ACM 215 3D Scene Design (3) Modeling, texturing, lighting and rendering. Students will design, build and create images of a consumer electronic device. A-F only. Prerequisite: consent.

ACM 216 3D Animation (3) Artistic/acting and technical/computer aspects of character animation. Special emphasis on techniques for imitating computer-generated characters with the illusion of life. Project-based. A-F only. Prerequisite: consent.

ACM 217 3D Visual Effects and Dynamics (3) Design and creation of computer animation visual effects using particles and dynamics systems to simulate natural phenomena. Compositing of visual layers. A-F only. Prerequisite: 215 and 216.

ACM 220 Advanced Rendering (3) Computer animation directing and cinematography in a 3D environment. A-F only. Prerequisite: 215 and 216.

ACM 255 Cinema and Digital Media (3) Introduction to the study of cinema and digital media: history, aesthetics and production of cinema, computer animation and video game design. A-F only. DH.

ACM 310 Cinematic Narrative Production (4) Production-intensive course with collaborative as well as individual projects. Theories and application of basic digital cinema production, including camera, lighting, sound and editing. Students must complete a certification workshop in camera and editing processes to be enrolled in this course. A-F only. Prerequisite: 255 (or concurrent), consent. DA.

ACM 312 Cinematography (3) Comprehensive course in visual styles supporting screen narratives through a study of principles of camera elements, operations, lighting, color and composition. Professional role and responsibilities of cinematographer. Project-oriented. Must have access to manually controlled still camera. ACM majors only. A-F only. Prerequisite: 310 (or concurrent) or consent.

ACM 315 Narrative Game Design (3) Storytelling through computer games. Effect of interactivity on narrative. Interactive plot structures, conceptual design, artwork, audio, cinematography, two- and three-dimensional design. Creation and programming of game narrative using scripting languages. ACM majors only. A-F only. Prerequisite: 215 and 216 and 255 (or concurrent), consent.

ACM 316 3D Character Animation (3) Creating the illusion of life through the principles of animation. Application of theory to practical scene work with emphasis on acting and personality in animated characters. ACM majors only. A-F only. Prerequisite: 215 and 216 and 255 and ART 113, consent.

ACM 318 Drawing for Animation (3) Design principles and observational drawing essential for the animation filmmaker. Gesture drawing from the model, human or animal. Composing for the screen, character design and conceptual illustration. ACM majors only. A-F only. Prerequisite: 215 and 216 and 255 and ART 113, consent.

ACM 320 Computer Animation Production I (3) 3D computer graphics production projects. Students will write, plan, execute, and deliver a 30 second computer-animated short film. Emphasis on visual storytelling and character animation. ACM majors only. A-F only. Prerequisite: 310 and 318. Fall only.

ACM 325 Visual Effects (3) Introduction to the history, theory, design and execution of visual effects for the screen. Project-based learning in traditional photographic and digitally-generated special effects. ACM majors only. A-F only. Prerequisite: 220 or 310, or consent.

ACM 350 Screenwriting (3) Research, development, style and structure of the narrative and documentary for the screen. ACM majors only. A-F only. Prerequisite: 310 (or concurrent) and B or better in ENG 100 or equivalent, or consent.

ACM 352 Screening Asian Americans (3) Survey of Asian and American representations in American film and television from the silent era to the present, with an emphasis on Orientalism and multiculturalism, as well as performance and spectatorship. ACM majors: A-F only. Prerequisite: junior standing or consent. (Once a year) (Cross-listed as AMST 352) DH.

ACM 355 Oral Tradition to Screenplay (3) Adapting the stories, styles and cultural values of oral traditions storytelling to cinematic narratives. A-F only. Prerequisite: 255 (or concurrent), consent.

ACM 360 Indigenous Aesthetics (3) Aesthetic theories and practices of indigenous cultures of the Pacific and their adaptation to the screen and storytelling to cinematic narratives. ACM majors only. A-F only. Prerequisite: 310 and 350 (or concurrent).

ACM 372 Editing for Cinema (3) Advanced course examining the theory, techniques, and practices of motion picture editing; use of non-linear digital editing systems; and practical experience in digital editing projects. ACM majors only. A-F only. Prerequisite: 310 or 316, or departmental approval.

ACM 374 Post Production Sound (3) Practical course on the theory, art and techniques of sound recording, editing and design for cinema. Students work on projects involving dialogue and sound effects in post production. ACM majors only. A-F only. Prerequisite: 372 or consent. Spring only.

ACM 375 Directing the Camera for the Screen (3) Detailed analysis of cinematic grammar, placement, movement, focus, and effects of the camera to create the mise-en-scene. Practical exercises and projects to apply theory to individual creative work. ACM majors only. A-F only. Prerequisite: 310 and 350 (or concurrent), consent.

ACM 380 Genre and Narrative Theory in Creative Media (3) Focus on the concept of genre, genre films, genre film criticism and popular genres such as Western, film noir, documentary, and Chinese martial arts. ACM majors only. A-F only. Prerequisite: 255 or consent.

ACM 382 Authors in Creative Media (3) Close textual analysis of film, TV and multimedia content. The course includes cinematic and television screenings. ACM majors only. A-F only. Prerequisite: 255 and 355, or consent.

ACM 384 Study Abroad (3) Intensive study of selected topics, genres, filmmakers, or digital media production in the host country in a UH Mānoa-approved study abroad location. Repeatable one time. A-F only. Prerequisite: 255 and consent.

ACM 385 Topics in Creative Media (3) Topics of interest to faculty and students; taught by regular and visiting faculty. Repeatable one time on different topics. ACM majors only. A-F only. Prerequisite: 255 and junior standing, or consent.

ACM 386 Techniques in Creative Media (3) Specialized techniques in the creation of digital media for a professional audience. ACM majors only. A-F only. Prerequisite: 310 or 316, or consent.

ACM 390 Workshop in Creative Media (V) Short-term intensive workshop in focused area of media production. Repeatable up to six credits. ACM majors only. A-F only. Prerequisite: 255 or consent.

ACM 399 Independent Group Project (V) Participation in a group production project under supervision of ACM faculty member. A-F only. Repeatable up to six credits. Prerequisite: 215 or 310, departmental approval, or consent.

ACM 405 Documentary Production (3) Analysis and practical knowledge of the documentary process including, but not limited to, research, organization and story structure, shooting, camera coverage, and editing. ACM majors only. A-F only. Prerequisite: 310 and 350, or consent.

ACM 410 Advanced Cinematic Production (3) Production of a major cinematic/digital narrative project. Working in groups, each student takes on creative and technical role and responsibilities of a principle crew position. Emphasis on artistic form in narrative development; timely execution from pre-to-post production. ACM majors only. A-F only. Prerequisite: 310 and 350, or consent.

ACM 415 Computer Game Production (3) Students will work as a team to produce to design and produce a computer game. 2D and 3D elements, animation, story, music, audio, and project software. ACM majors only. A-F only. Prerequisite: 315 or ICS 313, or consent.

ACM 420 Computer Animation Production II (3) Student teams produce a short, animated film. Prior knowledge of 2D and 3D media authoring tools and animation techniques is necessary. ACM majors only. A-F only. Prerequisite: 320 or consent.

ACM 450 Advanced Screenwriting (3) Application of narrative principles of character development, story structure and thematic spine to students’ short and feature-length screenplays. ACM majors only. A-F only. Prerequisite: 350 or consent.

ACM 455 Indigenous Filmmaking (3) Theories and studies of indigenous films and creation of a cinematic project based in indigenous cultural and value systems. Students must complete a certification workshop in camera and editing processes to be enrolled in this course. ACM majors only. A-F only. Prerequisite: 255 and 355, or consent.

ACM 460 Media Ethics (3) Ethics and social responsibility for media professionals. Application of ethical theories and principles to cases of recent mass media articles and research projects. A-F only. Prerequisite: Any 300-level course in ACM, COM or JOUR and junior standing, or consent. (Cross-listed as COM 460 and JOUR 460)

ACM 480 Oceanic Media and Culture (3) Involves close textual analysis of film, TV and multimedia content. The course includes cinematic and television screenings. ACM majors only. A-F only. Prerequisite: 255 or consent.

ACM 485 Seminar in Creative Media (3) Intellectual issues in creative media. Conducted by regular and visiting faculty with extensive student participation and scholarly presentation. Repeatable one time on different topics. ACM majors only. A-F only. Prerequisite: 255 or junior standing, or consent.

ACM 490 Global Media (3) Involves close textual analysis and strategic analysis of the globalism phenomenon, with an emphasis on transnational media corporations. ACM majors only. A-F only. Prerequisite: 255 or consent. Fall only.

ACM 495 Creative Media Internship (V) Internship in professional cinematic, television and/or digital media production company under professional and faculty supervision. Repeatable one time. ACM majors only. A-F only. Prerequisite: 310 or 315 or 316, and consent.

ACM 499 Directed Reading and Research (V) Directed reading and research. Repeatable two times. ACM majors only. Prerequisite: 310 or 315 or 316, and consent.
ACC 321 Intermediate Financial Accounting I (3) Accounting process and the application of GAAP to the recognition and measurement of cash, receivables, inventories, property plant and equipment, depreciation and depletion, intangibles, and current liabilities. Pre: 202 with C- or better.


ACC 399 Directed Reading and Research (V) Reading and research of a special area in major under direction of faculty member(s). Project must include statement of objectives, outline of activities planned, results expected, and how they are to be reported and evaluated. Must be approved in advance by the department chair and faculty advisor.

ACC 401 Federal Individual Income Taxation (3) Examines federal income tax concepts, such as gross income, exclusions, deductions, exemptions, and tax credits, especially for sole proprietors. Introduces taxation of property transactions. Pre: 202 or BUS 624 with C- or better.

ACC 407 Taxation of Business Entities (3) A survey of the general concepts, rules, and practices involved in the taxation of sole-proprietorships, corporations, partnerships, and subchapter S corporations. Pre: 401 with C- or better.

ACC 409 Accounting Information Systems (3) Accounting systems analysis, control and design in manual and computerized environments. Knowledge and skills of information technology for auditing AIS systems. Hands-on experience with microcomputers and a computerized accounting system. A-F only. Pre: 323 with C- or better (or concurrent).

ACC 413 Law for the Accountant (3) Intensive study of areas of law important to accountants. Particular attention is given to principles of law relating to contracts, sales, commercial paper, secured transactions, property, legal entities, agency, securities, and accountant’s legal liability. Pre: BLAW 200 or concurrent.

ACC 415 Advanced Financial Accounting (3) Accounting topics relating to consolidation requirements and introduction to the fundamentals of fund accounting, including the general fund, restricted funds, debt service funds, enterprise funds, general long-term account group, general fixed assets account group, and accounting entries for encumbrances. Pre: 323 with C- or better.

ACC 416 Special Topics in Accounting (3) Addresses current issues impacting the accounting profession. Topics vary each semester. Repeatable three times. Pre: 323.

ACC 418 Auditing (3) Auditing concepts including standards, objectives and ethics for external auditors. Emphasis on reporting standards, internal control, evidence, statistical sampling, IT audits and assurance. Pre: 323 and 409, both with C- or better.

ACC 460 International and Managerial Accounting (3) Integration of numerous elements of the accounting process from an international perspective. Examines information for managerial decision-making, planning and control. Current accounting issues discussed. Lectures, discussions, case analysis. ACC majors only. A-F only. Pre: 418 (or concurrent), no waiver.

ACC 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Repeatable unlimited times. Pre: master’s Plan B or C candidate and consent.

ACC 581 Financial Accounting I (5) Accounting process and the application of GAAP to the recognition and measurement of cash, receivables, inventories, property plant and equipment, depreciation and depletion, intangibles, current liabilities, and long-term liabilities. A-F only.

ACC 582 Financial Accounting II (5) Application of GAAP in recognition and measurement of investments, pensions, retained earnings, and other topics related to financial statements. Other topics include consolidation and mergers and acquisitions. A-F only. Pre: 581.

ACC 583 Cost Accounting (5) Information for managerial decision-making, planning and control, job order and process costing, direct and absorption costing, standard and normal cost systems. Will also cover Government and Not-for-profit topics. A-F only.

ACC 584 Regulation and Accounting (5) Will cover tax accounting topics for individuals, estates, and business entities. Also will cover business law and professional responsibility topics important for the professional accountant. A-F only. Pre: 581.

ACC 585 Auditing and Attestation (4) Concepts include standards, objectives, and ethics for external auditors. Emphasizes reporting standards, internal control, statistical sampling, EDP audits, and assurance. Also covers systems and relevant measurement topics. A-F only. Pre: 581.

ACC 609 Advanced Accounting Information Systems (3) The development, implementation and operation of enterprise-wide resource planning systems, with an emphasis on implications to accounting information. Also covers current and emerging issues relating to accounting information systems. Pre: 409 with C- or better.

ACC 616 Accounting Theory and Development (3) History and theoretical background of accounting standards. Including accounting theories, formulating and testing theories: scientific, pragmatic, syntactic and semantic theories; normative and positive theories. Literature supportive and critical of accounting standards. Pre: 323 with C- or better, or consent.

ACC 619 Advanced Auditing (3) Advanced auditing course using research, critical thinking and communication skills applied to contemporary accounting and auditing. Pre: 418 with C- or better.

ACC 620 Global Accounting (3) Theory and fundamental causes of international variations in accounting. Special emphasis on problems such as variations create for financial reporting, control, and decision-making within multinational business enterprises. Pre: 323 with C- or better, or consent.

ACC 625 Accounting and Tax Research (3) In-depth examination of tax and accounting research, IRC, and SEC procedures. Extensive practice in issue identification, reading and analyzing primary author-
Special research studies are examined as to their theoretical basis, design, implications, methodology, relevance, etc. A-F only. Pre: PhD student status in international management or consent.

ACC 705 Research in Taxation (3) Provides an overview of accounting research in taxation topics. Specific research studies are examined as to their theoretical basis, design, implications, methodology, relevance, etc. A-F only. Pre: PhD student status in international management or consent.

ACC 799 Directed Reading and Research (V) Reading and research in an area of accounting under the direction of faculty member(s). A-F only. Pre: PhD student status in international management or consent.

Aerospacel Studies (AS)

ROTC Programmes

The leadership laboratory is required for all courses except AS 304 and 306. Conducted within the framework of organized cadet corps with progression of experiences designed to develop leadership potential. Involves Air Force customs and courtesies, drills, and career progression.

AS 100 Air Force Fitness Course (1) A military fitness program that will challenge all students to meet their maximum fitness levels through a variety of exercises and fitness tests. Open to all students. Repeatable.

AS 101 Foundations of the United States Air Force (1) Study of the total force structure, strategic offensive and defensive, general purpose, and aerospace support forces of the Air Force in the contemporary world. A-F only.

AS 101L Initial Military Training I (1) Laboratory consists of activities that focus and promote the Air Force way of life. Instruction will include leadership and followership development, teamwork, physical fitness training, and activities designed to build camaraderie and esprit de corps. Course is open to all majors. CR/NC only.


AS 102L Initial Military Training II (1) Laboratory consists of activities that focus and promote the Air Force way of life. Instruction will include leadership and followership development, teamwork, physical fitness training, and activities designed to build camaraderie and esprit de corps. Course is open to all majors. CR/NC only.

AS 201 Evolution of USAF Air and Space Power (2) Study of Air Force heritage, Quality Air Force principles, ethics, and an introduction to leadership and group leadership problems. Application of written and verbal communication skills is included. A-F only.

AS 201L Field Training Preparation I (1) Laboratory consists of preparing second-year AFROTC cadets with the skills needed to successfully complete AFROTC Field Training (courses 304 and 306). Students will learn basic military skills, Field Training skills, and participate in physical fitness training. CR/NC only. Pre: consent.

AS 202 Evolution of USAF Air and Space Power (2) Continuation of 201. A-F only.

AS 202L Field Training Preparation II (1) Laboratory consists of preparing second-year AFROTC cadets with the skills needed to successfully complete AFROTC Field Training (courses 304 and 306). Students will learn basic military skills, Field Training skills, and participate in physical fitness training. CR/NC only. Pre: consent.

AS 251L Leadership Laboratory (1) Laboratory on the basic skills of leadership and followership. Lab includes application of leadership/followership skills, various field trips to military installations, group projects, and physical training. Repeatable one time. A-F only. Pre: 101, 102, 201, 202; or consent. Fall only. NI

AS 304 AFROTC Four-Week Field Training (4) Four-week field experience and training at selected Air Force bases on the mainland. Required of AFROTC students for Air Force commission. Pre: 101, 102, 201, 202, enrolled in AFROTC program, and consent.


AS 351 Air Force Leadership Studies (3) Integrated management course emphasizing the military officer as manager in Air Force milieu, including individual motivational and behavioral processes, leadership, communication and group dynamics. A-F only.

AS 351L Intermediate Cadet Leader I (1) Laboratory consists of demonstration of leadership and management skills needed to successfully function as an Air Force officer. Instructors will include lessons covering planning, organizational and communication skills, and the ability to use available resources to complete an assigned task. CR/NC only. Pre: must have completed 304 and 306; or consent.

AS 352 Air Force Leadership Studies (3) Continuation of 351. A-F only.

AS 352L Intermediate Cadet Leader II (1) Laboratory consists of demonstration of leadership and management skills needed to successfully function as an Air Force officer. Instructors will include lessons covering planning, organizational and communication skills, and the ability to use available resources to complete an assigned task. CR/NC only. Pre: must have completed 304 and 306; or consent.

AS 401 National Security Affairs (3) Study of the national security process, regional studies, advanced leadership, ethics, and Air Force doctrine. Special focus placed on preparation for active duty and current issues affecting professionalism. A-F only. Pre: 352 or consent. Fall only.

AS 401L Senior Cadet Leader I (1) Laboratory consists of providing prospective Air Force officers opportunities to continue to develop leadership, managerial, and supervisory skills. Instruction will include preparation for active duty. CR/NC only. Pre: must have completed 351 and 352L; or consent.

AS 402 National Security Affairs (3) Continuation of 401. A-F only. Pre: 401 or consent.

AS 402L Senior Cadet Leader II (1) Laboratory consists of providing prospective Air Force officers opportunities to continue to develop leadership, managerial, and supervisory skills. Instruction will include preparation for active duty. CR/NC only. Pre: must have completed 351 and 352L; or consent.

Agricultural and Resource Economics (AREC)

College of Tropical Agriculture and Human Resources, see also Natural Resources and Environmental Management (NREM)

AREC 610 Biosystems Modeling (3) Introduction to system thinking, procedures for developing system models, characteristics of important agricultural system models, computer-aided approach to evaluation and optimization of system models. Pre: one of MATH 215, MATH 241, MATH 251A; or consent. (Cross-listed as BIOL 603)

AREC 626 Econometrics I (3) Review of probability, estimation, small sample and asymptotic properties. Bivariate and multiple regression and matrix algebra formulation. Regression diagnostics. Introduction to heteroskedasticity, autocorrelation, simultaneity, dichotomous variables, advanced topics. Pre: NREM 310 or ECON 321, and MATH 241; or consent. (Cross-listed as ECON 628)

AREC 634 Econometrics II (3) Specification, statistical estimation, inference, and forecasting of economic models. Includes advanced topics for single-equation models, pooled models, qualitative dependent variables, simultaneous systems, distributed lags, and time series. Pre: 626 and ECON 628, or consent. (Cross-listed as ECON 629)

AREC 700 Thesis Research (V)

AREC 800 Dissertation Research (V)

American Studies (AMST)

College of Arts and Humanities

The minimum required grade for prerequisites is a grade of C (not C-) or better.

Sophomore standing or consent is required for all 300-level courses except as noted.

AMST 110 Introduction to American Studies (3) Introduction to different types of college-level writing through analyses of contemporary American culture and to the main themes and approaches used in American studies and the humanities. D 

AMST 150 America and the World (3) Examines America’s role in world history and the influence of world affairs on U.S. culture and society. Focuses on U.S. interdependence with African, European, Native American, Asian, and Polynesian civilizations, from 1492 to present. FGB

AMST 201 American Experience: Institutions and Movements (3) Interdisciplinary course that examines diversity and changes in American values and institutions-political, economic, legal, and social. D 

AMST 202 American Experience: Culture and the Arts (3) Interdisciplinary course that examines diversity and changes in American values and culture-literature, film, visual arts, and architecture. D 

AMST 211 Contemporary American Domestic Issues (3) Interdisciplinary exploration of such current American domestic issues; topics as politics, economics, civil rights, family life, the justice system, and the environment. D 

AMST 212 Contemporary American Global Issues (3) Interdisciplinary exploration of such current global issues as international diplomacy, economic development, national security, demographic change, and the environmental protection. D 

AMST 250 American Film History (3) Introduc- 

tory history of American cinema from the silent to the digital era, with an emphasis on criticism and genre, as well as cultural and sociopolitical context. D 

AMST 301 Hip-Hop and American Culture (3) Survey tracing hip-hop from its Afro-Caribean musical beginnings to contemporary adaptations and interpretations. Students will analyze various materials and will pay attention to the relationships between hip-hop and contemporary social forms. Pre: sophomore standing or consent. D 

AMST 310 Japanese Americans: History, Culture, Lifestyles (3) Explores the experiences of Japanese Americans in Hawai’i and the U.S. at large: historical and cultural heritage, biographical portraits, changing family ties, ethnic lifeways, gender relations, local identity, and the future of island living. D 

AMST 313 African Americans: Issues, Culture, History (3) Traces the history and culture of African Americans and outlines contemporary issues. Topics include: slavery and racism, community formation and resistance, cultural expression, African American
diversity, civil rights, gender and class relations. DH
AMST 316 U.S. Women's History (3) History of U.S. women and gender relations. Topics include women's work in and outside the household, women’s involvement in social movements, changing norms about gender and sexuality, and shared and divergent experiences among women. Pre: 201 (or concurrent), 202A (or concurrent), 202 (or concurrent), 202A (or concurrent) or WS 151 (or concurrent); or consent. (Cross-listed as HIST 361 and WS 311) DH
AMST 318 Asian American Survey (3) History of selected Asian immigrant groups from the 19th century to the present. Topics include: immigration and labor history, oral and print cultural productions, community adaptations and identity formation. Pre: junior standing and one of 201 (or concurrent), 202 (or concurrent), SOC 100 (or concurrent), or SOC 214 (or concurrent); or consent. (Cross-listed as ES 318) DH
AMST 319 America, Hawai‘i and World War II (3) Examine WWII as a watershed in American and Hawai‘i’s history and culture. Topics include: Pearl Harbor, Japanese American internment, sex and racial tensions, Anti-Semitism and the Holocaust, and the dawn of the Atomic Age. DH
AMST 320 American Environments Survey (3) Survey of social, political, and cultural relations in diverse, contemporary American environments, including: island societies, urban centers, suburbs, Indian reservations, farming communities, and national parks. Special emphasis on contemporary environmental issues in Hawai‘i. DS
AMST 321 The American City (3) Evolution since 17th century: role in contemporary American culture; related problems, perceptions, values. (Cross-listed as ES 321) DH
AMST 334 Digital America: Online Communities and Virtual Worlds (3) Seminar on the impact of the digital revolution and virtual communities on American culture and society, with an emphasis on questions of identity and participatory democracy. Open to nonmajors. Pre: one DH, DA, or DS course, or consent. DH
AMST 339 Religions in America (3) Examination of American religious traditions, both historical and contemporary, with an emphasis on the principles of religious liberty, non-establishment, and pluralism. Pre: sophomore standing or consent. DH
AMST 343 American Thought and Culture (3) Politics, family, philosophy, technology, etc.; their interconnectedness; the cultural society. Pre-Colonial to end of Reconstruction. Pre: 150 or 201 or 202 or 211 or 212 or HIST 151 or HIST 152; or consent. (Cross-listed as HIST 343) DH
AMST 344 American Thought and Culture (3) Continuation of 343; 20th century. Pre: 150 or 201 or 202 or 211 or 212 or HIST 151 or HIST 152; or consent. (Cross-listed as HIST 344) DH
AMST 350 Culture and Art in America: Survey (3) Popular arts, travel, fashions, craft and industrial productions, recreation. Past used to explain the present. DH
AMST 352 Screening Asian Americans (3) Survey of Asian and Asian American representations in American film and television from the silent era to the present, with an emphasis on Orientalism and multiculturalism, as well as performance and spectatorship. ACM majors: A-F only; Pre: junior standing or consent. (Once a year) (Cross-listed as ACM 352) DH
AMST 354 American Travel Writing (3) Survey examines the roles that travel writing plays in American identity- and nation-formation, from early colonial history to the present. A-F only; Pre: 110, 150, 201, 202, 211, or 212. (Alt. years) DH
AMST 365 American Empire (3) Examines the interplay between an “American culture of empire” and the rise of the U.S. as asuperpower. Topics: imperialist and political culture, social movements and international affairs, race, gender and class relations. (Cross-listed as HIST 379) DH
AMST 373 Filipinos Americans: History, Culture and Politics (3) An introduction to the study of Filipino Americans in the U.S. and the diaspora. The course pays special attention to labor migration, cultural production and community politics. Pre: sophomore standing. (Cross-listed as ES 373) DS
AMST 381 Junior Seminar (3) Materials and methods for the study of American life and thought. For AMST 344 and AMST 321. DH
AMST 382 Junior Seminar (3) Continuation of 381. For American studies majors and minors only. DH
AMST 391 Filipinos Americans: Research Topics (3) A research seminar on the study of Filipino Americans. Special themes in film/video/media, the performing arts, or literature may be offered. Pre: junior standing or consent. (Cross-listed as ES 443) DH
AMST 410 Asian American Music Cultures (3) An exploration of how Asian American music making is related to community formation, labor migration, and cultural sensibilities throughout the twentieth century. DH
AMST 411 Japanese Americans: Research Topics (3) Research and thematic seminar on Japanese American culture, issues, and history. Pre: junior standing or consent. DH
AMST 413 Regionalism: The South (3) Definition of a Southern identity and its relation to the larger U.S. culture, using literary and polemical works of 19th- and 20th-century. DH
AMST 418 Hawai‘i's Multiculturalism (3) A multidisciplinary examination of the dynamics of the Hawaiian Islands' racial and cultural diversity from the perspectives of historical trends, social processes, and contemporary political, social, and economic issues as they impact intercultural relations. DS
AMST 420 American Ideas of Nature (3) The natural world in American thought from Native Americans to modern ecologists. DH
AMST 423 History of American Architecture (3) History of American architecture in terms of style, techniques, and symbolic meaning. (Cross-listed as ARCH 473) DH
AMST 425 American Environmental History (3) Survey history of the complex relations between American societies and diverse U.S. ecosystems, from European contact and colonization to the present. DH
AMST 431 American Labor History (3) Conditions of labor in major phases of American development; response of labor and community to changing work environment. Capitalism, unionism, work, gender, law, etc. Emphasis on 20th century. (Cross-listed as HIST 477) DH
AMST 432 Slavery in History and Memory (3) Examines the history of African slavery in the Americas from its earliest development to its abolition with an emphasis on the U.S. Examines the memory of slavery as conveyed in literature, film, and music. (Cross-listed as HIST 477) DH
AMST 443 Politics in Hawai‘i (3) Discussion of modern politics against the background of recent history and major contemporary issues. DS
AMST 450 History of Crime & Punishment (3) History of American crime and punishment from 18th century to the present. Topics: changing crime patterns, evolving punishment methods, penal reform movements, convict resistance, growth of prison industrial complex, racism, class, and gender. DS
AMST 456 Gender, Justice and Law (3) Exploration of landmark U.S. Supreme Court cases related to sex and gender. Topics may include sex discrimination, sexual orientation discrimination, privacy, and reproductive freedom. A-F only. Pre: one of WS 151, WS 175, WS 176, WS 202, WS 360, WS 381, or consent. (Cross-listed as POLS 456 and WS 456) DS
AMST 458 Asian Women (3) History, culture, and contemporary reality of Asian women in Asia and the U.S. Includes critical analysis of an Asian feminist methodology and theory. Pre: one of 310, 316, 318, 373, 455, POLS 339, WS 360, WS 361, WS 439; or consent. (Cross-listed as POLS 372 and WS 462) DS
AMST 460 Race and Racism in America (3) Racial ideas and ideologies, and their effects throughout American history. Fall only. (Cross-listed as HIST 476) DH
AMST 462 Radical Traditions (3) Varieties of radicalism that have provided a continuing critique of prevailing values and structures. DH
AMST 445 Racism, American Culture and Film/Media (3) An exploration of the critique of racial ideologies in American film. The course also examines how aggrieved communities develop cultural sensibilities, aesthetic choices and politicized identities through film, video and media work. DH
AMST 451 Popular Culture (3) Major themes, modes, and media of popular or mass culture in the U.S.; emphasis on cultural trends and social implications. DH
AMST 452 The ‘20s and ‘30s (3) Novelist, painters, poets, jazz musicians as examples of culture of the 1920s and 1930s in America. DH
AMST 453 Culture, Society, and Literature (3) Literary and non-fiction exploration of the intellectual and moral response of Americans to institutions and culture of 20th-century marketplace economy. DL
AMST 454 Fashioning America (3) Examines linkages between American identity, representation, labor and capital through fashion theory, clothing discourses and other practices of textile production over history. A-F only. Pre: junior standing or consent. DS
AMST 455 U.S. Women’s Literature and Culture (3) Reading of selected works of U.S. women’s literature and cultural texts (such as art and film). Emphasis on historical and cultural context and diverse expressions of women’s gendered identities. Pre: 202 (or concurrent), one ENG DL course (or concurrent), or WS 151 (or concurrent); or consent. (Cross-listed as ENG 455 and WS 445) DL
AMST 456 Art of the United States (3) Emphasis on the 18th and 19th centuries. Pre: 202 or ART 176, or consent. (Cross-listed as ART 472) DH
AMST 457 Museum Interpretations (3) Studies the interpretive strategies and methods used by museums to communicate with visitors in museums, art galleries, historic sites, parks, and related places. Considers how interpretations contribute to cultural knowledge. Repeatable one time. Pre: consent. (Cross-listed as ART 481) DH
AMST 458 Film in American Culture (3) Comprehensive survey of varieties of film experience from historical and contemporary points of view. DL
AMST 459 Sports in America (3) Sports as reflected in literature, films, and TV. DS
AMST 461 America’s World Role (3) Examination of America’s role in modern world affairs, against the background of history, perceptions, and values. DS

Key to symbols & abbreviations: see the first page of this section.
AMST 464 America and Africa (3) American attitudes toward Africa, as well as how Africa has functioned within the dynamics of American culture and history. DH

AMST 465 American Experience in Asia (3) Comparison of American experiences in Japan, China, and Southeast Asia within historical and perceptual framework. DH

AMST 469 Religion and Homosexuality in American Public Life (3) Examines the roles of religious groups and religious values with regard to homosexuality in American public culture. Pre: junior standing or consent. DH

AMST 474 Preservation: Hawai’i, Asia, and the Pacific (3) Lectures and discussions on historic preservation issues in Hawai’i, Asia, and the Pacific. Emphasis on indigenous and national expressions. Pre: junior standing or consent. DH

AMST 475 Documentation of Historic Architecture (V) Study and documentation of existing buildings, structures, sites of historic and/or cultural significance, including field measurements and drawings, historical research, photo documentation, and preparation of archival drawings to be deposited in the Library of Congress. Documentation conducted according to standards of the Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER). Repeatable three times. Pre: consent. (Cross-listed as ARCH 472)

AMST 480 Approaches to American Studies (3) Required seminar in American Studies methods in preparation for the senior research seminar or the senior capstone project. AMST majors only. A-F only. Pre: 382. Fall only.

AMST 481 Senior Research Seminar (3) Capstone course for American studies students to undertake a major research and writing project. Requires a 20 page minimum final research paper. For AMST majors only. Pre: consent.

AMST 482 Senior Capstone Project (3) Capstone course for American Studies majors to undertake a non-thesis project. AMST majors only. A-F only. Pre: 480 and consent. Spring only.

AMST 489 World Maritime History (3) Survey of world maritime history from earliest times to the present, with emphasis on the evolution of nautical technology, motives from maritime enterprises, and the impact of cross-cultural encounters between oceanic peoples. (Cross-listed as HIST 489) DH

AMST 490 (Alpha) Topics in American Studies (3) Themes, problems, and issues not addressed in other American studies undergraduate courses, focused within these areas: (B) social structure and interaction; (D) arts and environment. Repeatable one time. Pre: junior standing or consent for (D). DH

AMST 499 Readings in American Studies (V) Directed readings and research for majors. Pre: consent.

AMST 500 Master’s Plan B/C Studies (1) Graduate standing or consent required for all 600-level courses.

AMST 600 Approaches to American Studies (3) Introductory survey of methodological issues underlying research in American studies.

AMST 601 Patterns of American Cultures (3) American cultural origins and development. Beginnings to civil war.

AMST 602 Patterns of American Cultures (3) American cultural origins and development. Civil war to present.

AMST 610 Early America (3) Interdisciplinary approach to understanding early American culture and history. Repeatable one time. Pre: graduate standing or consent. (Alt. years) (Cross-listed as HIST 632B)

AMST 611 Asian America (3) The Asian American experience from an interdisciplinary and humanities perspective. Asian American history, literature, media, and theater arts. Comparative study of Hawai’i and the Continental U.S.

AMST 612 Women in American Culture (3) Historical/contemporary status of women in the U.S.; women’s roles as defined by legal, educational, political, economic, and social institutions; implications for social scientific career. (Cross-listed as WS 612)

AMST 614 Advanced Topics: American West (3) Examination of the U.S. colonization of the American West. Topics include: European-indigenous relations, migration and labor, regional literature, frontier ideology, ethnic conflict, and new community formation. A-F only. Pre: graduate standing and consent. (Cross-listed as HIST 639F)

AMST 615 Performance, Culture, and Theory (3) Survey of major critical works in fields of performing arts and public culture (e.g., dance, theater, music, commemoration). Topics include: theoretical application for the discipline of American studies, and the impact of social movements and labor migration on the performing arts.

AMST 617 Social and Cultural Diversity in America (3) Examination of selected subcultures in America.

AMST 618 American Sexualities (3) Aspects of sexual identity within the context of American culture.

AMST 623 American Architecture (3) Cultural analysis of the evolution of American architecture from the Colonial period to the present involving sociopolitical and economic, as well as aesthetic, considerations.

AMST 624 Wilderness in America (3) American wilderness as both physical setting and social construction. A-F only. Pre: graduate standing or consent.

AMST 625 Material Culture (3) Physical artifacts considered as documents of American cultural and regional development.

AMST 626 Environment and Society (3) Technological development in cultural perspective; its relation to the American environment, science, capitalism, public policy, and values.

AMST 627 The American City (3) Urban life and culture in contemporary and historical perspective; emphasis upon problems and problems of city in American culture. Pre: graduate standing and consent. (Cross-listed as ARCH 627 and HIST 639E)

AMST 632 Mass Media (3) Appraisal of major media of communications in American society with attention to political, educational, cultural, and ethical implications.

AMST 635 Public History and Commemoration (3) Approaches to public presentations of history and examination of various ways in which historic memory is constructed in sites such as museums, memorials, and theme parks.

AMST 638 American Punishment (3) Examines the history of American criminal punishment, from the birth of the penitentiary to the rise of the prison-industrial complex. A-F only. Pre: graduate standing. (Cross-listed as SOC 638)

AMST 640 Writing for Publication (3) Advanced seminar designed to convert graduate research projects into publishable scholarly articles. Repeatable one time. A-F only.

AMST 643 Critical Traditions in America (3) Examination of various dissident movements in American history.

AMST 646 Advanced Topics: Social/Cultural/Intellectual (3) Readings and research on American social and intellectual history. Repeatable one time. Pre: graduate standing and consent. (Cross-listed as HIST 639B)

AMST 647 Advanced Topics: Business/Labor/Technology (3) Readings and research on American business, labor, and technological history. Repeatable one time. Pre: graduate standing and consent. (Cross-listed as HIST 639K)

AMST 649 American Intellectual Traditions (3) Examination of intellectual figures and movements in American history.

AMST 656 Film in America (3) Examination of various roles of motion picture film in America with particular respect to art form, cultural artifact, document, and myth.

AMST 659 Arts in America: Modern to Post-Modern (3) Survey of the literature of the field.

AMST 664 America in Asia (3) Topics in U.S. economic, political, military, and cultural relations with East and Southeast Asia, from the 18th century to the present.

AMST 668 Globalization and Transnationalism (3) Examines the socioeconomic and cultural meanings of globalization and transnationalism. Emphasis on how the deployment and flows of power beyond the nation-state have an impact on regional, national, and/or local communities and cultures.

AMST 669 Advanced Topics: America and the World (3) Historical and contemporary issues in America’s global relationships.

AMST 672 20th Century U.S. Literature (3) Selected works of 20th-century literature as cultural documents.

AMST 673 African American Literature (3) Cultural and social imagination of blacks and whites as revealed in literature, poetry, and drama.

AMST 675 Preservation: Theory and Practice (3) History and philosophy of historic preservation movement. Analysis of values and assumptions, methodologies and tactics, implications for society and public policy. (Cross-listed as ARCH 628 and PLAN 675)

AMST 676 Recording Historic Resources (3) Techniques in recording and evaluation of historic buildings and other resources, with an emphasis on field recordings and state and federal registration procedures. (Cross-listed as PLAN 676)

AMST 677 Community Preservation (3) Local-level historic preservation, with an emphasis on historic districts, design guidelines, regulatory controls, and community consensus-building. (Cross-listed as PLAN 677)

AMST 679 Elements of Style (3) The manifestations, visual characteristics, and social/cultural meaning of “style” in American architecture and decorative arts from the early settlement period through the present.


AMST 681 American Vernacular Traditions (3) Methods and approaches in the study of vernacular architecture, cultural landscapes, and material culture, with an emphasis on traditions and innovations in the Americas. (Cross-listed as ARCH 650)

AMST 683 Museums: Theory, History, Practice (3) History and theory of museums and related institutions (art galleries, historic houses, zoos, parks). Relationship between museums, collections, and communities. Introduction to governance, planning, legal, and ethical concerns.

AMST 684 Museums and Collections (3) Work of museums and professionals (registrars, collections
managers, conservators, curators and others) in the care of collections, interpretive studies of museum displays and collections and fieldtrips. Pre: 683 (or concurrent) or consent.

AMST 685 Museums and Communities (3) Public role of museums and their responsibilities, museum education and outreach programs, representation of Native peoples, legal issues, budgets and finances, marketing and public relations. Pre: 683 (or concurrent) or consent. (Cross-listed as EDCS 685)

AMST 686 Museum Studies Practicum (3) Applies coursework in museum studies to hands-on activities under the direction of practicing professionals and university faculty. Museum studies certificate students only. Pre: consent.

ANAT 690 Research Seminar (3) Themes, problems, and issues not addressed in other American studies graduate courses; emphasis upon research methods. Repeatable unlimited times.

AMST 695 Historic Preservation Practicum (3) Applies course work in historic preservation to hands-on activities under the direction of practicing professionals and University faculty. Historic preservation certificate students only.

AMST 696 (Alpha) Preservation Field Study (6) On-site historic preservation field study. Site will rotate. Academic and hands-on preservation training. (B) Hawai‘i; (C) Asia; (D) Pacific. Each alpha repeatable up to 18 credits. Pre: consent.

AMST 699 Directed Reading/Research (V) AMST 700 Thesis Research (V) AMST 800 Dissertation Research (V)

Anatomy (ANAT) School of Medicine

ANAT 499 Directed Reading Research (V)

ANAT 512 (Alpha) Unit II Concurrent Electives (1) Elective courses for first-year medical students. (B) human anatomy of the thorax and upper limb; (C) histology. CR/NC only. Pre: BIOM 551 and consent.

ANAT 513 Unit III Concurrent Electives (Alpha) (I) Elective course for first-year medical students. (B) human anatomy of abdomen and lower limbs; (C) histology. CR/NC only. Pre: BIOM 551 and consent. Spring only.

ANAT 514 (Alpha) Unit IV Concurrent Electives (I) Concurrent electives in anatomy. (B) functional anatomy of the head, neck, and lower limb with review of the upper limb anatomy included; (C) human embryology and study of human development including implantation, placentation, basics of development of each organ system with reference to pertinent congenital anomalies and their surgical repair; (D) neuroanatomy: spinal cord, brain stem and the regions of the cerebrum will be discussed; (E) human anatomy of the head, neck, and spine. CR/NC only. Pre: BIOM 551 and consent.

ANAT 515 (Alpha) Unit V Concurrent Elective (1) Elective course for second-year medical students. (B) embryology. CR/NC only. Pre: BIOM 551 and consent. Spring only.

ANAT 545 (Alpha) Unit VII Anatomy Electives (V) Advanced study of human anatomy by dissection and independent study of surgical procedures. (C) topics in reproductive biology. Repeatable two times. CR/NC only. Pre: FMCH, MED, OBGYN, PED, PSTY, SURG 531 or 532; or consent.

ANAT 599 Independent Study in Anatomy (1) Elective course for advanced medical students. (B) independent study of human gross anatomy; (C) histology; (D) research in anatomy and development. CR/NC, only. Repeatable three times for (B) and (C). MD majors only for (D). Pre: BIOM 551 or consent; MDED 554 for (D), no waiver. Fall only for (D).

ANAT 603 Lower Extremity, Thorax, and Abdomen (3) Human gross anatomy dissection of the lower extremity, thorax, and abdomen with emphasis on muscles, function, innervation, and vascular supply. A-F only. Repeatable one time. Pre: departmental approval. Spring only.

ANAT 604 Upper Extremity, Head, Neck, and Spine (3) Human gross anatomy dissection of the upper extremity, head, neck, and spine with emphasis on muscles, function, innervation, and vascular supply. A-F only. Repeatable one time. Pre: departmental approval. Fall only.

ANAT 607 Human Embryology (2) Systematic study of human development, including implantation, placentation, kinetics of development of each organ system with reference to pertinent congenital anomalies and their surgical repair. Pre: 603 or 604. Recommended: gross anatomy course.

ANAT 612 Seminar in Anatomy Teaching (V) Effective teaching methods, organization of courses in anatomical sciences, development and evaluation of examination and testing materials, development of atlases and computer aids. Open to graduate students in physiology or KRS. Repeatable eight times. Pre: 603 and 604.

ANAT 699 Directed Research (V) Repeatable unlimited times.

ANAT 700 Thesis Research (V) Pre: admission to candidacy (master’s program).

ANAT 800 Dissertation Research (V)
Must have strong interest in hands-on rearing aquaculture animals and flexible time for live animal care.

ANSC 472 Endocrinology of Domestic Animals (3) Physiology of secretion and actions of hormones of pituitary, thyroid, adrenal, pancreas, parathyroid, thymus, other endocrine organs excluding reproduction. Pre: 301. DB

ANSC 490 Aquaculture Business Planning and Entrepreneurship (2) Practical aspects of planning and developing an aquaculture business from conceptualization to a final business plan. Topics include species/technology, project planning, business structuring, permitting, contracts, production plans, financial planning and analysis, market/competition analysis, capital acquisition, intellectual property and legal issues. Pre: 450 or OCN 450. Must have strong interest in hands-on rearing aquaculture animals and flexible time for live animal care.

ANSC 491 Topics in Animal Sciences (V) Study and discussion of significant topics, problems. Offered by visiting faculty and/or for extension programs. Repeatable one time with instructor consent. Pre: junior or senior standing.

ANSC 492 Internship (4) Integration and application of academic knowledge and critical skills emphasizing professional development. Placement with an approved cooperating supervisor/employer. A-F only. Pre: senior standing in ANSC. (Cross-listed as FSHN 492)

ANSC 499 Directed Study or Research (V) Limited to exceptional undergraduate students, generally with a minimum cumulative GPA of 2.7 or a minimum GPA of 3.0 in major. Exceptions may be granted for students with high achievement in last three semesters. Pre: junior or senior standing.

ANSC 500 Master's Plan B/C Studies (1)

ANSC 601 The Science of Food Systems (2) (1 50-min Lec, 1 2-hr Discussion) Discussion of food systems as they apply to animal science, food science, and human nutrition. Repeatable one time. Pre: graduate standing or consent. Pre: consent. (Cross-listed as FSHN 601)

ANSC 603 Experimental Design (4) (3 Lec, 1 3-hr Lab) Design of experiments and variance analyses in biological and agricultural research. Pre: graduate standing or consent. Recommended: ZOOL 632. (Cross-listed as TPSS 603)

ANSC 641 Seminar in Animal Sciences (1) Topics of current interest and current research related to nutrition, genetics, and physiology. Pre: consent.

ANSC 642 Advanced Animal Nutrition (3) An advanced course in the nutrition of mono-gastric, ruminant, avian, and aquatic species. Topics include digestive system structures, utilization of nutrients, energy metabolism, and experimental techniques used in the study of animal nutrition. Pre: graduate standing or consent.

ANSC 643 Physiology of Reproduction (3) Comparative differentiation, development, growth, and function of the reproductive systems of mammals and birds; external factors that influence response; artificial insemination. Pre: graduate standing or consent.

ANSC 644 Growth Biology of Meat Animals (2) Growth and development of meat-producing animals; skeletal muscle, adipose tissue, and bone; protein turnover, lipid metabolism, and bioenergetics; regulation of animal growth. Pre: graduate standing or consent.

ANSC 650 DNA and Genetic Analysis (2) Combined lecture-lab for students interested in genetic analysis of humans, animals, and other species. Molecular techniques, such as PCR, DNA marker identifications, transgensics, expression analysis and functional genomics, are included. Open to nonmajors. Pre: graduate standing or consent. (Cross-listed as FSHN 650 and MBBE 650)

ANSC 652 Information Research Skills (1) Examines the use of libraries and information technology for scholarly investigation in support of scientific research; provides experience utilizing and critically evaluating a variety of print and electronic sources in basic and applied sciences. Pre: consent. (Cross-listed as FSHN 652, NREM 652, and TPSS 652)

ANSC 657 Grant Writing for Graduate Students (1) Combined lecture/discussion on grants and grant writing. Designed to introduce graduate students to grants and grant proposal writing through lectures, class discussion, writing assignments, and peer review. Open to CTAHR graduate students only; others with consent. Fall only. (Cross-listed as FSHN 657 and TPSS 657)

ANSC 667 Advanced Laboratory Techniques (3) (1 Lec, 2 3-hr Lab) Advanced laboratory techniques used in food science and human nutrition research. Pre: graduate standing or consent. (Cross-listed as FSHN 667 and MBBE 667)

ANSC 699 Directed Research (V) Pre: consent.

ANSC 700 Thesis Research (V)
ANTH 375 Race and Human Variation (3) Human genetic and physical variation; latitudinal, longitudinal, and altitudinal variation across human populations; history of racism; contemporary issues in race and human variation. Pre: 152 and 215, or consent. (Once a year) DS
ANTH 380 Archaeological Lab Techniques (4) Laboratory analysis and evaluation of field data; preservation and restoration of artifacts. Preparation for publication. Repeatable two times. Pre: 210 or consent. (Once a year) DS
ANTH 381 Archaeological Field Techniques (V) Archaeological surveys and excavations; field trips, mapping, photography. May focus on terrestrial or underwater. May be taught entirely in the field at a national or international archaeological site. Repeatable one time with consent. Pre: 210.
ANTH 384 Skeletal Biology (3) Introduction to the human skeleton and methods for analyzing archaeological human remains including age, sex, ethnicity, paleodemography, skeletal and dental variation, pathology, population studies. Co-requisite: 384L. DB
ANTH 384L Skeletal Biology Laboratory (1) Laboratory to accompany 384. Co-requisite: 384. DV
ANTH 385 (Alpha) Undergraduate Proseminar (3) Selected problems in current research. (B) archaeology; (C) ethnography; (D) social anthropology; (E) applied; (F) psychological; (G) biological. Repeatable nine times. Pre: consent. DS
ANTH 399 Directed Reading or Research (V) Repeatable nine times. Pre: major or minor in Anthropology.
ANTH 408 History and Memory (3) Lecture/discussion on the culture and politics of collective memory. Pre: junior standing or consent. (Once a year)
ANTH 410 Ethics in Anthropology (3) Seminar surveying ethical cases, problems, issues and questions from the inception of anthropology to the present. Pre: 152. (Alt. years)
ANTH 412 Evolutionary Anthropology (3) Lecture-discussion providing an overview of evolutionary theory in anthropology: focus on the evolution of culture, behavioral ecology, and cultural diversity; emphasis on archaeological and ethnographic research and explanatory models. Pre: 210 or 215, or consent. (Once a year)
ANTH 413 Language and Gender (3) The role of language in the construction of gender and in the maintenance of the gender order. Field projects explore hypotheses about the interaction of language and gender. No previous knowledge of linguistics required. A-F only. (Cross-listed as LING 413) DS
ANTH 414 Introduction to Linguistic Anthropology (3) Introduction to the ethnographic study of speech and language. Pre: 152 or consent. (Once a year) (Cross-listed as LING 414 and IS 414) DS
ANTH 415 Ecological Anthropology (3) Relationship of humans with natural environments; role of culture in ecological systems. Pre: 152. DS
ANTH 416 Economic Anthropology (3) Analysis of economic activities in non-Western, non-industrial societies: production, distribution, and consumption of goods and services in a variety of cultures. Pre: 152. DS
ANTH 417 Political Anthropology (3) Character of political institutions and their development in non-Western and non-industrial societies. Pre: 152. DS

Key to symbols & abbreviations: see the first page of this section.
ANTH 471 Assemblage Analyses in Archaeology
(4) Lecture and laboratory course surveying methods for conducting analyses of archaeological assemblages. Focus on classification, quantitative techniques, including reliability, precision, and accuracy. Students complete projects on existing assemblages or data from assemblages. Repeatable one time. Pre: 210. DH

ANTH 472 Ceramic Analysis in Archaeology

ANTH 473 Lithic Analysis in Archaeology
(3) How archaeologists infer procurement, production, distribution, and use of lithic resources, with emphasis on the manufacturing process. Includes lab for replicating prehistoric technologies. Pre: 210. DH

ANTH 474 Geoarchaeology
(3) Field and laboratory analysis of sediments and soils in 98 environments, site formation, post-depositional processes, landscape change, and paleogeomorphic reconstruction. Pre: 210. DP

ANTH 475 Fenestral Analysis in Archaeology
(3) Analysis of archaeologically recovered faunal collections with emphasis on identification and interpretation of nonhuman vertebrate remains. Pre: 210. DH

ANTH 477 Introduction to Geographic Information Systems for Anthropologists
(3) Combined lecture/lab on GIS and related technologies for anthropological applications. Lectures plus instructor-led and self-directed computer lab exercises. Emphasizes on practical technical skills and necessary conceptual understanding. Pre: junior standing or consent. (Once a year)

ANTH 481 Applied Anthropology
(3) Methods and results in application of anthropological concepts to the practical problems of agricultural, commercial, and industrial development. Pre: 152. DS

ANTH 482 Environmental Anthropology
(3) This seminar surveys practical environmental questions, cases, problems, and issues from the perspective of applied ecological anthropology. Pre: 415 or consent. (Alt. years) DS

ANTH 483 Japanese Culture and Behavior
(3) Sociocultural factors in Japanese behavior. Social structure; traditional institutions. DS

ANTH 484 Japanese Popular Culture
(3) Explores contemporary Japanese pop culture through themes such as gender, consumerism, globalization and nostalgia. Rather than a survey of popular culture genres, the course is organized thematically around issues and problems. DS

ANTH 485 Pre-European Hawai’i
(3) Pre-European society and culture from an anthropological viewpoint. Pre: junior standing or consent. DH

ANTH 486 Peoples of Hawai’i
(3) Critically examines the historical and contemporary experiences of various people of Hawai’i and utilizes anthropological and ethnic studies approaches to study identity, race, ethnicity, culture, language, gender, sex, class, land, and residence. Pre: junior standing or consent. (Once a year) (Cross-listed as ES 486) DS

ANTH 488 Chinese Culture: Ethnography
(3) Critical interpretations of ethnographic and biographic texts depicting individual and family lives in different socioeconomic circumstances, geographical regions, and historical periods of modern China. DS

ANTH 490 History of Anthropology
(3) Development of anthropological ideas, focusing on theoretical issues concerning culture, society, and human nature. Required of majors. Pre: 152. DS

ANTH 495 Senior Thesis
(3) Preparation of a major paper with a committee of one chairperson and one other member; paper on topic of interest in anthropology. Optional for majors. Pre: 490 and senior standing. DS

ANTH 496 Senior Thesis
(3) Preparation of a major paper with a committee of one chairperson and one other member; paper on topic of interest in anthropology. Optional for majors. Pre: 490 and senior standing. DS

ANTH 500 Master’s Plan B/C Studies
(1) The student and advisor select an option for the student to fulfill the Master’s Program. Pre: graduate standing.

ANTH 601 Ethnology
(3) Survey, in historical perspective, of theory in social and cultural anthropology. A course in the graduate core of anthropology. Pre: graduate standing.

ANTH 602 Linguistic Anthropology
(3) Investigation of mutual influences of linguistic theory and methodology and anthropological theory and methodology. A course in the graduate core of anthropology. Pre: graduate standing.

ANTH 603 Archaeology
(3) Development of critical and analytical skills in assessment of archaeological literature; emphasis on the science, theory, explanation, and paradigms that comprise archaeology. A course in the graduate core of anthropology. Pre: graduate standing.

ANTH 604 Physical Anthropology
(3) Human evolution and human variability in extant and previously existing populations, emphasis on history of physical anthropology, evolution of primates, primate biology and behavior, paleonotology, anthropological genetics, climatic adaptation, growth, and nutrition. A course in the graduate core of anthropology. Pre: graduate standing.

ANTH 605 Discursive Practices
(3) Emphasizes linguistic, semantic, and interactional aspects of culture, exploring ways that discourse constructs social action and social realities, examining processes by which culture is produced as meaningful behavior in actual situations. Pre: graduate standing.

ANTH 606 Anthropology of Infectious Disease
(3) The role of human behavior, including its social and cultural determinants, in the understanding of infectious diseases and in shaping preventive and therapeutic strategies. Pre: graduate standing.

ANTH 677 The Media and Discursive Practice
(3) Role of the mass media in constructing meaning in social cultural processes such as nationalism, ritual, identity, and collective memory. Attention to interactional and post-strucutural theories of discourse that link the mass media to discursive practice. A-F only.

ANTH 608 History and Memory
(3) History and collective memory as culturally formed and politically contested realities. The role of narrative, ritual, and media technologies in shaping representations of the past. Pre: graduate standing.

ANTH 609 (Alpha) Culture and Leadership
(3) Multicultural perspectives on the theory and practice of leadership. (B) service learning and leadership; (C) applied leadership internships; (D) contemporary leadership profiles; (E) film and leadership. A-F only. Pre: graduate standing and consent.

ANTH 610 Anthropology of Tourism
(3) Social and cultural analysis of tourism practice, with emphasis on natural environments. Pre: graduate standing and consent.

ANTH 611 Contemporary Anthropological Theory
(3) Graduate seminar that examines the history of theory in sociocultural anthropology from 1960 to present. Designed to be taken in sequence after 661. Pre: 610 or concurrent. (Once a year)

ANTH 620 (Alpha) Theory in Social and Cultural Anthropology
(3) Major theoretical problems in (B) kinship; (C) cognitive systems; (D) religion; (E) political institutions; (F) law and social control; (G) economics; (H) ecology; (I) other to be announced. Repeatable nine times. Pre: graduate standing.

ANTH 640 (Alpha) Methods and Theory in Anthropology
(3) Focused seminars pertaining to distinct areas of archaeological method and theory. (B) analytical; (C) environment/landscape; (D) archaeology; (E) economic/resources; (F) survey/locational. Repeatable two times. Pre: 603.

ANTH 645 Historic Preservation
(3) Federal, state, and local laws and regulations that regulate and provide protection to significant archaeological and historical resources in Hawai’i and the region.

ANTH 667 Biomedicine and Culture
(3) Examination of the social and cultural foundations of, and responses to, the values, technologies, and practices of modern medicine. Pre: graduate standing. (Alt. years)

ANTH 668 Archaeology Field Methods
(5) 7-hr Lab Laboratory and field training in the principles and practice of methods of archaeology—survey, mapping, excavation, conservation. Repeatable one time. Pre: graduate standing.

ANTH 694 Anthropology Colloquium Pro-Seminar
(1) Entering students in anthropology graduate program attend and participate in weekly colloquia, which encompasses sub-disciplines and specializations presented in anthropology at UH Mānoa. Presentations include faculty and other professionals. Graduate student colloquium series will be developed. Repeatable one time. CR/NC only. Pre: graduate standing.

ANTH 695 Professional Skills Develop in Anthropology
(3) Seminar prepares graduate students for entry into profession, including employment opportunities, research, presentations, ethics and outreach. Required of all Plan B students. Pre: graduate standing.

ANTH 699 Directed Reading or Research
(9) Repeatable nine times. Pre: graduate standing and consent.

ANTH 700 Thesis Research
(9) Research for master’s thesis. Repeatable nine times.

ANTH 710 Seminar in Research Methods in Cultural Anthropology
(3) Ethnographic research methods. Introduction to the approaches and techniques of participatory research, including the collection, analysis, and interpretation of social and cultural data. Direct applications ethics of research practice. Repeatable one time. Pre: graduate standing in anthropology or consent.

ANTH 711 Seminar in Research Design and Proposal Writing
(3) Research design and proposal writing. For students preparing for advanced research. Pre: graduate standing in ANTH or consent. Fall only.

ANTH 720 Anthropology of Japan
(3) Japan examined through three dimensions of cultural anthropology: cultural/symbolic, social/organizational, and individual/psychological. Selected topics analyzed and interpreted in terms of conjunctions of these dimensions. Pre: 483 or 484.

ANTH 750 (Alpha) Research Seminar
(3) Selected problems in current research. Pre: departmental consent. Pre: 601 or concurrent. (Once a year)

ANTH 800 Dissertation Research
(9) Research for doctoral dissertation. Repeatable nine times.
Apparel Product Design and Merchandising (APDM)

College of Tropical Agriculture and Human Resources

The minimum required grade for prerequisites is a grade of D or better.

APDM 101 Introduction to APDM (3) Introduction to the fields of apparel design and merchandising including theories of fashion change, apparel industry operations, current industry issues, literature of the field, professional competencies, careers in apparel and related businesses. A-F only.

APDM 111 Apparel and Marketing Aesthetics (3) Introduction to design elements, quality features and other factors influencing sensory experiences evoked by fashion-related products. Strategic uses of design in marketing.

APDM 200 Culture, Gender, and Appearance (3) Social construction of gender within culture and its visual expression through appearance. Analysis of role, identity, conformity, and deviance in human appearance. Open to nonmajors. (Cross-listed as WS 200) DS

APDM 201 Fashion Promotion (3) Principles and practices in fashion advertising, visual merchandising, publicity and public relations, and fashion show production in apparel and related businesses.

APDM 205 Basic Apparel Construction (4) (3 Lec, 1 3-hr Lab) Principles, concepts, and procedures for quality construction and custom fitting of clothing.

APDM 215 Block Pattern Designing (3) (2 Lec, 1 3-hr Lab) Principles of pattern making for women’s apparel through manipulation of pattern blocks. Pre: 205 or consent. NI

APDM 216 Fashion Illustration I (3) (2 Lec, 1 3-hr Lab) Principles and techniques of sketching the fashion figure including garment details and fabric drape. Development of a personal style of illustration. Introduction to use of computers for illustration. Pre: 111 or consent. NI DA

APDM 237 Pattern Grading (3) Principles of proportionally increasing or decreasing a master pattern according to a prescribed set of body measurements. Application includes basic, intermediate, and advanced designs. Use of computerized grading programs. Pre: 215. NI

APDM 301 Fashion Forecasting/Marketing (3) Principles and practices in fashion trend forecasting and their role in apparel company marketing strategies. Adapting fashion trend forecasts to apparel lines. Pre: 101, 111, and 216.

APDM 310 Western World Fashion History (3) Historic study of dress as related to customs and cultures in the Western world, in socio-historical and contemporary contexts. Emphasis on 19th and 20th centuries. Pre: 200, two FG courses; or consent.

APDM 315 Draping (3) (2 Lec, 1 3-hr Lab) Principles of pattern making through draping muslin models on standard garment forms. Pre: 215 or consent.

APDM 316 Advanced Pattern Design (3) (2 Lec, 1 3-hr Lab) Further study of flat pattern methods and industrial practices for fashion design majors. Use of CAD. Pre: 315.

APDM 318 Fashion Illustration II (3) (2 Lec, 1 3-hr Lab) Advanced study in the illustration of the fashion figure. Personal interpretation of the techniques of fashion illustration. Use of CAD. Pre: 216 or ART 214. DA

APDM 320 Textiles I (3) Introduction to fibers, fabric structure, and finishes related to selection and care. Interrelationship between textile characteristics, properties, and end uses. Open to non-majors. A-F only. Pre: 101, 111 and 205. DP

APDM 321 Textiles II (3) (2 Lec, 1 3-hr Lab) Chemical nature and structure of fibers and fabrics, their properties and finishes. APDM majors only. Pre: 320 within 2 years, or departmental approval. DP

APDM 330 Advanced Apparel Construction (3) (2 Lec, 1 3-hr Lab) Principles of advanced techniques for garment construction with emphasis on new, difficult-to-handle fabrics. Pre: 205 or consent.

APDM 337 Computerized Pattern Grading (3) (2 Lec, 1 3-hr Lab) Gerber Technologies (GT) AccuMark Pattern System. The system is designed to use CAD for specific apparel industry applications in grading patterns into different sizes and making production markers. Pre: 257 or knowledge and ability to grade patterns, or consent. Computer skills are helpful.

APDM 338 Computerized Pattern Design (3) (2 Lec, 1 3-hr Lab) Learn the capabilities of Gerber Technology (GT) Pattern Design System-PDS 2000 and Silhouette. The system is designed to use CAD for specific apparel industry applications in pattern designing. Pre: 215 and 337, or consent.

APDM 350 Embellishments (V) Emphasis on design principles as applied to stitching using a variety of techniques and raw materials. Processes and problems experienced and critiqued in a group environment. Repeatable nine times. Pre: 205 or consent. DA

APDM 370 Interior Design Fundamentals (3) Aesthetic, social, and functional aspects of selection, layout, and furnishing of home interiors; application of principles of design to family living situations.

APDM 371 Retail Buying and Merchandising (3) Theories and procedures in selecting, buying and selling apparel and textiles. Types of merchandising organizations, analysis of consumer demand, brick-and-click opportunities and challenges, development of an image, operation location, stock and floor layout. APDM majors only. Pre: 301.

APDM 372 Manage Resources-Lead People (4) Uses exist research to define and explore the differences between managing resources in organizations and leading groups/organizations. Explores roles of managers and the use of economic and social capital to achieve organizational goals.

APDM 375 Merchandise Planning and Control (3) Theories, problems, and procedures of financial and assortment planning and control of merchandise inventories. APDM majors only. Pre: 371.

APDM 411 Production Data Management (3) Application of principles of apparel production management, including methods engineering (detail construction for ordering), story boards and color tables, production measurements, costing, and PDM computer applications. A-F only. Pre: 205's and 216 and 301, or consent. (Once a year)

APDM 416 Costumes of South and Southeast Asia (3) Development of traditional dress as visual manifestation of culture. Ethnic and national dress of China, Japan, Korea, Mongolia, Okinawa, Tibet, and Vietnam. Pre: 200, two FG courses; or consent.

APDM 418 Costumes of East Asia (3) Development of traditional dress as visual manifestation of culture. Ethnic and national dress of Afghanistan, India, Indonesia, Malaysia, Pakistan, Philippines, Thailand and Saudi Arabia. Pre: 200, two FG courses; or consent.

APDM 419 Apparel Design Studio I (3) Development of independent expression through creative designing for a ready-to-wear collection. Problem solving in the design process; includes sketching, draping, blocking, muslin proofs, complete garments, and portfolio. Studio courses must be taken in sequence. Pre: 221, 301, 310, 316, 330, and either 416 or 418; or consent.

Key to symbols & abbreviations: see the first page of this section.

APDM 420 Apparel Design Studio II (V) Continuation of 419.

APDM 430 Fashion Promotion Studio (V) Application of principles and procedures related to the promotion of fashion apparel. Preparation and presentation of fashion information through shows, displays, media, and written communications. Repeatable one time. Pre: consent.

APDM 437 Bootcamp for Entrepreneurs (3) Application of principles, procedures and techniques of organizing a small retail business in a brick-and-click world. Creative use of low and high tech resources. Students plan, write and evaluate small retail business plans. Pre: 375 and consent.

APDM 460 Costume Collections Management (3) Guidelines and techniques needed for handling and caring for textile and apparel artifacts in museums and other cultural institutions. Students plan, write and evaluate small retail business plans. Pre: 375 or consent.

APDM 491 Topics in APDM (V) Study and discussion of special topics, problems. Offered by staff and visiting faculty. Repeatable nine times.

APDM 492 Internship (4) Integration and application of academic knowledge and critical skills emphasizing professional development. Placement with an approved cooperating supervisor/employer. Repeatable. Pre: 482 and senior standing.

APDM 496 Field Study in APDM (V) Study tours to various centers of the world to examine historical and modern apparel and textiles. Merchandising and design methods and operations examined. Repeatable two times. Pre: consent.

APDM 499 Directed Reading and Research (V) Pre: consent.

APDM 699 Directed Reading and Research (V) Pre: consent and graduate standing.

Arabic (ARAB)

College of Languages, Linguistics and Literature

Students choosing Arabic for the language requirement should realize it may not be offered if demand is limited.

ARAB 101 Elementary Modern Standard Arabic (4) Designed to provide students with basic knowledge of Modern Standard Arabic. The course focuses on developing proficiency in the standard written Arabic language, as well as formal spoken Arabic. HSL

ARAB 102 Elementary Modern Standard Arabic (4) Focuses on developing proficiency in the standard written Arabic language as well as formal spoken Arabic. It introduces a wide range of situation-based texts and topics that build vocabulary, grammar, and general communicative competence. Pre: 101. HSL

ARAB 201 Intermediate Modern Standard Arabic (4) Designed for students who have successfully completed a year of Elementary Arabic. Focus is on acquisition of more complex grammatical structures, expanding vocabulary, and developing competence in a wide range of communicative situations. Pre: 102 or exam or consent. Fall only. NJ HSL

ARAB 202 Intermediate Modern Standard Arabic (4) Designed for students who have successfully completed three semesters of Arabic. Focus is on intensive practice of interactive functional skills such as listening comprehension and fundamental
convention strategies. Pre: 201 or exam or consent. Spring only. /V HSL
ARCH 301 Third-Level Arabic I (3) Develop proficiency in reading/listening comprehension in Modern Standard Arabic. The instructional materials consist of authentic written, visual and audio materials. Classes meet 3 hours weekly. Pre: 202 (or equivalent), or consent.
ARCH 302 Third-Level Arabic II (3) Continuation of third-level Arabic I. Emphasis on developing writing and interaction ability at advanced levels of proficiency. Course includes extensive reading, composition exercises, listening skills, conversation practice and extensive review of Arabic grammar. Developing fluency is the main objective of this course. Classes meet 3 hours weekly. Pre: 301 (or equivalent), or consent.

Architecture (ARCH)

School of Architecture

All courses are restricted to declared architecture majors, unless otherwise specified.

ARCH 100 Introduction to the Built Environment (3) Exploration of human responses to place, climate, culture, technology, and time, with emphasis on the impact of scientific knowledge and architectural design theory on history, culture, sociology, technology and built form. Open to non-majors. DS
ARCH 101 Basic Architecture Studio (4) Hands-on exploration of materials and construction techniques and introduction to architectural design processes. Investigation of architecture as creation of space generated by human needs and aspirations including analysis of exemplary precedents. A-F only. DA
ARCH 103 Basic Architecture Studio A & B (8) Daily studio combined 101 and 102. Perception, design and communication of architectural design and communication. See 101 and 102 for full descriptions. A-F only. Pre: 101 and one of ART 113 or ART 114 or ART 115 or ART 116.
ARCH 132 Design Communication (4) Exploration of critical judgment and means to conceptualize, develop, represent, and communicate architectural form and space, including fundamentals of freehand drawing, mechanical drawing, physical model-making, diagramming, and graphic techniques. A-F only. Pre: 101 or departmental approval. DA
ARCH 200 Professional Practice of Architecture (3) Investigation of disciplines that address contemporary transformative issues. Emphasis on the role of architecture and the use of multi-disciplinary and collaborative methods to address critical issues. Open to non-majors. A-F only. Pre: 100. NJ
ARCH 201 Architecture Studio (4) Development of ideas and processes to explore solutions responding to human needs in the built and natural environment with emphasis on analysis and representation of architectural space and form using hand and computer techniques. A-F only. Pre: 132. NJ/DA
ARCH 235 Computer Applications in Architecture (2) Exploration of digital design fundamentals and their application to architectural analysis, conceptualization, design process, and communication of design intent. Pre: MATH 140. NJ
ARCH 251 Introduction to Landscape Architecture (3) Principles and practice of landscape planning, design, and technology. Ecological, sociocultural, and natural science determinants of landscape form and pattern. Open to non-majors if space available.
ARCH 271 World Architecture and Urbanism A (3) The significance of architecture in recording the development and aspirations of societies in the world’s major cultural regions, from early agricultural settlements to 1500 C.E. Prerequisite for advanced courses in architectural history and theory. Open to non-majors. Pre: HIST 151. NJ/DH
ARCH 272 World Architecture and Urbanism B (3) The significance of architecture in recording the development and aspirations of societies in the world’s major cultural regions from the 15th century to 1500 C.E. until the contemporary period. Prerequisite for advanced courses in architectural history and theory. Open to non-majors. Pre: HIST 152. NJ/DH
ARCH 320 Introduction to Architectural Systems A (3) Introduction to building systems, including structural, environmental, life-safety, building envelope, and building assemblies. Development of design skills with emphasis on elevating skills in assessing and selecting appropriate building systems. A-F only. Pre: MATH 140 and PHYS 151.
ARCH 321 Introduction to Architectural Systems B (3) Investigation of buildings as related to social and natural systems. Study of water, plumbing, energy generation, renewable energy, lighting, acoustics, vertical transportation, fire safety, and introduction to heating, ventilation, and air conditioning. ARCH majors only. A-F only. Pre: 320.
ARCH 322 Sustainable Systems (3) Qualitative and quantitative investigation of HVAC systems and sustainable building design with emphasis on high-performance building design and operation, innovative mechanical and energy systems, integrated energy and resource conservation and renewable energy systems. ARCH majors only. A-F only. Pre: 321 or departmental approval.
ARCH 341 Intermediate Architecture Studio A (4) Architectural design with emphasis on space planning, building envelope, structural, environmental, climatic responses, and codes including complex functional requirements, multi-story design issues, vertical transportation, structure, and finishes. Production of complete schematic design documents. A-F only. Pre: 235 and 320.
ARCH 342 Intermediate Architecture Studio B (4) Building and site design with emphasis on site development, analysis, and climatic response. Introduction to sustainable design, land use ordinances, description and delineation of property and land features, and urban and community design. A-F only. Pre: 341.
ARCH 350 Introduction to Planning (3) Perspectives on planning: planning tools and methods, specific Hawai’i planning/research problems from a multidisciplinary approach. Pre: consent. DS
ARCH 351 Introduction to Urban Design (3) Principles and practice of urban design within the comprehensive planning process. Sociocultural, economic, political, environmental determinants of urban form and pattern. Open to non-majors if space available. A-F only. Pre: departmental approval. DS
ARCH 353 Architecture and the Arts (3) Special topics in architecture and art history. A-F only. Pre: 302.
ARCH 354 Sustainable Design (3) Introduction to sustainable building design and the role of the architect. A-F only. Pre: 302.
ARCH 355 Introduction to Urban Design (3) Principles and practice of urban design within the comprehensive planning process. Sociocultural, economic, political, environmental determinants of urban form and pattern. Open to non-majors if space available. A-F only. Pre: departmental approval. DS
ARCH 356 Sustainable Development (3) Special topics in sustainable building design and the role of the architect. A-F only. Pre: 350.
ARCH 357 Introduction to Urban Design (3) Principles and practice of urban design within the comprehensive planning process. Sociocultural, economic, political, environmental determinants of urban form and pattern. Open to non-majors if space available. A-F only. Pre: departmental approval. DS
ARCH 358 Sustainable Development (3) Special topics in sustainable building design and the role of the architect. A-F only. Pre: 350.

Key to symbols & abbreviations: see the first page of this section.
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<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
<th>Prerequisites</th>
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<tbody>
<tr>
<td>ARCH 548 Doctorate Project II (9)</td>
<td>Individual development of a doctorate project with an approved committee that advances architectural knowledge through research, scholarship, design, and engages theoretical and architectural propositions. ARCH majors only. A-F only. Pre: 526 and 547, or departmental approval. Spring only.</td>
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<tr>
<td>ARCH 549 Professional Studio-Practicum (V)</td>
<td>Scholarly and research activity integrated into a professional office environment. Repeatable three times. ARCH majors only. A-F only. Pre: 544, 545, and 546; or departmental approval.</td>
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<tr>
<td>ARCH 550 Professional Studio-Alternative (V)</td>
<td>Studio-based research and design in architecture related design disciplines. Open to non-majors if space available. ARCH majors only. A-F only. Pre: 544, 545, and 546; or departmental approval.</td>
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<tr>
<td>ARCH 551 Architecture Topics (1)</td>
<td>Range of topics allowing acquisition of knowledge and ability needed for professional architectural practice offered on-line. Repeatable two times. ARCH majors only. A-F only. Pre: departmental approval.</td>
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<tr>
<td>ARCH 554 Professional Studio Topics (3)</td>
<td>Varied topics furthering knowledge and ability needed for professional practice emphasizing communication methods for collaborative and integrated design using digital technologies. Offered online. ARCH majors only. A-F only. Pre: 544 or departmental approval.</td>
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<tr>
<td>ARCH 569 Study Abroad: Architectural Study Tour (V)</td>
<td>Firsthand examination of the architecture of various countries, with emphasis on experiencing and comprehending significant spaces within historical, cultural, and physical contexts. Topics and countries varied with each offering. Open to non-majors. Repeatable two times.</td>
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<td>ARCH 571 Architecture History (3)</td>
<td>Investigation of architectural history worldwide from antiquity to present. Examining social, political, technological, material, and environmental forces. ARCH majors only. A-F only. Pre: departmental approval. Summer only.</td>
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<td>ARCH 575 Asia-Pacific Architectural History and Theory (3)</td>
<td>Study of the history and theory of architecture and the built environment with particular focus on the Asia-Pacific region. ARCH majors only. A-F only. Pre: 371.</td>
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<tr>
<td>ARCH 576 Architecture and Urban Design Theory (3)</td>
<td>Detailed investigation of major theories in architecture and urban design and examination of their impact on contemporary architectural practice in varied geopolitical contexts under the guidance of the faculty coordinator. Encourages interaction between returning practicum students and previously licensed candidates through shared proposal development and research techniques. Repeatable ten times. ARCH majors only. CR/NC only. Pre: 507 or 547. No waiver.</td>
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<tr>
<td>ARCH 588 Doctorate Project II Extension (1)</td>
<td>Development of individual ArchD project proposal with approval advising committee under the guidance of the faculty coordinator. Encourages interaction between returning practicum students and previously licensed candidates through shared proposal development and research techniques. Repeatable ten times. ARCH majors only. CR/NC only. Pre: 507 or 547.</td>
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tion and construction techniques using computer-aided design and manufacturing technologies. ARCH majors only. A-F only. Prereq: 533 or departmental approval.

ARCH 505 Building and Landscapes: Theory and Practice (3) Research into landscape, landscape architecture, and architecture from historical, historiographic, and theoretical perspectives. ARCH majors only. A-F only. Prereq: departmental approval.

ARCH 627 The American City (3) Urban life and culture in contemporary and historical perspective; emphasis on promises and problems of city in American culture. Prereq: graduate standing and consent. (Cross-listed as AMST 627 and HIST 639E)

ARCH 628 Preservation: Theory and Practice (3) History and philosophy of historic preservation movement. Analysis of values and assumptions, methodologies and tactics, implications for society and public policy. (Cross-listed as AMST 675 and PLAN 675)

ARCH 650 American Vernacular Traditions (3) Methods and approaches in the study of vernacular architecture, cultural landscapes and material culture, with an emphasis on traditions and innovations in the Americas. (Cross-listed as AMST 681)

ARCH 690 Special Topics Seminar (3) Seminar on a wide range of architectural topics to be directed by both visiting and regular faculty. Repeatable. Prereq: consent.

ARCH 691 Special Topics: Architecture History/ Theory (V) Specialized work at an advanced level on the history and theory of architecture. Repeatable two times. Prereq: consent.

ARCH 692 Special Topics in Architectural Technology (V) Specialized investigation at an advanced level of technological developments in structural systems, environmental control systems, or materials and methods of construction. Repeatable two times. Prereq: consent.

ARCH 693 Special Topics in Architecture and Design (V) Intensive work on specialized topics in the fields of architecture and design. May include research and/or studio experiences in architecture, interior architecture, computer-aided design, professional practice, advanced visual design, and architectural graphics. Repeatable four times. Prereq: consent.

ARCH 699 Directed Work (V) Specialized investigation at an advanced level. Prereq: consent. (Cross-listed as ARCH 699)

ARCH 710 History of Architecture and Art History of Ancient Civilizations (3) History of ancient architecture in the Middle East, Persia, and India; art of the ancient Mediterranean world; art of China; prehistoric art of the Americas. Prereq: consent.

ARCH 711 History of Architecture and Art History of Ancient Civilizations (3) History of ancient architecture in the Middle East, Persia, and India; art of the ancient Mediterranean world; art of China; prehistoric art of the Americas. Prereq: consent.

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ARCH 720 History of Architecture and Art History of Ancient Civilizations (3) History of ancient architecture in the Middle East, Persia, and India; art of the ancient Mediterranean world; art of China; prehistoric art of the Americas. Prereq: consent.

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ARCH 743 History of Architecture and Art History of Ancient Civilizations (3) History of ancient architecture in the Middle East, Persia, and India; art of the ancient Mediterranean world; art of China; prehistoric art of the Americas. Prereq: consent.
ART 496 Topics in the History of Cinema (3) Specific period or national style of cinema studied in its historical context. Repeatable two times. Pre: 109 or 176, or consent. DH
ART 670 Art Historical Methodology (3) An introduction to art historiography, analytical techniques, and research methods and materials. Pre: consent and graduate standing.
ART 677 Art of Oceania (3) Arts from Polynesia, Melanesia, Micronesia explored in context of issues involving belief systems and cultural change. Repeatable one time. A-F only. Pre: 475C or consent.
ART 690 Interdisciplinary Seminar (3) Issues of contemporary art. Analysis of current literature and criticism. Pre: consent.
ART 695 (Alpha) Seminar in Western Art History (3) Selected topics in European and American art history. Pre: consent.
ART 791 Seminar in South/Southeast Asian Art History (3) Selected topics in South and/or Southeast Asian art and architectural history with an emphasis on Hindu and Buddhist traditions. Pre: consent.

CERAMICS
ART 242 Introduction to Ceramics (3) Three-dimensional concepts in clay, hand-building and wheel-throwing techniques. Projects, lectures, and demonstrations. DA
ART 343 Ceramics—Sculpture (3) Sculptural concepts and techniques specifically related to the medium of clay; advanced hand-building, throwing, glazing, and firing techniques. Repeatable one time after completion of 344 and 345. Pre: 242 or consent. DA
ART 344 Ceramics—Vessels (3) Exploration of the ceramic vessel as function, metaphor, and expression. Advanced hand-building, throwing, glazing, and firing techniques. Repeatable one time after completion of 343 and 345. Pre: 242 or consent. DA
ART 345 Ceramics—Low Temperature (3) Form and surface problems related to earthenware clay bodies and low-temperature glazes; mold-making for ceramics. Repeatable one time after completion of 343 and 344. Pre: 242 or consent. DA
ART 346 History of Western Ceramics (3) Western ceramics history from chronological, developmental, contextual, and theoretical standpoints; influence of Asian ceramics. Pre: 242, with 175 and 176 recommended; or consent. DH
ART 347 Technical Ceramics (3) Clay body development, glaze development, empirical and calculation methods. Emphasis on glaze maturity, surface, and color. Pre: 242, and one of 343, 344, or 345; or consent. DA

DRAWING/PAINTING
ART 123 Introduction to Painting (3) Theory and practice of painting; material and technical procedures. DA
ART 213 Intermediate Drawing (3) Extension of 113 with emphasis on 20th-century issues. Pre: 113 and 115 (or concurrent), or consent. N/D DA
ART 214 Introduction to Life Drawing (3) Investigations of the figure concerning anatomical construction, light, space, diagramatic analysis, and thematic content. Pre: 113 or consent. N/D DA
ART 223 Intermediate Painting (3) Survey of late 19th- and 20th-century studio practice emphasizing developments in light notation, cubism, surrealism, and expressionism. Introduction to acrylic painting. Pre: 113, 115, 123, and 176 (or equivalent art history); or consent. N/D DA

ART 225 Painting/Water-Based Media (3) An introduction to water-based media. Traditional transparent color, gouache and acrylics. Pre: 113 or consent. N/D DA
ART 313 Advanced Drawing (3) Studio practice in drawing emphasizing 20th-century developments in art and independent research. Repeatable one time. Pre: 213 or consent. DA
ART 314 Intermediate Life Drawing (3) Further investigations of the figure concerning anatomical and diagramatic construction, light, space, and thematic content. Pre: 214 or consent. DA
ART 320 Chinese Brush Art (3) Brush techniques in classical painting and calligraphy; studio course. Repeatable one time. Pre: 113 and 115, or consent. 225 is recommended. DA
ART 321 Materials and Techniques of Painting (3) Experiments with various traditional and contemporary materials and procedures; discussion of their influences on painting. Pre: 123, 175, and 176; or consent. DA
ART 322 Advanced Color (3) Theory and application of color as related to studio practice. Pre: 115 or consent. DA
ART 323 Advanced Painting I (3) Studio practice in painting, emphasizing the development of abstract visual language and other 20th-century directions in art. Pre: 232 and 324 (or concurrent), or consent. DA
ART 324 Painting from Life (3) Painting from the model; a survey of the figurative tradition. Repeatable one time. Pre: 214, 223, or consent. DA
ART 414 Advanced Drawing from Life (3) Study of the figure with emphasis on the expressive function of drawing. Repeatable one time. Pre: 314 or consent. DA
ART 423 Advanced Drawing/Painting II (3) Development of greater formal means and aesthetic insight, emphasizing independent development. Required for BFA capstone in painting. Repeatable one time. Pre: 313 and 314, 325 and 324 with a B (not B-) or better, or consent. DA

ELECTRONIC ARTS
ART 301 (Alpha) Electronic Arts Studio I (3) (Lec/Lab) Combined theory and practice studio course(s) that investigate language, processes, and personalized composing systems related to the use of technological media and its application to a variety of contemporary art areas and related disciplines. (B) imaging systems; (C) sound; (D) interactive systems. Pre: 201 and one 200-level studio; or consent. DA
ART 401 Advanced Electronic Arts Studio (3) Tutorial studio course that encourages exploration and contemporary materials and procedures; discussion of their influences on painting. Pre: 123, 175, and 176; or consent. DA

GLASS
ART 314 Intermediate Life Drawing (3) Further investigations of the figure concerning anatomical and diagramatic construction, light, space, and thematic content. Pre: 213 or consent. DA

N/A
ART 306 Lost Wax Glass Casting (3) Glass kiln casting techniques, lost wax fuse casting, pâte de verre. Repeatable one time. Prereq: 230 and either 254 or 356, or consent. DA

ART 330 Advanced Glass (3) Glass as an expressive medium. Individual problems; construction of studio equipment. Readings and discussions of contemporary glass issues. Repeatable one time. Prereq: 230 and either 254 or 356, or consent. DA

GRAPHIC DESIGN

ART 265 Design: Studio I (3) Introduction to graphic design. Explorations of rhetorical and semiotic structures and their relationship to visual form and content. ART 176 is recommended as a prerequisite. A-F only. Prereq: 113 and 115, or consent. Corequisite: 265L. NI/DA

ART 265L Design: Studio I Lab (1) Beginning instruction in the Macintosh computer environment, including hardware, software, and lab networking as it relates to graphic design production. ART 176 is recommended as a prerequisite. CR/NC only. Prereq: 113 and 115, or consent. Corequisite: 265. NI

ART 266 Design: Typography I (3) Introduction to typography. Exploration of letterform and word composition in the context of single-page structures. ART 176 is recommended as a prerequisite. A-F only. Prereq: 113, 115 and 265L (or concurrent); or consent. NI/DA

ART 265 Design: Studio II (3) Intermediate level specialization in either intaglio, lithography, and stencil printmaking. Direct workshop studio practice in advanced graphic design, including related layout. Emphasis will be placed on conceptual and critical analysis. Techniques covered include large-format camera and studio lighting. Repeatable one time with consent. Prereq: 207 and positive portfolio review or consent. DA

ART 350 (Alpha) Advanced Photographic Techniques (3) Exploration of digital and analog photography. (B) Color; (C) Hand-applied emulsion. (B) and (C) Repeatable one time with consent. Prereq: 207 and positive portfolio review. DA

ART 309 Image in Motion Studio II (3) Advanced theory, practice, and techniques for sequential imagery with synchronized sound, using animation and live action video. Repeatable two times. A-F only. Prereq: 209 and positive portfolio review, or consent. DA

ART 409 Image in Motion Studio III (3) Studio/laboratory focusing on conceptualization and production of computer-generated three-dimensional animation. A-F only. Prereq: 309 or consent. DA

PRINTMAKING

ART 104 Introduction to Printmaking (3) Foundation explorations in the processes of relief, intaglio, and stencil printmaking. Direct workshop studio experience in the basic techniques and concepts of woodcut, linoleum cut, drypoint, monotype, and basic stencil processes. DA

ART 215 Intaglio Printmaking (3) Studio practice in concepts and techniques of making prints from metal plates including etching, engraving, aquatint, and drypoint. Prereq: 104 or 113, NI/DA

ART 217 Screenprinting (3) Studio practice in screenprinting on paper. Copy camera and basic photo-stencil techniques introduced. Prereq: 104 or 113 and 206. NI/DA

ART 218 Relief Printmaking (3) Studio practice in the techniques and concepts of woodblock, linoleum cut, screenprinting, and collagraph printmaking. Emphasis on both traditional and contemporary printmaking. Prereq: 104 or 113, or consent. NI/DA

ART 304 Lithography (3) Studio practice in concepts and techniques of making prints from lithographic stone and plates. Prereq: 113 and one of the following: 214, 215, 217, 218, 223, 236, 265, 266; or consent. NI/DA

ART 318 Intermediate Printmaking (3) Intermediate level specialization in either intaglio, lithography, screenprinting, or relief printmaking. Concentration on the techniques and formats of color printing and sequential image production. Repeatable one time. Prereq: two printmaking courses and portfolio review, or consent. DA

ART 418 Advanced Printmaking (3) Advanced work in intaglio, lithography, screenprinting, or relief printmaking. Emphasis on experimental processes, large-scale execution, and technical research. Prereq: 318 or consent. DA

Sculpture

ART 254 Sculpture—Metal Casting (3) Metal casting and development of associated practices and concepts. Repeatable one time. Prereq: one of 116 or 130, or consent. NI/DA

ART 255 Sculpture—Carving, Mixed Media (3) Investigations of traditional and contemporary carving concepts and methods. Repeatable one time. Prereq: one of 103, 116, 130, or 242; or consent. NI/DA

ART 351 Sculpture—Figure Modeling (3) Advanced figure modeling, mold making, and casting. Repeatable one time. Prereq: 214 or 242, or consent. DA

ART 352 Kinetic Sculpture (3) The design and construction of objects incorporating movement as an integral element of their content. Repeatable one time. Prereq: one of: 103, 116, 130, 242; or consent. DA

ART 356 Sculpture—Metal Fabrication (3) Metal fabrication and development of associated practices, concepts, and historical references. Repeatable one time. Prereq: one of 103, 116, 130, or 242; or consent. DA

ART 357 Sculpture—Small-Scale (3) Fabrication and casting of forms on a small scale such as jewelry. The development of related practices, concepts, and historical references. Repeatable one time. Prereq: 116 or consent. DA

ART 358 Utilitarian Sculpture (3) The design and construction of objects intended for use/interaction. Emphasis on wood and synthetic materials. Repeatable one time. Prereq: 116 or consent. DA

ART 359 Sculpture—Contemporary (3) Contextualization of late 20th/early 21st century sculptural practice, including stylistic and theoretical frameworks, with references to influential works of historical Western and Asian traditions and applying this knowledge in the creation of sculpture. Prereq: 116 and 176, or consent. DA

ART 452 Advanced Sculpture I (3) Individual projects. Seminar. Repeatable one time. Prereq: five courses from 230, 254, 255, 337, 343, 351, 352, 356, 357 or 358; or consent. VARIOUS CREDITS AND OTHER COURSES

ART 202 Introduction to Digital Imaging (3) Combined theory and practice examining major techniques, concepts, and emerging technologies in contemporary digital image production. Direct studio experience in essential software, printing techniques and hardware necessary in producing the gallery quality inkjet print. A-F only. Prereq: 113 and one of 201, 206, 215, 217, 218, 223, 236, 265, 266; or consent. NI/DA

ART 304 Intermediate Digital Imaging (3) Combined theory and practice emphasizing specialization in fine inkjet printing techniques and portfolio production. Emphasis will be placed on conceptual development, black and white printing, panoramic images, HDR imaging and web-based portfolios. A-F only. Prereq: two art studio core courses (113, 115, 116, 214) and either 202 or 365; or consent. DA

ART 360 Exhibit Design and Gallery Management (3) Design theory and techniques for presentation of artworks and mounting exhibitions. Prereq: 115, junior standing, and consent. DA

ART 389 Hawaiian Art: Studio (3) A studio art that explores art-making from a Hawaiian perspective, focusing on the concepts of ‘Oli and Mo‘olelo (narrative) and Kamulipo (creation mythology). Prereq: one 200-level studio art core course, or consent. DA

ART 399 Directed Work (V) Individual projects; tutorial. Maximum: 3 credit hours per semester; total 3 for BA, 6 for BFA. Prereq: two 200-level or above art courses in area of directed work, as well as consent of instructor and department associate chair.

ART 400 Special Projects (V) Intensive and specialized work at advanced level in fields of special interest
of visiting or resident faculty. Repeatable three times. Pre: advanced standing and consent.


ART 410 BFA Capstone Seminar (3) In conjunction with the production of art for the BFA annual exhibition, this seminar will examine, critique, and evaluate the student’s art within the context of contemporary art, professional practices, exhibition theory, and integrate theoretical and practical issues in the life of an artist. BFA majors only. A-F only. Pre: BFA major or consent. Spring only.

ART 481 Museum Interpretations (3) Studies the interpretive strategies and methods used by museums to communicate with visitors in museums, art galleries, historic sites, parks, and related places. Considers how interpretations contribute to cultural knowledge. Repeatable one time. Pre: consent. (Cross-listed as AMST 457) DH

GRADUATE STUDIOS

Studio concentrations for the Master of Fine Arts degree: ceramics, electronic arts, glass, fiber, graphic design, painting, photography, printmaking, and sculpture. Three sequential course levels are offered in each area, normally with 6 credit hours at level I prerequisite to level II, etc. Courses are repeatable; each carries a maximum of 6 credit hours per semester, and each requires consent of instructor.

Content at level I emphasizes creative exploration through research and evaluation in a personal direction; level II encourages development through analysis and definition; level III focuses on refinement and synthesis.

ART 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

ART 601, 602, 603 Electronic Arts I, II, III (V) Repeatable two times, up to 18 credits for 601 and 602.

ART 607, 608, 609 Photography I, II, III (V) Repeatable two times, up to 18 credits for 607. ART 615, 616, 617 Printmaking I, II, III (V) Repeatable two times, up to 18 credits for 615. ART 623, 624, 625 Painting I, II, III (V) Repeatable two times, up to 18 credits for 623.

ART 630 Graduate Studio Teaching Practicum (3) Observation, analysis and participation in teaching a lower division course under the direction of an instructor in the student’s area of concentration. Repeatable one time. A-F only. Pre: 690, admitted to candidacy for MFA in art, and consent.

ART 631, 632, 633 Glass I, II, III (V) Repeatable two times, up to 18 credits for 631, 632 and 633.

ART 637, 638, 639 Fiber I, II, III (V) Repeatable two times, up to 18 credits for 637.

ART 641, 642, 643 Ceramics I, II, III (V) Repeatable two times, up to 18 credits for 641.

ART 653, 654, 655 Sculpture I, II, III (V) Repeatable two times, up to 18 credits for 653.

ART 665 Graphic Design I, II, III (V) Repeatable two times, up to 18 credits for 665.

ART 699 Directed Work (V) Advanced individual projects; advanced tutorial. Maximum: 3 credit hours per semester; total 6 for MA Plan A, 9 for MA Plan B, 9 for MFA. Pre: consent of instructor and department chair.

ART 700 Thesis Research (V)

Arts and Sciences (CAS)

Colleges of Arts and Sciences

CAS 099 International Exchange (V) Designed for students accepted for participation in an international exchange program while enrolled at UH Mānoa. CR/NC only. Pre: Admittance to an international exchange program.

CAS 101 Using Information Critically (3) Concepts and practice for effective information seeking, evaluation, and use in context of information technology and libraries. Research framework structures activities involving fiction, film, scholarly studies, writing, oral presentation; original research is culminating project. A-F only. (Cross-listed as LIS 100)

CAS 102 RAP Foundation Course (3) Focus on communication and research skills. Multilevel work with technology, community service, linking with K-12 students, creation of museum exhibits. A-F only. Open only to RAP students.

CAS 110 Integrating Seminar I (1) An introduction to the university community; topics include critical thinking, the value of higher education, cultural and transition issues. A-F only.

CAS 111 Integrating Seminar II (1) Through the use of a unifying theme, students explore linkages with academic disciplines represented in Freshman Learning Communities. Theme examples: diversity, epistemology. A-F only. Spring only.

CAS 200 (Alpha) Scholar Seminars I (1) Discussion-based seminar led by senior faculty/administrator. Students meet with instructor for 1 hour once a week. Freshmen may take up to three alphas.

CAS 301 ACE Mentoring: Facilitating Student Development (4) Theoretical foundations in student learning and holistic development. Practical leadership skills acquisition and application through the facilitation of a seminar for new freshmen. Repeatable one time. A-F only. Pre: consent. Fall only.

Asian Studies (ASAN)

School of Pacific and Asian Studies

ASAN 201 Introduction to Asian Studies: East Asia (3) Understanding East Asia through multidisciplinary approaches. Examines the interrelationship of policies, economy, literature, religion, the arts, and history as the basis for such an understanding. DH

ASAN 202 Introduction to Asian Studies: South/Southeast Asia (3) Understanding South and Southeast Asia through multidisciplinary approaches. Examines the interrelationship of policies, economy, literature, religion, the arts, and history as the basis for such an understanding. DH

ASAN 241 Civilizations of Asia (3) Historical survey of major civilizations of Asia from earliest times: East Asia, Southeast Asia, and South Asia. (Cross-listed as HIST 241) DH

ASAN 242 Civilizations of Asia (3) Continuation of 241. (Cross-listed as HIST 242) DH

ASAN 308 Contemporary Chinese Politics (3) Interdisciplinary review and analysis of the social and political issues in contemporary China, the interrelationship between state and society in national policies, the relationship between cultural tradition and technological modernization in the social transformation process. A-F only. Pre: sophomore standing or higher, or consent. (Cross-listed as POLS 308) DS

ASAN 310 Asian Humanities (3) Multidisciplinary, Classics of literature, philosophy, and religion shaping Asian beliefs and values. Pre: 201 and 202, or consent. DH

ASAN 312 Contemporary Asian Civilization (3) Multidisciplinary examination of problems and issues affecting peoples and institutions of contemporary Asia: ethnic, language, religious, and cultural differences; population growth; public health; economic development; political and social change; environmental problems; etc. Pre: 201 and 202, or consent. DS

ASAN 320 (Alpha) Asian Nation Studies (3) Multidisciplinary examination of major Asian countries; cultural, social, economic, and political lives of their peoples. (C) China; (I) South Asia; (J) Japan; (K) Korea; (P) Philippines; (S) Southeast Asia; (Z) Other. Pre: 201 and 202, or consent. Repeatable three times in different alphas. DS

ASAN 323 The Way of Tea in Japanese History and Culture (3) History and culture of Japan as revealed in tea practice and tea ceremony: Zen, aesthetics, calligraphy, architecture, ceramics, gardens, politics. (Cross-listed as HIST 323) DH

ASAN 324 Chado-the Way of Tea Practicum (2) Actual practice of the tea ceremony as history and culture of Japan. Repeatable one time. Pre: 323, HIST 323 or (concurrence), or consent. DA

ASAN 325 (Alpha) Japanese Film: Art and History (3) Study and analysis of Japanese film; its history and relationship to cultural, social, philosophical, and aesthetic contexts. Pre: any WS course; or consent. (Cross-listed as EALL 325) DH

ASAN 330 Chinese Film: Art and History (3) Study and analysis of Chinese film; its history and relationship to cultural, social, philosophical, and aesthetic contexts. Pre: any WS course; or consent. (Cross-listed as EALL 330) DH

ASAN 361 Southeast Asian Literature in Translation (3) Survey in English traditional and modern literatures of Southeast Asia. A-F only. (Cross-listed as IP 361) DL

ASAN 364 20th-Century Chinese Women Writers (3) A survey and critical examination of contemporary Chinese women writers from China, Taiwan, and Hong Kong. Traces a genealogy of women’s writing from the early 1920s up until now through novels, poetry, drama, and film. Pre: one DH or DL course, or consent. (Cross-listed as EALL 364 and WS 346) DL

ASAN 393 (Alpha) Field Study in Asia (3) Students may submit proposals to have academic course work, field research, or work experience in Asia. See specific center for guidelines and procedures. (C) China; (I) South Asia; (J) Japan; (K) Korea; (P) Philippines; (S) Southeast Asia; (Z) Other. Repeatable one time.

ASAN 462 Contested Issues in Contemporary Japan (3) Familiarizes students with public discourse in Japan by analyzing key current issues widely debated in the Japanese media and in public forums in light of their political, historical, cultural, social and economic contexts. A-F only. Pre: 201-202, 312, 320, ANTH 483, ANTH 484, ECON 317, POLS 307H, or SOC 357, upper level undergraduate standing or consent. DS

ASAN 463 Gender Issues in Asian Society (3) Construction of gender identities in contemporary Asia. How these interface with other aspects of social difference and inequality (e.g., with class, religion, ethnicity). Pre: 201 and 202, or any WS course; or consent. (Cross-listed as WS 463) DS

ASAN 469 Ethnic Diversity in China (3) Survey of Tibetans, Mongols, Manchus, Muslims, and other minorities, as well as analyzing the nature of minority/majority identity in China from an anthropological perspective. Pre: 201 and 202, or consent. DS

ASAN 470 Sustainable Development in East Asia (3) Interdisciplinary investigation of development in East Asia is an urgent issue. Status and role of Asian business; current technological, economic, and financial developments; impact on world economy.

Key to symbols & abbreviations: see the first page of this section.

Courses 379
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites and Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASAN 473</td>
<td>Chinese Diaspora and Visual Culture</td>
<td>(3) Survey of contemporary Chinese popular entertainment forms that are produced and appreciated transnationally. Examples include martial arts genres, kung fu films, commercial novels, ballroom dancing, karaoke culture, music videos and rock music. Material will be selected based upon availability and readings will include critical essays from the fields of popular culture, media studies, and literary criticism. Pre: any 300- or 400-level DL or DH course. (Cross-listed as EALL 473) DH</td>
</tr>
<tr>
<td>ASAN 474</td>
<td>Transnational Chinese Popular Culture</td>
<td>(3) Survey of contemporary Chinese popular entertainment forms that are produced and appreciated transnationally. Examples include martial arts genres, kung fu films, commercial novels, ballroom dancing, karaoke culture, music videos and rock music. Material will be selected based upon availability and readings will include critical essays from the fields of popular culture, media studies, and literary criticism. Pre: any 300- or 400-level DL or DH course. (Cross-listed as EALL 474) DH</td>
</tr>
<tr>
<td>ASAN 480</td>
<td>Culture and Economy of Southeast Asia</td>
<td>(3) An exploration of the cultural and economic development of the countries of Southeast Asia from early times to the present day, with an emphasis on the effects of external influences. Pre: 201 or 202, or consent. DH</td>
</tr>
<tr>
<td>ASAN 485</td>
<td>Contemporary Chinese Development</td>
<td>(3) Development and planning in contemporary China: economic policy and institutional structure in the development and urbanization process; urban and rural transformation in a socialist economy. Pre: upper division standing or consent. DS</td>
</tr>
<tr>
<td>ASAN 491</td>
<td>Topics in Asian Studies</td>
<td>(3) Selected topics in Asian studies. (B) Buddhist studies; (C) China; (G) Asia; (I) South Asia; (J) Japan; (K) Korea; (P) Philippines; (S) Southeast Asia; (Z) Other. Pre: 201 or 202, or consent. Repeatable two times. DS</td>
</tr>
<tr>
<td>ASAN 493</td>
<td>Globalization in Asia</td>
<td>(3) Globalization affects the economic, political, and cultural lives of people in Asia. Transformations by capitalism in agricultural and industrial sectors of contemporary societies. Perspective is historical and global; approach is interdisciplinary. Repeatable two times. Pre: 201 or 202, or consent. DS</td>
</tr>
<tr>
<td>ASAN 495</td>
<td>Encountering Tourism in Asian-Pacific Societies</td>
<td>(3) A critical examination and current impact of tourism on contemporary Asian and Pacific island societies. Topics include colonial antecedents, social impacts, cultural and environmental concerns, case studies (including Hawai‘i). Pre: 201 or 202, or consent. (Cross-listed as PACS 495) DS</td>
</tr>
<tr>
<td>ASAN 496</td>
<td>Religions of Island Southeast Asia</td>
<td>(3) A comparative, interdisciplinary examination of indigenous beliefs, Islam, Christianity, and Hinduism in island Southeast Asia, and how they have been adjusted because of economic and social change. Pre: 201 and 202, or consent. DH</td>
</tr>
<tr>
<td>ASAN 499</td>
<td>Directed Reading</td>
<td>(V) Repeatable three times. Pre: consent.</td>
</tr>
<tr>
<td>ASAN 500</td>
<td>Master’s Plan B/C Studies</td>
<td>(1) Enrollment for degree completion. Repeatable six times. Pre: master’s Plan B or C candidate and consent.</td>
</tr>
<tr>
<td>ASAN 501</td>
<td>Practicum in Asian Studies</td>
<td>(V) Repeatable three times.</td>
</tr>
<tr>
<td>ASAN 600</td>
<td>Asian Studies Seminar: Scope and Methods</td>
<td>(3) Scope of Asian studies as a field; contributions of major disciplines to study of Asia; resources and methods of research; preparation of research proposal. (C) China; (I) South Asia; (J) Japan; (K) Korea; (P) Philippines; (S) Southeast Asia. Pre: graduate standing.</td>
</tr>
<tr>
<td>ASAN 608</td>
<td>Politics and Development: China</td>
<td>(3) Political economy of market transformation in China; developmental context of human resource, cultural tradition, ideology, policy issues of agriculture, industry transfer, decentralization, dualism, market reform in urbanization, social service, foreign investment, and Greater China. Pre: one of 600, 635, POLS 308, or POLS 341; or consent. (Cross-listed as POLS 645C)</td>
</tr>
<tr>
<td>ASAN 611</td>
<td>Comparative Muslim Societies in Asia</td>
<td>(3) Will compare Muslim societies and cultures in Asia with each other and with the so-called “core” Middle Eastern Muslim societies. Pre: 600 or consent.</td>
</tr>
<tr>
<td>ASAN 620</td>
<td>Problems/Issues of Contemporary Asia</td>
<td>(3) Analysis from multidisciplinary perspective: rural development, urbanization, international relations, ethnicity, religion, language, etc. Repeatable one time with different topics. Pre: 312 or consent.</td>
</tr>
<tr>
<td>ASAN 623</td>
<td>Gender in Asian Performing Arts</td>
<td>(3) Performance is a rich site for gender construction, critique, and articulation in Asia. The seminar examines gender reflected in traditional music, dance, and theatre, including character role and performer persona; approaches of performance and culture studies, and an “Asian way.” A-F only. (Once a year)</td>
</tr>
<tr>
<td>ASAN 624</td>
<td>Culture and Colonialism</td>
<td>(3) Analysis of theories and debates (cultural studies, feminist writings, post-colonial texts). Case studies of the transformation and creation of “traditional” cultures under colonialism. Pre: 310 or 312, or consent.</td>
</tr>
<tr>
<td>ASAN 625</td>
<td>Comparative Development in East and Southeast Asia</td>
<td>(3) Comparative developmental analysis of Asia’s leading economic powers. Considers Japanese political and economic developmental model; discusses problems for continued Asian growth; examines Korea, Taiwan, China, Indonesia, Thailand, Philippines and other Asian nations. Pre: 312, 600, or consent.</td>
</tr>
<tr>
<td>ASAN 626</td>
<td>Capitalism in Contemporary Asia</td>
<td>(3) Historically grounded theoretical examination of capitalism in 20th-century Asia; multidisciplinary approach to fundamental change in political and economic structure; in search of prospects for the future. Pre: 600 or 625, or consent.</td>
</tr>
<tr>
<td>ASAN 627</td>
<td>Ethnic Nationalism in Asia</td>
<td>(3) Contemporary theories of ethnic and cultural nationalism from perspective of Asia. Issues of nation-state, power hierarchies, modernity, and identity in contemporary societies. Pre: 310 (or concurrent) or 312 (or concurrent). A-F only. (Cru-listed as PLAN 627)</td>
</tr>
<tr>
<td>ASAN 629</td>
<td>Asian Security Cultures</td>
<td>(3) Comparative study of conceptualizations, practices and institutions of national security in Asia in light of their geographic and historic contexts. Pre: 310 and 312, or consent. (Once a year)</td>
</tr>
<tr>
<td>ASAN 636</td>
<td>Culture and Urban Form in Asia</td>
<td>(3) Cultural and historical impact on urban form, concentration of traditional and modern urban space, spatial expression of state and society, perception and utilization of urban design, evolution of urban form in selected Asian capitals. Pre: 312, ARCH 341, PLAN 310, or PLAN 600. (Cross-listed as PLAN 636)</td>
</tr>
<tr>
<td>ASAN 638</td>
<td>China’s Economic and Regional Development</td>
<td>(3) Examines China’s economic and regional development, examining the changing plans, policies and performances in the socialist development and market transition era, and the implications on spatial patterns. A-F only. Pre: GEOG 353 or PLAN 630, or consent. (Cross-listed as GEOG 638 and PLAN 638)</td>
</tr>
<tr>
<td>ASAN 651</td>
<td>East Asia Now</td>
<td>(3) Views East Asia as an interactive region. Examines common historical and cultural, economic and political themes including various experiences with the West. Focus on present state of the region. A-F only. Pre: 310, 312, or consent.</td>
</tr>
<tr>
<td>ASAN 653</td>
<td>Contemporary Japanese Studies Seminar</td>
<td>(3) Selected human and physical features that represent economic, social, and political life. Pre: consent. (Cross-listed as GEOG 652)</td>
</tr>
<tr>
<td>ASAN 671</td>
<td>The Splendor that was Southeast Asia</td>
<td>(3) Interdisciplinary examination of the classical civilizations of Southeast Asia, the 9th to 14th centuries. Includes Pagan, Sukhothai, Angkor, Dai Viet, Srivijaya, and Majapahit. Considers historical themes and patterns, issues in Southeast Asian studies. A-F only. Pre: 310, 312, or consent.</td>
</tr>
<tr>
<td>ASAN 694</td>
<td>Topics in Buddhist Studies</td>
<td>(3) Seminar on selected topics in Buddhist studies. Repeatable three times. Pre: PHIL 360, PHIL 406, REL 475, or REL 490; or consent.</td>
</tr>
<tr>
<td>ASAN 700</td>
<td>Thesis Research</td>
<td>(V) Repeatable nine times.</td>
</tr>
<tr>
<td>ASAN 705</td>
<td>Asian Research Materials and Methods</td>
<td>(3) Bibliography, reference tools, and research methods in sources in Asia in Western and Asian languages. Discussion of published and archival repositories. Repeatable one time. (Cross-listed as LIS 705)</td>
</tr>
<tr>
<td>ASAN 750</td>
<td>Alpha Research Seminar in Asian Studies</td>
<td>(3) (C) China; (I) South Asia; (J) Japan; (K) Korea; (P) Philippines; (S) Southeast Asia. Pre: 600 or consent.</td>
</tr>
</tbody>
</table>

### Astronomy (ASTR) College of Natural Sciences

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites and Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>ASTR 110</td>
<td>Survey of Astronomy</td>
<td>(3) Introductions to the astronomical universe: physics and celestial objects, planetary motion, planets and the Solar System, Sun and stars, the Milky Way and galaxies, cosmology and the universe. Credit not given for both 110 and 120. DP</td>
</tr>
<tr>
<td>ASTR 110L</td>
<td>Survey of Astronomy Laboratory</td>
<td>(1) Observations of constellations and the night sky, the sun and moon, planets, stars, and deep-sky objects; laboratory and observational experiments; illustrating basic concepts in astronomy. Offered in the evening. Pre: 110 (or concurrent), or consent. DY</td>
</tr>
<tr>
<td>ASTR 120</td>
<td>Astronomical Origins</td>
<td>(3) Formation of the sun and stars; origin of our solar system; formation and evolution of galaxies, including the Milky Way Galaxy; origin of chemical elements, and the beginnings of the cosmos. Credit not given for both 110 and 120. A-F only. DP</td>
</tr>
<tr>
<td>ASTR 130</td>
<td>Introduction to Archaeoastronomy</td>
<td>(3) Astronomy and celestial lore in ancient cultures: Neolithic Europe, Mayan, Mesoamerican, Egyptian, Mesopotamian, American Indian, Chinese, and Polynesian. Concepts of the cosmos, calendars, divine predictions, motion of celestial bodies, and navigation. Construction of simple observing tools. DP</td>
</tr>
<tr>
<td>ASTR 150</td>
<td>Voyage through the Solar System</td>
<td>(3) An illustrated voyage through the solar system. The origin, evolution, and present state of the sun and each planet based on recent results. Spring only. (Cross-listed as GG 105) DP</td>
</tr>
<tr>
<td>ASTR 240</td>
<td>Foundations of Astronomy</td>
<td>(3) Introduction to the astronomical universe for science or engineering students. Satisfies requirements for non-introductory level credit. Pre: PHYS 151 or PHYS 170, or consent. Credit not given for both 110 and 240. A-F only. DP</td>
</tr>
<tr>
<td>ASTR 280</td>
<td>Evolution of the Universe</td>
<td>(3) The Big Bang, origin of the elements, formation and evolution of galaxies and stars. Pre: any introductory astronomy or physics course, or consent. A-F DP</td>
</tr>
</tbody>
</table>
ASTR 281 Astrobiology (3) Are we alone in the universe? Modern astronomical, biological, and geological perspectives on this fundamental question. Searches for life on Mars, oceans on Europa, planets orbiting other stars. Space exploration and colonies, interstellar spacecraft and communication. Pre: 110 or 240, or consent. Spring only. NFD P

ASTR 380 The Cosmos in Western Culture (3) History and intellectual context of astronomical discovery; the evolution of ideas of space, time, and motion from the Babylonians to relativistic cosmologies; emphasis on the interaction of astronomy with the history of ideas. Pre: 110 or (concurrent). Spring only.

ASTR 399 Directed Study (V) Individual reading, observation, or experimentation in astronomy and astrophysics. Repeatable four times. Pre: consent.

ASTR 427 Cosmology (3) Structure, history, and composition of the universe; the Big Bang; formation and evolution of galaxies, clusters, and large-scale structure; cosmological models. Given concurrently with 627. Pre: PHYS 274 or consent. (Alt. years: spring) DP

ASTR 430 The Solar System (3) Observations and physical nature of planets and moons, asteroids, comets, and other small bodies; formation of the Solar System; discovery of other planetary systems; solar activity. Given concurrently with 630. Pre: PHYS 170 or consent. (Alt. years: spring) DP

ASTR 500 Master’s Plan B/C Studies (1)

ASTR 622 The Interstellar Medium (3) Astrophysics of diffuse matter, HI regions, molecular clouds, etc. Pre: consent. (Alt. years)

ASTR 623 Stellar Interiors and Evolution (3) Structure and evolution; energy sources, radiative processes; relations to observables. Pre: consent. (Alt. years)

ASTR 626 Galaxies (3) Observations and stellar dynamics of elliptical and spiral galaxies including our galaxy, globular clusters, and dark matter. Galaxy formation and evolution. Pre: consent. (Alt. years: spring)


ASTR 630 The Solar System (3) Survey of observational data and physical concepts on planets and smaller bodies; formation of planetary systems; solar activity. Pre: consent. (Alt. years)

ASTR 631 Radiative Transfer Stellar Atmospheres (3) Excitation, ionization, and radiative transfer in stellar atmospheres; model atmospheres, formation of light and continuum radiation. Pre: consent. (Alt. years)

ASTR 633 Astrophysical Techniques (3) Telescopes, positional astronomy, photon detection, error analysis, photometry, spectroscopy. Pre: consent. Fall only.


ASTR 640 General Relativity (3) Introduction to gravity and general relativity. Tensor basics, classical scalars, vector and tensor field theories. Exact symmetric Einstein equation, gravito-magnetic weak field, and radiation solutions. Pre: consent. (Alt. years)

ASTR 641 Active Galaxies (3) Phenomenology of active galactic nuclei, black holes, accretion flows and jets, emission mechanisms, host galaxies, and cosmic evolution. Pre: 635 or consent. (Alt. years: spring)

ASTR 657 Astrochemistry - A Molecular Approach (3) Formation of astrophysically important molecules and their precursors in the interstellar medium and in our solar system: first principles and latest trends. Pre: consent. Fall only. (Cross-listed as CHEM 657 and GG 657)

ASTR 699 Directed Research (V) Pre: consent.

ASTR 700 Thesis Research (V)

ASTR 734 Astronomy Seminar I (V) Selected advanced topics in astronomy and astrophysics. Available for 1 to 3 credit hours by arrangement. Repeatable unlimited times. Pre: consent.

ASTR 735 Astronomy Seminar II (V) Selected advanced topics in astronomy and astrophysics. Available for 1 to 3 credit hours by arrangement. Repeatable unlimited times. Pre: consent.

ASTR 736 Astronomy Seminar III (V) Selected advanced topics in astronomy and astrophysics. Available for 1 to 3 credit hours by arrangement. Repeatable unlimited times. Pre: consent.

ASTR 740 Astrobiology Seminar: Origin, Evolution and the Role of Water for Life in the Universe (1) Interdisciplinary research topics in astrobiology as they relate to the theme of water: formation in space, role in creating pre-biotic molecules, delivery to earth, and terrestrial planet habitability. Repeatable three times. Pre: graduate level sciences and ideas, or consent.

ASTR 777 Star Formation (2) Molecular clouds, collapse processes, physics of circumstellar disks and accretion, properties of young stars, outflows and jets, formation of binaries, extrasolar planets, planet formation, meteorites and the early solar system. Pre: graduate standing or consent. (Alt. years: spring)

ASTR 800 Dissertation Research (V)

Biochemistry (BIOC)

School of Medicine

Adequate preparation in chemistry (through physical chemistry), physics, and mathematics is required, and a background in biological sciences is desirable.

BIOC 241 Fundamentals of Biochemistry (3) Biological chemistry stressing integration of concepts of general, inorganic, and biochemistry and application to life chemistry. Pre: beginning algebra and high school science. DP

BIOC 341 Elements of Biochemistry (3) Biochemical principles and concepts as applied to living systems, including sufficient organic chemistry to understand those principles. Pre: 241 or consent. DP

BIOC 441 Basic Biochemistry (4) Function and composition of biological substances and their metabolic transformation in animals, plants, microorganisms. Pre: BIOL 275/275L, CHEM 273; or consent. DB

BIOC 441L Basic Biochemistry Lab (1) Experiments working with substances discussed in 441. DY

BIOC 481 Introduction to Molecular Biology (3) Biochemical basis of life presented in terms of the structure and function of the gene in the production of biological effects. Pre: 441 or consent. DB

BIOC 499 Directed Research and Reading (V) Independent research or selected reading of current literature in the area of biochemistry and biophysics. Repeatable unlimited times. Pre: consent.

BIOC 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Repeatable unlimited times. Pre: master’s Plan B or C candidate and consent.

BIOC 512 (Alpha) Unit II Electives in Biochemistry (1) Concurrent electives in biochemistry. (B) carboxylate biochemistry (review and clinical correlation of important aspects of biochemistry and carbohydrate chemistry); (D) introduction to magnetic resonance imaging (how the generation and processing of the magnetic signal produces strikingly clear anatomical images); (E) topics in carcinogenesis (review of current understanding of cancer cause and prevention). Repeatable one time. Pre: BIOM 551.

BIOC 513 (Alpha) Unit III Electives in Biochemistry (1) Concurrent electives in biochemistry. (B) carbohydrate biochemistry (review and clinical correlation of important aspects of biochemistry and carbohydrate chemistry); (D) introduction to magnetic resonance imaging (how the generation and processing of the magnetic signal produces strikingly clear anatomical images); (E) topics in carcinogenesis (review of current understanding of cancer cause and prevention). Repeatable one time. Pre: BIOM 551.

BIOC 514 (Alpha) Unit IV Electives in Biochemistry (1) Concurrent electives in biochemistry. (B) carbohydrate biochemistry (review and clinical correlation of important aspects of biochemistry and carbohydrate chemistry); (C) basic biochemical aspects (as applied to clinical cases); (D) introduction to magnetic resonance imaging (how the generation and processing of the magnetic signal produces strikingly clear anatomical images); (E) topics in carcinogenesis (review of current understanding of cancer cause and prevention). Repeatable one time. Pre: BIOM 551.

BIOC 525 Unit V Block Elective (V) Required elective for medical students. The objectives will be determined by contract; however, one option is a review for NBME Part I. CR/NC only. Pre: BIOM 551.

BIOC 545 Topics in Biochemistry (V) Fourth-year elective in which medical students take an in-depth study of selected topics in biochemistry. Pre: fourth-year medical student standing.

BIOC 595 Highlights of Organ-system Biochemistry (1) Provides highly interactive, small group discussions on concepts of biochemistry important to the various organ systems; such as cardiac, respiratory, hematology, gastrointestinal, endocrine, musculoskeletal and neurological systems, and relevant to clinical medicine. MD majors only. CR/NC only. Pre: MDED 554. Fall only.

BIOC 601L Biochemistry-Biophysics Lab (2) Basic biochemical experimental techniques; enzyme kinetics; active-site identification; amino acid sequence determination; radioimmunoassay, in vivo studies of nucleic acids. Pre: 441 or consent.

BIOC 644 Metabolic Biochemistry (2) Biochemical and physiologic bases of structure and function of human organ systems. Both normal and abnormal processes are discussed. Pre: 441 and PHYL 617 and PHYL 618, or consent.

BIOC 671 Seminar (1) Weekly discussions and reports on various subjects; current advances in biochemistry and biophysics.

BIOC 699 Directed Research (V) Repeatable unlimited times. Pre: consent.


Key to symbols & abbreviations: see the first page of this section.
Bioengineering (BE)
College of Tropical Agriculture and Human Resources

BE 150 Introduction to Biological Engineering (2) Discussion and experimental investigation of physical and chemical principles underlying representative biological processes and systems. Bioproduction, energy conversion processes, physiologcal systems, biological treatment, biosensors, biomechanics, and related natural and engineered systems. A-F only. Pre: MATH 140 or consent. DY
(Once a year)

BE 191 Introduction to Applications in Biological Engineering (V) Discussion and investigation of special topics, problems and applications of biological engineering. Pre: consent.

BE 260 Mass and Energy Balances (3) Introduction to the principles of mass and energy conservation; development of systematic approaches to apply these principles in calculations for design and analysis of biochemical, chemical, and physical processes. Pre: BIOL 171, CHEM 162 or 181A, PHYS 170, and MATH 242 or 252A; or consent. N/DP


BE 350L Dynamic Systems Modeling Laboratory (1) Industry field trips and lab experiences to illustrate behavior of representative dynamic systems in biological engineering. Data acquisition and model validation. A-F only. Pre: consent. Co-requisite: 350. DY

BE 373 Transport Phenomena (3) Fundamental principles and applications relating to mass, momentum, and energy transfers in biosystems and other systems for engineers and scientists. Pre: 260, CEE 270, MATH 243 or 252A, CEE 320 and ME 311. DP

BE 405 Engineering Economics (3) Economic analysis in engineering and management decision-making, interest, depreciation, income tax, cost classification, break-even analysis, economic comparisons of alternatives, benefit-cost analysis. A-F only. Pre: ECON 120 or 130, and senior standing; or consent. (Cross-listed as CEE 405) N/DP

BE 411 Food Engineering (3) Principles and applications of cooking, storage, cleaning, recycling, fluid mechanics, heat transfer, psychrometry, and material and energy balances of food processing and preservation. Pre: BIOL 171, CHEM 162 or CHEM 181A, MATH 243, PHYS 151 or PHYS 170; or consent. (Once a year) (Cross-listed as FSHN 411) DP

BE 420 Sensors and Instrumentation for Biological Systems (4) Principles of common physical and chemical sensors. Interfacing sensors to different electronic circuits and instrumentation systems. Electronic detection and quantification of biomolecules (biosensors). Applied control for biological processes. Pre: 350, EE 160, and EE 211; or consent. (Cross-listed as FSHN 420) DP

BE 421 Bioprocess Control (3) Process control in both time and Laplace domains with an introduction to the frequency domain; selection and design of appropriate control systems for bioprocesses with consideration of the impact on the total system; identification of safety concerns in designing control systems and process equipment. Pre: 260, MATH 243; or consent. DP

BE 431 Environmental Biotechnology (3) Environmental impact and control; the micro-organism and its nutrition and growth conditions; microbial growth and substrate removal kinetics; bioreactors; biological treatment systems; biodegradation of xenobiotic organic chemicals; case studies. A-F only. Pre: 373 or consent. Spring only. DP

BE 437 Biosystem Unit Operations (2) Pumps and fans; size reduction; cleaning and sorting; materials handling; processing of fruits, nuts, vegetables, animals, and other bioproducts. Pre: 373, CEE 320 or ME 322; or consent. DP

BE 440 Bioremediation: Principles and Practices (2) (2 Lec, 1-3 hr Lab) Soil environment, fate and transport of contaminants; microbial ecology, metabolism, and energy production; biodegradation of selected compounds. In situ treatment, solid-phase bioremediation, slurry-phase bioremediation, and vapor-phase biological treatment. Open to nonmajors. Repeatable one time. Pre: 260, CHEM 161, PHYS 170; or consent. DP

BE 460 Bioreactor Design and Analysis (3) Application of mass/energy balances and reaction kinetics for the design and analysis of bioreactors for microbial, plant, and animal cell cultures. Pre: 373, CEE 320 or ME 322; or consent. DP

BE 481 Senior Engineering Design I (3) (1 1-hr Lec, 2-3 hr Lab) First of a two-semester sequence that provides a major design experience for senior students in biosystems engineering. Design process; project management; design methods; modeling and simulation; design optimization; engineering economics; engineering statistics, initiation of an opened-ended design project. Pre: 260, CHEM 153, CEE 320 or ME 322, ME 311, EE 211; or consent. DP

BE 482 Senior Engineering Design II (3) (1 1-hr Lec, 2-3 hr Lab) Continuation of 481. Properties of biological materials; risk and reliability; design ethics; guest lectures on engineering design by practicing engineers; extension and completion of the design project with submission of a final design report. Pre: 481 or consent. DP

BE 491 Biological Engineering Topics (V) Study and discussion of significant topics and problems. Offered by visiting faculty and/or for extension programs. Repeatable nine times.

BE 492 Internship (4) Integration and application of academic knowledge and critical skills emphasizing professional development. Placement with an approved cooperating supervisor/employer. Pre: consent.

BE 499 Directed Research (V) Research in the area of biosystems engineering. Pre: consent.

BE 606 Instrumentation and Measurement (3) Measurement concepts and operating principles applied to the selection and use of instruments important to scientists and engineers dealing with biological systems, including automatic data acquisition and processing. Pre: CHEM 151, MATH 241, and ME 311; or consent.

BE 622 Experimental Methods in Cause-Eflect Modeling (3) Factorial designs and fractional factorial designs for screening variable and response optimization. Response surface methodology. Experimental designs appropriate to building and testing multi-variable behavior relationships. Sequential experimental designs.

BE 625 Biosensor Principles and Applications (3) Elaboration of common biophysical interactions used to quantify biological molecules, and the electronic technologies used to detect them. Discussion of the desirable properties of biosensors, miniaturization and applications related to medicine, agriculture, bioproduction and environment. Pre: consent. (Cross-listed as MBBE 625)

BE 634 Biological Treatment (3) Fundamentals of applied microbiology and biochemical reactor engineering, quantitative description of microbial growth, operational theory and design basis of aerobic, anoxic and anaerobic treatment processes. Applications for water, wastewater, air, solid wastes, and soil. A-F only. Pre: consent. (Alt. years: spring) (Cross-listed as CEE 634)

BE 638 Biosystems Modeling (3) Introduction to system thinking, procedures for developing system models, characteristics of important agricultural system models, computer approach to evaluation and optimization of system models. Pre: one of MATH 215, MATH 241, MATH 251A; or consent. (Cross-listed as AREC 610)

BE 639 Bioprocess Engineering (3) Application of fundamental concepts of microbiology and biochemistry in the design and analysis of biological production and processing systems with special emphasis on biolrnel and biobased product recovery. Discussion of case studies. A-F only. Pre: consent. (Once a year)

BE 664 Hydrologic Processes in Soils (3) (2 Lec, 1-3 hr Lab) Hydrologic processes in soils and the processes involved in water infiltration drainage and solute transport. Emphasis on key parameters required for modeling. Recommended: CEE 424 or consent. Fall only. (Cross-listed as CEE 625 and NREM 660)

BE 699 Directed Research (V)

BE 700 Thesis Research (V)

BE 750 Seminar (1) Use of computer and video technology in technical presentation, review of current biosystems engineering research. Pre: consent.

Biology (BIOL)
College of Natural Sciences

Courses for Non-Science Majors

BIOL 101 Biology and Society (3) Characteristics of science, historical development of scientific concepts, and interaction of society with science illustrated by topics from biological science. Credit not given for both 101 and 123.

BIOL 101L Biology and Society Laboratory (1) (1 3-hr Lab) Lab experiments illustrating topics and methods in the biological sciences.

BIOL 120 Hawaiian Environment Science (3) Characteristics of science and interaction with society illustrated by topics in geology, astronomy, oceanography, and biology of Hawaiian Islands. Credit not given for both 125 and 101.

BIOL 124 Environment and Ecology (3) Biological and physical principles affecting human/environment interaction; impact of science, technology, value, and perceptions on global society and ecology; projections and options about human ecology.

BIOL 124L Environment and Ecology Lab (1) (1 3-hr Lab) Lab experiments and projects illustrating topics in human ecology. Pre: 124 (or concurrent).

BIOL 310 Environmental Issues (3) Global environmental problems in historical perspective; physical, biological, sociocultural views. Pre: one of 101, 123, or GEOG 101; or consent.

BIOL 320 The Atoll (3) Atoll as ecosystem and as human environment. Formation, structure, distribution, biota. Pre: two semesters of introductory science or consent.

BIOL 340 Genetics, Evolution and Society (3) The role of genetics in evolution, medicine, behavior, plant and animal breeding and technology; its impact on today's society. Pre: one semester of biological science at college level or consent. (Cross-listed as CMH 551)

BIOL 340X Sex Differences in the Life Cycle (3) Human sex differences, their biological basis and significance; genetic, hormonal, and behavioral determinants of sexual differentiation; biology of gender, sexuality, parenting, menopause, and aging.

Key to symbols & abbreviations: see the first page of this section.
Courses 383

BIOL 301L Marine Ecology and Evolution Lab (2) (1 3-hr Lab) Laboratory to accompany 301. A-F only. Pre: C (not C-) or better in 265/265L, 275/275L (or concurrent), and OCN 201; or consent. DY

BIOL 304 Biotechnology: Science and Ethical Issues (3) Introduction to the concepts, goals, ethical issues and consequences of biotechnology using real-life case studies of cloning, DNA fingerprinting, gene therapy and genetic engineering. Pre: 171 or consent. (Cross-listed as MBBE 304)

BIOL 331 Marine Mammal Biology (3) Overview of marine mammal science, significance and roles of marine mammals in their ecosystems, and marine conservation issues. Lab topics in marine mammal science will also be covered. Pre: C (not C-) or better in 171/171L, 172/172L, and 265/265L; or consent. DB

BIOL 331L Marine Mammal Biology Lab (2) Laboratory to accompany 331. Activities will include taxonomy, anatomy, morphology, necropsy, hematology, histology, diagnostic methods, tracking, field distribution surveys, standing response, and energetics, and/or similar depending on field access and availability of specimens. A-F only. Pre: C (not C-) or better in 171/171L and 172/172L and 265/265L and 331 (or concurrent); or consent. DY

BIOL 363 Biological Field Studies (V) Biological survey, collection, and analysis techniques will be reviewed and applied through field studies. Students will be introduced to the uniqueness of the Hawaiian environment and its diversity of life. Emphasis on diversity, evolution and ecology. Repeatable up to six credits. Pre: C (not C-) or better in 265/265L (or equivalent); or consent. DB

BIOL 375 Concepts of Genetics (3) Genetic concepts at advanced undergraduate level; genetic transmission, recombination, gene action, mutation, population and evolutionary genetics. Repeatable one time. Pre: C (not C-) or better in 171/171L and 275/275L; or consent. DB

BIOL 375L Concepts of Genetics Lab (1) (1 4-hr Lab) Experiments with a variety of organisms to illustrate principles discussed in BIOL 375. Pre: C (not C-) or better in 171/171L and 275/275L; or consent. DY

BIOL 390 Communicating in Biological Sciences (3) Combined lecture/lab impart essential knowledge and skills in technical writing, poster design, and oral presentations for effective communication for life sciences majors. Research papers, lab reports, project proposals, conference presentations are covered. Life sciences majors only. A-F only. Pre: C (not C-) or better in 171/171L, 172/172L, and ENG 100.

BIOL 395 Internship in Biology Teaching (2) Supervised laboratory internship in the preparation and demonstration of laboratory experiments in selected laboratory courses. Repeatable one time. Pre: consent.

BIOL 401 Molecular Biotechnology (3) General principles, applications, and recent advances of the rapidly growing science of biotechnology. Topics include impact of biotechnology on medicine, animal sciences, environment, agriculture, forensics, and economic and socio-ethical issues. Pre: C (not C-) or better in 275/275L (or concurrent); or consent. (Cross-listed as MBBE 401) DB

BIOL 402 Principles of Biochemistry (4) Molecul- ar basis of living processes in bacteria, plants, and animals; emphasis on metabolism of carbohydrates, lipids, proteins, and nucleic acids. Pre: C (not C-) or better in 275/275L, and CHEM 273; or consent. (Cross-listed as MBBE 402 and PEPS 402) DB

BIOL 403 Field Problems in Marine Biology (4) Integrated program of intensive lectures, laboratory experiments, and field surveys that focus on the biological processes that shape the lives of marine organisms at HIMB. A-F only. Pre: C (not C-) or better in 301/301L, or consent. DB

BIOL 404 Advanced Topics in Marine Biology (3) Current themes in marine biology and exper- ience in scientific assessment. Repeatable two times. A-F only. Pre: C (not C-) or better in 301/301L, or consent. DB

BIOL 406 Cellular Biology (3) Cell structure and function. Structure, chemistry, and functions of organelles and macromolecules. Pre: C (not C-) or better in 275/275L, CHEM 273; or consent. (Cross-listed as MBBE 406) DB

BIOL 406L Advanced Molecular and Cellular Biology Laboratory (2) (1 3-hr Lab) A laboratory to accompany 406 and 407. Pre: 275/275L and CHEM 273; or consent. Co-requisite: 406. DY

BIOL 407 Molecular Biology (3) Relationship between structure and function at macromolecular level. Pre: C (not C-) or better in 275/275L and CHEM 273, or consent. DB

BIOL 425 Wildlife and Plant Conservation (3) Principles of conservation biology and wildlife management techniques, illustrated with animal, plant, and ecosystem examples. Examination of ethical, cultural, legal, political, and socioeconomic issues impinging on conservation policy and practice. Group project and field trips. Pre: C (not C-) or better in 265/265L, or consent. DB

BIOL 483 Introduction to Bioinformatics Topics for Biologists (3) Focuses on the use of computational tools and approaches to analyze the enormous amount of biological data (DNA, RNA, protein) available today. A-F only. Pre: 171 (or equivalent), or consent. (Once a year) (Cross-listed as MBBE 483)

BIOL 499 Biological Problems (V) Directed reading and research. For juniors and seniors majoring in life science 1-12 credits. Repeatable up to 12 credits. A-F only. Pre: 2.5 GPA minimum, written proposal and consent.

Professional Development Courses for Science Teachers

BIOL 501 (Alpha) Biology Workshop for Science Teachers (V) Principles taught in a conceptual and/or hands-on manner either in a laboratory setting or in the field. (B) biotechnology; (C) ecology, evolution and conservation; (D) marine biology; (E) general biology, A-F only. Repeatable unlimited times. Pre: 171/171L, 172/172L, in-service teachers; or consent.

See other science professional development courses NSCI 501, 502, 503, 504, 505, and 619 under the Natural Sciences (NSCI) course listing in this section of the Catalog.

Biomedical Sciences (BIOM)

School of Medicine

BIOM 499 Directed Research and Reading (V) To provide elective courses for undergraduates in the biomedical sciences specialties. Repeatable unlimited times.

BIOM 500 Master’s Plan B/C Studies (1) Repeatable unlimited times.

BIOM 512 (Alpha) Unit II Concurrent Electives (1) Elective courses for first-year medical students. (B) histopathology; (C) medical ethics; (D) introduction to student research. CR/NC only. Pre: 551 and consent.

BIOM 513 (Alpha) Unit III Concurrent Electives (1) Elective courses for first-year medical students. (B) healer’s art; (C) introduction to student research. CR/NC only. Pre: 551 and consent.

BIOM 514 (Alpha) Unit IV Concurrent Electives (1) Elective courses for second-year medical students. (B) community health; (C) healer’s art; (D)
introduction to student research, CR/NC only. Pre: 551 and consent.

BIOM 515 (Alpha) Unit V Concurrent Electives (V) Elective courses for second-year medical students. (B) community health; (C) medical ethics. CR/NC only. Pre: 551 and consent.

BIOM 531 Clerkship Assessment (1) Required comprehensive interdepartment multidisciplinary assessment program for third-year medical students. Pre: 555.

BIOM 545 (Alpha) Unit VII Interdisciplinary Electives (V) An elective for senior students to enhance skills in student-centered teaching, to review the sciences basic to the clinical problems, and to prepare students for their role as teachers during residency. CR/NC only. Pre: 551 and consent.

BIOM 581 (Alpha) Unit I Community Health (2) Field experience placing student in community settings to work with health-care professionals as they provide services to patients; (B) community health and service; (C) AHCEC. CR/NC only. Repeatable two times.

BIOM 582 (Alpha) Unit II Community Health (2) Field experience placing students in community settings to work with health-care professionals as they provide services to patients; (B) community health and service; (C) AHCEC. CR/NC only. Pre: 551. Repeatable two times.

BIOM 583 (Alpha) Unit III Community Health (2) Field experience placing students in community settings to work with health-care professionals as they provide services to patients; (B) community health and service; (C) AHCEC. CR/NC only. Pre: 551. Repeatable two times.

BIOM 584 Senior Seminars (4) In-depth review of issues and subjects for fourth-year medical students to strengthen skills in art of medicine. Subjects include medical ethics, decision analysis, medical economics, and biostatistics. CR/NC only.

BIOM 591 Unit I Health and Illness (13) Introductory series of problem-oriented small group tutorials for medical students stressing concepts of health and disease, supplemented by colloquia and resource sessions intended to broaden the perspectives of the Unit I health-care problems. Repeatable two times. CR/NC only.

BIOM 592 Unit II Cardiovascular, Respiratory, and Renal Problems (10) Advanced series of problem-oriented small group tutorials for medical students focusing on cardiovascular, respiratory, and renal topics, supplemented by conferences, colloquia, labs, and resource sessions intended to broaden the perspectives of the Unit II health-care problems. Repeatable two times. CR/NC only. Pre: 551 or consent.

BIOM 593 Primary Care Preceptorship (3) Students will work with a primary care physician and develop an understanding of primary care practice as well as gain experience in clinical skills. Repeatable one time. CR/NC only. Pre: 551, 571, 572, and 573; or consent. Spring only.

BIOM 594 Student Research Project (3) Students will identify a research project and conduct an in-depth study that will form the focus of a formal paper and a poster presentation. Course work will be integrated into Units 1 through 4. Repeatable one time. CR/NC only. Pre: 551, 552, and 553; or consent. Fall only.

BIOM 595 Evidence-Based Medicine (2) The critical appraisal track is designed to improve the student's ability to seek and evaluate new medical knowledge. CR/NC only. Pre: 551.

BIOM 601 Global Health and Medicine: Emerging Problems and Impact (3) Analysis of emerging problems and impact in countries on a multidimensional perspective. Repeatable one time. BIOM, NURS, PH, SPA majors only. Pre: consent.

BIOM 640 Clinical Research Methods (2) Instruction in developing clinical research questions and overseeing data collection. Emphasis is placed on literature review, study design, subject recruitment and sampling, instruments, other measures and bioinformatics, sample size, consent form, budget and timetable. A-F only. Pre: consent.

BIOM 641 Legal and Regulatory Issues and Bioethics (2) Ethical dilemmas in clinical research are identified and resolved in cases, research on human subjects regulation are discussed. Research misconduct is defined. Ethical considerations in protocol development in the Designing Clinical Research course are resolved. A-F only. (Cross-listed as CMB 626)

BIOM 642 Applied Clinical Epidemiology and Biostatistics (3) Introductory epidemiologic and intermediate statistical methods are applied to clinical research. Epidemiologic measures such as relative risks and odds ratios and how to interpret these measures in the context of clinical studies will be addressed. Interpretation of screening tests will be included. A-F only. Pre: 640 and consent.

BIOM 643 Applied Biostatistics (3) Combines a didactic approach with hands-on analysis of a clinical dataset. Regression methods for normally distributed, binary and count data, time-to-event data, model building and model evaluation are included. A-F only. Pre: 640, 642, or consent.

Key to symbols & abbreviations: see the first page of this section.
equation models. A-F only. Prereq: 642 and 643, or consent.

BIOM 699 Direct Reading (V) Students may register on approval of department. CR/NC only. Repeatable unlimited times.


BIOM 701 Disasters and Pandemics: Medical and PH Management and Risk Communication (3) Assess impact on health in disasters and diseases. Enhances research skills related to management and communication. Repeatable one time. BIOM, PH, NURS, and SPA majors only. Prereq: consent.


**Biophysics (BIOP)**

**School of Medicine**

Adequate preparation in chemistry (through physical chemistry), physics, and mathematics is required, and a background in biological sciences is desirable.

BIOP 499 Directed Research and Reading (V) Independent research or selected reading of current literature. Emphasizes experimental approaches in biophysics. Repeatable unlimited times. Prereq: consent.

BIOP 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Repeatable unlimited times. Prereq: master’s Plan B or C candidate and consent.

BIOP 602L Biochemistry-Biophysics Lab (2) Basic biophysical techniques: spectrometric methods for macromolecular characterization; ultracentrifugation; receptor methodology; in vitro studies of nucleic acids. Prereq: BIOC 441 or consent.

BIOP 629 Bioenergetics and Membrane Function (2) Energy transducing membrane systems; relationships of structure to function. Prereq: BIOC 441, CHEM 351, or consent.

BIOP 641 Structures and Interactions (3) Proteins, nucleic acids, and membranes are examined to understand the physical and chemical bases of their structures, binding, kinetics, and interactions between biomolecular components. Prereq: BIOC 441 and CHEM 351 (or concurrent); or consent.

BIOP 699 Directed Research (V) Repeatable unlimited times. Prereq: consent.


**Botany (BOT)**

**College of Natural Sciences**

BOT 101 General Botany (3) Growth, functions, and evolution of plants; their relations to the environment and particularly to humans and human activities. DB

BOT 101L General Botany Lab (1) (1 3-hr Lab) Lab observations and experiments illustrating basic principles of plant biology. Prereq: 101 (or concurrent). DY

BOT 105 Ethnobotany (3) (2 Lect, 1 Demonstration) Plants and their influence upon culture of Hawai‘i and Pacific; uses of cultivated and wild plants. FGC

BOT 105L Ethnobotany Laboratory (1) (1 3-hr Lab) Laboratory exercises, experiments, and analysis in ethnobotany. A-F only. DY

BOT 135 Magical Mushrooms and Mystical Molds (3) Impact of fungi in nature and on human-kind. Selected historical events in which fungi played a significant role, their activities as decomposers and pathogens, and their uses as sources for mind-altering drugs in religious ceremonies and in food and beverage production in various societies. DB

BOT 160 Campus Plants (2) Nontechnical course emphasizing recognition of the many interesting tropical plants seen on campus; origin, status in Hawai‘i, and cultural and economic uses of campus plants. DB

BOT 180 Plant Life in the Sea (4) (3 Lect, 1 3-hr Lab) Combined lecture-lab to introduce common marine plants in Hawaiian coastal areas via discussion of morphology, growth, ecological functions and native/alien status. Field trips to observe plants in local habitats. DB, DY

BOT 201 Plant Evolutionary Diversity (3) Significance of evolutionary trends in the plant world, including reproductive, morphological, and life history adaptations by algae, fungi, and vascular plants. Prereq: 101 or college general biology. Co-requisite: 201L. NI/DB

BOT 201L Plant Evolutionary Diversity Lab (1) (1 3-hr Lab) Exercise in the morphology and systematics of land plants, fungi, and algae. Co-requisite: 201L. NI/DB

BOT 350 Resource Management and Conservation in Hawai‘i (3) Management of native Hawaiian organisms and terrestrial ecosystems with particular attention to strategies, planning, research, and management actions necessary to control alien influences and promote native species. Prereq: college general biology. DB

BOT 351 Inside Tropical Ecosystems (3) Ecology of tropical ecosystems; biodiversity and its values; energy flow, successive stages and nutrient cycles; approaches to conservation and resource management. Emphasis on Hawaiian ecosystems via field trips to study local examples. Prereq: 101 or BIOL 172, or consent. DB

BOT 351L Inside Tropical Ecosystems Lab (1) (1 3-hr Lab) Introduction to ecological methods and common plant species of Hawaiian marine and terrestrial ecosystems. Prereq: consent. Co-requisite: 351, DY

BOT 399 Botanical Problems (V) Individualized directed research. Intended for upper division botany majors. Repeatable six times. Prereq: 101, BIOL 172; or consent.

BOT 410 Plant Anatomy (3) Structure of vascular plants; origin and differentiation of tissues; relation of structure to function. Prereq: 201. Co-requisite: 410L. Recommended: 470. DB

BOT 410L Plant Anatomy Lab (1) (1 3-hr Lab) Lab study of plant structure. Co-requisite: 410. DY

BOT 430 Mycology (2) Morphology, physiology, ecology of fungi; their identification. Prereq: 201, BIOL 172; or consent. DB

BOT 430L Mycology Lab (2) (2 3-hr Lab) Laboratory to accompany 430. Prereq: 430 (or concurrent) or consent. DY

BOT 440 Advanced Ethnobotany (3) Advanced studies of plant uses in cultural contexts, focusing upon impacts of plant-culture interactions in development of cultures, cultivars, medicinals, ethnobotany, ethnics, and intellectual property. Lecture/discussion, term paper. Prereq: 105, 461 and ANTH 151 or ANTH 200; or consent. DB

BOT 442 Medical Ethnobotany (3) Survey and theory of plants used as medicines, cultural perspectives of herbal medicine, and the botanical/chemical basis of allopathic and naturopathic medicine. Lecture/discussion, term paper or project. Prereq: 440 and 470 or CHEM 272 or BIOL 341; or consent. DS

BOT 444 Ethnobotany and Conservation (3) Ecological implications of cultural uses of plants. Examines the biological basis for, and ecological effects of traditional and local resource management systems. Prereq: 440 and 350 or 351 or 453 or GEOG 328; or consent. DB

BOT 446 Hawaiian Ethnobotany (3) (2 Lect, 1 3-hr Lab) Methods and techniques of handling and identifying plant materials used by early Hawaiians and modern Hawaiians for house and canoe construction, clothing, household and fishing items, medicine, and food preparation. Reading, laboratory, and fieldwork. Prereq: 440 or consent. DS

BOT 448 Cognitive Ethnobotany (3) Survey, methods and theory of the cognitive aspects of human interactions with plants and plant environments. Lecture/discussion and term paper. Prereq: 440 and ANTH 414 or LING 414; or consent.

BOT 449 Ethnobotany Practicum (V) Practical laboratory and/or field training experiences for a botanical career conducting ethnobotany research. Repeatable up to 25 credits. Prereq: 440 or consent.

BOT 450 Natural History of Hawaiian Islands (3) (2 Lect, 1 3-hr Lab) Geography, geology, climatology, biotic environment of Pacific Basin and Hawaiian Islands; endemism and evolution in terrestrial and marine biota of islands. Prereq: one semester of biological sciences at college level. (Cross-listed as ZOOL 450) DB

BOT 453 Plant Ecology and Environmental Measurements (4) (2 Lect, 2 3-hr Lab) Influence of natural environments on plant behavior (autoecology). A field-oriented course to complement 454. Field trips. Should precede 454. Prereq: one of 101, BIOL 172, or ZOOL 101. DB DY

BOT 454 Vegetation Ecology (4) (2 Lect, 2 3-hr Lab) Analysis and synthesis of plant communities and ecosystems (synecoecology). Field trips to develop local examples. Integrated with 453. Prereq: one of 101, BIOL 172, or ZOOL 101. Recommended: 453. DB DY

BOT 455 Analysis of Biological Data (3) Application of computers to analysis of biological data: preparation and storage, report production, database analysis procedures, univariate and bivariate statistical analyses. Prereq: BIOL 172 or consent.

BOT 456 Plant-Animal Interactions (3) Interdependence of plants and animals, emphasizing the influence of animals on plant fitness and evolution. Topics include pollination, fruit/seed dispersal, herbivory, and ant-plant mutualisms. Prereq: 201/210L or BIOL 265/265L. DB

BOT 457 'Aina Mauliola: Hawaiian Ecosystems (3) Comprehensive analysis of traditional Hawaiian and modern resource management practices. Rigorous overview of the dominant physical and biological processes from the uplands to the oceans in Hawai‘i. Prereq: 105, HWST 107, and junior standing; or consent. (Cross-listed as HWST 457)

BOT 458 Natural Resource Issues and Ethics (4) Overview of the history of land, resources and power in Hawai‘i; players and processes influencing land and natural resources policies today explored from Native Hawaiian and other viewpoints. Extensive use of case studies. Prereq: 457 or HWST 457. (Cross-listed as HWST 458)

BOT 459 Strategies in Hawaiian Resource Use (3) Analyzing diverse land and water use strategies of O‘ahu, from traditional Hawaiian, scientific and economic perspectives, through classroom and on-site lectures. Topics include traditional Hawaiian methods, modern development, threatened ecosystems, ecotourism and scientific research. A-F only. Prereq: BOT/HWST 457 (or concurrent) or consent. (Cross-listed as HWST 459)
BOT 460 Hui Konohiki Internship: Applied Resource Management (3) A "hands-on" internship in an environmental or resource-management organization in Hawai‘i. The experience will be broadened and supplemented by classroom lectures, discussion and analysis from traditional Hawaiian, scientific and economic perspectives. A-F only. Pre: BOT/HWST 457, BOT/HWST 458 (or co-requisite), BOT/HWST 459; or consent. Spring only. (Cross-listed as HWST 460)

BOT 461 Systematics of Vascular Plants (4) (2 Lec, 2 3-hr Lab) "Hands-on" experience with Hawai‘i’s unique tropical flora; emphasis on recognition and identification of vascular plant families and the principles and methodologies that define them; evolution of biodiversity. Pre: 101 or college general biology. DB DY

BOT 462 Plant Evolution (3) Major events and principles; includes the blue-green algae and fungi. Pre: 201 or BIOL 172. DB (Alt. years)

BOT 470 Plant Physiology (3) Integration of form and function. Emphasis on processes such as photosynthesis, growth, and morphogenesis, to flowering and senescence. A-F only. Pre: CHEM 152 and BIOL 171, or consent. Co-requisite: 470L. (Cross-listed as TPSS 470) DB

BOT 470L Principles of Plant Physiology Lab (1) (3 hr Lab) Principles of experimentation in plant physiology; includes individual investigations. A-F only. Pre: consent. Co-requisite: 470L. (Cross-listed as TPSS 470L) DY

BOT 480 Algal Diversity and Evolution (4) (3 Lec, 1.5-3 Lab) Principles of algal diversity, structure, and evolution. Identification of common Hawaiian algae. Pre: one of 101, BIOL 172, MICR 351, ZOOL 439; or consent. Fall only.

BOT 492 Wildlife Ecology and Management in the Tropics (3) Practices from around the world that focus on the tropics. Integrates across disciplines, considers how science based management interacts with world views and considers management plans that are scientifically rigorous but culturally sensitive. Pre: 351 or BIOL 268 and instructor consent. lecture only, no lab. Fall only.

BOT 500 Master’s Plan B/C Studies (1) Pre: 501 or consent. Spring only.

BOT 501 Current Research and Classic Papers (1) Discussion of current and classic papers important to modern concepts in history of science, plant diversity, plant interactions with the environment, and plant integration. Pre: graduate standing in BOT or consent. Fall only.

BOT 502 Current Research and Classic Papers (2) (3 Lec, 1-3 Lab) Discussion of current research and classic papers important to modern concepts in ecology, plant interactions with other plants or animals, and ecosystem functioning. BOT majors only. Pre: graduate standing in BOT or consent. Spring only.

BOT 506 Graduate Research Skills (2) (1 Lec, 3-5 Lab) Survey of major research areas in the botanical sciences with emphasis upon research opportunities in Hawai‘i and an overview of (1) skills needed by botanical researchers including writing scientific papers and proposals, practicing ethical research procedures, and collection of specimens, and (2) equipment used by botanical researchers including computers, cameras, measuring and monitoring equipment, and global positioning systems. Lecture/ discussion, laboratory. Repeatable one time. Pre: graduate standing in biological science or approval.

BOT 610 Botanical Seminar (1) Study and discussion of significant topics and problems in botany. Repeatable three times.

BOT 612 Advanced Botanical Problems (V) Investigation of any botanical problem; reading and laboratory work. Repeatable nine times. Pre: consent.

BOT 620 Perspectives in Modern Botany (2) Lectures by distinguished visiting professor on contemporary botanical topics in the lecturer’s area of expertise. No more than 6 credit hours may be counted toward the MS degree requirements. Repeatable five times.

BOT 621 Ecophylogeny: Theory and Modeling (3) Vegetative responses to hydrologic and nutrient cycles; quantitative linkages between hydrologic dynamics and ecological patterns/processes. Matlab is used to develop and simulate ecophylogenetic models. Pre: college level calculus or consent. (Once a year)

BOT 640 Quantitative Ethnobotany (3) Modern ethnobotanical theory and techniques, execution, data analysis, and documentation methods. Intended for students preparing to conduct field research studies. Lecture/discussion, term paper. Pre: 105 and one of 201, 461, ANTH 200, or BIOL 172.

BOT 651 Population Ecology (3) Theoretical and applied studies of plant population concepts and processes. Emphasis on techniques and methods useful for the study of populations. Pre: college level calculus or consent.

BOT 651A Population Ecology Lab (1) Discussion of current studies in population ecology, and computer simulation; application to population models, as revealed by analytical methods and computer simulation; application to population problems such as endangered species; discussion of classical and current literature in population biology. Pre: one of 453, 456, 480; and either 201 or BIOL 172, or consent.

BOT 652 Population Biology (3) Theory and applications of population biology: behavior of population models, as revealed by analytical methods and computer simulation; application to population problems such as endangered species; discussion of classical and current literature in population biology. Pre: one of 453, 456, 480; and either 201 or BIOL 172, or consent.

BOT 652A Population Biology Lab (1) Preparation of projects related to an introduction to population ecology. (3)

BOT 654 Advances in Plant Ecology (2) A research-oriented course focusing on recent advances in all areas of plant ecology. Involves critical review of recent literature, and research project, oral and written presentation of project results. Repeatable three times. Pre: consent.

BOT 657 Plant Taxonomy (3) (2 Lec, 1-3 Lab) Identification, systematic evolution, and biogeography of native plants. Field trips. Pre: 461 or consent.

BOT 668 Nomenclature and Practical Systematics (2) Modern issues of naming and classifying of organisms, with a botanical emphasis. Includes lectures, discussions, class projects, and field trips. A-F only. Pre: 461 (or equivalent) or consent. (Once a year)


BOT 676 Environmental Physiology Seminar (2) Environmental stress; pollution; salinity, geobotany, and other interactions between the environment and plant processes. Current literature emphasized at multidisciplinary and interdisciplinary levels. Pre: graduate status in a biological science, geosciences, etc.; consent for well-prepared undergraduates.

BOT 680 Marine Macrophytes Seminar (2) Discussion of current literature in physiological ecology, cellular and molecular adaptations to environmental factors by marine plants. Repeatable four times. Pre: 480.

BOT 682 Physiological Ecology of Marine Plants (3) Discussion of current studies in morphological, physiological, cellular, and ecological adaptations to marine environments by macroalgae, phytoplankton, and seagrasses. A-F only. Pre: upper division ecology class recommended, 470 (or equivalent), 480 (or equivalent), or consent. Co-requisite: 682L.

BOT 682L Physiological Ecology of Marine Plants Lab (1) Field and laboratory research techniques and projects in the physiological ecology of algae and seagrasses. A-F only. Pre: upper division ecology class recommended, 470L (or equivalent), 480 (or equivalent), or consent. Co-requisite: 682.

BOT 690 Conservation Biology (3) Theories and concepts of ecology, evolution, and genetics for conservation of biological diversity. Topics will include restoration ecology, management planning, laws and policies, biological invasions. Pre: BIOL 375 and either 462 or ZOOL 480; and either 453, 454, 456, or 492; or ZOOL 410, ZOOL 439, ZOOL 620, ZOOL 623. (Cross-listed as ZOOL 690)

BOT 699 Directed Research (V) Research preliminary to thesis or dissertation research. CR/NCR only. Pre: consent of graduate committee.

BOT 700 Thesis Research (V) Pre: candidacy for MS degree and approval of thesis proposal.

BOT 750 Topics in Conservation Biology (V) Advanced topics in conservation and environmental biology. Repeatable three times. A-F only. Pre: consent. (Cross-listed as ZOOL 750)

BOT 800 Dissertation Research (V) Pre: candidacy for PhD and approval of dissertation proposal.

Business (BUS)

Shidler College of Business

BUS 099 International Exchange Study/Research (V) Study overseas in an approved international exchange or similar program. Repeatable four times. CR/NCR only. Pre: consent of academic advisor.

BUS 209 Written Communication in Business (3) An interactive writing class stressing persuasive writing in the context of memos, letters, and business reports. A-F only. Pre: ACC 100. Students may not earn credit for both BUS 209 and ENG 209. NI

BUS 250 Applied Math in Business (3) The algebra and geometry of line, quadratic, exponential, and logarithmic functions. Mathematics of finance—annuities, perpetuities, present value. Derivatives, graphical analysis, mathematical models as applied to business. Selected coverage of algebra, geometry, and calculus emphasizing business applications and decision making. Pre: two years high school algebra and one year plane geometry. FS

BUS 301 Business Ethics (1) Comprehensive examination into major components of social responsibility including economic, legal, political, ethical, and societal issues involving interaction of business, government, and society. Students develop awareness of major ethical frameworks and issues that affect business decision. A-F only. Pre: first or second semester in Shidler College or departmental approval. Recommended: taken in the first year of admission to Shidler College.

BUS 310 Statistical Analysis for Business Decisions (3) Problem recognition and formulation; stress on cross-disciplinary complex problem solving and communication; computer intensive. Coverage of descriptive statistics, probability and hypothesis testing with emphasis on quality, productivity, and

Key to symbols & abbreviations: see the first page of this section.
BUS 311 Information Systems for Global Business Environment (3) Skills and strategies for using external information resources applied to local and global business issues; advanced skills in computer-based analytical techniques and information management; impact of information technology on business operations. Must be taken in first semester of BBA program. Pre: ICS 101 or equivalent, or consent.

BUS 312 Principles of Marketing (3) Concepts, problems, and opportunities in marketing within its competitive, political/legal, economic, social and global environments. Social responsibility and ethics. Marketing research and business-to-business segmentation and positioning. Strategic marketing planning. Students may not earn credit for BUS 312 and TIM 304.

BUS 313 Economic and Financial Environment of Global Business (3) International trade, financial flows, and direct investment. Public and private institutions including government policies and capital markets. Emphasis on Asia-Pacific issues, with attention to the cultural differences among countries. Must be taken in first year of BBA program. DS

BUS 314 Business Finance (3) Introduction to the theory and practice of financial management: analysis and decision making for asset management, capital budgeting, capital structure, and dividend policy. Prerequisite for all other finance courses. Pre: ACC 202 or consent.

BUS 315 Global Management and Organizational Behavior (3) Analysis of theories and concepts underlying domestic and global organizational management, including behavioral and personnel issues. Emphasis on leadership, team-work, cultural differences in the Asia-Pacific region. Prerequisite to all other advanced management courses. Students may not receive credit for BUS 315 and TIM 303. Pre: PSY 100 or SOC 100.

BUS 345 Strategic Management (3) Applications of strategy to domestic and global business problems using an interdisciplinary approach. Emphasis on Asia-Pacific business risk, integration of all business core disciplines. Extensive writing expected. Pre: all core courses and graduating senior standing.

BUS 367 Business Study Abroad (V) Study abroad experience emphasizing international business issues. Content varies depending on where the course is taught. Pre: BBA. Course guidelines as an international business elective. Repeatable four times.

BUS 395 (Alpha) Internship (V) On-the-job experience in the business community. Term paper and meetings with faculty advisor required. (C) accounting; (D) MIS; (F) finance; (G) management; (I) international business; (K) marketing; (M) human resource management; (R) real estate. CR/NC only. Repeatable one time. Pre: consent and RE 300 for (R) only.

BUS 475 Asia Pacific Business (V) Analysis of business environment and business issues through study of businesses, governmental entities, and non-governmental organizations in specific geographic areas in non-U.S. Settings. Repeatable one time. A-F only. Pre: consent. Summer only.

BUS 476 Asia Pacific Field Trip (V) Analysis of business environment and business issues through study and direct observation of businesses, governmental entities, and non-governmental organizations in non-U.S. Settings. Involves group travel to selected international cities. Travel sites will vary. Repeatable one time. A-F only. Pre: BUS 475 and consent. Summer only.

BUS 477 Dynamics of Asian Finance (6) Analysis of selected key industries of Asian countries: business/economic trends, shifting product mix, technological changes, joint ventures, international competition, and productivity strategy, including contrasting management styles, worker/management relationships, and decision-making processes under different cultural settings. Industry observations conducted in Asian countries for three weeks during the summer. Pre: 6 credit hours of economics or business, PAM participants or consent.

BUS 500 Master’s Plan B/C Studies (1) Enrollment required for degree completion. Repeatable unlimited times. Pre: master’s Plan B or C candidate and consent.

BUS 601 Professional Development (0) Professional development course designed to focus on and improve professional skills. Students will learn from guest speakers, through field trips, intensive workshops, and hands-on experience. Repeatable two times. Full-time MBA degree program only. No grading.

BUS 621 Business Statistics (1.5) Statistical tools for the MBA. A-F only. Co-requisite: 622.

BUS 622 Economic Foundations of Strategy (1.5) Microeconomic principles that provide structure to solve managerial problems, and to suggest strategies for success. Evaluation of the microeconomic competitive environment in which organizations operate. A-F only. Co-requisite: 621.

BUS 623 Marketing Management (3) Concepts and issues in marketing within the global environment of business. Ethical dimensions and social responsibilities; market research; consumer segmentation and positioning. Strategic marketing planning. A-F only.


BUS 625 Leadership and Communication (1.5) Introduction to personal leadership development with emphasis on communication skills building and leading organizational change. A-F only. Co-requisite: 626.

BUS 626 Organizational Behavior (1.5) Contributions made by sociology, psychology, and related behavioral sciences to the understanding and prediction of human behavior in organizations. A-F only. Co-requisite: 625.

BUS 627 Business, Government, and External Environment (1.5) Important issues related to the external environment of business. This includes international trade and finance, regulatory environment, social impacts of business. A-F only. Pre: 622 or consent. Co-requisite: 628.

BUS 628 Ethics (1.5) Assists students in developing an awareness of major ethical issues which affect business decisions, and encourages a socially responsible consideration of those issues and being able to express their views. A-F only.

BUS 629 Managerial Finance (3) Financial management theories and tools for business professionals; asset management; capital budgeting; capital structure and dividend policies. A-F only. Pre: 621, 622, and 624; or consent.

BUS 630 Managing Information Technology for Strategic Advantage (1.5) Theory, practices, techniques for managing information technology resources for innovation and for strategic advantage in global business environment. Emphasis on Asia/ Pacific, A-F only. Pre: 621 and 622. Co-requisite: Must be taken same semester as 631.

BUS 631 Operations and Supply Chain Management (1.5) Theory, practices, techniques for managing operations and supply chains for global integration of firms and organizations. Emphasis on Asia/Pacific. A-F only. Pre: 621 and 622, or consent. Co-requisite: 630.

BUS 632 Business Policy and Strategy (3) Integration of learning through analysis of comprehensive business problems, resolution of policy issues, and the study of competitive strategies in the international setting. Pre: all required MBA core courses (or concurrent for full-time MBA program), or consent.

BUS 667 Business Study Abroad (V) Study abroad experience emphasizing international business issues. Content varies depending on course of study and educational institution selected. Course qualifies as an international business elective(s). Repeatable one time. CR/NC only. Pre: business core or permission of academic advisor.

BUS 675 International Business Topics (V) Analysis of the business environment and business issues through study of businesses, governmental entities, and/or non-governmental organizations in specific geographic areas, in non-U.S. Settings. Repeatable one time. A-F only. Pre: consent. Summer only.

BUS 677 Field Study in Asia (6) Industry observations conducted entirely in Asian countries for three and a half weeks. Pre: consent.


BUS 696 MBA Consulting Practicum (3) Final MBA requirement for those candidates not writing a thesis. Candidates will form consulting teams to perform a meaningful, strategic study for a client organization. Pre: 632.

BUS 696C Entrepreneurship (3) Comprehensive study of entrepreneurship.

BUS 699 Directed Reading and Research (V) Outline (including methodology or sources, results expected and means of measurement) must be prepared by student and approved by supervisor and chair of graduate programs before registration.

BUS 700 Thesis Research (V) Required for Plan A candidates only; six credit hours required, one of which must be taken during semester in which degree is awarded. Repeatable unlimited times.

BUS 705 Seminar in International Management (V) Introduces students to research and teaching at the university. Covers topics of research including research projects currently underway by Shidler College faculty, advanced PhD students, distinguished visiting faculty, and research contemplated by new PhD students. Repeatable unlimited times. CR/NC only. Pre: PhD student status in international management or consent.

BUS 800 Dissertation Research (V) Repeatable unlimited times. Pre: PhD student status in international management or consent.

Key to symbols & abbreviations: see the first page of this section.

Business Law (BLAW)

Shidler College of Business

BLAW 200 Legal Environment of Business (3) Introduction to the legal environment of business operations with particular attention to business law and ethics and to principles of law relating to contracts, agency, partnerships, and corporations.

BLAW 360 International Business Law (3) Overview of international and national law as it applies to international trade. Reading case studies focus on the legal environment of selected areas in the Asia Pacific region and strategies for doing business overseas. Pre: 200.
BLAW 604 Social and Legal Aspects of Management (3) Study of the legal environment of management with particular attention to the sources, principles, and form of the law; contracts, business organizational structures, agency, and partnership.

Cambodian (CAM)

College of Languages, Linguistics and Literature
CAM 101 Introduction to Modern Khmer (4) Listening, speaking, reading, writing. Structural points introduced inductively. Meets five hours weekly; daily lab work. HSL.
CAM 102 Introduction to Modern Khmer (4) Continuation of 101. Pre: 101 or exam or consent. HSL.
CAM 103 Conversing in Khmer I (2) Online course aims to develop students' proficiency skills in speaking and listening at the first year level for the purpose of communication, travel, and for enjoyment.
CAM 104 Conversing in Khmer II (2) Online course aims to develop students' proficiency skills in speaking and listening at the first year level for the purpose of communication, travel, and for enjoyment. Pre: 103 or consent.
CAM 105 Reading/Writing Khmer (2) This online course aims to develop the student's proficiency skills in reading and writing Khmer at the First Year level.
CAM 107 First Year Khmer (2) Continuation of 105. This online course aims to develop proficiency skills in listening, reading, and writing Khmer at the first year level. Use a multimedia CD-ROM and a textbook to complement the web-based instruction. Pre: 105 (or equivalent) or consent. Spring only. HSL.
CAM 112 Intensive Elementary Khmer (10) HSL.
CAM 201 Intermediate Modern Khmer (4) Continuation of 102. Conversation, reading, writing. Meets five hours weekly; daily lab work. Pre: 102 or exam or consent. NF HSL.
CAM 202 Intermediate Modern Khmer (4) Continuation of 201. Pre: 201 or exam or consent. NF HSL.
CAM 205 Second Year Khmer I (2) This online course aims to develop student’s proficiency-based units exploring Cambodian language and culture and focusing on reading and writing at the intermediate level. Pre: 102 or 105, or consent. Fall only. NF.
CAM 207 Second Year Khmer II (2) Continuation of 205. This online course provides opportunities for learners to enhance their linguistic, discourse and sociolinguistic competencies in Khmer at the intermediate level. Use a multimedia CD-ROM and a textbook to complement the web-based instruction. Pre: 201 or 205, or consent. Spring only. HSL.
CAM 212 Intensive Intermediate Khmer (10) NF HSL.
CAM 301 Third-Level Khmer (3) Continuation of 202. Advanced reading, writing, conversation and comprehension. Emphasis on modern contemporary texts. Computer assisted learning. Lab work. Pre: 202 or 212 (or equivalent), or consent.
CAM 302 Third-Level Khmer (3) Continuation of 301. Computer assisted learning. Lab work. Pre: 301 (or equivalent), or consent.
CAM 303 Accelerated Third-Level Cambodian (6) Continuation of 212. Practice in idiomatic conversation and extensive reading. Integrated development of listening, speaking, reading, and writing skills. Meets 10 hours weekly. Pre: 212.
CAM 305 Third Year Khmer I (2) Online course provides opportunities for learners to enhance their linguistic, discourse and sociolinguistic competencies in Khmer at the advanced level. Use a multimedia CD-ROM and a textbook to complement the web-based instruction. Fall only. Pre: 206 or consent. DL.
CAM 306 Third Year Khmer II (2) Continuation of 305. Online course provides opportunities for learners to enhance their linguistic, discourse and sociolinguistic competencies in Khmer at the advanced level. Use a multimedia CD-ROM and a textbook to complement the web-based instruction. Pre: 305 or consent. Spring only.
CAM 401 Fourth-Level Khmer (3) Continuation of 302. Computer assisted learning. Advanced reading in current literature; discussion of social and cultural issues; advanced conversation and composition. Pre: 302 (or equivalent), or consent.
CAM 402 Fourth-Level Khmer (3) Continuation of 401. Computer assisted learning. Pre: 401 (or equivalent), or consent.
CAM 415 Khmer Language in the Media (3) Focuses on advanced reading, writing, aural comprehension and speaking skills through the study of Khmer newspaper, radio, TV, audio/video clips and film. Repeatable one time. Pre: 402 (or equivalent), or consent.

Cell and Molecular Biology (CMB)

School of Medicine
CMB 351 Genetics, Evolution and Society (3) The role of genetics in evolution, medicine, behavior, plant and animal breeding and technology; its impact on today's society. Pre: one semester of biological science at college level or consent. (Cross-listed as BIOL 340) DB.
CMB 411 Human Genetics (3) Principles of human genetics. Designed for pre-medical or pre-dental students or others who require a course with emphasis on human genetics. Pre: BIOL 172 and BIOL 172L, or consent. DB.
CMB 499 Genetical Problems (V) Directed reading and research in genetics. Repeatable unlimited times. Pre: 351 or 411.
CMB 500 Master’s Plan B/C Studies (I) Enrollment for degree completion. Repeatable unlimited times. Pre: master’s Plan B or C candidate and consent.
CMB 515 Unit V Topics in Genetics (1) First-year elective course in which medical students may take an in-depth study of genetics. Repeatable six times. Pre: first-year medical student or consent.
CMB 599 Research Topics in Cell Molecular Biology (V) Research elective for medical students. May be repeated. CR/NC only. Pre: MDED 554 or consent. Fall only.
CMB 606 Introduction to Neurosciences (4) An interdisciplinary overview of the central nervous system, drawn from current knowledge and research on vertebrate and invertebrate neurobiology. Repeatable one time. Pre: consent.
CMB 611 Seminar in Biomedical Sciences (1) Presentation and discussion of research topics in biomedical science. Repeatable nine times. CR/NC only. Pre: graduate standing or consent. (Cross-listed as REPR 611).
CMB 621 Cell Molecular Biology I (4) Molecular approaches to cell structure and function emphasizing cells in multi-cellular plants and animals. Pre: graduate standing, BIOL 441 or BIOL 402, MBBE 402, or PEPS 402, and BIOL 406; or consent. Recommended: CHEM 351.
CMB 622 Cell Molecular Biology II (4) Molecular approaches to cell structure and function emphasizing cells in multi-cellular plants and animals. Pre: one of 621, BIOL 441 or BIOL 402, MBBE 402, or PEPS 402, and BIOL 406; or consent.
CMB 625 Advanced Topics in Genetics (2) Advanced treatment of frontiers in genetics. Pre: graduate standing in genetics or consent.
CMB 626 Ethics in Biomedical Research (2) Topics include responsible data management, recording, reporting, misconduct and scientific fraud, conflicts of interest, critical use of animals and human issues and subjects in research, genetic screening, stem cell and gene therapy and patenting. (Cross-listed as BIOM 641).
CMB 631 Research Rotations (3) Individualized research project in one of three laboratories of CMB faculty with a written report on each project. Faculty labora-
tories will be selected by consultation with student's graduate committee and individual faculty. Pre: 621 (or concurrent), 622 (or concurrent); or consent.
CMB 650 Population Genetics (3) Mathemati-
cal, observational, experimental results on effects of mutation, selection, and systems of mating on distribution of genes. Analysis of non-experimental populations. Pre: consent.
CMB 654 (Alpha) Genetics Seminar (1) Research and topical literature reports in genetics. May be repeated. (B) molecular genetics; (C) molecular biology of cancer; (D) human genetics; (E) cytogenetics; (F) evolutionary genetics; (G) molecular biology of the cell; (H) drosophila genetics; (I) population/ statistical genetics; (J) developmental genetics; (K) insect molecular biology; (M) genetics and molecular biology of fungi. Pre: graduate standing in genetics or consent.
CMB 671 (Alpha) Techniques in Genetics (V) Laboratory training in procedures used in diagnosis of genetic diseases, cytogenetics, immunogenetics, and dermatoglyphics. Repeatable three times. Pre: graduate standing in genetics or consent.
CMB 699 Directed Research (V) Repeatable unlimited times. Pre: graduate standing and consent.
CMB 705 Special Topics in Neurosciences (V) Advanced topics in neuroscience, from basic neurobiology to clinical neurology and psychiatry. Emphasis on current investigations at the cellular or molecular level. Pre: consent.
CMB 800 Dissertation Research (V) Repeatable unlimited times. Pre: acceptance of dissertation topic.

Chamorro (CHAM)

College of Languages, Linguistics and Literature
Students choosing Chamorro for the language requirement should realize it may not be offered if demand is limited.
CHAM 101 Elementary Chamorro (4) Introduc-
tion to Chamorro, emphasis on listening and speaking, language structure. Meets five hours weekly. Lab work. HSL.
CHAM 102 Elementary Chamorro (4) Listeni-
ing, speaking, reading, and writing skills; emphasis on oral and reading proficiency. Meets five hours weekly. Lab work. Pre: 101 (or equivalent), or consent. HSL.
CHAM 201 Intermediate Chamorro (4) Continu-
ation of 102. Emphasis on comprehension and language production (speaking). Meets five hours weekly. Lab work. Pre: 102 (or equivalent), or consent. NF HSL.
CHAM 202 Intermediate Chamorro (4) Continu-
ation of 201. Emphasis on comprehension and language production. Lab work. Pre: 201 (or equivalent), or consent. NF HSL.

Key to symbols & abbreviations: see the first page of this section.
structure of atoms and molecules. Pre: graduate standing in CHEM.

CHEM 657 Astrochemistry - A Molecular Approach (3) Formation of astrobiologically important molecules and their precursors in the interstellar medium and in our solar system: first principles and latest trends. Pre: consent. Fall only. (Cross-listed as ASTR 657 and GG 657)

CHEM 658 Crystallography (3) Crystal symmetry. Elementary x-ray physics. Diffraction theory and its application to crystal and molecular structure determination. Pre: 352 and MATH 244 or MATH 253A.

CHEM 691 (Alpha) Inorganic Chemistry Seminar (I) Current topics in (D) analytic-inorganic; (E) organic; (Z) inorganic chemistry. Repeatable eight times for (Z). Pre: graduate standing.

CHEM 692 (Alpha) Inorganic Chemistry Seminar (I) Continuation of 691. Current topics in (D) analytic-physical; (E) organic; (Z) inorganic chemistry. Repeatable nine times for (Z). Pre: graduate standing.

CHEM 699 Directed Research (V) Repeatable unlimited times. Pre: consent.

CHEM 700 Thesis Research (V) Pre: candidacy for M.S. degree and consent of thesis chair.

CHEM 721 Special Topics: Inorganic Chemistry (V) Theory and applications. Repeatable unlimited times in different topics. Pre: consent.

CHEM 741 Special Topics: Organic Chemistry (V) Theory and applications. Repeatable unlimited times in different topics. Pre: consent.

CHEM 751 Special Topics: Physical Chemistry (V) Theory and applications. Repeatable unlimited times in different topics. Pre: consent.

CHEM 800 Dissertation Research (V) Pre: candidacy for Ph.D. degree and consent of dissertation chair.

Chinese (CHN)

College of Languages, Linguistics and Literature

All students taking language courses in this program for the first time must take a regularly scheduled placement test; those with no background must come to the Department of East Asian Languages and Literatures for a brief interview. A grade of C or better in the prerequisite course is required for continuation.

CHN 101 Elementary Mandarin (4) Listening, speaking, reading, writing, grammar. Meets one hour, four times a week. Pre: placement test. HSL

CHN 102 Elementary Mandarin (4) Continuation of 101. Pre: 101 or consent. HSL

CHN 103 Accelerated Elementary Mandarin (8) Content of 101 and 102 covered in one semester. Meets two hours daily, Monday–Friday, plus daily lab work. Pre: placement test. HSL

CHN 105 Elementary Chinese for Business Professionals (8) Accelerated, intensive elementary course focusing on everyday listening, speaking, reading, and writing communicative needs of business professionals in the Chinese business context. Pre: 105 (or equivalent) or consent. NI HSL

CHN 201 Intermediate Mandarin (4) Continuation of 101 and 102. Meets one hour a day, four times a week. Pre: 102 or 103, or consent. NI HSL

CHN 202 Intermediate Mandarin (4) Continuation of 201. Pre: 201 or consent. NI HSL

CHN 204 Accelerated Intermediate Mandarin (8) Content of 201 and 202 covered in one semester. Meets two hours daily, Monday–Friday, plus daily lab work. Pre: 102 or 103, or consent. NI HSL

CHN 205 Intermediate Chinese for Business Professionals (8) Accelerated, intensive intermediate course focusing on everyday listening, speaking, reading, and writing communicative needs of business professionals in the Chinese business context. Pre: 105 (or equivalent) or consent. NI HSL

CHN 211 Intermediate Conversational Mandarin I (3) Further development of listening and speaking skills in Mandarin. The student is expected to be able to comprehend and produce speech at the paragraph level. Pre: 102 or 103 or 112, or consent. NI HSL

CHN 212 Intermediate Conversational Mandarin II (3) Continuation of 211. Pre: 201 or 211, or consent. NI HSL

CHN 231 Intermediate Cantonese (3) Continuation of 131 and 132; meets three hours a week, plus lab work. Pre: 132 or consent. NI HSL

CHN 232 Intermediate Cantonese (3) Continuation of 231. Pre: 231 or consent. NI HSL

CHN 251 Reading and Writing Chinese I (3) For students who have completed the conversational Mandarin courses up through 212 and wish to continue on to 301, or others who can handle daily conversation in Mandarin but cannot read or write in the language. Pre: 212 or consent. NI

CHN 252 Reading and Writing Chinese II (3) Continuation of 251. Pre: 251 or consent. NI

CHN 301 Third-Level Mandarin (4) Vocabulary building and extended mastery of sentence structures of modern Chinese through reading and related conversation. Meets one hour a day, four times a week. Pre: 202, 204, or 252, or consent.

CHN 302 Third-Level Mandarin (4) Continuation of 301. Pre: 301 or consent. NI

CHN 303 Accelerated Third-Level Mandarin (8) Content of 301 and 302 covered in one semester. Meets two hours daily, Monday–Friday, plus daily lab work. Pre: 202 or 204 or 252, or consent.

CHN 305 Third-Year Chinese for Business Professionals (8) Accelerated, intensive advanced course focusing on general advanced listening, speaking, reading, and writing communicative needs of business professionals in the Chinese business context. Pre: 205 (or equivalent) or consent.

CHN 311 Mandarin Conversation (3) Systematic practice on everyday topics of conversation. Lab work. Pre: 202 or 204 or 252, or consent.

CHN 312 Mandarin Conversation (3) Continuation of 311. Pre: 311 or consent.

CHN 313 Mandarin for Cantonese Speakers (3) For Cantonese speakers only. Competence in spoken Mandarin through comparison of Cantonese and Mandarin (pronunciation, romanization, vocabulary, idioms, and syntax). Translation from Cantonese to Mandarin. CR/NC only. Pre: placement test.

CHN 314 Mandarin for Cantonese Speakers (3) Continuation of 313. Pre: 313 or placement test.

CHN 315 Spoken Taiwanese I (3) Basic skills (listening, speaking, romanization and grammar) of spoken Taiwanese, with application to some familiar everyday topics. Pre: 202 or 204 or 252, or consent.

CHN 316 Spoken Taiwanese II (3) Continuation of 315. Pre: 315 or consent.


CHN 331 Advanced Chinese Listening and Writing (3) Web-based training in Chinese listening, reading, and writing to develop skills at the advanced level. Activities combine independent work with communicative activities on the course website. Features language exchange with native speakers. Repeatable one time. Pre: 301 (or concurrent) or consent.

CHN 332 Advanced Chinese Reading and Writing (3) Web-based training in Chinese reading and writing to develop skills at the advanced level. Activities combine independent work with communicative activities on the course website. Ideal for in-service professionals seeking language development and maintenance. Repeatable one time. Pre: 301 (or concurrent) or consent.

CHN 399 Directed Third-Level Reading (V) For those who need special assistance, e.g., in reading texts in their area of specialization or at a pace more rapid than those of standard courses. CR/NC only. Repeatable three times. Pre: consent.

CHN 401 Fourth-Level Mandarin (4) Extensive reading in academic topics. Meets one hour a day, four times a week. Pre: 302 or 303, or consent.

CHN 402 Fourth-Level Mandarin (4) Continuation of 401. Pre: 401 or consent.

CHN 404 Accelerated Fourth-Level Mandarin (8) Content of 401 and 402 covered in one semester. Meets two hours daily, Monday–Friday, plus lab work. Pre: 302 or 303, or consent.

CHN 405 Fourth-Year Chinese for Business Professionals (8) Accelerated, intensive advanced course focusing on specialized advanced listening, speaking, reading, and writing communicative needs of business professionals in the Chinese business context. Pre: 305 (or equivalent) or consent. Spring only.

CHN 411 Advanced Mandarin Conversation (3) Systematic practice on academic topics of conversation. Lab work. Pre: 302 or 303, or consent.

CHN 412 Advanced Mandarin Conversation (3) Continuation of 411. Pre: 411 or consent.

CHN 413 Advanced Mandarin for Cantonese Speakers (3) Systematic practice for spontaneity, accuracy, and depth in conversation. CR/NC only. Pre: 314 or consent.

CHN 414 Advanced Mandarin for Cantonese Speakers (3) Continuation of 413. Pre: 413 or consent.

CHN 415 Advanced Taiwanese I (3) Development of listening, speaking and reading skills in Taiwanese and writing in Church Romanization. A-F only. Pre: 316 or consent.

CHN 416 Advanced Taiwanese II (3) Continuation of 415. Pre: 415 or consent.

CHN 421 (Alpha) Chinese Translation (3) Training in techniques; theory of translation. (B) Chinese–English; (C) English–Chinese. Pre: 402 or 404, or consent.

CHN 431 Readings in Taiwanese: Nonfiction (3) For those with knowledge of spoken Taiwanese and Chinese characters to learn and practice reading Taiwanese. Pre: 316 or consent.

CHN 432 Readings in Taiwanese: Fiction (3) For students who have the speaking ability in Taiwanese and a good knowledge of Han characters. Content consists of reading Taiwanese fiction texts. Pre: 316 or consent.
CHN 441 Fourth Year Reading and Writing: Advanced Topics I (3) Asynchronous web-based course. Interaction with teacher and fellow students to prepare for, read, and reflect on authentic texts on academic, research-oriented topics with a view to meeting learners’ eventual independent research needs. Pre: 401 (or concurrent) or equivalent or consent. Fall only.

CHN 442 Fourth Year Reading and Writing: Advanced Topics II (3) Asynchronous web-based course. Continuation of 441, with focus on meeting learners’ eventual independent research needs. Pre: 401 (or concurrent) or 441. Spring only.

CHN 451 Structure of Chinese (3) Introduction to phonology and morphology of Mandarin Chinese; some discussion of usage and linguistic geography. Pre: 202 or 204; or consent. DH

CHN 452 Structure of Chinese (3) Introduction to syntax and semantics of Mandarin Chinese; some discussion of usage and linguistic geography. Pre: 202 or 204; or consent. DH

CHN 453 Study of Chinese Characters (3) Origin, structure, and evolution. Pre: 402, 461; or consent. (Alt. years)

CHN 454 Study of Chinese Characters (3) Continuation of 453. Pre: 453 or consent. (Alt. years)

CHN 455 Chinese Pragmatics and Discourse (3) Introduction to pragmatics and discourse analysis of Mandarin Chinese; some discussion of usage and linguistic geography. Pre: 202, 204; or consent. DH

CHN 456 Chinese Semantics and Communication (3) Study of the meaning of Chinese sentences in isolation, in discourse contexts, and in written texts. Pays equal attention to theoretical issues and practical problems in Chinese semantics and communication. Pre: 402 or 404, or consent. (Once a year)

CHN 461 Introduction to Classical Chinese (3) Analysis of basic structural patterns through selected readings in various texts. Pre: 302 or consent.

CHN 462 Introduction to Classical Chinese (3) Continuation of 461. Pre: 461 or consent.

CHN 470 Language and Culture of China (3) Extensive exposure—chubby through tape recordings, classroom conversation, and outside readings— to history, culture, and institutions. Pre: 401 or consent. DH

CHN 485 Selected Readings in Chinese (3) Readings in modern Chinese in various disciplines. Pre: 402 or consent.

CHN 486 Selected Readings in Chinese (3) Continuation of 485. Pre: 485 or consent.

CHN 487 (Alpha) Readings in 20th Century Chinese Literature (3) Representative works of writers from People’s Republic of China, Taiwan, and Hong Kong. (B) short stories; (C) poetry and drama; (D) novels and essays. Repeatable two times. Pre: 402 or consent. DL

CHN 491 Oral Fluency Through Chinese Films (3) Development of listening and speaking skills through discussion of Chinese films. Students will be required to watch the films before class. Pre: 402 or consent. DH

CHN 499 Directed Fourth-Level Reading (V) For those who need special assistance, e.g., in reading texts in area of specialization or at a pace more rapid than those of standard courses. CR/NC only. Repeatable three times. Primarily for graduate students from other departments. Pre: consent.

CHN 610 (Alpha) Chinese Poetry (3) Critical study of major traditional Chinese poetic forms. (B) ancient (to 5th century); (C) medieval (5th–10th century); (D) late imperial (10th–19th century). Pre: 462 or consent for (B), 610B or consent for (C), 610C or consent for (D).

CHN 612 Traditional Chinese Fiction (3) Formal and thematic analysis of short stories, historical romances, and novels. Repeatable one time with consent. Pre: 402 or consent.

CHN 631 (Alpha) History of Chinese Language (3) (B) phonology; (C) syntax. Pre: 451, LING 421, or consent for (B); 452 or consent for (C).

CHN 633 Chinese Dialects (3) Synchronic description of a Chinese dialect other than Cantonese and Mandarin; contrastive and comparative studies with Mandarin. Repeatable one time with consent. Pre: 451 and 452, or consent.

CHN 634 Chinese Syntax and Semantics (3) Verbal categories, aspects, focus devices, resumptive and directional compounds, cleft constructions. Interaction between syntax and semantics. Pre: 452 or consent.

CHN 642 Contrastive Analysis of Mandarin and English (3) Pre: 452.


CHN 650 (Alpha) Topics in Chinese Language (3) Extensive studies of selected topics (B) teaching and testing; specific problems in teaching Chinese including characters and cultural elements; proficiency and communicative ability; (C) cognitive grammar. A-F only for (C). Pre: 451 and 452, or consent. Once a year.

CHN 655 Current Topics in Chinese Grammar (3) Current approaches to Chinese grammar and related issues and debates, focusing on the papers published by leading Chinese linguists employing these approaches. Pre: 452, 455, or 456; or consent. (Alt. years)

CHN 661 Advanced Classical Chinese (3) Pre: 462 and consent.

CHN 662 Advanced Classical Chinese (3) Pre: 661 and consent.

CHN 699 Directed Research (V) CR/NC only. Pre: consent.

CHN 750 (Alpha) Research Seminar in Chinese Language (3) (B) teaching methods; (C) structure; (D) classical grammar; (E) sociolinguistics. Pre: 463 for (B) and (E); 452 for (C) and (D).

CHN 753 (Alpha) Research Seminar in Chinese Literature (3) Study of authors, a genre, a period, or a problem. (M) modern; (T) traditional. Repeatable one time for (M). A-F only for (M). Pre: 611, WS 613, WS 615, or WS 659; or consent for (M); 612, or consent for (T). (Cross-listed as WS 753 (Alpha))

Civil and Environmental Engineering (CEE)

College of Engineering

Preference in registration is given to declared engineering majors. Minimum grade for prerequisite courses is D- except PHYS 170 and CEE 270, which require a C or better grade. Please consult the current Schedule of Classes for confirmed offerings each semester.

CEE 270 Applied Mechanics I (3) Forces, resultants, and equilibrium; analysis of trusses, frames, and machines; centroids, moments of inertia; friction. A-F only. Pre: grade of C or better in PHYS 170, and grade of D- or better in either MATH 243 (or concurrent) or MATH 252A (or concurrent); or consent. NT DP

CEE 271 Applied Mechanics II (3) Dynamics of particles and rigid bodies; force, acceleration, impulse-momentum, work-energy. A-F only. Pre: C or better in 270; D- or better in either MATH 244 (or concurrent) or MATH 253A (or concurrent); or consent. (Cross-listed as ME 271) NT DP

CEE 305 Applied Probability and Statistics (3) Description of sample data; correlation and regression; probability and statistical distributions; estimations of population parameters; fittings distributions to histograms; hypothesis testing. A-F only. Pre: MATH 244 or MATH 253A; or consent.

CEE 320 Fluid Mechanics Fundamentals (4) (3 Lec, 1-2 hr Lab) Compressible and incompressible fluid properties; fluid statics; kinematics, energy and momentum considerations in steady flows; application of steady flow concepts to various fluid processes. A-F only. Pre: 271. DP

CEE 330 Environmental Engineering (4) (3 Lec, 1-2 hr Lab) Parameters, properties, and indices of environmental quality; matrices balances; chemical kinetics; ideal reactor models; water and air pollution control; solid and hazardous waste management. A-F only. Pre: 271. DP

CEE 355 Geotechnical Engineering I (4) (3 Lec, 1-3 hr Lab) Introduction to geotechnical engineering—soil characterization, properties, seepage and flow in soil, stresses in soils, compressibility, consolidation, shear strength. Substantial emphasis on writing lab reports. A-F only. Pre: 320, 370; or consent. DP


CEE 370 Mechanics of Materials (3) Elastic stress-strain relation and behavior of members under flexural, torsional, and axial loading. A-F only. Pre: 271 (or concurrent); MATH 244 (or concurrent) or MATH 253A (or concurrent); CEE 370L (or concurrent); or consent. DP

CEE 370L Mechanics of Materials Lab (1) Tension, compression, and torsion of bars, and bending of beams. A-F only. Pre: 370 (or concurrent). DY

CEE 375 Construction Materials (3) (2 Lec, 1-2 hr Lab) Introduction to the crystalline and molecular structure of materials. Properties of metals, concrete, concrete admixtures, asphalt, wood, and other materials commonly used in construction. A-F only. Pre: 305 and 370. DP

CEE 381 Structural Analysis (3) Analysis of statically determine plane and space trusses and frames; deflections; introduction to matrix methods; computer applications. A-F only. Pre: 370. DP

CEE 405 Engineering Economics (3) Economic analysis in engineering and management decision-making, interest, depreciation, income tax, cost classification, break-even analysis, economic comparisons of alternatives, benefit-cost analysis. A-F only. Pre: ECON 120 or 130, and senior standing; or consent. (Cross-listed as BE 405)

CEE 412 Surveying II (3) (2 Lec, 1-3 hr Lab) Advanced course in surveying: project design and specifications; computations, errors, and adjustments; land surveying; state plane coordinate systems; modern instrumentation. A-F only. Pre: consent.


CEE 421 Engineering Hydraulics (3) Hydraulics of closed conduits and open channels with emphasis on engineering applications. Topics also include pump hydraulics, bridge hydraulics, urban drainage
CEE 472 Construction Management (3) Introduc-
tory treatment of the management of construction. 
Construction supervision, contract documents, 
estimating and bidding, organization, planning and 
scheduling, administration, business methods, safety, 
and labor. Pr: 375 or consent.

CEE 473 Construction Equipment and Methods 
(3) Leasing, ownership, and operation of horizon-
al/vertical heavy engineering projects. Available equipment, 
their production, and how they are used to excavate, 
move, process, and place the earth. Pr: 375, senior 
standing or consent.

CEE 474 Construction Estimating and Bidding 
(3) Estimating science; techniques of estimating 
quantities and costs of constructing projects; 
contracting; classification of costs, analysis of plans 
and specifications for estimating; computerized esti-
mating; cash flow, bidding strategy, preparation and 
submission. A-F only. Pr: 375 or consent.

CEE 476 Construction Planning and Scheduling 
(3) To teach the theory and the practice of planning, 
scheduling, and reporting a construction project 
through the use of bar chart and CPM. Format to 
include lectures, texts, outside speakers, site visits, 
discussions, case study, and computers. Pr: 375 or 
consent.

CEE 481 Undergraduate Structural Research 
(3) Individual research project for undergraduate 
students in the structures track. Topic to be determined 
by consultation with structural faculty advisor. A-F 
only. Pr: senior standing and consent.

CEE 482 Indeterminate Structures (3) Analysis 
of statically indeterminate beams, frames, trusses, 
arches, and space structures by classical and matrix 
methods; computer applications. Pr: 381. DP

CEE 483 Field Experience (1) A-F only. Pr: 
380 and either CHEM 171 and 171L or 
CHEM 161, 161L and 162, and senior standing.

CEE 450 Soil and Site Improvement (3) Methods 
of improving engineering properties of soils and sites 
throughout use of mechanical stabilization, soil admix-
tures, pre-consolidation, deep densification, and 
earth reinforcement. A-F only. Pr: 355 or consent.

CEE 455 Geotechnical Engineering II (3) Continu-
ation of 355 introducing geotechnical engineering 
topics including: field exploration, lateral earth pres-
sures, bearing capacity, slope stability theory, 
use of geotechnics, earthquake effects and ground 
modification. A-F only. Pr: 355 or consent. DP

CEE 461 Pavement Engineering (3) (2 Lec, 1 
3-hr Lab) Analysis and characterization of typical 
water and wastewater samples for organic and inorganic 
constituents such as alkalinity, hardness, solids, 
biochemical oxygen demand, nitrogen and phos-
phorus species, coliform bacteria, and trace organic 
chemicals. Relevance of these measurements to water 
and wastewater regulations and engineering design. 
A-F only. Pr: 330 and either CHEM 171 and 171L 
or CHEM 161, 161L and 162, and senior standing.

CEE 465 Geotechnical Engineering II (3) Continu-
ation of 355 introducing geotechnical engineering 
topics including: field exploration, lateral earth pres-
sures, bearing capacity, slope stability theory, 
use of geotechnics, earthquake effects and ground 
modification. A-F only. Pr: 355 or consent. DP

CEE 466 Traffic Engineering (3) Design/analyze-
sis of signalized, unsignalized intersections, urban 
networks. Traffic impact studies; analysis steps 
and applications. Design/redesign options. Parking stud-
ies: demand, alternative designs (lot layouts). Pr: 
361 or consent.

CEE 464 Urban and Regional Transportation 
Planning (3) Application of travel demand forecast-
ing models to transportation planning. Evaluation 
and decision-making, microcomputer applications. 
Term projects. Pr: 361 or consent.

CEE 471 Construction Methods (3) Methods 
of construction, primarily buildings. Construction 
types: light and heavy wood; steel; plain, reinforced, 
and prestressed concrete; masonry. Foundations; 
associated details, framing, walls, roofs, floors, 
openings, finishes. Disasters, failures, and their causes. 
Industrialization of the building process. Pr: 375.
CEE 634 Biological Treatment (3) Fundamentals of applied microbiology and biochemical reactor engineering, quantitative description of microbial growth, operational theory and design basis of aerobic, anoxic and anaerobic treatment processes. Applications for water, wastewater, air, solid wastes, and soil. A-F only. Pre: consent. (Alt. years: spring) (Cross-listed as BE 634)

CEE 635 Environmental Chemistry (3) Basic concepts of chemistry as related to the environment, with more emphasis on water. Topics include chemical kinetics, equilibrium, acid-base, precipitation and dissolution redox reactions, sorption, organic chemicals in the environment. Pre: consent.

CEE 641 Marine Disposal of Wastes (3) Practical material on outfalls: Alternatives; planning; dangers; data collection; predesign studies; design and bidding; dredging and construction; costs; commissioning; inspection, operation and maintenance; repairs and replacement; review of selected world outfalls. Pre: consent. (Alt. years)

CEE 643 Hazardous Waste Remediation (3) Introduces the national problems dealing with the contamination of groundwater and presents remedial measures. Such measures include pump and treat (P&T) technology, in-situ bioremediation, soil vapor extraction, air sparging, electrokinetics, hydraulic fracturing, reactive media, and phytoremediation. A-F only. Pre: 627 or consent. Co-requisite 634 and 635. Fall only.


CEE 648 Membrane Separations (3) Applications of membrane separations to desalination, water reclamation, brine disposal and ultrapure water systems. Discussion of reverse osmosis, nanofiltration, ultrafiltration, microfiltration, electrodialysis and ion exchange technologies. Membrane fouling and concentration polarization from both practical and theoretical standpoints. Membrane bio-reactors. A-F only. Pre: consent.

CEE 650 Seepage, Drainage, and Dewatering (3) Theory of seepage, field and laboratory methods of measurement; graphical and numerical methods; design of drainage structures; construction dewatering. A-F only. Recommended: 455 or consent. (Alt. years)

CEE 651 Deep Foundations (3) Analysis and design of deep foundations; driven piles and drilled shafts. A-F only. Recommended: 455 or consent. (Alt. years)

CEE 654 Geotech Seismic Engineering (3) Soil and site response to dynamic loading, earthquake ground motions; stress waves and soil shear moduli; soil liquefaction theory, evaluation, analyses, and preventative design. A-F only. Recommended: 455 or consent. (Alt. years)

CEE 655 Slope and Earth Structures (3) Classification of landslides and triggering mechanisms; field investigation procedures; limit equilibrium slope stability methods and techniques; seepage and dynamic considerations; case studies. A-F only. Recommended: 455 or consent. (Alt. years)

CEE 656 Marine Geotechnics (3) Principles of geotechnical engineering applied to marine environments; marine geology; surveying and sampling methods; seabed sediment types, properties, and behavior; scour and sediment transport; coastal and offshore foundations; shelf stability; dredging and waste disposal. A-F only. Recommended: 455 or consent. (Alt. years)

CEE 657 Designing with Geosynthetics (3) An overview of geotechnical uses of geosynthetics, including product descriptions, applications, design methods, and case studies. A-F only. Recommended: 455 or consent. (Alt. years)

CEE 658 Earth Pressures (3) Estimation of lateral earth pressures; analysis and design of retaining walls and excavation support systems. A-F only. Recommended: 455 or consent. (Alt. years)

CEE 659 Soil and Site Improvement (3) Methods of improving engineering properties of soils and sites through use of mechanical stabilization, soil admixtures, pre-consolidation, deep densification, and earth reinforcement. A-F only. Recommended: 455 or, 455, or consent. (Alt. years)

CEE 660 Systems Analysis for Engineers (3) Optimization used in design and management of systems for minimizing resources or optimizing outcomes. Evaluation of alternatives, economic efficiency and effectiveness analysis. Logics. Open to engineering students. Computer applications and labs. Recommended: 462 or 464, or consent.


CEE 665 Pavement Design and Rehabilitation (3) Pavement engineering with emphasis given to understanding fundamental issues such as historical development of pavement design, approaches used for design of pavements; understanding of construction issues and their effects on pavement performance, and various design factors; environmental, loading and materials characterization. Introduction of pavement management systems. A-F only. Recommended: consent.

CEE 671 Continuum Mechanics (3) Cartesian tensors in mechanics; coordinate transformations; analysis of stress and strain; principal values, invariants, equilibrium and compatibility equations; constitutive relations; field equations. Problems in elasticity. Recommended: 370 or ME 371, or consent. (Cross-listed as ME 671)

CEE 672 Project Management Systems (3) Project integration and organizational powers, project management, life-cycle management in construction management; matrix structure compared to projectized structure; project success; team building; change and culture in construction organizations; competitive bidding. A-F only. Pre: consent.


CEE 677 Smart Structures Technology (3) Fundamentals of sensor technologies for structural engineering applications. Control devices and strategies for protection of structures against extreme events, i.e. earthquakes, strong winds, etc. Structural health monitoring systems, smart sensor networks. Smart materials for civil structures. CE majors only. A-F only. Pre: 675. Fall only.


CEE 683 Advanced Reinforced Concrete Design (3) Slender columns; beams-columns; combined shear and torsion. Building lateral load resisting frame analysis and design—shearwalls, rigid frames. Floor system analysis and design—flat slabs, joist systems. Computer applications. A-F only. Recommended: 485 or consent.

CEE 685 Advanced Structural Steel Design (3) Load and resistance factored design (LRFD); steel building modeling and analysis; moment-resisting frames; bracing systems; beam-columns; moment connections; composite construction; and plate girders. A-F only. Recommended: 482 (or concurrent) and 486, or consent.


CEE 687 Prestressed Concrete (3) Behavior of prestressed concrete members, including prestress losses. Analysis and design of prestressed beams, slabs, and composite sections. Anchorage of prestressed continuous systems. Recommended: 485 or consent.

CEE 689 Mechanics and Design of Composite Materials (3) Basic concepts of mechanics and design of composite materials utilizing continuous fibers embedded in polymeric matrices (Fiber Reinforced Polymers (FRP)) and short fibers randomly oriented in cementitious matrices (Fiber Reinforced Cement Composites). Repeatable two times. A-F only. Recommended: 370 or consent. (Alt. years)

CEE 691 Seminar in Civil and Environmental Engineering (1) Discussions and reports on literature, research, developments and activities in civil engineering. One unit of all graduate students for students working on a Plan B master’s project. A grade of Satisfactory (S) is assigned when satisfactory performance is demonstrated. Repeatable unlimited times. Pre: consent.

CEE 695 Plan B Master’s Project (3) Independent study for students working on a Plan B master’s project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. CR/NC only. Pre: graduate standing in CEE or consent.

CEE 696 Selected Topics in Civil and Environmental Engineering (3) Highiy specialized topics in structures, soils, hydraulics, sanitary, water resources, applied mechanics, transportation. Repeatable unlimited times. Pre: consent.

CEE 699 Directed Readings or Research (V) Pre: consent.

CEE 700 Thesis Research (V) Pre: consent.


Communication (COM)

College of Social Sciences

COM 201 Introduction to Communication (3) An overview of communication emphasizing the interpersonal, intercultural, organizational and international communication, management, multimedia, mass media, and telecommunications perspectives. DS

COM 320 Organizational Communication (3) Communication in formal organizational contexts; research and theory of communication within organ-
nizations; role of communication in organizational effectiveness. Pre: 201 or consent. DS
COM 330 Communication and Information Concepts and Technologies (3) Basic electronics and concepts of telecommunication; orientation to telecommunication technologies including television, radio, cable, video disc, and telecom/computer convergence. Pre: 201 or consent.

COM 337 Fundamentals of Visual Media (3) Orientation to techniques of production. Emphasis on history, language, and theory of the creative process and application to video productions and multimedia. Pre: 201 or consent.

COM 335 Mass Communication (3) Introduction to mass communication theory. Emphasis placed on theoretical approaches to societal effects of media, human communication, and research traditions in mass communication. Pre: 201 or consent. DS

COM 337 Introduction to Multimedia (3) Combined lecture-lab providing an orientation to, and examination of, procedures and techniques of multimedia. Emphasis on new media literacy, human-computer interaction, and basic design of electronic multimedia. Pre: 201 or consent.

COM 340 Intercultural Communication (3) Problems and opportunities of communication in a variety of intercultural contexts. Focus on theory, research, and managing intercultural effectiveness. Pre: 201 or consent. DS

COM 350 Communication in Interpersonal Relationships (3) Theory and practice of interpersonal communication from a social science perspective. Pre: 201 or consent. DS

COM 390 (Alpha) Journalism/Communications Workshops (V) Short-term intensive workshops in journalism and mass communication skills and projects. (A) workshop in new media; (C) workshop in reporting; (D) workshop in editing; (E) workshop in broadcast journalism; (F) workshop in public relations. Repeatable one time. Pre: 201 or consent. (Cross-listed as JOUR 390)

COM 401 Introduction to Communication Research Methods (3) Exploration of quantitative and qualitative research methods commonly used in communication studies. Practical experience will be offered. Pre: 201 or consent. DS

COM 420 Communication in Multicultural Organizations (3) Cultural diversity in multicultural and multinational organizations is examined regarding communication-related aspects of working life. Pre: 320 and 340, or consent. DS

COM 423 Applied Organizational Communication (3) Principles of organizational communication applied in organizational assessment, intervention, training, and development. Pre: 201 and junior standing, or consent.

COM 431 Video Production Lab I (3) Production of studio and remote video programming including news/information, instructional/educational, and dramatic formats. Lighting, sound, blocking, and equipment competency. Pre: 331 or consent.

COM 432 Communication and Information Services (3) Understanding human information needs as they relate to information and communication services developed from new technologies. Pre: 330 or consent.

COM 433 Video Scriptwriting (3) Application of communication theory to creating and revising commercial and dramatic script material for video production. Pre: 351 or consent.

COM 434 Video Production Lab II (3) Creating, scripting, and producing complex programs. Media aesthetics and professional production, preparation, and execution are emphasized. Pre: 331 or consent.

COM 436 Media Effects (3) Social, political, economic, and cultural effects of broadcast media are examined to understand their impact on human behavior. Pre: 201 and junior standing, or consent.

COM 437 Interactive Multimedia Design and Development (3) The design, development, and evaluation of interactive computer-based multimedia communication. The course emphasizes authoring and production of such multimedia elements as full-motion images, audio, graphics, etc. Pre: 337 or consent.

COM 438 International Communication and Information Technologies and Services (3) Development of international information and communications with emphasis on political theory, social purposes, legal regulation, and competition among nations. Pre: 330 or consent. DS

COM 440 Intercultural Training and Intervention (3) Describes programs designed to prepare, support, and train individuals, groups, and communities for effective intercultural interaction at home and abroad. Pre: 340 or consent.

COM 441 Communication Policy and Planning (3) Alternative models in policy and planning that bring about or inhibit social, economic, and technological development in communication systems and their environments. Pre: 201 and junior standing, or consent. DS

COM 442 Communication in the Pacific Hemisphere (3) Comparative communication processes, development communication, technology, knowledge, and skill transfer, and regional communication issues in the Pacific Hemisphere. Pre: 201 and junior standing, or consent.

COM 444 Communication and Gender (3) Theories, myths, and the missing links in gendered communication. Application of established and emerging theories of gender and communication to interpersonal, organizational, intercultural, and mass communication. Pre: 201 and junior standing, or consent. DS

COM 451 Communication and Law (3) Role of communication in the legal process; impact of law on communication processes. Pre: 201 and junior standing, or consent. (Cross-listed as JOUR 365) DS

COM 452 Building Communication Theory (3) Major theories of communication in terms of requirements for a theory, theory development, associated research, and application. Pre: 201 and junior standing, or consent.

COM 453 Ethnography of Communication (3) The interactive basis of communication in normal everyday living. Students analyze face-to-face and mediated communication using ethnographic methods. Pre: 201 and junior standing, or consent. DS

COM 454 Communication Campaigns (3) Communication strategies and research methods that lead to effective campaign programs. Focus on political, marketing, and public communication campaigns. Pre: 201 and junior standing, or consent.

COM 459 Special Topics (3) Topics of interest to faculty and students; taught by regular and visiting faculty. Repeatable on different topics to six credit hours. Pre: 201 and junior standing, or consent.

COM 460 Media Ethics (3) Ethics and social responsibility for media professionals. Application of ethical theories to case studies and research projects. A-F only. Pre: any 300-level course in ACM, COM or JOUR and junior standing or consent. (Cross-listed as ACM 460 and JOUR 460)

COM 475 Global Communication (3) Problems and opportunities of communication in a variety of international contexts. Focus on commerce, diplomacy, and regional communication. Pre: 201 or consent. (Cross-listed as JOUR 475) DS

COM 480 Communication Seminar (3) Application of theoretic and methodological criteria to researchable questions. Topics will vary. Pre: 201 and senior standing, or consent.

COM 489 Communicating Creativity (3) The role of communication in fostering or inhibiting creativity. Exploration of theoretical bases for shared scientific or artistic creativity in communication research. COM major or consent. Pre: 201 and senior standing, or consent. (Once a year)

COM 490 Senior Thesis Project (3) Completion of the thesis project appropriate to the selected area of concentration within the context of a seminar. Pre: 201 and senior standing, or consent.

COM 495 Communication Internship (V) Analysis of communication processes under faculty supervision through participation in the operations of an organization. Repeatable up to three credits. Pre: 201 and junior standing, or consent.

COM 499 Special Problems (V) Independent study of selected topics under faculty supervision. Repeatable up to three credits. Pre: 201 and junior standing, or consent.

COM 500 Master's Plan B/C Studies (1)

COM 611 Communication Theories (3) Systematic study of major theories of communication and current status of communication research.

COM 612 Communication Research Methods (3) Introduction to the methods of research. Emphasis on the methodological approaches to making choices among alternatives at each step of a research cycle.

COM 623 Organizational Communication (3) Communication theory/research applied to formal organizations; assessments of strengths and weaknesses of organizational communications systems. Pre: 611 (or concurrent) or consent.

COM 624 Organizational Communication Training (3) Designing and implementing training systems in organizations; conducting training programs; evaluating training program effectiveness. Pre: 612 (or concurrent) or consent.

COM 633 Communication and Information Architectures (3) Information and communication structures, processes, and networks as an area of research and study in the social sciences. Pre: 611 (or concurrent) or consent.

COM 634 New Communication and Information Services (3) Systematic study from a social science perspective of current and emerging telecommunications. Attention to user needs and impact, and to teleservice design. Pre: 612 (or concurrent) or consent.

COM 643 Intercultural Communication (3) Problems and opportunities of intercultural communication from theory and research, consulting and training, and policy and program perspectives. Pre: 611 (or concurrent) or consent.

COM 644 International Communication (3) Principles and practices of international communication from the perspectives of relevant theories, focusing on problems in an information age. Pre: 612 (or concurrent) or consent.

COM 645 Mass Communications (3) An introduction to major mass media theories, research trends and literature. Pre: 611 (or concurrent) or consent.

COM 646 Intercultural Training/Intervention (3) Describes programs designed to prepare, support, and train individuals, groups, and communities for effective intercultural interaction at home and abroad. A-F only. Pre: 643 or consent.

COM 660 Communication Planning (3) Processes and methods of planning appropriate to the communication sector, including cultural, information, and media industries and organizations. Pre: 611 (or concurrent) or consent.

Key to symbols & abbreviations: see the first page of this section.
CSD 320 Anatomy/Physiology and Neuroanatomy of Speech and Language (4) Structure and function of the respiratory, phonatory, and articulatory systems related to speech production; neuroanatomical development and physiology related to speech and language. Pre: 300 (or concurrent) or consent.


CSD 402 Applications of Phonological Theory (3) Introduction to the fundamentals of speech sound development and production. Phonological developments and models; cultural variations; analysis, interpretation, and other considerations related to management of phonological disorders. Pre: 300, 302, and LING 410; or consent.

CSD 404 Developmental Aspects of Language (3) Language development; infancy through school age. Theoretical perspectives relating to speech-language pathology and processing of language. Cognitive, linguistic, and social aspects including learning strategies, play, context, conversation, and multicultural issues are discussed. Pre: 300 and 302, or consent.

CSD 412 Clinical Observation and Participation (2) Provides observation and discussion of the clinical management of individuals with communication disorders, and practical experience related to clinical procedures and requirements. Pre: 300, 302, 402 (or concurrent); and consent.

CSD 414 Organic and Neurogenic Disorders (3) Communication impairments from CNS, oral and laryngeal systems disorders, and impaired sensory systems are presented across the lifespan. Information includes multiple disabilities, and medical fragile children. Models of appropriate intervention are presented and discussed. Pre: 320, 402, and 404; or consent.

CSD 415 Hearing Habilitation and Rehabilitation (3) Principles and methods of habilitation and rehabilitation of children and adults with hearing problems. Pre: 301, 303 (or concurrent), 321 (or concurrent), and consent.


CSD 421 Practicum in Audiology I (1) Clinical practice in diagnostic procedures in pure-tone threshold, speech threshold and discrimination, immittance and electrophysiological testing at various age levels. Pre: 301, 303, 415 (or concurrent), and consent.

CSD 423 Practicum in Audiology II (2) Clinical practice in diagnostic procedures in pure-tone threshold, speech threshold and discrimination, immittance and electrophysiological testing at various age levels. Pre: 301, 303, 415, 421, and consent.

CSD 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Repeatable unlimited times. Pre: master’s Plan B or C candidate and consent.

CSD 600 Research Methods (3) Research methods applicable to the field of speech-language pathology and audiology: analysis and reporting of data. Required of all CSD graduate students. Pre: previous coursework in inferential statistics and consent.


CSD 603 Advanced Audiology (3) Instrumentation; special tests of hearing. Pre: 301, 303, 415, and consent.

CSD 604 Seminar in Motor Speech Disorders (3) Provides in-depth examination of various motor speech disorders, including apraxia of speech and dysarthria. Emphasis is on assessment/treatment of these diagnoses. Review of current treatment literature, anatomy/physiology, practical exercises in treatment planning. A-F only. Pre: consent.

CSD 610 Disorders of Phonology and Articulation (3) Study of the etiology, assessment, and remediation of disorders and articulation. Pre: LING 410 and consent.

CSD 612 Child Language Disorders (3) Study of the etiology, behavioral characteristics, and treatment methods for various child language disorders. Includes identifying specific language deficits and writing intervention goals. Pre: consent.


CSD 616 Advanced Practicum in Speech Pathology I (1) Clinical practice in diagnostic and therapeutic procedures with various types of speech and language problems in different clinical settings. Repeatable unlimited times. Pre: 412 and consent.

CSD 617 Advanced Practicum in Audiology I (3) Clinical practice in administering tests, interpreting results; counseling with hearing-impaired children; use of various rehabilitation techniques. Repeatable unlimited times. Pre: 421, 423, or 603, and consent.

CSD 620 Voice Disorders (3) Contemporary development and theoretical issues in the diagnosis, evaluation, and treatment of vocal system disorders in children and adults; current literature and clinical practice issues are addressed. Pre: consent.

CSD 622 Aphasia and the Dementias (3) Study of acquired aphasia in adults and the characteristics and progression of disorders of dementia. Procedures for clinical intervention, current literature review, and related professional issues. Pre: consent.

CSD 695 Research—Speech Pathology (3) Required of all CSD graduate students following the non-thesis (Plan B) program and emphasizing speech-language pathology. Pre: 600 and consent.

CSD 696 Research—Audiology (3) Required of all SPA graduate students following the non-thesis (Plan B) program and emphasizing audiology. Pre: 600 and consent.

CSD 699 (Alpha) Directed Study (3) To allow student and faculty advisor to design research/study units outside existing academic structure in specialized area. Repeatable unlimited times. Pre: language pathology; (C) audiology. Pre: 402 and 602 for (B); 603 for (C).

CSD 700 Thesis Research (V) Repeatable unlimited times. Pre: consent.

CSD 701 Amplification: Assessment and Applications (3) Comprehensive study of amplification. Assessment, fitting, evaluation, electroacoustic evaluation, dispensing, personal instruments and instructional-educational systems. Pre: 603 and consent.

CSD 702 Disorders of Fluency (3) Contemporary developments and theoretical issues in diagnosis, evaluation, and treatment of disorders of fluency such as stuttering in both children and adults. Pre: 602 and consent.

CSD 703 Electrophysiologic Audiometry (3) Study of early, middle, and late auditory evoked potentials with emphasis on the auditory brainstem response. Pre: 603 or consent.

CSD 708 Seminar in Right Hemisphere Brain Damage and Traumatic Brain Injury (3) Traumatic brain injury and right hemisphere communicative disorders are explored with emphasis on assessment and treatment of individuals with these diagnoses. Review of current treatment literature, communication and cognitive theories, and practical exercises in treatment planning. Pre: 622 and consent.
CSD 710 (Alpha) Special Topics in Audiology and Speech-Language Pathology (3) (B) study of contemporary developments in speech/language pathology; (C) study of contemporary developments in audiology. Repeatable for credit for different alphs unlimited times. Pre: 602 for (B); 603 for (C).

CSD 716 Advanced Practicum in Speech Pathology II (2) Clinical practice in diagnostic and therapeutic procedures with various types of speech and language problems in different clinical settings. Repeatable unlimited times. Pre: 412 and consent.

CSD 717 Advanced Practicum in Audiology II (2) Clinical practice in administering tests and interpreting results; counseling individuals with impaired hearing; use of various rehabilitation techniques. Repeatable unlimited times. Pre: 421 or 423, 603, and consent.

CSD 718 Advanced Practicum in Speech-Language Pathology in the Schools (3) Clinical practice in diagnostic and therapeutic procedures with children in the public schools who have speech and/or language problems. Repeatable one time. Pre: 602, 716, and consent.

CSD 721 Seminar in Audiology—Diagnostic Procedures (3) Study of diagnostic procedures as reflected in current literature. Pre: 603 and consent.

CSD 723 Seminar in Audiology—Rehabilitative Procedures (3) Procedures and philosophies presented in recent literature dealing with rehabilitative phases of audiology. Pre: 603 and consent.

CSD 724 Advanced Practicum in Speech Pathology III (3) Clinical practice in diagnostic and therapeutic procedures with various types of speech and language problems in different clinical settings. Repeatable unlimited times. Pre: 412, 602, and consent.

CSD 725 Advanced Practicum in Audiology III (3) Clinical practice in administering tests and interpreting results, counseling of individuals with impaired hearing; use of various rehabilitation techniques. Repeatable unlimited times. Pre: 421, 603, and consent.

Complementary and Alternative Medicine (CAAM)

School of Medicine

CAAM 595 Nutrition for Clinicians (1) Provides in-depth lectures and case studies reviewing the role of nutritional therapy in health and illness, MD majors only. CR/NC only. Pre: MDED 554 or consent. Fall only.

CAAM 399 Research Topics in Complementary and Alternative Medicine (V) Research elective for medical students. May repeat for credit. CR/NC only. Pre: MDED 554 or consent. Fall only.

Curriculum Studies (EDCS)

College of Education

EDCS 415 Early Childhood: Foundations and Curriculum (3) Introduction to the field of ECE; birth to 8 years. Emphasizes foundations of the field, historical roots, issues and trends influencing policy and practice, play theory, observation, documentation, and assessment in early childhood settings. Pre: FAMR 331 or consent. (Cross-listed as ITE 415)

EDCS 415L Early Childhood: Foundations and Curriculum Lab (3) Direct experience with children in early childhood settings in order to apply concepts from 415, develop skills in observation and assessment and gain perspective on the role of the teacher in ECE settings. Co-requisite: 415. (Cross-listed as ITE 415L)

EDCS 416 Early Childhood: Foundations and Curriculum (3) Continuation of 415: focuses on the design, implementation, evaluation of meaningful, challenging integrated curriculum that promotes comprehensive developmental and learning outcomes for diverse young children (PK-3). Pre: 415 or consent. (Cross-listed as ITE 416)

EDCS 416L Early Childhood: Foundations and Curriculum Lab (3) Continuation of 416L. Co-requisite: 416. (Cross-listed as ITE 416L)

EDCS 431 Collaborative Language and Learning (3) Examination of language (talking, reading, and writing) processes within a collaborative teaching framework in the secondary curriculum. Field experience may be required.

EDCS 432 Adolescent Literature and Literacy (3) Selection and interpretation of young adult literature, including multiliteracy for middle level and high school students. Theory and teaching strategies for integrating literacy instruction in the literature program for diverse student populations. A-F only.

EDCS 433 Interdisciplinary Science Curriculum (3) Conceptual schemes and processes for integrating science curricula within the sciences and with subject areas. Methods and curricular integration such as interdisciplinary, culturally relevant, place and community-based learning. Repeatable one time.

EDCS 440 Curriculum Implications of Multicultural Education (3) Examination of trends, issues, school practices, and program in multicultural education and its related area of study—bilingual-bicultural education. (Cross-listed as ITE 440)

EDCS 450 Methods and Materials in Science (3) Selecting and using methods and materials, demonstrations and simulations, open-ended experimentation, inquiry and discovery, task analysis, measurement tools and techniques, activities from various curricular opportunities for individualized goals and projects. Repeatable one time. Pre: ITE 323, ITE 404(H), teaching experience; or consent.

EDCS 451 Programs for Infants/Toddlers (3) Examination of current theory, research, issues, and models in programs for infants and toddlers, including criteria for evaluation and planning. Pre: FAMR 230 (or concurrent), FAMR 331 (or concurrent); or consent. (Cross-listed as SPED 451)

EDCS 453 Gender Issues in Education (3) Examination of current and historical issues in education and how they are impacted upon by gender, with particular reference to gender as it intersects with ethnicity and class, locally and globally. Pre: WS 151 or consent. (Cross-listed as EDEF 453 and WS 453) DS

EDCS 471 Special Problems in Home Economics Education (2) Individual and group problems selected according to interests and needs of fourth- and fifth-year students in home economics education. Development of teaching materials.

EDCS 480 Issues in Computer Education (3) Integration of microcomputers into school curriculum and key issues related to microcomputer use in education. Pre: ETIE 442 or consent. (Cross-listed as ITE 480)

EDCS 494 Problem Solving in Mathematics Education (3) Experiencing and learning to teach heuristics of solving mathematical problems; designing curricula, classroom organization, evaluative measures for problem solving. Pre: ITE 324 or ITE 334, and teaching experience in mathematics or consent.

EDCS 495 Difficulties in Learning Mathematics (3) Identification, analysis, and remediation of difficulties in learning mathematics. Pre: ITE 324 or ITE 334.

Key to symbols & abbreviations: see the first page of this section.

EDCS 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: Master’s Plan B or C candidate and consent.

EDCS 600 Language, Learning and Teaching (3) Examines the role that language plays in the social construction of knowledge within various disciplines, K–adult. Collaborative group learning strategies will be modeled. A-F only. Pre: student teaching or teaching experience or consent.

EDCS 601 Advanced Topics in Reading (3) Current theories and teaching strategies of reading throughout the life span within various social contexts. Topics include emergent literacy, critical comprehension, meta-linguistic awareness, monolingual-bilingual literacy, evaluation. Must have had student teaching or teaching experience. Pre: undergraduate course in reading.

EDCS 602 Advanced Topics in Writing and Oral Language (3) Examines language and literacy learning in the context of an integrated language arts approach to curriculum and instruction. Emphasis on oral and written language. Must have student teaching or teaching experience. Pre: undergraduate course in language arts.

EDCS 603 Children’s Literature in the Elementary Curriculum (3) In-depth examination of traditional and modern literature for children, with emphasis upon genre, historical development, research, curriculum development. Pre: undergraduate course in reading.

EDCS 604 Effective Writing Practices (6) Analysis and practical application of principles and strategies of effective writing and informed writing instruction in K-12 classrooms. Pre: teaching experience and consent. (Summer only)

EDCS 605 Reading Supervision and Leadership (3) Examines varied roles and responsibilities of the reading specialist, including performance, development and evaluation of curriculum, instruction and professional in-services, and leadership. A-F only. Pre: 12 credits of reading coursework from the following: 432, 501, 603, 604(L), 640(M), 647, or 648; or consent. (On a year)

EDCS 606 Introduction to Research in Curriculum and Teaching (3) Introduction to research and/or student based research in teaching and learning that develops relevant theories and methods of qualitative and quantitative paradigms including Action Research and Curriculum Based Assessment. Exploratory and confirmatory research approaches are highlighted.

EDCS 610 Learning to Teach: The First Five Years (3) Focuses on research and practical classroom related to the first five years of teaching. Especially recommended for beginning teachers and graduate students interested in this stage of teaching development. Repeatable one time. Pre: ITE 390 and ITE 391; or consent.

EDCS 618 Early Childhood Education: Advanced Topics (3) Analytical and practical application of selected early childhood education program and/or instructional materials. Restricted to majors. Repeatable two times. Pre: 415 and 416, or consent.

EDCS 622 (Alpha) School Curriculum (3) Development and improvement of curriculum. (B) early childhood; (C) elementary; (D) middle school; (E) secondary; (F) community college. Pre: ITE 312 or equivalent, and teaching experience for (B) only; EDEA 657, EDEF 657, or community college teaching experience; and consent.

EDCS 623 (Alpha) Science and Science Curriculum (3) Application of recent developments in science, curriculum construction, and learning theory to pre-kindergarten, elementary, middle level, and secondary schools. Science philosophy, content and methodology stressed. (B) elementary; (C) secondary; (D) inquiry and nature of science; (E) science literacy. May be repeated one time in different alphs.
EDCS 624 (Alpha) School Mathematics Curriculum (3) Analysis of research related to teaching and learning school mathematics, application of research to classroom practices. Appraisal of recent curriculum trends; critical examination of assumptions underlying proposed curriculum changes. (C) elementary; (D) middle; (E) secondary. Pre: teaching experience or consent.

EDCS 625 Social Studies Curriculum (3) Examination and evaluation of social science content, societal values and research findings as basis for development and revision of social studies materials, texts, curriculum guides, methodology. Pre: ITE 322 or equivalent, social studies teaching experience, or consent.

EDCS 626 Art in Elementary Education (3) Principles of and problems in teaching art in elementary school; curriculum development and current approaches in art education; laboratory experiences in art media. Pre: student teaching or teaching experience.

EDCS 630 Cultural Diversity and Education (3) Examines issues, theories, perspectives and practices in multicultural education and promotes awareness, encourages knowledgeable reflection and develops skills necessary for multicultural practitioners. A-F only. (Cross-listed as EDEF 630)

EDCS 632 Qualitative Research Methods (3) Methods of qualitative research in education or related social science from an interdisciplinary framework.

EDCS 638 (Alpha) Curriculum and Instruction in Studio Art (3) Understanding art methods and materials related to art education for teachers grades K-12. Writing curricula, integrating visual arts across the curriculum, developing evaluation methods observing stages of artistic growth among students of multiple ages/abilities. (B) painting, drawing, printing; (C) fiber arts, ceramics, sculpture; (D) photography, technology, collage; (E) Combination of any of three B, C, and/or D. Previous BA, BS, BEd, and BFA only. Repeatable two times. A-F only. Pre: teaching experience or consent. (Once a year)

EDCS 639 Business and Marketing Education Curriculum (3) Theory, philosophy, objectives, and development of business and marketing education curriculum. Pre: ITE 390D or consent.

EDCS 640 (Alpha) Seminar in Teaching Field (3) Study in trends, research, and problems of implementation in teaching field. (B) business and marketing education; (C) graphic design; (D) home economics; (E) visual arts; (F) industrial education; (H) mathematics; (I) reading; (J) science; (K) social studies; (M) interdisciplinary education; (N) art; (O) physical education; (P) health education. Pre: teaching experience or consent, and undergraduate special methods course in appropriate teaching field; for (B) only: ITE 390D or consent; for (O) only: KRS 405, KRS 406, KRS 643, and teaching experience or consent.

EDCS 641 (Alpha) Seminar in Foreign Language (3) Study in trends, research, and problems of implementation of language education instruction. (B) French; (C) German; (D) Japanese; (F) Spanish. Pre: teaching experience, and consent.

EDCS 642 Seminar in Issues in Multicultural Middle Level Education (1) Examination of principles of multicultural and middle-level education. Restricted to middle-level related area of master’s in Secondary Education. Repeatable six times. Pre: consent.

EDCS 645 Seminar In Multicultural Literacy (3) Interdisciplinary examination of research and issues in the teaching and learning of literacy in diverse multicultural settings. A-F only. Pre: course in teaching language arts of multicultural education, teaching experience, or consent.

EDCS 646 Literacy Assessment I (3) Theory and practice in classroom-based assessment of struggling readers and writers. Analyses of individual learners with implications for instruction. Pre: teaching experience, or consent.

EDCS 647 Literacy Assessment II (3) Practicum in theory and methods of classroom-based and large-scale assessment. Analysis of the achievement of groups of learners and implementation of interventional instruction. Classroom field experience required. Pre: 646 or consent.

EDCS 648 Reading for English Language Learners (3) Presents key concepts and theories in teaching reading to K-12 English language learners. Topics include instructional decisions in teaching reading to ELLs, the interrelationship of language skills, strategies, and teaching academic content. A-F only. Pre: 601 or consent. (Alt. years)

EDCS 649 Theory/Practice in Cooperative Occupational Education (3) Theory and practices of coordinating cooperative education in high school and community college. Pre: teaching experience or consent.

EDCS 653 (Alpha) Mathematics in the Schools (3) School mathematics, K-12 content, curricula, pedagogy, and standards; trends and issues; theory and research. (B) number and operation; (C) patterns, functions and algebra; (D) geometry and measurement; (E) probability and statistics; (F) integrated math content. Each alpha represents a different K-12 content area. Pre: teaching experience or consent.

EDCS 656 Seminar in Issues in ECE (V) Concepts and inquiry regarding the application of early childhood educational principles and approaches to programs serving children between birth and age five. Study and discussion of topics and problems presented in required summer courses and by invited experts in early childhood education. Restricted to masters in Early Childhood Education. Repeatable six times. A-F only. (Two times a year)

EDCS 667 (Alpha) Seminar in Curriculum (3) Curriculum trends and issues related to school organization, program, administration, faculty. Required for Plan B MEd candidates in their final semester or summer session. Repeatable one time. (B) early childhood; (C) elementary; (D) middle-level; (E) secondary. Pre: 622 and 2 research courses, or consent.

EDCS 685 Museums and Communities (3) Public role of museums and their responsibilities, museum education and outreach programs, representation of Native peoples, legal issues, budgets and finances, marketing, and public relations. Pre: AMST 683 (or concurrent) or consent. (Once a year) (Cross-listed as AMST 685)

EDCS 686 Information Literacy and Learning Resources (3) Study of information literacy models. Integration of information literacy with K-12 curriculum units and lessons. Evaluation of print and multimedia resources to meet student and curricular needs. Required for Librarian HDOE licensure. A-F only. Pre: consent. (Cross-listed as ETFC 686 and LIS 686)

EDCS 690 Practicum in Teaching Reading (3) Includes methods and intervention approaches for meeting the needs of struggling readers at early, intermediate, and secondary levels of reading acquisition, and tutoring or small-group instruction. Classroom field experience required. A-F only. Pre: 15 credits of reading coursework from the following: 432, 601, 603, 605, 6040I, 640M, 646, 647, or 648; or consent. (Once a year)

EDCS 695 Plan B Master’s Project (V) Independent study for students working on a Plan B master’s project. A-F only.

EDCS 699 Directed Reading and/or Research (V) Individual reading and/or research. Pre: written consent.

EDCS 700 Thesis Research (V)

EDCS 732 Qualitative Data Analysis (3) Advanced seminar in qualitative research methods with an emphasis upon qualitative data analysis, theory construction, data presentation and reporting. Pre: 632, a course in introduction to qualitative research methods; or consent.

EDCS 760 Research on Teaching and Teacher Education (3) Examination of alternative approaches and multidisciplinary perspectives on research on teaching and learning in and out of school, on educational change, and on teacher education and professional development. Pre: classified PhD student or written consent of graduate field chair.

EDCS 767 Issues and Trends in Curriculum (3) Uses problem-centered approach and field experiences. Topics include historical review of curriculum development since 1900, examination of current curriculum practices at all levels of education, and prediction of future directions in curriculum theory and design. Pre: classified PhD student or written consent. Recommended: EDEA 602, EDEP 408, or EDEP 608.

**Dance (DNCE)**

College of Arts and Humanities

DNCE 121 Beginning Ballet Technique (3) Introduction to classical ballet technique. Repeatable one time. DA

DNCE 122 Continuing Ballet Technique (3) Continuation of beginning classical ballet technique. Repeatable three times. Pre: 121 or consent. DA

DNCE 131 Beginning Modern Dance Technique (3) Introduction to modern dance technique. Repeatable one time. DA

DNCE 132 Continuing Modern Dance Technique (3) Continuation of beginning modern dance technique. Repeatable three times. Pre: 131 or consent. DA

DNCE 150 Introduction to Dance (3) Survey the development of major dance styles and their relationship to contemporary choreography. DA

DNCE 151 Music Theory for Dancers (3) Elements of music and relationship to dance; emphasis on rhythmic analysis. (Alt. years) DA

DNCE 221 Low Intermediate Ballet Technique (3) Low intermediate ballet technique. Repeatable two times. Pre: 122 or consent. NF/DA

DNCE 222 Low Intermediate Ballet Technique (3) Low intermediate ballet technique. Repeatable two times. Pre: 221 or consent. NF/DA

DNCE 231 Low Intermediate Modern Technique (3) Low intermediate modern dance technique. Repeatable two times. Pre: 131 or consent. NF/DA

DNCE 232 Low Intermediate Modern Technique (3) Low intermediate modern dance technique. Repeatable two times. Pre: 231 or consent. NF/DA

DNCE 250 Dance Production (3) Survey of historical, theoretical, and practical aspects; work in scenery, lighting, costume, makeup, and theater management. DA
DNCE 255 Dance in World Cultures (3) Multi-media overview of world dance forms, with emphasis on Asia and the Pacific, and related concepts. Pre: sophomore standing or consent. DA

DNCE 260 Movement Fundamentals (1) Organized somatic systems as a framework for understanding movement and dance techniques. Required for majors. Repeatable two times. DA

DNCE 301 Asian Dance I (V) Performance and techniques at the introductory level. Pre: upper division standing or consent. Repeatable up to eight credits. DA

DNCE 302 Chinese Dance I (1) Performance and techniques at the introductory level. Pre: upper division standing or consent. DA

DNCE 303 Japanese Dance I (1) Performance and techniques at the introductory level. Pre: upper division standing or consent. DA

DNCE 304 Javanese Dance I (1) Performance and techniques at the introductory level. Pre: upper division standing or consent. DA

DNCE 305 Korean Dance I (1) Performance and techniques at the introductory level. Pre: upper division standing or consent. DA

DNCE 306 Oinawan Dance I (1) Performance and techniques at the introductory level. Pre: upper division standing or consent. DA

DNCE 307 Philippine Dance I (1) Performance and techniques at the introductory level. Pre: upper division standing or consent. DA

DNCE 311 Oceanic Dance I (1) Performance and techniques at the introductory level. Pre: upper division standing or consent. DA

DNCE 321 Intermediate Ballet Technique (3) Intermediate ballet technique. Repeatable four times. Pre: 222 or consent. DA

DNCE 331 Intermediate Modern Technique (3) Intermediate modern dance technique. Repeatable four times. Pre: 252 or consent. DA

DNCE 334 Taiji (T’ai Chi) for Actors I (3) Basic Taijiquan (T’ai Chi Ch’uan) movement training. Repeatable two times. Pre: sophomore standing or higher, or consent. (Cross-listed as THEA 334) DA

DNCE 360 Dance Kinesiology (3) Practical information for dance students on diet and nutrition, anatomy, training and conditioning, and injury prevention. Pre: 260 or consent. DA

DNCE 361 Elementary Labanotation (3) Elementary theory of Labanotation with practical application in scoring and reconstructing dances. Pre: 151 or MUS 280, or consent. (Alt. years) DA

DNCE 362 Intermediate Labanotation (3) Intermediate theory of Labanotation with practical application in scoring and reconstructing dances. Pre: 361 or consent. (Alt. years) DA

DNCE 370 Dance Improvisation (3) Improvisation in dance as creative experience, as source of new movement ideas, and as means of developing spontaneity in performance. Repeatable one time. Pre: 200 level or above, or consent. DA

DNCE 371 Dance Composition I (3) Elementary techniques and theories for creating and crafting concert dances. Pre: 231 and 370, or consent. DA

DNCE 372 Dance Composition II (3) Intermediate techniques and theories for creating and crafting concert dances. Pre: 371 or consent. DA

DNCE 401 Asian Dance II (V) Performance and techniques at intermediate level. Repeatable up to eight credits. Pre: 301 or consent. DA

DNCE 402 Chinese Dance II (1) Performance and techniques at intermediate level. Repeatable up to eight credits. Pre: 302 or consent. DA

DNCE 403 Japanese Dance II (1) Performance and techniques at intermediate level. Repeatable up to eight credits. Pre: 303 or consent. DA

DNCE 404 Javanese Dance II (1) Performance and techniques at intermediate level. Repeatable up to eight credits. Pre: 304 or consent. DA

DNCE 405 Korean Dance II (1) Performance and techniques at intermediate level. Repeatable up to eight credits. Pre: 305 or consent. DA

DNCE 406 Okinawan Dance II (1) Performance and techniques at intermediate level. Repeatable up to eight credits. Pre: 306 or consent. DA

DNCE 407 Philippine Dance II (1) Performance and techniques at intermediate level. Repeatable up to eight credits. Pre: 307 or consent. DA

DNCE 411 Oceanic Dance II (1) Performance and techniques at intermediate level. Repeatable up to eight credits. Pre: 311 or consent. DA

DNCE 421 Advanced Ballet Technique (3) Advanced ballet technique. Repeatable six times. Pre: 321 or consent. DA

DNCE 431 Advanced Modern Technique (3) Advanced modern dance technique. Repeatable six times. Pre: 331 or consent. DA

DNCE 433 Movement Workshop (V) Special workshops in movements relating to specific departmental theatrical productions beyond the scope of movement taught in 437 and 438. Repeatable one time. Pre: one of 435 or THEA 435, or consent. (Alt. years) (Cross-listed as THEA 433) DA

DNCE 434 Taiji (T’ai Chi) for Actors II (3) Intermediate-level Taijiquan (T’ai Chi Ch’uan) movement training. Repeatable two times. Pre: 334 or consent. (Cross-listed as THEA 434) DA

DNCE 435 Movement for Actors (3) Training actors to discover experientially the sources of movement; to teach skills for analyzing movement for its mechanical, anatomical, spatial, and dynamical content; and then to apply these skills in a role. Pre: THEA 222 or consent. (Cross-listed as THEA 435) DA

DNCE 436 Advanced Movement for Actors (3) Detailed development of material presented in 435. Focus on Bartenieff fundamentals and movement analysis as it applies to the physical interpretation of theatrical roles. Pre: 435 or THEA 435, or consent. (Alt. years) (Cross-listed as THEA 436) DA

DNCE 437 Period Movement Styles, 1450–1650 (3) Movement styles and social deportment of European societies in the Renaissance and early Baroque periods. Pre: 435 or THEA 435, one semester of a 100-level dance technique class; or consent. (Alt. years) (Cross-listed as THEA 437) DA

DNCE 438 Period Movement Styles, 1650–1800 (3) Movement styles and social deportment of the Baroque and pre-Romantic periods in Europe and the American colonies. Pre: 435 or THEA 435, one semester of a 100-level dance technique class; or consent. (Alt. years) (Cross-listed as THEA 438) DA

DNCE 439 Musical Theater Dance Forms (3) Theatrical dance forms used in 20th-century musical theater. Pre: 100 level or above dance technique class, 421, or consent. (Alt. years) (Cross-listed as THEA 439) DA

DNCE 452 Dance History I: Ritual to Theater (3) Development of Western theatrical dance from Ancient Greece through 19th-century ballet. Pre: upper division standing or consent. DH

DNCE 453 Dance History II: 20th Century to the Present (3) Development of modern dance, contemporary ballet, and dance forms of musical theater and film. Pre: upper division standing or consent. DH

DNCE 458 Field Experiences in Dance (V) Field experiences in relevant contexts under professional and faculty supervision. Repeatable one time. CR/NC only. Pre: upper division standing and consent. DA

DNCE 459 Topics in Dance (V) Readings, research, and/or field and movement experiences. Repeatable if topic changes unlimited times. Pre: upper division standing and consent. DA

DNCE 470 Dance Performance (1) Performance in various dance styles and settings. Repeatable eight times. Pre: audition or consent. DA

DNCE 480 Dance Repertory (V) Preparation of standard and new works for performance. Repeatable three times. Pre: consent. DA

DNCE 490 Creative Dance (3) Dance activities for young people. Appropriate for teachers, group workers, recreation majors, and others working with children. Also adults with special needs. Supervised field activities. Pre: upper division standing or consent. DA

DNCE 495 Senior Project (1) Individual choreographic project; student choreographs, performs, and oversees all technical aspects of a creative project; tutorial. Pre: 372, senior standing, and consent. DA

DNCE 499 Directed Work (V) Individual projects. Pre: consent. DA

DNCE 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent. DA

DNCE 651 Seminar in Dance Research (3) Research materials and methods; preparation for thesis and scholarly research reporting. Required for graduate concentrations in dance. (Alt. years)

DNCE 652 Seminar: Dance Theory and Criticism (3) Major theories of dance and dance criticism; emphasis on Western ideas. Pre: 452 and 453, or consent.

DNCE 653 Dance Ethnology Seminar (3) Exemplary studies and field research. Pre: graduate standing or consent. (Alt. years)

DNCE 654 Regional Dances of Asia (3) Dance content and historico-social context of principal dance traditions. Pre: graduate standing or consent. (Alt. years)

DNCE 655 Regional Dances of Oceania (3) Dance content and historico-social context of principal dance traditions. Pre: graduate standing or consent. (Alt. years)

DNCE 659 Advanced Topics in Dance (V) Readings, research, and/or field movement experiences. Repeatable one time if topic changes. Pre: graduate standing or consent.

DNCE 660 Laban Movement Analysis (3) Study and application of Laban Movement Analysis as a framework for enhancing analytical and artistic abilities. Pre: 260 (or concurrent) and 360 (or concurrent); or consent.


DNCE 671 Advanced Choreography (3) Advanced analytic and creative study. Pre: 372 or consent. (Alt. years)

DNCE 672 Dance Performance (V) Graduate performance in various dance styles and settings. By audition only. Repeatable six times. Pre: consent.

DNCE 679 Directed Choreography (1) Concert choreography for selected performance settings under the direction of a faculty advisor. Repeatable six times. Pre: 372 (or concurrent) or 671 (or concurrent), or consent.

DNCE 691 Seminar in Teaching Dance/Theater (3) Pedagogy and classroom experience in teaching...
Dental Hygiene (DH)

School of Nursing and Dental Hygiene

Dental hygiene courses are listed in sequence and are open only to those admitted to the program by the Department of Dental Hygiene.

DH 231 Oral Anatomy and Tooth Morphology (2) The study of the structure and functions of the head and neck with emphasis on structures in or related to the oral cavity; of tooth morphology. Repeatable one time. A-F only. Prereq: BIOC 241, PHYL 103, PHYL 103L; or equivalent. Co-requisite: 231L. NFDY

DH 231L Oral Anatomy and Tooth Morphology Lab (2-3 hr) Application of DH 231L didactic concepts to laboratory activities and practices. Repeatable one time. A-F only. Prereq: BIOC 241 and PHYL 103, PHYL 103L; or equivalent. Co-requisite: 231L. NFDY

DH 238 Basic Dental Hygiene I (1) Relationship to dentistry, problems, trends, issues; role and functions of the dental hygienist in prevention and control of chronic oral diseases; preliminary dental hygiene clinical and support procedures including vital signs; team concepts in dentistry. Repeatable one time. A-F only. Co-requisite: 238L and 239L. DB

DH 238L Basic Dental Hygiene I Lab (1) Application of preliminary dental hygiene clinical and support procedures including instrumentation, vital signs, and team concepts in dentistry. Repeatable one time. A-F only. Co-requisite: 238 and 239L. DY

DH 239L Basic Dental Hygiene I Lab (1) Application of preliminary dental hygiene clinical and support procedures including instrumentation, vital signs, and team concepts in dentistry. Repeatable one time. A-F only. Co-requisite: 238L/238L, DY/DB

DH 240 Basic Dental Hygiene II (2) Basic dental hygiene theory and skills including competencies in health history taking, examination, patient care plan, oral prophylaxis, application of caries preventive agents, plaque control and support procedures. A-F only. Prereq: 238, 238L, and 239L. Co-requisite: 240L, 241L, and 242L. NFDY

DH 240L Basic Dental Hygiene Lab/Clinic (1) (1-4 hr Lab/Clinic) Laboratory and clinical experiences in basic dental hygiene skills and competencies including history taking, examination, patient care plan, oral prophylaxis, application of caries preventive agents, and clinic support procedures. A-F only. Prereq: 238 and 238L. Co-requisite: 240, 240L, and 242L. NFDY

DH 241L Basic Dental Hygiene Lab/Clinic (1) (1-4 hr Lab/Clinic) Laboratory and clinical experiences in basic dental hygiene skills and competencies including history taking, examination, patient care plan, oral prophylaxis, application of caries preventive agents, and clinic support procedures. A-F only. Prereq: 238 and 238L. Co-requisite: 240, 240L, and 242L. NFDY

DH 242L Basic Dental Hygiene Lab/Clinic (1) (1-4 hr Lab/Clinic) Laboratory and clinical experiences in basic dental hygiene skills and competencies including history taking, examination, patient care plan, oral prophylaxis, application of caries preventive agents, and clinic support procedures. A-F only. Prereq: 238 and 238L. Co-requisite: 240, 240L, and 242L. NFDY

DH 247 Advanced Clinical Dental Hygiene II (2) An in-depth knowledge and clinical application of expanded function in periodontics with emphasis on principles, techniques, procedures in pain management, control, soft tissue curetage, host factors, and modification of behavior. Repeatable one time. A-F only.
DH 495 Advanced Directed Reading, Field Work, or Supervision (1)
Application of knowledge of expanded functions in periodontics with emphasis on principles, techniques, procedures, in pain-anxiety control, soft tissue curettage, host factors, and modification of behavior. Repeatable one time. A-F only. Pre: 380/380L, 381L, 382L, and 381L. Co-requisite: 475, 476L, 477L, and 478L. Fall only.

DH 476L Advanced Directed Dental Hygiene I Clinic B (1) Application of knowledge of expanded functions in periodontics with emphasis on principles, techniques, procedures in pain-anxiety control, soft tissue curettage, host factors, and modification of behavior. Repeatable one time. A-F only. Pre: 380/380L, 381L, 382L, and 391L. Co-requisite: 475, 476L, 477L, and 478L. Fall only.

DH 476L Advanced Directed Dental Hygiene I Clinic B (1) Application of knowledge of expanded functions in periodontics with emphasis on principles, techniques, procedures in pain-anxiety control, soft tissue curettage, host factors, and modification of behavior. Repeatable one time. A-F only. Pre: 380/380L, 381L, 382L, and 391L. Co-requisite: 475, 476L, 477L, and 478L. Fall only.

DH 477L Advanced Directed Dental Hygiene I Clinic C (1) Application of knowledge of expanded functions in periodontics with emphasis on principles, techniques, procedures in pain-anxiety control, soft tissue curettage, host factors, and modification of behavior. Repeatable one time. A-F only. Pre: 380/380L, 381L, 382L, and 391L. Co-requisite: 475, 476L, 477L, and 478L. Fall only.

DH 478L Advanced Directed Dental Hygiene I Clinic D (1) Application of knowledge of expanded functions in periodontics with emphasis on principles, techniques, procedures in pain-anxiety control, soft tissue curettage, host factors, and modification of behavior. Repeatable one time. A-F only. Pre: 380/380L, 381L, 382L, and 391L. Co-requisite: 475, 476L, 476L, and 478L. Fall only.

DH 480 Advanced Clinical Dental Hygiene II (2) In-depth knowledge development of expanded functions in periodontics with emphasis on principles, techniques, procedures in pain-anxiety control, soft tissue curettage, host factors, and modification of behavior. Repeatable one time. A-F only. Pre: 475/475L, 476L, 477L, and 478L. Co-requisite: 480L, 481L, 482L, and 483L. Spring only.

DH 480L Advanced Clinical Dental Hygiene II Clinic (1) 4-hr Clinic Application of knowledge of expanded functions in periodontics with emphasis on principles, techniques, procedures in pain-anxiety control, soft tissue curettage, host factors, and modification of behavior. Repeatable one time. A-F only. Pre: 475/475L, 476L, 477L, and 478L. Co-requisite: 480L, 481L, 482L, and 483L. Spring only.

DH 481L Advanced Clinical Dental Hygiene II Clinic (1) 1-hr Clinic Application of knowledge of expanded functions in periodontics with emphasis on principles, techniques, procedures in pain-anxiety control, soft tissue curettage, host factors, and modification of behavior. Repeatable one time. A-F only. Pre: 475/475L, 476L, 477L, and 478L. Co-requisite: 480L, 481L, 482L, and 483L. Spring only.

DH 482L Advanced Clinical Dental Hygiene II Clinic (1) 1-hr Clinic Application of knowledge of expanded functions in periodontics with emphasis on principles, techniques, procedures in pain-anxiety control, soft tissue curettage, host factors, and modification of behavior. Repeatable one time. A-F only. Pre: 475/475L, 476L, 477L, and 478L. Co-requisite: 480L, 481L, 481L, and 483L. Spring only.

DH 483L Advanced Clinical Dental Hygiene II Clinic (1) 1-hr Clinic Application of knowledge of expanded functions in periodontics with emphasis on principles, techniques, procedures in pain-anxiety control, soft tissue curettage, host factors, and modification of behavior. Repeatable one time. A-F only. Pre: 475/475L, 476L, 477L, and 478L. Co-requisite: 480L, 481L, 481L, and 482L. Spring only.

DH 499 Directed Reading, Field Work, or Research (V) Individualized program of directed reading, field work, or research for major under supervision in related areas of dentistry and dental hygiene. Pre: consent.

Developmental and Reproductive Biology (DRB)

DRB 610 Experimental Physiology (2) Biophysical approach to selected techniques of quantitative experimental physiology. Pre: 604 or consent. DRB 613 Seminar in Developmental and Reproductive Biology I (1) Discussion of current research in physiology. DRB 614 Seminar in Developmental and Reproductive Biology II (1) Continuation of 613. DRB 650 Stem Cell Biology (3) Seminar designed to teach graduate students and advanced undergraduates about current topics relating to stem cell biology, as well as the application of stem cells to modern medicine. A-F only. Pre: PHYL 617 and BIOL 275, or consent. Spring only. DRB 699 Directed Research (V) Research experience in developmental and reproductive biology. Repeatable unlimited times. DRB 700 Thesis Research (V) Repeatable unlimited times. DRB 800 Dissertation Research (V) Repeatable unlimited times.

Disability and Diversity Studies (DIS)

College of Education

DIS 681 Multicultural Issues in Disabilities (3) Provide background and understanding of various Pacific Rim cultural issues in the conceptualization and treatment of individuals with disabilities and their families. A-F only.

DIS 683 Interdisciplinary Disability and Diversity Issues (3) Develop understanding of current issues faced by individuals with disabilities and their families within the disability paradigm and across cultures. A-F only.

DIS 684 Interdisciplinary Team Development (3) Develop knowledge and skills to participate effectively on interdisciplinary teams for the common goal of promoting service integration and coordination of education, social, health, mental health, and other services with individuals with disabilities and their families. A-F only.

DIS 685 Interdisciplinary Assessment (3) Assessment methods and techniques to instructional research-based practices and supports across disciplines, cultures and PK-12 and address barriers to learning for all students with the context of the Comprehensive Student Support System (CSSS). A-F only.

DIS 686 Advanced Interdisciplinary Assessment (3) Assessment methods and techniques to instructional research-based practices and supports across disciplines, cultures and PK-12 and address barriers to learning for all students with the context of the Comprehensive Student Support System (CSSS). A-F only.

DIS 687 Seminar on Disability Issues (3) In-depth explorations of current and compelling interdisciplinary topics related to advancing the social, political, educational, and economic integration of individuals with disabilities of all ages. DIS 688 Portfolio/Field Work (3) Interdisciplinary community experience and portfolio in disability and diversity studies. Repeatable three times. A-F only.

DIS 699 Directed Reading and/or Research (V) Directed reading and/or research. Repeatable three times. A-F only. Pre: consent.
EALL 366 The City in Modern Chinese Literature and Visual Arts (3) Study of the fictional and visual representations of the city in the changing contexts of Chinese modernization from the late imperial age to the beginning of the 21st century. Pre: one DH or DL course, or consent. (Once a year) DH

EALL 371 (Alpha) Traditional Japanese Literature (5) Reading and analysis of English translations of selected important works in the classical tradition. No knowledge of Japanese required: (B) prose fiction and literary miscellany; (C) drama and poetry. DL

EALL 372 (Alpha) Modern Japanese Literature (3) Reading and analysis of English translations of selected important works in modern Japanese literature. No knowledge required: (B) fiction; (C) poetry, drama, and criticism. DL

EALL 384 Modern Korean Women Writers and Culture (3) Study of fiction by modern Korean women writers in the changing context of Korean culture. A-F only. Pre: sophomore standing or higher.

EALL 472 East-West Cultural Encounters (3) Critical examination of encounters between Western and East Asian cultures across time. In addition to literary texts, the course may use sources from other media, and focus on a specific era, region, or genre. Pre: an EALL course at 200 level or above; or a DH or DL course at 200 level or above; or consent. DL

EALL 473 Chinese Diaspora and Visual Culture (3) Examines films focusing on the social relationships and cultural practices of the Chinese diaspora, i.e. Chinese communities living outside China (e.g. Taiwan, Hong Kong, Southeast Asia, North America, and Europe). Weekly film showings in class, readings on visual culture, media studies, and film criticism. Course material will also include theater productions, art exhibitions, and other visual material depending on availability. Pre: any 300- or 400-level DL or DH course. (Cross-listed as ASIAN 473) DH

EALL 474 Transnational Chinese Popular Culture (3) Survey of contemporary Chinese popular entertainment forms that are produced and appreciated transnationally. Examples include martial arts genres, kung fu films, commercial novels, ballroom dancing, karaoke culture, music videos and rock music. Material will be selected based upon availability and readings will include critical essays from the fields of popular culture, media studies, and literary criticism. Pre any 300- or 400-level DL or DH course. (Cross-listed as ASIAN 474) DH

EALL 476 Perspectives on Chinese Cinema (3) Introduction to Chinese cinema studies, with emphasis on the theoretical and critical approaches to Chinese film. Pre: one DH or DL course, or consent. (Once a year)

EALL 491 Senior Colloquium in East Asian Literature (3) Comparative perspectives; some works studied in the original. Pre: third-level East Asian language. DL

EALL 492 (Alpha) Study of East Asian Languages (V) Less commonly taught languages of East Asia: (B) Manchu; (C) Mongolian. Recommended: previous experience in history, linguistics, or languages. Repeatable one time. Pre: consent.

EALL 500 Master’s Plan B/C Studies (1)

EALL 590 Intensive Japanese for Reading Knowledge (4) Open to graduate students only. CR/NC only. Pre: consent.

EALL 591 Intensive Japanese for Reading Knowledge (4) Open to graduate students only. CR/NC only. Pre: 590 or consent.

EALL 601 Method of Teaching East Asian Languages (3) Identification and analysis of problems in language learning, teaching, testing, Development of teaching strategies for East Asian languages. Pre: CHN 451, JPN 451, or KOR 451.

EALL 603 (Alpha) Bibliographical and Research Methods (3) Traditional and modern references and other library materials basic to research in all areas of East Asian studies: (C) Chinese; (J) Japanese; (K) Korean. Pre: CHN 402 or for (C); JPN 467 (alpha) for (J); KOR 402 or for (K).

EALL 611 (Alpha) 20th Century Chinese Literary and Cultural Studies (3) Critical discussion of scholarship in the field and formal analysis of literary and cultural texts pertaining, but not limited, to the People’s Republic of China, Taiwan, and Hong Kong. (B) short stories; (C) poetry and drama; (D) novels and essays. Reading knowledge of Chinese desirable but not required. English translations of original texts will be provided whenever available. Repeatable one time for different alphabas. Pre: consent.

EALL 691 Introduction to Classical Tibetan (5) Introduction to Classical Tibetan grammar and vocabulary with emphasis on the earliest Tibetan texts; reading and analysis of pre-classical, classical and postclassical texts.

EALL 699 Directed Research (V) CR/NC only. Pre: consent.

EALL 700 Thesis Research (V)

EALL 750 Seminar in Comparison of East Asian Languages (3) Comparison of lexicon, phonology, morphology, syntax, semantics, etc., of two or more East Asian languages, contact influence on them. Pre: CHN 451, CHN 452, or JPN 451; or consent.

EALL 800 Dissertation Research (1)

Economics (ECON)

College of Social Sciences

No more than 6 credit hours total for 120, 130, and 131. Students who major/minor in ECON are strongly urged to take the 130/131 sequence. A-F only. Pre: 120 or 130, but not both. Students applying to Shidler College of Business must take the 130/131 sequence.

ECON 120 Introduction to Economics (3) One-semester survey of the principles of microeconomics and macroeconomics to enable students in all disciplines to understand current economic events. DS

ECON 130 Principles of Microeconomics (3) Examination of the decision-making process of both households and firms. Analysis of the functioning of a competitive market system, using supply and demand models and the theory of government in cases where the market system fails. Additional topics include the effects of international rate on the welfare of a nation and the effects of different competitive market structures on society. DS

ECON 131 Principles of Macroeconomics (3) An introduction to macroeconomics—the study of the overall economy and the relationships between the various components of the economy. Topics include the determination of national income; causes and effects of inflation, unemployment, and income inequality; causes and consequences of international differences in economic growth; sources of business cycle expansions and contractions; role of government policy in stabilizing the economy and promoting long-term growth; financial markets and monetary policy; taxes, spending, consequences of budget deficits, determination of trade imbalances, exchange rate fluctuations, and balance of payment crises. DS

ECON 300 Intermediate Economics: Macroeconomic Analysis (3) Develops basic techniques and fundamental concepts needed to study the overall macroeconomy and policies that affect it. Study the determinants of national income and long-run growth; causes and consequences of unemployment, inflation, and business cycle fluctuations; determination of foreign exchange rates and current account imbalances, and the role of government policy in various settings. Pre: 131 or instructor and economics undergraduate advisor consent. DS

ECON 301 Intermediate Microeconomics (3) Develops basic techniques and fundamental concepts of microeconomic theory. Learn to use economic reasoning to understand the social consequences of decisions made by individual consumers, producers, and governments. Analyze the nature of market outcomes under alternative market structures, and further discuss possible welfare-improving government policies when markets fail to be efficient. Special attention is paid to the ethical implications of behavior and markets with public goods and externalities. Pre: 130 or instructor and economics undergraduate advisor consent. DS

ECON 311 The Economy of Hawai‘i (3) History of development of Hawaiian economy; current economic problems. Pre: 120, 130, or 131; or consent. DS

ECON 317 The Japanese Economy (3) Analysis of Japan’s growth past and present. Does Japan’s economy look different in terms of its international trade structure, industrial structure, labor market, savings patterns, government policies, etc.? Does it matter? Pre: 120 or 130, or consent. DS

ECON 320 Introduction to Tourism Economics (3) Examines tourism from an economic perspective. Topics include: the determinants of consumer demand for leisure travel, structure of competition among suppliers of tourism services, benefits and costs of tourism development to the host community, government’s role in the taxation, subsidy, regulation and protection of the tourism industry, tourism’s impact on the environment, and sustainable tourism development. A-F only. Pre: 120 or 130 or 131; consent. (Cross-listed as TAIM 320) DS

ECON 321 Introduction to Statistics (3) Basic elements: descriptive statistics, probability, inference, distributions, hypothesis testing, regression, and correlation analysis. DS

ECON 340 Financial Markets and Institutions (3) The determination of asset prices; the risk and term structure of interest rates; efficient markets hypothesis; risk management and financial derivatives, asymmetric information models of financial market structure, innovation, regulation and deregulation; and financial crises. Pre: 120, 130, or 131; or consent. Pre: DS/L. DS

ECON 350 Sustainable Development (3) Trans-disciplinary introduction to sustainable development. Interactions between environment, economy, and public policy, especially in Hawai‘i. Topics include: curse of paradise, global warming, energy use, health, poverty, population, water resources, traffic congestion, biodiversity, pollution controls. Pre: 120 or 130 or 131, or consent. (Once a year) DS

ECON 356 Games and Economic Behavior (3) Introduces students to the study of strategic behavior with applications to economics, business, and public policy. Simple economic models of strategic decision making are used to analyze provision of public goods; competition, cooperation, and coordination among firms; bargaining between employers and labor unions; international trade negotiations; reputation as a competitive advantage, and others. Pre: 120, 130, or 131; or consent. DS

ECON 358 Environmental Economics (3) Nature and causes of environmental degradation and economic solutions. Topics include: air and water pollution, toxic waste, deforestation, soil erosion, biodiversity, global warming and sustainable economic growth. Pre: 120, 130, or 131; or consent. DS

ECON 361 Seminar: Women and International Development (3) Women’s role, status, work and treatment in the Third World; economic develop-

Key to symbols & abbreviations: see the first page of this section.
Sources of economic growth and enforcement, juries, prosecutors; evolution of legal rules. Pre: 301. DS
ECON 495 Land and Housing Economics (3) Microeconomics explains urban land and housing phenomena, and analyzes selected land and housing issues relevant to Honolulu. Pre: 301 and 321. DS
ECON 496 Contemporary Economic Issues (3) Economic analysis of current events. Topics announced each semester; e.g., environmental pollution, crime control, racial discrimination, traffic congestion. Pre: consent. DS
ECON 499 Advanced Directed Research (V) Economics majors and minors conduct research, under faculty supervision, on a topic of their choice. Repeatable one time. A-F only. Pre: minimum GPA of 3.0 in economics and consent.
ECON 500 Master's Plan B/C Studies (1) Repeatable unlimited times.
ECON 604 Microeconomics and Policy Analysis (3) Theory of the consumer, firm, and market. Role of governments and analysis of public policy. Applications to both industrialized and developing countries. Pre: consent.
ECON 606 Microeconomics Theory I (3) Theory of the firm: production, costs, duality; theory of the market: competition, monopoly, oligopoly, monopolistic competition; theory of the consumer: preferences, expenditures, duality; expected utility theory.
ECON 607* Macroeconomics Theory I (3) Neo-classical theory of real and monetary equilibrium, economics of J. M. Keynes, standard IS/LM models and aggregate demand/supply analysis in the closed and open economy, theory of rational expectations.
ECON 608 Microeconomics Theory II (3) General equilibrium analysis: production, consumption and Walrasian equilibria; Pareto efficiency, fundamental theorems of welfare economics; externals; public goods; game theory; information theory. Pre: 606 or consent.
ECON 609 Macroeconomics Theory II (3) Models of economic growth and fluctuations; stochastic and dynamic macroeconomic models; econometric testing of rational expectations models; theory of public debt; current topics in macroeconomic theory. Pre: 607 or consent.
ECON 611 Economic Development Policy (3) Analysis of policies for the promotion of industrial and agricultural development. Project evaluation, industrial regulation, public administration, investment and capital market policies, land-use policies, trade policies, pricing, and stabilization. Pre: 604 or 606, or consent.
ECON 614 Economic Development of Japan (3) Analysis of growth from Meiji period to present. Problems of population change, capital formation, income distribution, industrial structure. Pre: 610 or consent.
ECON 620 Microeconomics Theory III (3) Game theory and strategic behavior. Economics of information and incentives principal-agent theory. Economic design. Applications include: theory of contracts; incentive compatible mechanism for provision of public goods; auction theory. Pre: 608 or consent.
ECON 627* Mathematics for Economics (3) Sets, functions, limits, convexity, continuity; constrained and unconstrained optimization; difference and differential equations; matrix algebra; simultaneous equations; comparative statics; Kuhn-Tucker theory; game theory; mathematical programming. Pre: MATH 203, MATH 215, MATH 241, or MATH 251A.
ECON 628 Econometrics I (3) Review of probability, estimation, small sample and asymptotic properties. Bivariate and multiple regression and matrix algebra formulation. Regression diagnostics. Introduction to heteroskedasticity, autocorrelation, simultaneity, dichotomous variables, advanced topics. Pr: 321 or NREM 310, and MATH 241; or consent. (Cross-listed as AREC 626)

ECON 629 Econometrics II (3) Specification, statistical estimation, inference and forecasting of econometric models. Includes advanced topics for single-equation models, pooled models, qualitative dependent variables, simultaneous systems, distributed lags, and time series. Pr: 628, AREC 626, or consent. (Cross-listed as AREC 634)

ECON 637 Resource Economics (3) Analysis of problems of development and management of natural resources with emphasis on resources in agriculture and role in economic development. Pr: 608 and 629; (Cross-listed as NREM 637)

ECON 638 Environmental Resource Economics (3) Principles and evaluation for environmental resource management, forestry and watershed conservation, and sustainable economic development. Pr: 604 or 606; or consent.

ECON 639 Marine Resource Economics (3) Seminar on the economics of the marine environment. Topics include fisheries management, ocean recreation, shipping, and coral reef protection. Pr: 606 or consent. (Offered as needed)

ECON 650 Theory of Public Finance—Expenditures (3) Microeconomic principles of public spending and policy analysis. Externalities, sustainability, public and common property goods, public choice, benefit-cost analysis, general-equilibrium analysis, rent-seeking, corruption, constitutional design, development policy, poverty alleviation, economic security, and new institutional economics. Pr: 604 or 606; or consent.

ECON 651 Theory of Public Finance—Revenue (3) Public and political economics approach to taxation and debt finance. Topics include incidence of taxation, optimal taxation, explicit and implicit debt financing, tax competition, behavioral public finance, and tax reforms. Pr: 606 or consent.

ECON 660 International Trade and Welfare (3) Advanced theory of international trade and welfare; international specialization and exchange, general equilibrium, tariffs, quotas, common markets; welfare implications. Pr: 608 (or concurrent) or consent.

ECON 662 International Macroeconomics (3) Advanced international monetary and macroeconomic theory: balance of payments, output, price and exchange rate determination, international aspects of growth and economic fluctuations, alternative exchange rate regimes, international capital flows. Pr: 605 or 607, or consent.

ECON 664 Applied International Finance (3) Surveys empirical research in international macroeconomics, finance and econometric methods: including balance of payments adjustment, international equilibrium, international prices, interest rates and exchange rates, models of exchange rate determination, capital flows, balance of payments crises. Pr: 607 and 629 (or concurrent), or consent. Fall only.

ECON 670 Labor Economics I (3) Supply of and demand for labor; implications for labor markets and unemployment level. Pr: 606 or consent.

ECON 672 Economics of Population (3) Economic determinants and consequences of population change. Pr: consent.

ECON 674 Health Economics and Policy (3) Economic analysis of health-care policy; efficient design of health-care financing schemes; private and public demand for health, health insurance, and medical care; provider behavior. Pr: 604 (or concurrent) or 606 (or concurrent), or consent.


ECON 699 Directed Research (V) Repeatable unlimited times. Pr: consent of department chair.


ECON 730 Research Seminar (3) Selected issues emphasizing research techniques. Required for students who have passed the two theory qualifying exams and have not passed the comprehensive exam. CR/NC only. Pr: consent.

ECON 732 MA Capstone Research (3) Student applies theoretical and quantitative techniques, critical thinking, and communicating skills to prepare a written and oral presentation of original research on a topic of his or her choice. A-F only. Pr: 420, 425, 604 (or concurrent), and 605 (or concurrent); or consent.

ECON 800 Dissertation Research (V) Research for doctoral dissertation. Repeatable unlimited times.

Education (EDUC)

College of Education

EDUC 740 Field Project (V) Practicum experience in area of specialization. Variable credit: minimum of 3 credit hours, maximum of 6 credit hours. Repeatable two times. Pr: consent.

EDUC 799 Internship in College Teaching (V) Introduction to college-level teaching; doctoral students serve as apprentices to professors; responsibilities include supervised teaching, planning and evaluation. Repeatable one time. CR/NC only. Pr: admission to PhD candidacy and consent.


Educational Administration (EDEA)

College of Education

EDEA 360 Dynamics of Student Leadership (3) Theoretical approaches and an experimental orientation toward leadership in student organizations via classroom activities and practicum experiences with student organizations.

EDEA 370 Peer Leadership Education and Mentoring (3) Theoretical explorations and a supervised practicum experience in student peer leadership education and mentoring in a variety of curricular and co-curricular contexts. Pr: 360 (or equivalent) and consent. Summer only.

EDEA 460 (Alpha/Topics) in Emergent Paradigms of Leadership (3) Exploration, application, analysis and synthesis of advanced leadership concepts including emergent theories, issues, trends and empowering approaches. (B) survey of emergent paradigms; (C) Asian Pacific American leadership; (D) gender and leadership; (E) ethics and leadership; (K) issues and problems in leadership. Repeatable one time per alpha. Pr: 360 (or equivalent) and consent.

EDEA 499 Directed Reading (V) Planned individualized study, reading, research, teaching, and/or projects under direct supervision of instructor. A-F only. Repeatable one time. Pr: consent.

EDEA 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Repeatable unlimited times. Pr: master’s Plan B or C candidate and consent.

EDEA 601 Introduction to Education Administration (3) Develops view of administrative process and organization elements in context of system of personal, social, and physical variables. Emphasis on role and functions of school administrator.

EDEA 602 Research in Education Administration (3) Develops basic concepts of research on educational administration: methodology, status of particular topics, communication, and application of findings to problems of school administration. (Meets PhD common core inquiry methods requirement.)

EDEA 604 Qualitative Research Methods in Educational Organizations (3) Introduction to methods of qualitative research in educational administration. (Meets PhD common core requirement.)

EDEA 608 Survey Research Design and Analysis (3) Survey study designs, survey sampling, questionnaire construction, interviewing, pre-tests, pilot studies, logic of measurement and association, table construction, and elaboration models. Pr: consent. (Cross-listed as SOC 608)

EDEA 610 School-Community Relations (3) Application of principles, strategies, policies, organization of school-community information program.

EDEA 620 Education Finance (3) Educational revenues, appropriations, budgetary procedures, costs, business management, economics of education, measures of productivity.

EDEA 623 Administration in Kinesiology (3) Current problems, trends, and strategies in the administration of physical education, recreation, sport and fitness programs in school and non-school settings. Pr: KRS 423 or consent. (Cross-listed as KRS 623)

EDEA 629 Educational Statistics (3) Statistical inference including applications of parametric and nonparametric methods to educational problems.

EDEA 630 Education Law (3) Status and functions of educational institutions and personnel relative to their legal rights and responsibilities. Includes interpretation of important court decisions, statutes, equity measures.

EDEA 642 Information Systems in Education (3) Integration of information systems and computer technology in educational planning, policy analysis, decision-making, and program assessment. Pr: ETEC 442 and consent.

EDEA 645 Principles of School Leadership (3) Examine the emerging theories, issues, practices, and problems relevant for educational leaders in school organizations. Integrates the aspects of management and administration within the context of leadership.

EDEA 646 American College Student (3) Study of psycho-social characteristics of the American college student and college environment, from viewpoint of student personnel work. (Cross-listed as KRS 646)

EDEA 650 Human Factors in Organization (3) Analysis of the nature of human factors in the physical and social environment. Emphasis on nature and needs, and their relationship to leader- ship, staffing, and staff development. Implications of group structure and human conflict, communication, and supervision and evaluation considered.

EDEA 652 Conflict Management in Education (3) Human factors in administration. Skills in the management of conflict in organizations; theoretical and practical application techniques. Pr: 601, 650, or consent.

EDEA 655 Intercultural Interactions (3) Theory-based frameworks and training methods of intercultural interaction and their applications to educational administration situations.

EDEA 657 Introduction to Higher Education (3) Salient historic, social, and organizational aspects of higher education; history, philosophy, purposes,
governance, administration, structures, financing, faculty and student selection, curricula, legal and social issues. (Cross-listed as EDEF 657)

EDEA 600 Management/Leadership in Higher Education (3) Trends, research, and problems in college and university management. Pre: 657 or consent.

EDEA 601 Student Affairs Administration in Higher Education (3) Philosophy, history, organization, and administration of student personnel services at college and university levels, including admissions, housing, student activities, financial aids, placement, counseling, health services. Pre: 657 or consent.

EDEA 602 Curriculum in Higher Education (3) Development and changing missions of community colleges; in-depth study of emerging leadership issues: planning, financial management, decision-making, governance, and student personnel. Pre: 660 or consent.

EDEA 670 School Supervision (3) Principles of supervision, development of supervisory programs.

EDEA 676 The Politics of Education (3) Examination of the ways in which education can be viewed as political, arising from its connection to the larger political system including local, state, and federal governments. A-F only. Pre: 675, EDEF 675; or consent. (Cross-listed as EDEF 676)

EDEA 699 Directed Reading and/or Research (V) Individual reading and/or research. Repeatable unlimited times. Pre: consent of instructor and department chair.


EDEA 704 Advanced Qualitative Research (3) Study in trends, research, and problems. Pre: 604 or comparable, or consent.

EDEA 720 Administrative Internship (V) Supervised intern experience in school and university administration. Development of leadership skills through program and project management. A-F only. Pre: approval of cooperating agencies and department.

EDEA 745 Creative Learning Strategies for Adults (3) Analysis of psychology of adult learner; forces that affect learning in dynamics of individual, group, and organizational behavior; concept of lifelong learning vis-a-vis development of creative strategies that assist maturing, self-directed persons to develop their potentials. (Cross-listed as EDEF 745 and NURS 745)

EDEA 767 Seminar on the Educational System (3) Examination of structure and dynamics of the educational system. Particular focus on how educational policy interacts with principles that explain educational system behavior. A-F only. Pre: 675 or EDEF 675, or consent. (Cross-listed as EDEF 767)

EDEA 775 Seminar on the Principalship (3) Series of planned seminar experiences on problems and issues confronting school principals, such as contract administration, program planning and budgeting systems (PPBS), teacher evaluation. Topic to be announced. Repeatable unlimited times.

EDEA 780 (Alpha) Seminar (3) Study in trends, research, and problems. (B) policy formulation; (C) organizational change; (D) evaluation and research management (meets PhD common required advanced methodology course); (F) curriculum administration; (G) school governance; (H) higher education administration; (I) administrative theories; (K) administrative problems and issues. Pre: consent.

Key to symbols & abbreviations: see the first page of this section.

Educational Foundations (EDEF)

College of Education

Current TB clearance is a requirement for all students taking courses requiring practicum experiences.

The minimum required grade for prerequisites for undergraduate-level courses is a grade of “C” or better. The minimum required grade for prerequisites for graduate-level courses is a grade of “B” or better.

EDEF 310 Education in American Society (3) Interrelated historical, philosophical, and sociocultural contexts of education with an emphasis on contemporary problems and applications. Students enrolled in colleges other than the College of Education are asked to confer with the College of Education director of student services before enrolling in 310. A-F only. DS

EDEF 360 Introduction to Multicultural Education (3) Concepts and methods to develop sensitivity and awareness of cultural influences on behavior as these relate to the schooling process. (Cross-listed as ITE 360) DS

EDEF 399 Directed Reading (V) Individual reading or research. Pre: senior majors with a minimum cumulative GPA of 2.7 or a minimum GPA of 3.0 in education, and consent of instructor and department chair.

EDEF 408 Community and Culture (3) Theoretical and practical approaches to understanding the constitution of community life. A focus on the social construction of normative values, social dynamics of organizations, and school-community relations.

EDEF 445 Sociology of Education (3) Introduction to sociological frameworks of analysis of the institutional, cultural and social dynamics of schooling, classroom management, school reform, social group and individual role behavior. DS

EDEF 453 Gender Issues in Education (3) Examination of current and historical issues in education and how they are impacted upon by gender, with particular reference to gender as it intersects with ethnicity and class, locally and globally. Pre: WS 151 or consent. (Cross-listed as EDCS 455 and WS 453) DS

EDEF 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

EDEF 610 Foundations of Educational Theory (3) An in-depth review of social, philosophical, and historical views underlying various theories of education and their applications in teaching and learning.

EDEF 630 Cultural Diversity and Education (3) Examines issues, theories, perspectives and practices in multicultural education and promotes awareness, encourages knowledgeable reflection and develops skills necessary for multicultural practitioners. A-F only. (Cross-listed as EDCS 630)

EDEF 649 Field Studies in Educational Foundations (V) Field-based participant research projects, including analysis of educational problems and issues. Repeatable three times. Pre: consent.

EDEF 651 History of Education in America (3) History of educational thought and practice from European colonialism to revolutionary nationalism to the present.

EDEF 652 History of Education in Hawai‘i (3) From pre-contact, ancient Hawai‘i to the present. Social and intellectual influences on the development of national, local, and indigenous educational institutions; emphasis on multicultural as well as monocolonial directions in Hawai‘i’s schools.

EDEF 657 Introduction to Higher Education (3) Salient historic, social, and organizational aspects of higher education; history, philosophy, purposes, governance, administration, structures, financing, faculty and student selection, curricula, legal and social issues. (Cross-listed as EDEF 657)

EDEF 660 Philosophy of Education (3) Readings of the original texts of major philosophers affecting American education. Considerations about the conditions of knowing and their extension in everyday practices in education.

EDEF 667 (Alpha) Seminar in Educational Foundations-Seminar Topics (3) Multi-disciplinary historical, philosophical, social/cultural and comparative/international focus on topical issues in education. (B) general; (C) leadership and governance in education; (D) educational reform; (E) foundations of teaching; (F) foundations of curriculum; (G) globalization in education; (H) moral political education. Repeatable one time for (H). A-F only for (H). Pre: graduate standing and departmental approval.

EDEF 669 Introduction to Comparative/International Education (3) Introduction to basic methods of comparative studies, focusing on schooling, but also treating broader educational issues.

EDEF 671 Topics in Comparative Education (3) Educational institutions, structures, processes, policies, and problems viewed within the context of political, social, and cultural milieus. Geographical region or theme focus. Repeatable three times. Pre: consent.

EDEF 675 Introduction to Educational Policy Studies (3) Examines theories and models of educational policy and policy making and the contribution of policy analysis to the policy-making and change processes. A-F only. Pre: consent.

EDEF 676 The Politics of Education (3) Examination of the ways in which education can be viewed as political, arising from its connection to the larger political system including local, state, and federal governments. A-F only. Pre: 675, EDEF 675, or consent. (Cross-listed as EDEF 676)

EDEF 678 Approaches to Educational Inquiry (3) Overview of different research methods in educational inquiry with an opportunity to explore through practice one or more methods (ex: case study, interviewing, narrative construction, practitioner inquiry. Preparation for MEd or PhD proposals.

EDEF 680 Seminar on Race, Law, and Education (4) Examination of racial and ethnic policy relates to issues of race and ethnicity. Particular focus on how the U.S. courts have dealt with the question of educational inequality in a multicultural/multinational society. A-F only. Pre: graduate standing or consent.

EDEF 683 Social and Cultural Contexts of Education (3) Focuses on the interplay of class, race, gender and ethnicity in school and community settings. Social praxis, educational reform and policy are considered.

EDEF 684 Education and World Order (3) Focuses on the challenges educators face in identifying appropriate pedagogical frameworks and practices in global education that address the impact of globalization in our society today. A-F only. Pre: consent.

EDEF 685 International Development Education (3) Introduction to international development education in Asian and Pacific nations. Students explore links between education and development. Emphasis is on cross-cultural perception of development.

EDEF 686 Environmental Education (3) Focus on environmental problems, such as pollution, resource depletion, and overpopulation, to develop programs of relevant education. Uses action projects in schools and community.

EDEF 699 Directed Reading and/or Research (V) Individual reading and/or research. Pre: consent of department chair.

EDEP 762 Seminar on the Social and Cultural Contexts of Education (3) Examination of social, political, and cultural issues affecting educational policy with special emphasis on methods of inquiry and theoretical constructs. Pre: consent.


EDEP 766 Seminar in History of Education (3) Aspects of the history of education. Application of historiography to educational problems and policy. Repeatable with different content. Pre: one of 650, 651, 652, or 761; or consent.

EDEP 767 Seminar on the Educational System (3) Examination of the structure and dynamics of educational system. Particular focus on how educational policy interacts with principles that explain educational system behavior. A-F only. Pre: EDEP 675, or consent. (Cross-listed as EDEA 767)

**Educational Psychology (EDEP)**

**College of Education**

EDEP 201 Introduction to Teaching as a Career (3) An experience-based introduction to teaching as a career. Repeatable one time.

EDEP 311 Psychological Foundations (3) Principles of learning and individual differences; relationships of these factors to classroom experience. DS


EDEP 399 Directed Reading (V) Individual reading or research. Pre: consent.

EDEP 408 Fundamentals of Research in Education (3) Introduction to the methodology of systematic study of problems in education: principles of research design, data processing, technical writing, and evaluation of research proposals and reports. DS

EDEP 411 Seminar in Contemporary Perspectives in Educational Psychology (3) In-depth analysis of contemporary issues in education from the theoretical and methodological perspectives of the faculty in educational psychology. Repeatable one time. DS

EDEP 416 Student Assessment (3) Theory and methods of major unidimensional and multidimensional scaling techniques. Examples from education, sociology, and psychology. Pre: graduate standing. (Cross-listed as PSY 617)

EDEP 611 Inquiry Approach to Educational Psychology (3) Foundations of educational psychology through the vehicle of an exploratory study. Inquiry approach stresses learning theory, measurement techniques, and research skills in education.

EDEP 612 Statistical Power in Behavioral Research (3) Theory and techniques of power analysis for significance testing of means, proportions, correlations or variances, estimation of effect size, and necessary sample size.

EDEP 616 Measurement and Evaluation (3) Theory of measurement and evaluation; analysis of experimental and standardized tests and scales. Course requires basic statistics. (Meets PhD common inquiry methods requirement or elective.)

EDEP 611 Inquiry Approach to Educational Psychology (3) Foundations of educational psychology through the vehicle of an exploratory study. Inquiry approach stresses learning theory, measurement techniques, and research skills in education.

EDEP 661 Development and Learning (3) Examination of the structure and dynamics of educational system. Particular focus on how educational policy interacts with principles that explain educational system behavior. A-F only. Pre: EDEP 675, or consent. (Cross-listed as EDEA 767)

**Educational Technology (ETEC)**

**College of Education**

ETEC 415 Technology for Teachers (3) Introduction to the application of educational technology in teaching and learning using strategies in design, selection, development, integration, and evaluation. Interactive delivery via distance education technologies. A-F only. Pre: basic teaching certification.

ETEC 430 Video Technology (3) Overview of video uses in educational contexts. Includes video planning, production, and simple editing procedures, as well as selection, evaluation, and integration into learning plans. Pre: upper division standing.

ETEC 442 Computers in Education (3) Planning and implementation of computer systems and applications for effective integration into classroom settings. Emphasis is on methods and strategies for using digital technologies to enhance standards-based learning by K-12 students. Pre: upper division standing.

ETEC 448 Links to Lifelong Learning (3) Focused exploration of the internet and its application to effective teaching/learning, including finding, evaluating, using, creating information on the web, culminating project involving designing, creating, and publishing a website. Integration with copyright laws and standards. Repeatable one time. Pre: upper division standing (junior+). and consent.

ETEC 454 Technology Resources (3) Virtual and hands-on analysis of technology resources and utilization in K-12 schools. Pre: upper division standing (junior+) and consent.

ETEC 499 Directed Activity (V) Individual work, supervised by instructor. May consist of reading, research, and/or projects. Repeatable two times. Pre: consent.

ETEC 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.


ETEC 502 PDET: Technology Skills for Educators (2) Exploring technology resources needed for integration into classroom instruction. Repeatable one time. CR/NC only.

Key to symbols & abbreviations: see the first page of this section.
ETEC 511 Professional Development Education Technology I (3) Specialized topics reflecting interests and needs of faculty in current issues of technology integration. Combined lecture, lab and discussion course. Repeatable one time. Pr: consent.

ETEC 512 Professional Development Education Technology II (3) Specialized topics reflecting interests and needs of faculty in current issues of technology integration. Combined lecture, lab and discussion course. Repeatable one time. Pr: consent.

ETEC 513 Professional Development Education Technology III (3) Specialized topics reflecting interests and needs of faculty in current issues of technology integration. Combined lecture, lab and discussion course. Repeatable one time. Pr: consent.

ETEC 600 Theory and Practice in Educational Technology (3) The profession of educational technology and the role of instructional designers. Theoretical and philosophical foundations underlying practice that include instructional systems theory, needs assessment, change theory, and relevant learning models. Practical applications of these theories to solve instructional problems in real-life settings. A-F only. Pr: ETEC major or consent.

ETEC 601 Ed Tech Research Review (3) Review of existing research in educational technology, with activities leading to the preparation of final study or project proposal. Repeatable one time. A-F only. Pr: ETEC major or consent.

ETEC 602 Teaching/Training Technologies (3) Innovative technological advances for use in teaching and training, and their evaluation in terms of instructional goals. A-F only. Pr: ETEC major or consent.

ETEC 603 Instructional Design and Development (3) Basic concepts and techniques of instructional design and development, for application to solving instructional problems in real-life situations. A-F only. Pr: ETEC major or consent.

ETEC 605 Conducting Ed Tech Research (3) Application of methodological and statistical concepts to students’ own research projects. Formative and summative evaluation methods, descriptive and inferential statistics. A-F only. Pr: ETEC major.

ETEC 606 Qualitative Research in Educational Technology (3) Introduction to qualitative research traditions and designs. Emphasis will be on the use of digital technologies in data collection and analysis. A-F only. Pr: 601, ETEC major or consent. (Once a year)

ETEC 620 Visual Design (3) Theory and practice involved in planning educational/instructional graphic and photographic material for print and computer-based media. Pr: ETEC major or consent.

ETEC 630 Video/TV Design (3) Development and utilization of television programs for the purpose of improving the teaching-learning process. A-F only. Pr: ETEC major or consent.

ETEC 644 Programming Concepts/Structures (3) Using Java, project-based exploration of the breadth of computer programming in the context of general and instructional applications, including educational games. Pr: ETEC major or consent.

ETEC 645 Design Web-based Instruction (3) The design and development of instruction for Web and internet delivery. Integration of HTML, Java, and current Web authoring software will be employed to create instructional websites. Repeatable one time. A-F only. Pr: ETEC major or consent.

ETEC 647 Hypermedia Design (3) The utilization and application of computer interactive systems including the use of advanced authoring tools, combining unique advantages of video, motion, imagery, and sound with current instructional processes in student-centered learning. Repeatable one time. A-F only. Pr: ETEC major or consent.

ETEC 648 (Alpha) Computer Authoring (3) Conceptualization of instructional design and its application to the development of particular types of instruction, whether or environment: (B) assisted instruction (CAI); (C) managed instruction; (D) virtual reality; (E) animation. Repeatable one time. A-F only. Pr: ETEC major or consent.

ETEC 649 Development of Online Courseware (3) Planning, design, and development of online instruction for educational and training settings. Implementation of elements such as student interaction, course management, testing, and content delivery using an authoring environment such as Web Course Tools or equivalent. Repeatable one time. A-F only. Pr: ETEC major or consent.

ETEC 650 Instructional Technology Services Management (3) Applying theory of management in instructional technology, support services and delivery systems. Pr: ETEC major or consent.

ETEC 661 Distance Education Technology (3) Technical and instructional considerations for developing, delivering, managing, and evaluating distance education including video, voice, video, print, hypermedia and data transmissions. Pr: ETEC major or consent.

ETEC 662 Computer Networks in Education (3) Design, installation, and management of computer networks for administrative and instructional uses, with particular focus on local area network issues. Pr: ETEC major or consent.

ETEC 663 Planning for Technology and Resources (3) Planning, needs assessment, and change theory applied to the development and evaluation of long-range plans and the communication of a vision for technology in education. Pr: ETEC major or consent.

ETEC 664 Technology and Instructional Applications (3) Designing, delivering, and evaluating performance solutions related to technology-based needs of adult learners in various instructional settings. Pr: ETEC major or consent.

ETEC 667 Tech in Non-TEC Disciplines I (3) Designed for non-tech disciplines, course focuses on building and facilitating student success in selected computer, distance learning, web, and internet technologies through exploration, understanding, application, and integration of key concepts and skills. Not for ETEC majors. Pr: consent.

ETEC 668 Tech in Non-TEC Disciplines II (3) Designed for non-tech disciplines, course builds upon the concepts and skills learned in ETEC 667 by presenting for mastery, more complex technological concepts and skills involved in designing, creating, and publishing information on the web. Not for ETEC majors. Pr: consent.

ETEC 670 Media and Technological Product Evaluation (3) Evaluation process, sources and instruments applicable to systematic appraisal of technology systems, hardware, software, and other instructional resources. Repeatable two times. A-F only. Pr: ETEC major or consent.

ETEC 679 Education and Communication Technologies (3) Role and impact of communication technologies in contemporary educational institutions. Application and adaptation of such technologies to instructional purposes and as learning activities and ramifications of these technologies on administrative structure of schools. A-F only. Pr: ETEC major or consent.

ETEC 680 Professional Ethics and Technology (3) Examining and conveying an ethical vision of the role and impact of technologies in contemporary education and training: designing ways to communicate that vision to peers and students. A-F only. Pr: ETEC major or consent.

ETEC 686 Information Literacy and Learning Resources (3) Study of information literacy models. Integration of information literacy with K-12 curriculum units and lessons. Evaluation of print and multimedia resources to meet student and curricular needs. Required for Librarian HDOE licensure. Pr: ETEC major or consent. (Cross-listed as EDCS 686 and LIS 686)

ETEC 687 Instructional Development Practicum (3) Practicum in instructional development and design in academic, agency, and private industry settings, under close supervision, plus regular class meetings in seminar format. Repeatable one time. Pr: ETEC major or consent.

ETEC 688 Educational Technology Practicum (3) Practicum in educational technology applications in academic or non-academic settings, under close supervision, plus regular class meetings. Repeatable one time. Pr: ETEC major or consent.

ETEC 690 Seminar in Technology Leadership (3) Supervised activity in application of technology to teaching/training experiences. Repeatable one time. Pr: ETEC major or consent.

ETEC 699 Directed Reading and/or Research (V) Individual reading and/or research. Repeatable for 3 credit hours maximum each time. Pr: ETEC major or consent.


ETEC 750 (Alpha) Seminar in Educational Technology Issues (3) Study and discussion of significant topics and problems. (A) instructional technology issues; (B) administrative structure of schools. A-F only. Pr: ETEC major or consent.

EE 101 Electrical Engineering Skills (3) Electrical engineering subjects in a skill acquisition context at the freshman level. Learning outcomes include: (A) problem solving, brainstorming, technical information assimilation, and presentation skills development. Repeatable two times. DP

EE 160 Programming for Engineers (4) (3 Lec, 1 3-hr Lab) Introductory course on computer programming and modern computing environments in C with an emphasis on algorithm and program design, implementation, and debugging. Includes a hands-on laboratory to develop and practice programming skills. A-F only. Pr: MATH 241 (or concurrent) or MATH 251A (or concurrent) or consent.

EE 196 Freshmen Project (V) Freshman level individual or team project under EE faculty direction and guidance. This project provides early student entry into EE hands-on project activity providing practical skills, EE subject exposure and experience. Second semester freshman standing required. Repeatable unlimited times. Pr: consent.

EE 205 Object Oriented Programming (3) Second-level programming for computer engineers. Object-oriented programming paradigm, definition and use of classes, fundamentals of object-oriented design in modern object-oriented languages such as C++. Common data structures, simple searching and sort-
EE 315 Signal and Systems Analysis (3) Discrete Fourier transform, Fourier series, Laplace transform. Fast Fourier transform, analysis of linear systems. Pre: 213 and either MATH 244 or MATH 253A; or consent.

EE 323 Microelectronic Circuits I (3) Semiconductor structures, operating principles and characteristics of diodes and amplifying devices. Their application as circuit elements in building basic digital, analog, and integrated circuit subsystems. Pre: 213. DP

EE 323L Microelectronic Circuits I Lab (1) (1 3-hr Lab) Experiments on linear and logic properties of diodes and transistor networks. Pre: 213. Co-requisite: 323. DY

EE 324 Physical Electronics (3) Review of quantum mechanics fundamentals, F-atom, and chemical bonding. Introduction to band structure models and materials. Semiconductor doping, charge carrier statistics and charge transport, including ambipolar transport. Metal-semiconductor and PN junctions. Pre: MATH 243 or MATH 253A, and PHYS 274; or consent. DP

EE 326 Microelectronic Circuits II (3) Principles and design of linear electronic circuits including differential, operational, feedback, and tuned amplifiers; integrated circuits, current mirrors, signal generators, filters, and stability. Pre: 323. DP

EE 326L Microelectronic Circuits II Lab (1) (1 3-hr Lab) Laboratory for 326, experiments on linear and analog electronics. Pre: 323L. Co-requisite: 326. DY

EE 327 Theory and Design of IC Devices (3) Band structure models and carrier transport physics review. Theory and design of semiconductor IC devices: Schottky diodes, bipolar devices (PN junction diodes, BJTs), FETs (MOSFETs, JFETs), and MESFETs. Pre: 324 and either MATH 243 or MATH 253A; or consent. DP

EE 328 Microcircuit Fabrication (3) Technology principles, materials, and methods for the design and fabrication of semiconductor devices, integrated circuits, and microelectromechanical systems. Pre: 327 or consent. Co-requisite: 328. DP

EE 328L Microcircuit Fabrication Lab (1) (1 3-hr Lab) Hands-on laboratory where students make various electronic and electromechanical micro-devices using IC technology. Devices are also tested and analyzed. Pre: 324 or consent. Co-requisite: 328. DY

EE 341 Introduction to Communication Systems (3) Signal representation, Fourier analysis; amplitude and angle modulated systems; sampling theorems, pulse and digital modulation systems; carrier modulation by digital signals. Pre: 315.


EE 342 Probability and Statistics (3) Probability, statistics, random variables, distributions, densities, expectations, limit theorems, and applications to electrical engineering. Pre: 315 (or concurrent) and either MATH 244 or MATH 253A; or consent.

EE 344 Networking I (1) (3 Lec, 1 3-hr Lab) Covers 4 semesters from the Cisco Networking Academy plus supplementary material; hands-on experience with routers and switches; prepares students for the CCNA. Topics include TCP/IP, LANs, WANs, routing protocols, network security; PPP, ISDN, frame relay. A-F only. Pre: 160 or consent.

EE 351 Feedback-Control Systems (3) Analysis/design of feedback systems. Compensator design via root locus and Bode analysis. Routh/Nyquist stability. Nonlinear systems, linearization, and introduction to MIMO formulation. Controllability/observability. Application to physical dynamic systems such as industrial robots. Pre: 315 or ME 375 or consent. DP

EE 351L Linear Feedback-Control Systems Lab (1) (1 3-hr Lab) Provides experience in applying theoretical tools to analyze linear systems. Extensive use is made of computer-aided and off-the-shelf design packages study system performance. Pre: 315. Co-requisite: 351.

EE 361 Digital Systems and Computer Design (3) Design methodology, processor design, control design, memory organization, system organization. Pre: 160 and 260, or consent.


EE 366 CMOS VLSI Design (4) (3 Lec, 1 3-hr Lab) Introduction to the design of very large scale integrated (VLSI) systems and use of CAD tools and design languages. Lab includes hands-on use of CAD tools and experiments with field programmable logic devices. Pre: 326, 326L, and either MATH 243 or MATH 253A, or consent. DP

EE 367 Computer Data Structures and Algorithms (3) Introduction to computer programming algorithms with emphasis on advanced data structures, input-output routines, files, and interpreters. Pre: 160.


EE 371 Engineering Electromagnetics I (3) Transient and steady-state waves on transmission lines, plane wave solutions of Maxwell’s equations. Application of Maxwell’s equations under static and time-varying conditions. Pre: 213.

EE 372 Engineering Electromagnetics II (3) Solution of Maxwell’s equations under various boundary conditions. Introduction to radiation, guided waves, and principles of optics. Pre: 371 and PHYS 274 (or concurrent), or consent.

EE 372L Engineering Electromagnetics Lab (1) (1 3-hr Lab) Experiments illustrating the basic principles of electromagnetics and optics. Pre: 371 and PHYS 274 (or concurrent), or consent. Co-requisite: 372.

EE 396 Junior Project (V) Junior level individual or team project under EE faculty direction and guidance. The project provides design experience and develops practical skills. It may be a continuation of EE 296 or a new project. Repeatable unlimited times. Pre: 296 and junior standing or consent.

EE 406 Introduction to Computer and Network Security (3) Review basic network mechanisms, introduce basic cryptography concepts, and study algorithms and protocols used in computer and network security. Discuss practical security mechanisms, including SSL, web security. A-F only. Pre: consent. (Once a year)

EE 415 Digital Signal Processing (4) (3 Lec, 1 3-hr Lab) Discrete-time signals and systems, sampling, Z-transform, transform, transform analysis of linear time-invariant systems, filter design, discrete Fourier transform, and computation of discrete Fourier transform. Repeatable one time. Pre: 315 and 342 (or concurrent), or consent.

EE 416 Introduction to Digital Image Processing (3) Digital image representation, intensity transformations, spatial filtering, filtering in the frequency domain, image restoration, color spaces and transformations, the fast wavelet transform, image compression. Pre: 315 (or equivalent) or consent.

EE 417 Introduction to Optimization (3) Application of linear and nonlinear programming models and algorithms to communications, control, signal processing, computer networking, financial engineering, manufacturing, production and distribution systems. CE, EE, ME, or CBA majors only. Pre: MATH 307 or consent. (Alt. years)

EE 422 Electronic Instrumentation (3) Electronic circuits for interfacing with transducers, signal processing, and data acquisition. Amplifiers for measurement and control. Operational amplifiers in linear, nonlinear, and digital applications. Design project. Basic transducers. Pre: 526, 526L, and 371; or consent. DP

EE 422L Instrumentation Lab (1) (1 3-hr Lab) Laboratory for 422. Co-requisite: 422. DY


EE 425 Electronic Instrumentation II (3) Instrumentation systems and circuits for measurement, control, signal processing, transmission, and detection. Noise and interference, measurement and test, modulation, demodulation, high-frequency and high-speed techniques of electronic components, the fast wavelet transform, image compression. Pre: 315 and 422L, or consent. DP

EE 426 Advanced Si IC and Solid State Devices (3) State of the art Si-based devices including advanced bipolar and MOS devices, heterojunction devices, new device trends. Topics from the most current literature included. Pre: 327 and either MATH 243 or MATH 253A, or consent. DP

EE 427 Computer-Aided Circuit Design (3) Application of the computer to the analysis, design, simulation, and construction of analog and digital circuits. Pre: 326 and 326L, or consent. DP

EE 442 Digital Communications (3) Baseband transmission, intersymbol interference and pulse shaping, partial response signaling, equalization, bandpass modulation and demodulation, channel coding, synchronization, multiplexing and multiple access, spread spectrum techniques. Pre: 341 and 342, or consent.

EE 446 Information Theory and Coding (3) Models of communication systems. Channel noise, measurement, and coding of information. Intrinsic limits of performance of communication systems. Pre: 341 and 342, or consent.

EE 449 Computer Communication Networks (3) ISO Reference Model, Physical Layer, Data Link Layer protocols, local- and wide-area networks, routing, congestion and flow control, higher layer
protocols, network design, ISDN, performance evaluation, high-speed networks. Pre: 315 and one of 342, MATH 371 or MATH 471; or consent.


EE 453 Modern Control Theory (3) Analysis and synthesis of nonlinear control systems by means of Lagrange’s equation, state space techniques, maximum principle. Lyapunov’s theorems, the phase plane, and Z-transform techniques. Optimization and adaptive control. Stability and robustness, calculus of variations, dynamic programming. Pre: 351.

EE 455 Design of Intelligent Robots (3) Study of the design principles of computer-controlled, intelligent robots such as roving vehicles, hand-eye systems. Pre: 351 and 367. DP

EE 461 Computer Architecture (3) Structure of stored program machines, data flow machines, pipelining, fault-tolerant computing, instruction set design, effects of computer design on architecture, RISC vs. CISC architecture, uses of parallelism. Pre: 361.

EE 467 Object-oriented Software Engineering (3) Introduction to advanced techniques for designing, implementing, and testing computer software with a particular focus on using object-oriented design, analysis, and programming to produce high-quality computer programs that solve non-trivial problems. Pre: 367 or consent.

EE 468 Introduction to Operating Systems (3) Computer system organization; multiprocessor systems, memory hierarchies, assemblers, compilers, operating systems, virtual machine, memory management, processor management; information management. Pre: 367 or consent.

EE 469 Wireless Data Networks (3) Mobile agent’s platforms and systems, mobile agent-based service implementation, middleware, and configuration, wireless local area networks, wireless protocols, network architecture supporting wireless applications, routing protocols in mobile and wireless networks, handoff in mobile and wireless networks. Pre: 344 and 367, or consent.

EE 470 Physical Optics (3) Fundamentals of classical physical optics emphasizing linear systems theory, including optical fields in matter, polarization phenomena, temporal coherence, interference and diffraction (Fourier optics). Specialized applications include laser beams, laser resonators, pulse propagation, and nonlinear optics. Pre: 315 (or concurrent) and 371, or PHYS 350 and PHYS 400 (or concurrent); or consent. (Cross-listed as PHYS 460) DP

EE 473 Microwave Engineering (3) Passive and active microwave devices and circuits for RF and wireless applications. Scattering parameters, signal-flow graphs, and computer-aided design. Pre: 371, or consent.


EE 475 Optical Communications (3) Principles and applications of optical fibers and waveguides. Fundamentals of optical communication systems (optical links, high-speed systems, wavelength-division-multiplexing networks, and network elements) and optical components (guided-wave circuits, lasers, detectors, and optical amplifiers). System and network integration issues. A-F only. Pre: 341 (or concurrent) and 371, or consent. DP

EE 477 Fundamentals of Radar, Sonar, and Navigation Systems (3) Discussion of basic radar detection and position-velocity-measurement principles. Applications to various types of radar and sonar systems. Modern navigation aids. Pre: 371 (or equivalent), and familiarity with waveguides or waveguide theory. DP


EE 481 Bioelectric Phenomena (3) Study of electro-physical phenomena in living systems. Mechanisms underlying bioelectric activity. Membrane and transmembrane potentials, skin impedance, electrocardiography, electroencephalography, and laboratory demonstrations. Pre: 480 or consent.

EE 482 Biomedical Instrumentation (3) (2 Lec, 1 3-hr Lab) Principles, applications, and design of biomedical instrumentation. Transducers, ICs and microcomputer applications, patient safety. Pre: 326, 480, or consent.

EE 491 (Alpha) Special Topics in Electrical Engineering (3) Content will reflect special interests of visiting/permanent faculty; to be oriented toward juniors and seniors. (B) artificial intelligence; (C) analog/digital electronics, mixed-signal circuits. (D) digital logic design and computer-aided design. Pre: 326, 480, or consent.

EE 494 Provisional Topics (3) Upper division course with subject matter to be announced.

EE 495 Ethics in Electrical Engineering (1) Equip electrical engineers with the necessary background for ethical reasoning, as it pertains to technology, society, workplace issues, and the environment. EE majors only. A-F only. Pre: senior standing or consent. (Once a year)

EE 496 Capstone Design Project (V) Significant project integrating the design content of previous courses and incorporating engineering standards and realistic constraints. Written report must document all aspects of the design process: reliability, safety, economics, ethics. Repeatable unlimited times. A-F only. Pre: 396 or consent.

EE 499 Directed Reading (V) Investigation of advanced engineering problems. Pre: senior standing and consent.

EE 500 Master’s Plan B/C Studies (1)

EE 602 Algorithm I (3) Design and evaluation of machine representations, techniques and algorithms for sorting, pattern processing, computational geometry, mathematical computations, and engineering applications. Introduction to computational issues of time, space, communication, and program correctness. Pre: 367 or consent.

EE 604 Artificial Intelligence (3) LISP for machine intelligence applications, or related constraint object and logic-oriented languages. Pre: 467 or knowledge of LISP/PROLOG.

EE 606 Intelligent Autonomous Agents (3) Theory, methods and practical applications of autonomous agents, robotics, and computer-aided design. Pre: 467 or ICS 313 (or equivalent), graduate standing; or consent. (Once a year) (Cross-listed as ICS 606)

EE 607 Advanced Network Algorithms (3) Network algorithms, protocols, and packet switching systems for the internet including TCP/IP, routing algorithms, transmission scheduling, link management, buffer management, and simple network management. Pre: 367 or consent.

EE 608 Optical Networks (3) Propagation of signals in fibers, components and systems, digital and analog modulation and demodulation, transmission system engineering, network systems and architectures, network design, control and management and packet switching. Pre: 342, 367, and 371; or consent.


EE 616 Digital Image Processing (3) Human visual perception, image formation, sampling and quantization, enhancement, restoration and computer-aided image processing, wavelets and multiresolution representations, image and video compression. Pre: 415 or equivalent.

EE 617 Linear and Convex Optimization (3) Algorithms for linear, nonlinear, and convex optimization. Emphasis is on methodology and the underlying mathematical structures. Topics include simplex method, network flow methods, optimal control, inventory control, resource allocation, scheduling, and control of queues. Rollout and other suboptimal methods. Value and policy iteration. Pre: 342 or MATH 371 or MATH 471, or consent.

EE 620 Advanced Electronic Circuits (3) Electronic circuits for precision measurement, computation, and signal processing, low-noise electronic and silicon-on-insulator techniques, transistors and integrated circuits. Pre: 414 or consent.

EE 621 Advanced Solid-State Devices (3) Advanced physical principles and design of modern solid-state electronic devices. Heterostructures, photodetectors, LEDs, junctions, and other devices of current importance identified from the current literature. Pre: 327.

EE 622 Optical Electronics I (3) Fundamentals of optical radiation, including stimulated and spontaneous processes. Optical electronics including optical resonators, lasers, optical detectors, light-guiding, and applications. Pre: 327 or consent.

EE 624 Micromirrors and Microactuators I (3) Fundamentals and physical principles of micromirrors and microactuators. Vacuum technology, thin film deposition and characterization techniques, solid mechanics, micromachining, acoustics, piezoelectricity, and principles of current microtransducers. Pre: 327 or consent.

EE 627 Advanced Topics in Physical Electronics (3) Recent developments in phenomena and devices of physical electronics. Pre: 327.


EE 640 Applied Random Processes (3) Random variables, multivariate distributions, random sequences, stochastic convergence, stationary and nonstationary processes, spectral analysis, Karhunen-

EE 681 Biosensors and Bioelectronics (3) Advanced topics in the design of biological detection technologies. Topics include fundamentals of electrochemistry, electrochemical biosensors, DNA and protein biochips, and bioelectronics for bio-signal conditioning and processing. Pre: 324 and 326, or consent. (Once a year)

EE 683 (Alpha) Special Topics in Electrical Engineering (3) Content will reflect special interests of visiting/permanent faculty. (B) artificial intelligence; (C) circuits; (D) communications; (E) computer hardware; (F) computer software; (G) computer vision; (H) control; (I) devices; (J) fields; (K) power. Pre: consent.

EE 699 Directed Reading or Research (V) Repeatable unlimited times. CR/NC only. Pre: graduate standing and consent.


EE 790 Directed Instruction (V) Repeatable unlimited times. CR/NC only. Pre: graduate standing and consent.

EE 800 Dissertation Research (V) Research for doctoral dissertation. Pre: candidacy for PhD in electrical engineering.

Engineering (ENGR)

College of Engineering

Eng 140 Introduction to Engineering (3) Introduction to engineering design, modeling, and practice. Required of all engineering majors. Pre: MATH 471 or equivalent.

EE 240 Detection and Estimation Theory (3) Fundamentals of signal detection and estimation theory. Hypothesis testing, parametric and nonparametric detection, sequential detection, parametric estimation, linear estimation, robust detection and estimation, and applications to communication systems. Pre: 640.


EE 270 Introduction to Electrical Engineering (3) Introduction to electrical engineering. Pre: 471 or consent.

EE 280 Advanced Microwave Engineering (3) Advanced RF and microwave circuit design for wireless applications. Pre: 473 or consent.

EE 281 Microwave and Wireless Engineering (3) Advanced microwave and RF concepts. Pre: 240.

EE 297 Independent Study (1) Independent study under direction and close supervision of faculty. Repeatable one time. CR/NC only. Pre: graduate standing and consent.

EE 340 Machine Learning (3) Learning theory, pattern recognition and regression; gradient based algorithms and least square algorithms; Kernel methods; Bayesian learning algorithms; ensemble learning and boosting; principal component analysis; independent component analysis, and clustering; reinforcement learning and approximate dynamic programming. EE, ME, ICS, MATH majors only. Pre: 342.

EE 364 Advanced Information Theory (3) Measure of information, coding for discrete sources, discrete memoryless channels and capacity, the noisy channel coding theorem, source coding with fidelity criterion, rate-distortion theory, multiuser channels. Pre: 640.

EE 368 Error-Control Coding I (3) Linear block codes, soft and hard decision decodings, correction of random errors, cyclic codes, BCH codes, Reed-Solomon codes, majority logic decodable codes, burst-error correcting codes, concatenated codes. Pre: MATH 311 or consent.

EE 369 Error-Control Coding II (3) Convolutional codes, Viterbi algorithm, coded modulation, multistage decoding, concatenated coded modulation, probabilistic decoding, turbo codes, low density parity check codes and iterative decoding. Pre: 648.

EE 370 Linear System Theory (3) State space theory of linear systems, controllability, observability, stability, irreducible realizations. Pre: 452.


EE 388 Telecommunication Networks (3) Telecommunication-network architecture; switching, broadcast, and wireless networks; protocols, interfaces, routing, flow- and congestion-control techniques; intelligent network architecture; service creation capabilities; multimedia, voice, data, and video networks and services. Pre: 468 or consent.

EE 371 Electromagnetic Theory and Applications (3) Solutions of Maxwell’s equations and applications to radiation and propagation of electromagnetic waves. Pre: 372 or consent.

EE 373 Advanced Microwave Engineering (3) Advanced RF and microwave circuit design for wireless applications. Pre: 473 or consent.

Key to symbols & abbreviations: see the first page of this section.
and multimedia essays. Pre: two ENG DL courses; second may be taken concurrently; or consent.

ENG 308 Technical Writing (3) Combined lecture/lab preparing students to write about technical subjects for specialists and laypersons. Introduces theory of technical communication and document design and teaches students to make use of relevant technology. A-F only. Pre: FW and either 200 or one ENG DL course, or consent.

ENG 311 Autobiographical Writing (3) Writing clear, effective prose based on the writer's own experiences and ideas. Pre: one ENG DL course or consent. DA

ENG 313 Creative Writing (3) Basic principles applied through writing in two major genres (short story and poetry, short story and drama, or poetry and drama). Pre: one ENG DL course or consent. DA

Enrollment of the college's written communication requirement and two semesters of DL courses (second may be taken concurrently) are prerequisite to upper division English courses numbered 320 or above. A few courses have different or additional prerequisites as listed below.

ENG 320 Introduction to English Studies (3) Introduction to the purpose, practice, and potential of literary and rhetorical study of texts. Prerequisite to 400-level work for ENG majors. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

Each semester, selected "large-enrollment" 300-level courses are designed largely for non-majors. Prerequisites are waived for these particular courses. Please see the Schedule of Classes for these designated courses. English majors can use at most two "large enrollment courses" to fulfill major requirements.

ENG 321 Backgrounds of Western Literature (3) Sources of European and American literary themes and allusions; myth, legend, and folklore of Western cultures; e.g., Classical texts, Arthurian romances, King James Bible. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 322 The Bible as Literature (3) Narrative, generic, and stylistic forms in the Bible in English. Related writings may be considered in comparative analysis. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 323 Literature in English to 1660 (3) Basic concepts and representative texts for the study of literature in English to 1660. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 324 Literature in English 1660-1900 (3) Basic concepts and representative texts for the study of literature in English from 1660-1900. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 325 Literature in English after 1900 (3) Basic concepts and representative texts for the study of literature in English after 1900. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 326 Literature and (Post)Colonialism (3) Basic concepts and representative texts for the study of colonial, post-colonial, and/or Commonwealth literatures from regions such as Africa, India, the Pacific, and the Caribbean. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 327 Literary Criticism and Theory (3) Survey of representative texts from Greek to modern times; e.g., Plato, Aristotle, Sidney, Johnson, Arnold, Eliot, Barthes, Derrida, Foucault, Kristeva. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 330 Medieval British Literature (3) Basic concepts and representative texts for the study of British literature before 1500. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 331 Renaissance British Literature (3) Basic concepts and representative texts for the study of British prose and poetry from 1500 to 1660. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 332 Restoration/18th-Century British Literature (3) Basic concepts and representative texts for the study of British prose, poetry, and drama from 1660 to 1780, exclusive of Milton. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 333 Romantic British Literature (3) Basic concepts and representative texts for the study of British prose and poetry from 1780 to 1832. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 334 Victorian British Literature (3) Basic concepts and representative texts for the study of British prose and poetry from 1832 to 1900. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 335 British Literature After 1900 (3) Basic concepts and representative texts for the study of British prose, poetry, and drama from 1900 to the present. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 336 American Literature to Mid-19th Century (3) Basic concepts and representative texts for the study of prose, poetry, and drama in American literature through the middle of the 19th century. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 337 American Literature Mid-19th to Mid-20th Century (3) Basic concepts and representative texts for the study of prose, poetry, and drama in American literature from the middle of the 19th century to the middle of the 20th century. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 338 American Literature Since Mid-20th Century (3) Basic concepts and representative texts for the study of American literature since approximately 1950. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 350 18th-Century Novel in English (3) Basic concepts and representative texts for the study of the novel in English before 1800. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 351 19th-Century Novel in English (3) Basic concepts and representative texts for the study of the novel in English between 1800 and 1900. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 352 20th-Century Novel in English (3) Basic concepts and representative texts for the study of the novel in English after 1900. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 354 Poetry in English After 1900 (3) Basic concepts and representative texts for the study of poetry in English after 1900. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 355 Drama in English to 1900 (3) Basic concepts and representative texts for the study of drama in English from the Middle Ages through the end of the 19th century. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 356 Drama in English After 1900 (3) Basic concepts and representative texts for the study of drama in English after 1900. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 360 Prose Fiction (3) Basic concepts and representative texts for the study of the form, function, and development of prose fiction genres such as short story and novel. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 361 Poetry (3) Basic concepts and representative texts for the analysis of imagery, sound, language, form, and structure in poems. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 362 Drama (3) Basic concepts and representative texts for the study of the form, function, and development of the genre of drama. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 363 Film (3) Basic concepts and representative texts for the study of the form, function, and development of cinematic narrative techniques. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 364 Non-fiction Prose (3) Basic concepts and representative texts for the study of non-fiction prose such as essays, biographies, autobiographies, speeches, political and legal documents, conversion and captivity narratives, testimonials, science writing, and travel writing. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 365 Mixed Genres (3) Basic concepts and representative texts for the study of works that incorporate more than one genre. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 366 Shakespeare and Film (3) Comparative analysis of selected plays by Shakespeare and films which appropriate, reenact, adapt, or offer variations on his texts. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 370 Ethnic Literature of Hawai‘i (3) Writings of various ethnic groups in Hawai‘i, ancient to contemporary. Songs, stories, poetry, fiction, essays that illustrate the social history of Hawai‘i. Pre: two ENG DL courses; second may be taken concurrently; or consent. (Cross-listed as ES 370) DL

ENG 371 Literature of the Pacific (3) Basic concepts and representative texts for the study of the literature of the Pacific, including Pacific voyagers and contemporary writings in English by Pacific Islanders. Pre: two ENG DL courses; second may be taken concurrently; or consent. (Cross-listed as PACS 371) DL

ENG 372 Asian American Literature (3) Basic concepts and representative texts for the study of Asian American literature by writers from a variety of backgrounds. Pre: two ENG DL courses; second may be taken concurrently; or consent. (Cross-listed as ES 372) DL

ENG 373 African American Literature (3) Basic concepts and representative texts for the study of African American literature by writers from a variety of backgrounds. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 374 Race, Ethnicity, and Literature (3) Basic concepts and representative texts for the study of race and ethnicity as the basis for literary inquiry. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 375 Philippine Contemporary Literature in English (3) Critical survey of 20th-century Philip-
pine literature written in English; cultural values. Pre: one ENG DL course or consent. (Cross-listed as IP 363) DL

ENG 376 Philippine Literature and Folklore in Translation (3) Philippine folk literature translated into English: epics, myths, legends, and other folklore. Classic works of vernacular writers. Pre: one ENG DL course or consent. (Cross-listed as IP 396) DL

ENG 380 Folklore and Oral Tradition (3) Basic concepts and representative texts for the study of folktales, legends, ballads and other folklore genres in various cultures; consideration given to folklore/ literature relationships. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 381 Popular Literature (3) Basic concepts and representative texts for the study of popular literature genres, such as detective fiction, science fiction, the thriller, the romance, and westerns. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 382 Gender, Sexuality and Literature (3) Basic concepts and representative texts for the study of literary constructions of gender and sexuality. Pre: one ENG DL course or consent. (Cross-listed as WS 381) DL

ENG 383 Children’s Literature (3) Basic concepts and representative texts for the study of children’s literature; may include study of children’s book illustration. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 384 Literature and Technology (3) Basic concepts and representative texts for the study of literature in relation to technological developments. May include history of the book, impact of printing and computer networks, science fiction. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 385 Fairy Tales and Their Adaptations (3) Comparative analysis of selected tales of magic and their adaptations across history, cultures and media such as book illustration and film. Pre: two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 393 Junior Honors Tutorial (3) Tutorials in literature. Contact the English department’s Honors director for particulars; offered fall semester. Repeatable one time. Pre: enrollment in Honors Program and two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 394 Junior Honors Tutorial (3) Tutorials in literature. Consult the English department’s Honors director for particulars; offered spring semester. Repeatable one time. Pre: enrollment in Honors Program and two ENG DL courses; second may be taken concurrently; or consent. DL

ENG 400 Teaching Composition (3) Theory, observation, and practice in teaching writing, especially the use of one-on-one and small group instruction. Pre: two ENG DL courses, or consent. Recommended: 306.

ENG 405L Teaching Composition (1) Observation, and practice in teaching writing, especially the use of one-on-one and small group instruction. Repeatable three times, CR/NC only. Pre: 405 or consent.

ENG 406 Argumentative Writing II (3) Extended study of both the philosophical and practical dimensions of written reasoning. Emphasis on argument as a process of inquiry. Pre: 306 or consent.

ENG 407 Writing for Electronic Media (3) Combined lecture/lab on writing and rhetoric in computer-mediated communication. May include online technical writing, coursework development, hypertext, fiction. Pre: two ENG DL courses or consent.

ENG 408 Professional Editing (3) Discussion and practice in the professional editing of articles, reports, books; logic, clarity, coherence, consistency of tone and style, grammar and punctuation. Pre: 306, 311, 313, 403; or consent.

ENG 409 Studies in Composition/Rhetoric/Language (3) Intensive study of selected topics, problems, themes, issues, and/or writers in composition, rhetoric, and/or English language. Repeatable one time. Pre: 320 and one other 300-level ENG course; or consent. DL

ENG 410 Form and Theory of Poetry (3) Poetic theories and techniques for students interested in writing poetry. Pre: 313 or consent. DL

ENG 411 Poetry Workshop (3) Writing, evaluating poems. Repeatable one time. Pre: 410 or consent. DA

ENG 412 Nonfiction Writing (3) Workshop analysis of nonfiction as a literary form. Repeatable one time. Pre: 306 or 313; or consent. DA

ENG 413 Form and Theory of Fiction (3) Narrative techniques for students interested in writing fiction. Pre: 313 or consent. DL

ENG 414 Fiction Workshop (3) Writing, evaluating fiction. Repeatable one time. Pre: 413 or consent. DA

ENG 415 Prosody (3) Reading and writing in traditional poetic forms—sonnet, villanelle, sestina, roundel, pantoum, etc.—for theoretical and practical appreciation of formal poetry. Pre: two ENG DL courses or consent. DL

ENG 416 Studies in Creative Writing (3) Intensive study of selected topics, problems, themes, writers, or modes of creative writing in a workshop setting. Repeatable one time. Pre: 313 and 410, 412, or 413; or consent. DA

ENG 420 Studies in Literature and Culture (3) Intensive study of selected problems, issues, writers, traditions, or movements in regard to cultural studies and the reading and interpretation of cultural texts. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 421 Studies in Comparative Literature (3) Intensive study of selected problems, issues, writers, traditions, or movements in the field of comparative literature. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 422 Studies in Literary Criticism and Theory (3) Intensive study of selected problems, issues, writers, traditions, or movements in the field of literary criticism and critical theory. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 423 Studies in Medieval Literature (3) Intensive study of selected problems, issues, writers, traditions, or movements in Old/Middle English literature from 500-1500, including works in modern translation. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 431 Studies in 16th and 17th Century Literature (3) Intensive study of selected problems, issues, writers, traditions, or movements in texts written during the period 1560-1830, the “long” 18th century. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 432 Studies in 18th Century Literature (3) Intensive study of selected problems, issues, writers, traditions, or movements in texts written during the period 1660-1830, the “long” 18th century. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 433 Studies in 19th Century Literature (3) Intensive study of selected problems, issues, writers, traditions, or movements in texts written during the 19th century. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 440 (Alpha) Single Author (3) Intensive study of the works and literary milieu of a single author: (A) Emily Dickinson; (C) George Eliot; (D) William Faulkner; (E) Ben Jonson; (F) James Joyce; (G) Mark Twain; (H) Walt Whitman; (I) Virginia Woolf; (J) William Wordsworth; (K) Charles Dickens; (M) Toni Morrison; (N) Jane Austen. Repeatable one time for a different alpha. Pre: two ENG DL courses or consent. DL

ENG 442 Geoffrey Chaucer (3) Intensive study of the works and literary milieu of Geoffrey Chaucer. Pre: two ENG DL courses or consent. DL

ENG 445 William Shakespeare (3) Intensive study of the works and literary milieu of William Shakespeare. Repeatable one time. Pre: two ENG DL courses or consent. DL

ENG 447 John Milton (3) Intensive study of the works and literary milieu of John Milton. Pre: two ENG DL courses or consent. DL

ENG 455 U.S. Women’s Literature and Culture (3) Reading of selected works of U.S. women’s literature and cultural texts (such as art and film). Emphasis on historical and cultural context and diverse expressions of women’s gendered identities. Pre: one ENG DL course (or concurrent) or AMST 202 (or concurrent) or WS 151 (or concurrent); or consent. (Cross-listed as AMST 455 and WS 445) DL

ENG 460 Studies in Fiction (3) Intensive study of selected problems, issues, writers, traditions, or movements in prose fiction. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 461 Studies in Poetry (3) Intensive study of selected problems, issues, writers, traditions, or movements in poetry. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 462 Studies in Drama (3) Intensive study of selected problems, issues, writers, traditions, or movements in drama. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 463 Studies in Film (3) Intensive study of selected topics in film, e.g., genres, major filmmakers, film theory/criticism, and film and literature. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DH

ENG 464 Studies in Life Writing (3) Intensive study of forms and theories of life writing in forms such as biographies, autobiographies, oral histories, diaries, journals, letters, film, drama, and portraiture.

Key to symbols & abbreviations: see the first page of this section.

Courses 411
Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 466 Special Topics: Genre Studies (3) Intensive study of selected texts that combine traditional genres, cross disciplines, challenge categorization, or are overlooked in the study of larger genre categories such as poetry, fiction, or drama. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 470 Studies in Asia/Pacific Literature (3) Intensive study of selected problems, issues, traditions, genres, or writers relating to Asia and the Pacific. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 471 Studies in Postcolonial Literature (3) Intensive study of selected problems, issues, traditions, genres, or writers in postcolonial literatures and theories. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 472 Studies in Diasporic Literature (3) Intensive study of literary, cultural and theoretical issues of diasporic experiences such as immigration, assimilation, nation, and transnationalism. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 479 Modern Pacific Women's Poetry (3) Critical examination of modern indigenous women’s poetry from the Pacific Islands. Thematic concentration on land, family, sexual and national oppression. Pre: two ENG DL courses; or consent. (Cross-listed as WS 483) DL

ENG 480 Studies in Literature and Folklore (3) Intensive study of selected problems, issues, traditions, or genres in folklore and oral traditions and their performance and transformations within specific social and cultural contexts. Repeatable one time. Pre: 320 and one other 300-level ENG courses, or consent. DL

ENG 481 Studies in Literature and Popular Culture (3) Intensive study of selected problems, issues, traditions, writers, movements, or genres in the field of popular literature and/or popular culture. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. DL

ENG 482 Studies in Literature and Sexuality and Gender (3) Intensive study of selected problems and issues in the construction and representation of sexuality and gender in specific genres, social and cultural contexts, or thematic/figurative clusters. Repeatable one time. Pre: 320 and one other 300-level ENG course, or consent. (Cross-listed as WS 484) DL

ENG 491 Senior Honors Tutorial (3) Studies in history of ideas, periods, genres, or themes in literature. Includes research paper. Repeatable one time. Pre: enrollment in Honors Program, 320 and two 300-level ENG courses; or consent. Offered fall semester. DL

ENG 492 Senior Honors Tutorial (3) Studies in history of ideas, periods, genres, or themes in literature. Includes research paper. Repeatable one time. Pre: enrollment in Honors Program, 320, and two 300-level courses; or consent. Offered spring semester. DL

ENG 494 Study Abroad (V) Intensive study in the English language of selected topics, issues or writers from the host country in a UH Mānoa-approved study abroad location. Repeatable one time. A-F only. Pre: two ENG DL courses or consent. DL

ENG 495 Internship (3) Faculty supervised participation in the operations of an organization. A-F only. Pre: two ENG DL courses, junior standing, or consent.

ENG 499 Directed Reading (V) Repeatable one time. A-F only. Pre: two ENG DL courses or consent.

ENG 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

ENG 550 Supervised Teaching Practicum (1) Supervised participation in instruction or tutoring. CR/NC only. Repeatable two times. Pre: graduate standing and consent.

ENG 560 HWP Summer Writing Institute (V) Repeatable one time.

ENG 561 HWP Summer Institute WAC (V) Practicum in the current best approaches to teaching writing across the curriculum. Participants write, read published theory and research in composition, and demonstrate effective writing lessons. Repeatable one time.

Graduate standing or consent is required for all courses numbered 600 and above for which no specific prerequisite is listed.

ENG 601 Old English (3) Structure of the language, relation to present English; reading of selected prose and poetry.

ENG 605 Theory and Practice of Teaching Composition (3) Major contemporary theorists and classroom practices that evolve from their theories; observation and applications.

ENG 610 Elements of Creative Writing (3) Intensive discussion of the craft and technique of creative writing through readings in poetry, fiction, creative nonfiction, and creative writing pedagogy. A-F only. Pre: graduate standing or consent. Fall only.

ENG 613 (Alpha) Graduate Writing Workshop (3) Advanced practice and critical evaluation of the writing of poetry, fiction, or creative nonfiction. (B) poetry; (C) fiction; (D) nonfiction. Repeatable one time. Pre: graduate standing plus 411 for (B); 414 for (C); 412 for (D); or consent.

ENG 620 The Profession of English (3) Introduction to the professional study of English and the four concentrations in the MA program. Required of all candidates for the MA in English. Pre: graduate standing. Fall only.

ENG 625 (Alpha) Theories and Methods (3) Required course in the MA student’s area of concentration. (B) theories and methods of literary study; (C) introduction to composition and rhetoric; (D) foundations of creative writing; (E) theories in cultural studies. Repeatable in different alphabas. Pre: 620 or consent. Spring only.

ENG 627 (Alpha) Literary Theory and Criticism (3) (B) classical period through 18th century; (C) Romantic and post-Romantic.

ENG 664 Biography (3) Study of one or more authors, English or American literature. Repeatable one time. A-F only. Pre: graduate standing or consent.

ENG 691 MA Final Project (V) Individual reading and research towards preparation of MA project. 3 credit hours required. CR/NC only. Repeatable one time. Pre: 620, 625 (or concurrent); and consent.

ENG 699 Directed Reading (V) Individual reading or research. Pre: graduate standing and consent.

ENG 700 Thesis Research (V) Pre: graduate standing and consent.

ENG 705 Seminar in Composition Studies (3) Intensive study of selected issues in composition studies. Repeatable one time. Pre: 625C (or concurrent); or consent.

ENG 709 Seminar in Rhetoric (3) Intensive study of selected topics in the history of rhetoric, rhetorical theory, or rhetorical criticism; topic to be announced. Repeatable one time. Pre: 625C. (or concurrent) or consent.

ENG 713 Seminar in Creative Writing (3) Advanced study in creative writing focused on thesis and dissertation projects. Repeatable one time. Pre: 613 or consent.

ENG 716 (Alpha) Seminar in Techniques in Contemporary Literature (3) The study, from the point of view of the creative writer, of works written within the last 25 years. (B) techniques in fiction; (C) techniques in poetry; (D) techniques in creative nonfiction. Repeatable one time. Pre: 613 (or concurrent) or consent.

ENG 727 Seminar in Literary Criticism (3) Intensive study of selected topics in literary theory and its practical application; topics to be announced. Repeatable two times. Pre: graduate standing or consent.

ENG 730 (Alpha) Seminar in English Literature (3) Study of authors or a period. (C) re-reading Chaucer; (N) 14th century poetry; (P) extended Victorian lyric; (Q) modern British fiction; (R) early 17th century poetry; (S) dominant Victorians: the 1840s; (T) Baroque and English literature; (U) literature and social change; (X) literature and history; (Y) study of different alphas.

ENG 735 (Alpha) Seminar in American Literature (3) Study of authors or a period. (B) American modernism; (C) race in American literature; (D) 19th century American poetry; (E) American literature naturalism; (F) African American literature and theory; (G) American transcendentism; (H) 19th century American novel; (I) contemporary American poetry; (J) narrative theory and criticism; (K) American women; (L) women writers and multiculturalism; (M) Asian American literature and theory; (N) relocaiting American literature; (O) early American literature; (P) T. H. Melville and T. Morrison. Repeatable one time for different alphas.

ENG 740 (Alpha) Seminar in Major Author (3) Study of one or more authors, English or American. (A) Chaucer or Chaucer's and his backgrounds; (B) Austen; (C) George Eliot; (D) Emily Dickinson; (M) Milton; (N) Shakespeare and his backgrounds; (P) Yeats and his circle; (Q) Beowulf; (R) Faulkner's narrative; (T) Virginia Woolf. Repeatable one time. A-F only. Pre: graduate standing or consent.

ENG 745 Seminar in Shakespeare (3) Intensive study of Shakespeare.

ENG 760 (Alpha) Seminar in Literary Genres (3) Study of one or more authors, English or American literature. (A) neoclassicism; (B) tragedy; (C) modern American short story; (D) sonnet and sonnet sequences; (G) Rest., 18th century dramatic comedy; (H) 18th century literature and art; (I) medieval drama; (J) narrative theory and criticism; (K) reinventing the author; (M) laughter and the comic arts; (N) nature of romance; (O) Victorian novel; (P) Jacobean drama; (Q) science fiction; (R) essay, past and present; (S) Eng. hymn in Western culture; (W) 18th century British women novelists; (Y) English romanticism; (Z) English novel and criticism. Repeatable one time. A-F only. Pre: graduate standing or consent.

ENG 763 Seminar in Film Theory and Criticism (3) Classic theories of representation and aesthetics; modern and contemporary cultural, psychoanalytic, and aesthetic theories as they apply to film.

ENG 764 Seminar in Life Writing (3) Intensive study of critical and theoretical issues raised by various forms of life writing (biography, autobiography, oral history, diaries, etc.) and of their history and methodology. Repeatable one time.

ENG 770 Seminar in Cultural Studies in Asia/Pacific (3) Intensive study of selected issues in cultural studies in Asia and the Pacific; topics to be announced. Repeatable one time.

ENG 772 Seminar in Literatures of Hawai`i (3) Introduction to comparative literature; relationship of Hawaiian to other literatures; sources and influences. Repeatable one time.
ENG 775 Seminar in Cultural Studies (3) Intensive study of selected issues in cultural studies and cultural and social theory; topics to be announced. Repeatable one time.

ENG 780 (Alpha) Seminar in Comparative Literature (3) Introduction to comparative literature; relationship of English to other literatures; sources and influences. (B) African lit. and literary theory; (F) folklore and literature; (G) theory/practice of poetry; (H) contemporary drama; (I) mythic method; (J) postmodern fiction; (M) modernism; (N) colonial/postcolonial; (P) postmodernism and postcolonialism; (W) medieval women writers. Repeatable one time for different alphas.

ENG 790 Seminar in Special Topics (3) Content to be announced. Repeatable five times.

ENG 800 Dissertation Research (V) Pre: graduate standing and consent. Repeatable nine times.

### English Language Institute (ELI)

College of Languages, Linguistics and Literature

Initial placement in ELI courses is by examination only. A grade of CR (credit) is a prerequisite to promotion or exemption. Normal core sequence is 70, 80, 72, 82-73, 83 or ELI 100.

ELI 070 Listening Comprehension I (0) Intensive work in understanding lectures, taking lecture notes, writing examinations, and study skills. Language laboratory required.

ELI 072 Reading for Foreign Students (0) Instruction and practice in improving reading comprehension and speed, and in use of textbooks and reference materials. Work on study skills; individual conferences and tutoring.

ELI 073 Writing for Foreign Students (0) Extensive practice in expository writing. Analysis and use of rhetorical devices. Individual conferences and tutoring as required.

ELI 080 Listening Comprehension II (0) Further practice; development of classroom discussion skills. Language laboratory required. Pre: 070 or placement by examination.

ELI 082 Advanced ESL Reading (0) Advanced ESL study skills and extensive reading strategies; focus on vocabulary and reading in student’s major. Pre: 072 or placement by examination.

ELI 083 Writing for Foreign Graduate Students (0) Individual instruction in specific writing problems: term papers, research projects. Foreign graduate students only except by permission. Pre: 073 or placement by examination.

ELI 100 Expository Writing: A Guided Approach (3) Extensive practice in writing expository essays; linguistic devices that make an essay effective. (Full-fills composition requirement for nonnative speakers of English only.) FW

ELI 111 Practicum for International Teaching Assistants (3) Extensive practice for international teaching assistants in speaking in classroom situations with emphasis on oral skills, American cultural expectations and classroom management. CR/NC only. Pre: 080.

### Ethnic Studies (ES)

College of Social Sciences

ES 101 Introduction to Ethnic Studies (3) Basic concepts and theories for analyzing dynamics of ethnic group experiences, particularly those represented in Hawai‘i, and their relation to colonization, immigration, problems of identity, racism, and social class. DS

ES 221 Hawaiians (3) Relationship between changes in Hawaiian lifestyle and development of Hawaiian economy; land use and tenure; participation in government, labor, and industry; Hawaiian institutions; Hawaiian movement. DS

ES 301 Ethnic Identity (3) Individual and group problems of identity, identity conflict, culture conflict, inter-ethnic relations. Critical review of available material on Hawai‘i. Pre: one social sciences core course. DS

ES 305 African American Experience I (3) Afrocentric perspective. Analysis of the black political/cultural diaspora, including ancient African kingdoms, the slag trade, organized resistance, emancipation struggles, the Civil War and Reconstruction. Pre: one social sciences core course or consent. DS

ES 306 African American Experience II (3) Afrocentric socio political analysis. The struggle for freedom: Reconstruction period, period of terror, intellectual and cultural awakenings, civil rights movements, contemporary issues. Pre: one social sciences core course or consent. DS

ES 310 Ethnicity and Community: Hawai‘i (3) Site visits to museums, social welfare units, etc., as well as guest lecturers from the community including police, health, education. Pre: one social sciences course. (Summer) DS

ES 318 Asian America: Survey (3) History of selected Asian immigrant groups from the 19th century to the present. Topics include: immigration and labor history, Asian American movements, literature and cultural productions, community adaptations and identity formation. Pre: junior standing and one of AMST 201 (or concurrent), AMST 202 (or concurrent), SOC 100 (or concurrent), or SOC 214 (or concurrent); or consent. (Cross-listed as AMST 318) DH

ES 320 Hawai‘i and the Pacific (3) Hawai‘i as part of the Pacific community: selected historical and contemporary problems of Pacific areas; cultural and economic issues; land alienation, and the impact of development on Pacific peoples. Pre: one social sciences core course. DH

ES 330 Japanese in Hawai‘i (3) Issei roots in Japan; the role of Japanese in labor, politics, and business; sensei and perspectives on local identity and culture. The Japanese in light of changing economic, social, and political conditions in Hawai‘i today. Pre: one social sciences core course. DH

ES 333 Chinese in Hawai‘i (3) Ethnohistorical and contemporary view of the experiences of the Chinese in Hawai‘i and the U.S. mainland; specific roles and contributions; immigration, social organization, and identity. Pre: one social sciences core course. DH

ES 332 Caucasians in Hawai‘i (3) Historical and current views of white ethnic groups in Hawai‘i; significance in economic and social development of Hawaiian society. Pre: one social sciences core course. DH

ES 333 Filipinos in Hawai‘i (3) Historical and contemporary experiences; immigration; traditional culture and values; plantation experience; labor organizing; development of Filipino community; racism; discrimination; and ethnic identity. Pre: one social sciences core course or consent. DH

ES 335 Koreans in Hawai‘i (3) Historical and contemporary experiences, causes and patterns of immigration, conditions on plantations, ties to Korea, community development and roles in society. Pre: one social sciences core course. DH

ES 338 The Original American: Indians (3) Overview of American Indian history and traditions. Impact of European contact and conquest; contemporary issues of resistance and survival. Pre: one social sciences core course. DH

ES 339 South Asian Migrants: Culture and Politics (3) Historical and contemporary experiences of South Asian migrants in North America, Pacific, Caribbean, and/or African diaspora; causes and patterns of migration, inter-ethnic relations and policies; role of race, gender, culture in community, identity formation. A-F only. Pre one ES or WS course in the 100, 200 or 300 level; or consent. (Once a year) (Cross-listed as WS 339) DS

ES 340 Land Tenure and Use in Hawai‘i (3) Dynamics of change: indigenous Hawaiian land tenure; Great Mahele and Kuleana Act; ethnic succession of land ownership; concentration of ownership today; effects of land development on ethnic communities. Pre: one social sciences core course. DH

ES 350 Economic Change and Hawai‘i’s People (3) Development of modern Hawaiian economy and impact on Hawai‘i’s people. Sugar, pineapple, and tourism industries; role of local and multinational corporations; scenarios for Hawai‘i’s future development. Pre: one social sciences core course. DS

ES 360 Immigration to Hawai‘i and U.S. (3) Historical overview: “push and pull factors”; effect of changing economy; experiences of various ethnic groups; problems of recent immigrants; immigration policies in the U.S. and Hawai‘i. Pre: one social sciences core course. DH

ES 365 Pacific/Asian Women in Hawai‘i (3) Adaptive strategies of Hawaiian, Chinese, Japanese, Korean, Filipino, Samoan, and Southeast Asian women in Hawai‘i; feminist anthropological and historical analysis. Pre: one ANTH, SOC, or WS course. (Cross-listed as WS 360) DS

ES 370 Ethnic Literature of Hawai‘i (3) Writings of various ethnic groups in Hawai‘i, ancient to contemporary. Songs, stories, poetry, fiction, essays that illustrate the social history of Hawai‘i. Pre: two ENG DL courses; second may be taken concurrently; or consent. (Cross-listed as ENG 370) DL

ES 372 Asian American Literature (3) Basic concepts and representative texts for the study of Asian American literature by writers from a variety of backgrounds. Pre: two ENG DL courses; second may be taken concurrently; or consent. (Cross-listed as ENG 372) DL

ES 373 Filipino Americans: History, Culture and Politics (3) An introduction to the study of Filipino Americans in the U.S. and the diaspora. The course pays special attention to the role of cultural and economic imperialism, land alienation, and the impact of development on Pacific peoples. Pre: one social sciences core course. DH

ES 380 Fieldwork in Ethnic Studies (V) Specialized supervision of individual student research projects in historical, oral history, or contemporary problems. Repeatable to total of 6 credit hours. Pre: consent.

ES 381 Social Movements in Hawai‘i (3) Role of various contemporary movements for social change in Hawai‘i: community, ethnic, labor, student, etc. Theories of social movements and social change. Pre: one social sciences core course. DS

ES 390 Gender and Race in U.S. Society (3) Historical and sociological studies of race and gender in U.S. society; grassroots feminist and race/ethnic activism in the mainland and Hawai‘i. A-F only. Pre: 101, WS 151, or Social Science Core. (Cross-listed as WS 390) DS

Key to symbols & abbreviations: see the first page of this section.
ES 392 Change in the Pacific—Polynesia (3) Impact of cultural and physical change and their interrelationship. Pre: ES or social sciences courses. Repeatable up to 6 credits. Consent only.

ES 410 Race, Class, and the Law (3) Historical context and implications of landmark court decisions and legal issues affecting social change in ethnic communities in Hawai‘i and the continental U.S. Pre: one 300-level course in ES, POLS, or SOC. Consent.

ES 418 Women and Work (3) Gender and racial division of labor nationally and internationally; racial and gender differentials in wages, training, working conditions and unemployment; historical trends and future directions. Pre: one 300-level ES or WS course, or IOC 500 or consent. (Cross-listed as SOC 418 and WS 418) DS

ES 420 American Ethnic and Race Relations (3) Surveys ethnic and race relations in the U.S. Focus on historical conflicts and critical issues such as racism, immigration, affirmative action, changing economic structures, and the role of government. Pre: 101 or consent. DS

ES 440 Contemporary African Diaspora and Black Communities Beyond the U.S. (3) Analysis of social, political, and cultural circumstances that inform the experiences of contemporary African Diaspora and Black communities outside of the U.S.; Black identity. Pre: one of 301 or 305 or 306, or consent. Spring only. DS

ES 443 Filipino Americans: Research Topics (3) A research seminar on the study of Filipino Americans. Special themes in film/video/media, the performing arts, or literature may be offered. Pre: junior standing or consent. (Cross-listed as AMST 401) DS

ES 455 (Alpha) Topics in Comparative Ethnic Conflict (3) Causes and dynamics of ethnic conflicts with attention to problem resolution; (B) Middle East; (C) Hawaiian sovereignty in Pacific context. Repeatable three times. Pre: 320 or 392, or consent for (C). DS

ES 456 Racism and Ethnicity in Hawai‘i (3) The historical and contemporary social processes involved in inter-ethnic relationships in Hawai‘i. Pre: SOC 300 or one 300 level course, or consent. (Cross-listed as SOC 456) DS

ES 480 Qualitative Research Methods (3) Introduction to qualitative data collection methods; explore methods of analyzing data including grounded theory method, discourse analysis, and narrative analysis and those used in ethnic, gender, and community studies. A-F only. Pre: one upper division ES or SOCS course or consent.

ES 486 Peoples of Hawai‘i (3) Critically examines the historical and contemporary experiences of various peoples of Hawai‘i and utilizes anthropological and ethnic studies approaches to study identity, race, ethnicity, culture, language, gender, sex, class, land, and residence. Pre: junior standing or consent. (Once a year) (Cross-listed as ANTH 486) DS

ES 492 Politics of Multiculturalism (3) The development of ethnic relations and political approaches to multiculturalism in two multiethnic nations: Canada and the U.S. A-F only. Pre: SOC 300 or one 300 level ES course, or consent. (Cross-listed as SOC 492) DS

ES 493 Oral History: Theory and Practice (3) Literature and methodology; project design. Students develop and execute an oral history project. Pre: upper division standing; and HIST 151 and HIST 152, or HIST 281 and HIST 282; or consent. DH

ES 495 Hawaiian Labor History (3) Conditions of work under varying political, social, and economic transformations in Hawai‘i; anthropological, sociological, and historic data. Pre: HIST 151 and HIST 152. DH

Family Medicine and Community Health (FMCH) (3) Exploration of leadership research and theories and their application to leadership development; designed to enhance personal and interactive leadership. Pre: 230 or APDM 200, or consent.

FAMR 350 Leadership and Group Process (3) Theories and practices in determining community needs and resources; community resources development based on needs identification. Pre: 230 or consent. DS

FAMR 360 Family Resource Management (3) Concepts, principles, and practices in managing family and household resources. Pre: 230 or consent.

FAMR 361 Family Financial Planning (3) Analytical approach to family financial planning from the perspective of changing family demands over the life cycle. Pre: 360 or an ECON course, or consent.

FAMR 363 Consumer Economics (3) Consumer rights, responsibilities, and resources; consumer decision-making; factors affecting consumer functioning within economy. Pre: 360 or an ECON course, or consent.

FAMR 380 Research Methodology (3) Fundamentals of scientific methodology and techniques in design and data collection; introduction to statistics for decision-making and program evaluations in agriculture and human resources. Pre: 230 or APDM 200, or consent. Co-requisite: 380L. DS

FAMR 380L Research Methodology Lab (1) (3 hr lab) Test design, computer use, data analysis. Co-requisite: 380. DS

FAMR 425 Partnerships with Families and Professionals (4) Lecture, discussion and hands-on course, prepares students for direct, educational work with parents and children and for continued graduate work in child and family studies, counseling, psychology, social work and/or family life education. A-F only. Pre: 341 or consent.

FAMR 442 Marriage Development (3) Marital interaction and development; divorce and remarriage; resources and techniques for marital adjustment, enrichment, and growth. Pre: 340.

FAMR 444 Contemporary Family Issues (3) Investigation of current issues with impact upon family quality of life, with emphasis on the interdependent nature of families and their environments. Pre: 340 or consent. DS

FAMR 445 Family Life Education Methodology (4) Lecture, discussion and hands-on course, with service learning on Family Life Education Methodology. Repeatable three times. Pre: 341 or 442, or consent.

FAMR 452 Community Program Development (3) Concepts and theories of community program development; principles, practices, and procedures in administration and supervision of volunteer services surveyed and analyzed. Pre: 352.

FAMR 454 Family Public Policy (3) Cross-national survey of family public policy; analysis, revision, and development of family public policy; impacts of policy on consumers and families. Pre: 352. DS

FAMR 455 Consumer Communications (3) Development, production, analysis, and evaluation of consumer materials for print media. Use of desktop publishing computer programs. Pre: 360 or an ECON course, or consent.

FAMR 468 Family Economics (3) Study of personal family resources and its interaction with the economy. Focuses on contemporary economic problems that affect the welfare of families. Pre: 360 or an ECON course, or consent.

FAMR 482W Senior Seminar (3) Preparation, presentation, and discussion of student research papers dealing with selected topics in family resources. Pre: 230, 340, 350, 352, 360, 380L; or consent.
FIL 451 Structure of Filipino (3) Introduction to phonology, morphology, syntax. Pre: 202 or consent. DH
FIL 461 Filipino Contemporary Literature (3) Selected readings in poetry, short stories, and plays from early 1900s to present. Co-curricular cultural activities included. Pre: 302 or consent. DL
FIL 462 Filipino Contemporary Literature: 1980s-Present (3) Survey of literature from the 1980s to the present. Co-curricular cultural activities included. Pre: 302 or consent. DL

Finance (FIN)
Shidler College of Business

FIN 301 Personal Finance (3) Focuses on principles and techniques of personal financial decisions, including: personal budgeting, obtaining credit, life and casualty insurance, buying a home, buying an automobile, savings and investments, and retirement planning.
FIN 305 Problems of Business Finance (3) Application of financial principles to cases involving important financial decisions. Pre: BUS 314.
FIN 311 Investments (3) Introduction to various investment media and capital markets. Topics include: the analysis of security returns using techniques such as beta, filter rules, and portfolio theory. Pre: BUS 314.
FIN 331 International Banking (3) Commercial, investment, and merchant banking. Includes theory and practical applications. Topics include: international lending, Euromarkets, global gap management, Forex activities, and global risk management. Pre: BUS 314.
FIN 341 Financial Aspects of New Ventures (3) Examination of underlying business models for new ventures, how to determine corresponding financial requirements, and approaches to resource acquisition. Students explore a range of financing sources and related issues of valuation and deal structure. Pre: junior standing and BUS 314, or consent.
FIN 399 Directed Reading and Research (V) Reading and research in a special area of major under direction of faculty member(s). Project must include statement of objectives, outline of activities planned, results expected, and how they are to be reported and evaluated. Must be approved in advance by the department chair and the faculty advisor. Repeatable unlimited times.
FIN 412 Options and Other Derivatives (3) Options and other derivatives. Equity options, index options and options on futures. Pre: BUS 314 or consent.

FIN 430 Bank Financial Management (3) Analysis of financial institution management within the domestic economy and regulatory environment. Topics include: federal reserve activities, interest rates, regulation, lending, investments, and asset/liability management. Pre: BUS 314.
FIN 444 Asian Finance (3) Financial systems, regulations, and financial institutions in the Asia-Pacific region. Major financial policy issues for financial sector reforms in the region. Seminar format. A-F only. Pre: BUS 314 or consent.
FIN 450 Enterprise Risk Management (3) Overview analyzing various primary risks faced by corporations and developing important risk management techniques with an emphasis on enterprise risk management. Combined lectures, case studies, and discussions. A-F only. Pre: 314 or consent. (Once a year)
FIN 467 Seminar in Financial Planning (3) A capstone course for financial services and planning track. This is a case study course intended to provide students the opportunity to integrate concepts from earlier courses and develop a comprehensive view of the financial planning process. A-F only. Pre: 301 and 311 and two of the following courses: 490E, 490F, ACC 401, INS 300.
FIN 470 Sustainable Development in East Asia (3) Interdisciplinary investigation of development in East Asia is an urgent issue. Status and role of Asian business; current technological, economic, and financial developments; impact on world economy. Pre: ASAN 201, ASAN 312 or BUS 314; or consent. (Cross-listed as ASAN 470)
FIN 490 (Alpha) Advanced Topics in Finance (3) In-depth analysis of recent current issues and issues in finance. (C) Japanese financial management; (D) financial analysis (repeatable four times); (E) retirement and employee benefit planning; (F) finance estate planning. A-F only for (E) and (F). Pre: BUS 314 or BUS 629 for (C); 311 or 634 for (D); 301 for (E) and (F).
FIN 625 Monetary Systems and Financial Markets (3) Supply and demand for capital in national and international markets and role of capital in industrialization of regions and nations.
FIN 633 Problems in Business Finance (3) Application of financial principles and analytical techniques to financial problems. Case method. Pre: BUS 629 or consent.
FIN 634 Investment Analysis and Management (3) Techniques of security analysis, theories of investment, and the analysis of investment decisions related to portfolio planning. Pre: BUS 629 or consent.
FIN 635 (Alpha) Advanced Topics in Finance (3) Major current financial issues and problems. (C) Japanese financial management; (D) portfolio management theory; (F) stocks, bonds, and modern instruments. Pre: BUS 629 or consent.
FIN 637 International Financial Management (3) Financial decision-making in an international setting: analysis of direct foreign investment; economic, accounting, and regulatory environments, including taxation; international money and capital markets; import and export financing; multinational working capital management; and other aspects of international finance. Pre: BUS 629 or consent.
FIN 639 International Banking (3) Commercial, investment, and merchant banking in the international arena. Includes international lending, Euromarkets, global gap management, Forex activities, and international risk management. Pre: BUS 629 or consent.
FIN 641 Entrepreneurial Finance (3) Assessment of financial needs, arranging venture financing, assessing value to the entrepreneur and the investor(s),

Key to symbols & abbreviations: see the first page of this section.
FIN 702 Seminar in International Investments (3) Seminar covers research issues and methodologies in investments and capital markets. Main topics include theories and empirical characteristics of asset pricing, portfolio diversification and performance evaluation, derivatives, and risk management. A-F only. Pre: 701 and PhD student status in international management, or consent.
FIN 703 International Corporate Control and Restructuring (3) Provides and understanding of some of the scholarly research in corporate control and restructuring. Topics include: mergers and takeovers, international corporate governance, corporate restructuring, and entrepreneurship. A-F only. Pre: 701 and PhD student status in international management, or consent.
FIN 704 International Asian Finance (3) In-depth review of scholarly journal articles and working papers relevant to Asian finance to prepare PhD students for scholarly research work. A-F only. Pre: 701 and PhD student status in international management, or consent.
FIN 799 Directed Reading and Research (V) Reading and research in a special area of major under direction of faculty member(s). Project must include statement of objectives, outline of activities planned, results expected, and how they are to be reported and evaluated. Must be approved by department chair and the faculty advisor. A-F only. Pre: Ph.D student status in international management, or consent.

Food Science and Human Nutrition (FSHN)

FSHN 181 The Chemical Nature of Food (3) Lectures, discussions, and demonstrations on how food components contribute to the functional, sensory, and safety characteristics of foods, and what changes occur in foods due to preparation, processing, and storage.
FSHN 181L Food Preparation Lab (1) (1 3-hr Lab) Experiments in foods emphasizing ingredient function and standard preparation methods for food groups. Co-requisite: 181. DY
FSHN 185 The Science of Human Nutrition (3) Integration of natural science concepts basic to the study of human nutrition. Emphasis on nutrient requirements of health and disease individuals, food sources, functions of nutrients. DB
FSHN 244 Comparative Nutrition (3) Digestive systems and nutrient functions, interrelationships and metabolism are compared among animal species, including humans. An intermediate, general nutrition course for Food Science and Human Nutrition and Animal Science majors. Pre: ANSC 200 (or concurrent), CHEM 161/L or higher. Fall only. (Cross-listed as ANSC 244) AV DB
FSHN 311 Restaurant and Club Management (3) Critical and essential aspects of managing food and beverage operations and personnel in restaurants and clubs; understanding marketing, menu development and costing, purchasing procedures and inventory control for food and beverages; procurement methods; legislation on dietary menu claims; institutional sanitation responsibility. Pre: 181 and 181L (or concurrent), or consent.
FSHN 312 Quantity Foods and Institutional Purchasing (4) (3 Lec, 1 3-hr Lab) Quantity food and beverage operations, menu development and costing, dietary menu claims, purchasing procedures, inventory control, procurement, transportation, legislation. Institutional food service sanitation, Hazard Analysis Critical Control Point and National Restaurant Association Certification. Pre: 181 and 181L, or consent. (Cross-listed as TIM 319)
FSHN 322 Marketing Nutrition and Food (3) Fundamental marketing principles applied to nutrition and food. Will include concepts such as the psychology of food purchasing decisions and consumer behavior. Field trips and group projects included. Open to non-majors. Pre: E181/181L, 185, 312/312L; or consent. (Alt. years)
FSHN 350 Humans, Food, and Animals: Ethics, Issues, and Controversies (3) (2 Lec, 1 3-hr Lab) Ethical issues and other controversies related to human and animal needs; their impact on resource sustainability and quality of life are explored from scientific perspectives. Pre: 181 or 185 or ANSC 200 or ANSC 201. (Cross-listed as ANSC 350)
FSHN 370 Lifespan Nutrition (V) Nutritional requirements and food needs during infancy, early childhood and adolescence, and aging. One credit provided for each age group module. One to three credits. Pre: C or better in CHEM 161/161L and PHYT 142/142L, or B or better in 185; or consent. Spring only. DB
FSHN 381 Experimental Foods (4) (3 Lec, 1 3-hr Lab) Experimental approach to study food preparation problems. Applying basic food science research design to conduct experiments, interpret data and write reports. Subject matter used to practice critical thinking and problem solving skills. Pre: 181L, CHEM 152 or similar organic chemistry course, the equivalent of two years of high school algebra; or consent. DB
FSHN 389 Nutritional Assessment (2) Addresses concepts and uses of nutrition assessment tools at individual and community levels. Students will be introduced to national surveys and new, more sophisticated body composition measurements. A-F only. Pre: 185, 370 (or concurrent), or consent.
FSHN 403 Microbiology of Foods (3) Microorganisms encountered in foods; types of food spoilage; microbial hazards in food; methods of food preservation. Pre: MIRC 130 and MIRC 140, or consent. (Alt. years) DB
FSHN 411 Food Engineering (3) (2 Lec, 1 3-hr Lab) Principles and applications of thermodynamics, electricity, fluid mechanics, heat transfer, psychrometry, and material and energy balances of food processing and preservation. Pre: BIOL 171, CHEM 162 or CHEM 181A, MATH 243, PHYS 151 or PHYS 170; or consent. (Alt. years: spring) (Cross-listed as BE 411) DP
FSHN 420 Sensors and Instrumentation for Biological Systems (4) (Principles of common physical and chemical sensors. Interfacing sensors to different electronic circuits and instrumentation systems. Electronic detection and quantification of biomolecules (biosensors). Applied control for biological processes. Pre: EE 160, EE 211, and BE 359; or consent. (Cross-listed as BE 420) DP DY
FSHN 430 Food Chemistry (3) Chemical properties of food constituents studied in relationship to their effects on processing, nutrition, and spoilage. Pre: CHEM 272/272L, or consent. DP
FSHN 430L Food Chemistry Lab (1) (1 3-hr Lab) Application of different chemical methods in the study of food constituents, such as proteins, lipids, carbohydrates, pigments, enzymes, etc. Pre: 430 (or concurrent). (Alt. years: fall only) DY
FSHN 440 Food Safety (3) Discussion of potential microbiological, parasitic, chemical, and natural food hazards; food laws and standards; and related aspects of consumer protection. Pre: 181, BIOL 171, and CHEM 272; or consent. (Alt. years: spring only) DB
FSHN 445 Food Quality Control (3) Fundamental principles of quality control in the food industry: measurement of quality parameters, utilization
and integration of the individual test procedures into grades and standards of quality, sampling, and reporting results.

FShN 451 Community Nutrition (3) (2 Lec, 1 3-hr Lab) Concepts and methods of nutrition program planning; analysis of nutritional problems of local, national, and international communities. Pre: 370 and either FAMB 380 or NREM 310; or consent.

FShN 452 Concepts in Nutrition Education (3) (2 Lec, 1 1-hr Discussion) Concepts, methods, and materials used in nutrition education of community, clinical, and school populations. Strategies used to educate groups or individuals. Pre: 451 and consent.

FShN 460 Food Processing Operations (3) (3 Lec, 1-lab discussion) Principles and applications of food dehydration, thermal processing, low temperature preservation, chemical and biochemical preservation, irradiation, packaging, manufacturing, plant sanitation, water and waste management. Pre: 403, 430, PHYF 151/151L; or consent.

FShN 467 Medical Nutrition Therapy I (V) Development of dietary, anthropometric and clinical lab assessment skills measuring nutritional status. Understanding pathophysiology of disease processes, medical terminology and nutritional intervention, utilizing case studies. Pre: 486 or consent. DB

FShN 468 Medical Nutrition Therapy II (3) Understanding of the pathophysiology of disease processes and nutritional intervention, using medical terminology and case studies. Pre: 467 or consent. DB

FShN 469 Nutrition Counseling Skills (2) Theory and practice in nutritional counseling. Combined lecture and discussion on nutrition/dietary counseling, Knowledge and theories. Application through lab experiences including role playing, case presentations, and performing actual counseling sessions. A-F only. Pre: 467 or consent.

FShN 475 Human Nutrition for Health Professionals (3) Basic principles and practices; includes sources and functions of nutrients, nutritional needs and habits. Intended for students in pre-nursing and nursing, and graduate students in health professions. Pre: CHEM 151 (or higher) or BIOC 241 (or higher); PHYF 151 or ZOOL 141. DB

FShN 476 Cultural Aspects of Food Habits (3) Study of eating from behavioral perspectives. Implications for health practitioners and health education. Pre: two classes from ANTH 151 or higher or SOC 100 or higher or PSY 100 or higher. (Alt. years: spring)

FShN 477 Food Analysis (2) Principles of sample preparation and chemical and physical analysis of food components using current methodology. Pre: 430; and CHEM 162 or higher; and BIOL 402 or MBBE 402 or PEP 402. (Alt. years: spring)

FShN 477L Food Analysis Lab (2) (2 3-hr Lab) Application of different chemical and physical methods for the identification and quantitation of food components. Co-requisite: 477. (Alt. years: spring) DV

FShN 480 Nutrition in Exercise and Sport (3) Effects of physiologic demands of exercise on nutrition. Emphasis on physiologic and biochemical basis for nutrition recommendations to enhance exercise participation and optimize athletic performance. Pre: 185 or consent. (Cross-listed as KRS 480) DB

FShN 485 Nutritional Biochemistry I (3) Metabolism and biochemistry of carbohydrates, lipids, and proteins, including chemical structure, digestion, absorption, transport, cellular/molecular functions in human nutrition; integration of metabolic pathways; energy metabolism and balance, including relevance to chronic disease. Pre: PHYL 142/142L or PHYL 302/302L; BIOC 341 or higher or MBBE 375 or MBBE 402. DB

FShN 486 Nutritional Biochemistry II (3) Metabolism and biochemistry of vitamins, minerals, and dietary fiber, including chemical structure, digestion, absorption, transport, and cellular/molecular functions in human nutrition; relevance to establishing nutrient requirements and to mechanisms of chronic disease. Pre: 485 or consent. DB

FShN 491 Topics in Food Science and Human Nutrition (V) Study and discussion of significant topics, problems, or laboratory experiments. Repeatable one time with instructor consent.

FShN 492 Internship (4) Integration and application of academic knowledge and critical skills emphasizing professional development. Placement with an approved cooperating supervisor/employer. A-F only. Pre: senior standing in FShN. (Cross-listed as ANSC 492)

FShN 499 Directed Reading and Research (V) FShN 500 Master's Plan B/C Studies (1)

FShN 601 The Science of Food Systems (2) (1 50-min Lab, 1 2-hr discussion) Discussion of food systems as they apply to animal science, food science, and human nutrition. Repeatable one time. Pre: graduate standing or consent. (Cross-listed as ANSC 601)

FShN 607 Advanced Food Science I (3) Advanced topics in chemical and physical characteristics of foods as well as their role in human nutrition. Repeatable one time. A-F only. Pre: graduate student status with undergraduate courses in organic chemistry, microbiology, additional biological science, physics, and biochemistry. Basic knowledge of food science is expected; or consent. Fall only. (Cross-listed as MBBE 607)

FShN 608 Advanced Food Science II (3) Advances in sensory quality and evaluation, deterioration of foods and food safety, as well as food processing technology. Repeatable one time. A-F only. Pre: graduate student status with undergraduate courses in organic chemistry, microbiology, additional biological sciences, physics, and biochemistry. Basic knowledge of food science is expected; or consent. Spring only.

FShN 609 Advanced Food Safety (3) Real and perceived food hazards, their ethical issues and implications, advanced emerging trends in food safety, and controls, including laws and regulations of food safety issues and public perception of food safety will be discussed. A-F only. Pre: graduate student status with undergraduate courses in biochemistry, microbiology, food processing, physics and organic chemistry. Basic food science knowledge is required; or consent. Spring only.

FShN 613 Nutritional Epidemiology (3) Dietary, biochemical, anthropometric and clinical methods used for evaluating nutrition and diet in the etiology and epidemiology of disease. Pre: 185 or consent. (Cross-listed as PH 631)

FShN 633 International Nutrition (3) Analysis of major nutrition problems in developing countries. Comparative review of the design, implementation, and evaluation of programs to intervene in the development of malnutrition. Pre: 185 or consent.

FShN 650 DNA and Genetic Analysis (2) Combined lecture/lab students interested in genetic analysis of humans, animals, and other species. Molecular techniques, such as PCR, DNA marker identification, linkage analysis and functional genomics, are included. Open to nonmajors. Pre: graduate standing or consent. (Cross-listed as ANSC 650 and MBBE 650)

FShN 652 Information Research Skills (1) Examines the use of libraries and information technology for scholarly investigation in support of scientific research; provides experience utilizing and critically evaluating a variety of print and electronic sources in basic and applied sciences. Pre: consent. (Cross-listed as ANSC 652, NREM 652, and TPPS 652)

FShN 657 Grant Writing for Graduate Students (1) Combined lecture/discussion on grants and grant writing. Designed to introduce graduate students to grants and grant proposal writing through lectures, class discussion, writing assignments, and peer review. Open to CTAHR graduate students only; others with consent. Fall only. (Cross-listed as ANSC 657 and TPPS 657)

FShN 681 Seminar in Food and Nutritional Sciences (1) Student presentation of literature reviews and research. Repeatable one time. Pre: consent.

FShN 682 Topics in Nutritional Sciences (1) Advanced topics in nutritional sciences, from basic to applied research, including current issues in nutrition and critical analysis of current research literature. Repeatable four times. Pre: consent.

FShN 683 Nutrition Policy Analysis (2) The analysis of agricultural, economic, and social policies that affect food security and nutrition. Pre: NREM 310 and consent. (Alt. years: fall)

FShN 685 Nutrition and Disease: Cellular and Molecular Aspects (2) In-depth discussion and discussion of selected topics related to the etiology and prevention of chronic diseases at the cellular and molecular level. Pre: 485 and 486; statistics; or consent. Spring only.

FShN 687 Advanced Lab Techniques (3) (1 Lec, 2 3-hr Lab) Advanced laboratory techniques used in food science and human nutrition research. Pre: graduate standing or consent. (Cross-listed as ANSC 687 and MBBE 687)

FShN 695 Plan B Master’s Project (3) Independent study for students working on a Plan B Master’s project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. A-F only. Pre: graduate standing in nutritional sciences.

FShN 699 Directed Reading and Research (V) FShN 700 Thesis Research (V)

FShN 701 Topics in Food Science (1) Advanced topics in food science and technology, from basic to applied research, including current issues in food science and technology and critical analysis of current research literature. Repeatable one time. A-F only. Pre: graduate standing or consent. Spring only.

French (FR)

College of Languages, Linguistics and Literature

All courses are conducted in French. A grade of C- or better in the prerequisite courses is required for continuation.

FR 101 Elementary French (3) Conversation, grammar, and reading. HSL

FR 102 Elementary French (3) Conversation, grammar, and reading. Pre: 101 or consent. HSL

FR 201 Intermediate French (3) Reading, conversation, laboratory drill, composition. Pre: 102 or equivalent. N’H HSL


FR 258 Intermediate French Abroad (3) Intensive course of full-time formal instruction on the second-year level in French language and culture in a French-speaking country. Pre: 102 or equivalent. N’H HSL

FR 259 Intermediate French Abroad (3) Continuation of 258. N’H HSL

FR 260 Intensive Intermediate French Abroad (V) Intensive course of formal instruction on the second-year level in French language and culture in a French-speaking country. A student having taken
FR 301 French Phonetics (3) Analysis of phonological system; methods of teaching pronunciation; understanding various types of spontaneous speech. Drills in pronunciation, intonation, stress, and rhythm. Pr: 202 or consent. DH
FR 302 Reading in French (3) Development of language skills through reading of cultural and literary texts. Pr: 202 or consent. DH
FR 306 Structure of French (3) Structure of contemporary French as analyzed by descriptive linguists. Pr: 202. DH
FR 312 Composition (3) Emphasis on strengthening facility with language through further training in syntax, structure, and composition writing. Pr: 202.
FR 321 Advanced Conversation (3) Systematic and advanced practice for control of spoken French, advanced development for accurate, mature expression. Pr: 311 or consent.
FR 331 Survey of French Literature (3) Major authors and movements. Pr: 311 (or concurrent) and 312; only 311 may be concurrent. DL
FR 332 Survey of French Literature (3) Continuation of 331. Pr: 311 (or concurrent) and 312; only 311 may be concurrent. DL
FR 358 Third-Level French Abroad (3) Intensive course of full-time formal instruction on the third-year level in French language and culture in a French-speaking country. Pr: 202 or 259 or 260 or equivalent.
FR 359 Third-Level French Abroad (3) Continuation of 358.
FR 360 Intensive Third-Level French Abroad (V) Intensive course of formal instruction on the third-year level in French language and culture in a French-speaking country. For semester programs only. Pr: 202 or 260 or equivalent.
FR 361 Contemporary French Civilization (3) Survey of culture and institutions of modern France. Pr: 202. DH
FR 364 Survey of French Civilization (3) A historical survey of the development of French culture. The course is interdisciplinary, focusing on the relations between philosophy, science, and the arts. Pr: 202 or consent. DH
FR 391 (Alpha) Topics in French Literature (3) (B) French film; (C) The Fantastic; (D) Francophone literature. Repeatable two times with consent. Pr: 311 or 312, or consent. DL
FR 399 Directed Reading (V) Independent study of approved reading with faculty supervision. Repeatable two times. A-F only. Pr: consent.
FR 405 Advanced Oral and Written Expression (3) Further development of listening, comprehen- sion, speaking, and writing skills through viewing of French videotapes, reading French newspapers, frequent oral and written reports. Pr: 311 and 312, or 306, or 358, or 360: or consent.
FR 406 French-English Translation (3) Practice in techniques based on contrastive linguistics. Translation of texts from various fields from French into English and the reverse. Pr: 306 or 309, and 312; or consent.
FR 408 Masterpieces of Medieval Literature (3) Samplings from epic, novel, verse and prose, tale, lyric poetry, chronicle, theater, didactic literature. Elementary readings in original text in editions giving modern French translation. Pr: 331 or consent. DL
FR 409 Advanced Language Study: French (3) Advanced course in spoken and written French with intensive review of alternative grammatical structures and shades of meaning in the modern language. Graduates who have not taken prerequisites may request consent. Pr: 306 or 405 (or equivalent); or consent.
FR 410 Masterpieces of 16th-Century Literature (3) Samplings from all major writers of the period. Readings in original text in editions giving modern French equivalents for difficult words. Pr: 331 or consent. DL
FR 411 Masterpieces of 17th-Century Literature (3) Principal works of major dramatists Corneille, Moliere, Racine. Principal movements and major authors of non-dramatic prose and poetry. Pr: 331 or consent. DL
FR 413 Masterpieces of 18th-Century Literature (3) Pr: 332 or consent. DL
FR 420 20th-Century French Theater (3) Major French playwrights and their works: Claudel, Giraudoux, Anouilh, Sartre, Camus, etc. Pr: 332 or consent. DL
FR 423 20th Century French Prose and Poetry (3) Study of representative prose and poetry of the major trends of 20th century France: modernism, surrealism, existentialism, postmodernism and multi-culturalism. Pr: 332 or consent. DL
FR 458 Fourth-Level French Abroad (3) Intensive course of full-time formal instruction on the fourth-year level in French linguistics, civilization, culture, and literature in a French-speaking country. Pr: 359 or 360 or equivalent.
FR 459 Fourth-Level French Abroad (3) Continuation of 458.
FR 460 Intensive Fourth-Level French Abroad (V) Intensive course of formal instruction on the fourth-year level in French language, culture and literature in a French-speaking country. For semester programs only. Pr: 360 or equivalent.
FR 491 (Alpha) Seminar in French Literature (3) (B) French literature by period; (C) Francophone literature; (D) French film; (E) topic in French literature. Repeatable one time for different alphas. Pr: 331 (or concurrent) and 332 (or concurrent), or consent. DL
FR 499 Directed Reading and Research (V) Independent study of approved readings and research with faculty supervision. Repeatable two times. A-F only. Pr: consent.
FR 506 French for Reading Proficiency (3) Reading of scholarly and technical French for graduate students; open to undergraduates with consent of department chair. Not applicable to undergraduate language requirement. Repeatable two times with consent. CR/NC only.
FR 620 Masterpieces of the 17th Century (3) Dramatic or prose works of the classical period. FR 651 Philosophic Currents in 18th Century (3) Philosophic movements and their impact on the social, political, and literary life of the period and the modern era.
FR 672 Seminar in Medieval Literature (3) Genesis and evolution of literary genres from the 12th to 15th centuries. Epic, romance, lyric poetry, prose, and drama. Repeatable two times with consent.
FR 681 Seminar: The Novel in France (3) Novels which have influenced movements or established techniques. Repeatable two times with consent.
FR 690 The Theater in France (3) Historical development; major dramatists who have influenced movements or established techniques. Pr: 6 credit hours at 400 level.
FR 699 Directed Research (V) Pr: consent of department chair.
FR 735 Seminar in French Literature (3) Study of authors or a period. Repeatable two times with consent. Pr: consent of chair of graduate field.

Geography (GEOG)
College of Social Sciences
Sophomore standing or higher or consent is required for all 300-level courses except as noted. Junior standing or higher or consent is required for all 400-level courses except as noted.
GEOG 101 The Natural Environment (3) Survey of man’s natural environment; distribution and interrelationships of climates, vegetation, soils, landforms. DP
GEOG 101L The Natural Environment Lab (1) Analysis by use of maps, air photos, field and laboratory observation, and experimentation. Emphasis on Hawaii’s and on human modification of environment. Pr: 101 (or concurrent). DY
GEOG 102 World Regional Geography (3) World’s major cultural regions; geographic aspects of contemporary economic, social, political conditions. FGB
GEOG 151 Geography and Contemporary Society (3) Elements of economic geography and resource management, population and urban geography; application to current problems of developed and underdeveloped worlds. FGC
GEOG 300 Introduction to Climatology (3) Elements and controls of climate. World patterns of insolation, temperature, evaporation, precipitation, atmospheric circulation. Climatic classifications. Pr: 101 or MET 101 or MET 200, or consent. DP
GEOG 301 Atmospheric Pollution (3) Interdisciplinary approach: chemical, meteorological, health, economic, technological, control, and legal aspects; public awareness. Pr: 101, CHEM 151, or MET 101. DP
GEOG 302 Environmental Geography (3) Use and abuse of natural resources and humanity’s progress toward developing a sustainable relationship with its supporting environment. A-F only. Pr: 101 or consent. (Once a year)
GEOG 303 General Geomorphology (3) Introduction to geomorphological concepts, process mechanics, and relationships between forms and processes. Emphasis on various subdisciplines of geomorphology: coastal hillslopes, fluvial, aeolian, and glacial. Pr: 101 and 101L, or GG 101 and GG 101L. DP
GEOG 305 Water and Society (3) Interaction of people with water at household, community, regional, national, and international scales, from cultural, political, economic, and biophysical perspectives. Pr: sophomore standing or higher, or consent. DS
GEOG 309 Plants, People and Ecosystems (3) Introduction to ecosystem concept; environmental
adaptations for energy and nutrient transfer; characteristics, dynamics, productivity, and distribution of principal vegetation communities. Human dominance. Pre: sophomore standing or higher, or consent. DB

GEOG 312 Agriculture, Food and Society (3) Examines historical and contemporary development of the global geofood systems. The impacts of technological, political and economic changes to food security, environment and development. Open to nonmajors. DS

GEOG 321 Regional Analysis (3) Spatial dynamics and environmental implications of urban and rural development. Concepts of regions, process of regional development, patterns of spatial interaction, and theoretical bases for development strategies; emphasis on Hawai’i. Pre: 102 or 151. DS

GEOG 324 Geography of Global Tourism (3) Tourist landscape in relation to resources, spatial patterns of supply and demand, impacts of tourism development, and models of tourist space. Flows between major world regions. Pre: sophomore standing or higher, or consent. (Cross-listed as TMM 324) DS

GEOG 325 World Resources and Economic Development (3) The pattern of world economic development. Agricultural resources and industries. Mineral resources, energy and metal industries. Manufacturing industries in development. The network of world economic associations, and international economic aid. DS

GEOG 326 Environment, Resources and Society (3) Human interaction with the environment. Changes in concept of conservation. Ecological, philosophical, and political aspects of present environmental dilemmas. Problems in Hawai’i, U.S., and developing world. DS

GEOG 328 Culture and Environment (3) Introduction to cultural geography, the cultural landscape and built environment. Pre: 102 or 151, or consent. DS

GEOG 335 Political Geography (3) Political organization of area in the nation state; geographic background of international relations. Boundaries and disputed territories, exploitation of physical resources, evolution of geography of the territorial sea and zones of exclusive economic interest. DS

GEOG 336 Geography of Peace and War (3) Geographical factors underlying conflict in the world. Pre: sophomore standing or higher, or consent. DS

GEOG 340 Geography of North America (3) Overview of the physical and cultural geography. Regions and characters. Patterns of population, natural resources, industry, agriculture, and transportation/communication networks. Pre: 101 or 102 or 151, or consent. DS

GEOG 352 Geography of Japan (3) Regional synthesis of physical and cultural features; economic, social, political geography; origins and development of cities. DS

GEOG 353 Geography of China (3) Topics: environmental parameters and resource base, ecological control and resource management, institutional and technological transformation of agriculture, industrial potential and industrial location, settlement patterns and rural urban symbiosis. DS

GEOG 355 Geography of South Asia (3) Introduction to physical and human geography of India, Bangladesh, Pakistan, Sri Lanka, Himalayan kingdoms. Environmental, economic, social, cultural, and political factors in development. DS

GEOG 356 Geography of Southeast Asia (3) Southeast Asia in world economy. Human and physical resources; returns achieved by various methods of land use. National economics; problems and prospects of modernization. DS

GEOG 365 Geography of the Pacific (3) Physical character of the Pacific; cultural, political, economic geography of Melanesia, Micronesia, Polynesia (except Hawai’i). DS

GEOG 366 Geography of Honolulu (3) Development of Honolulu and O’ahu from 1778. Evolution of function, land use, and social patterns. Contemporary planning and environmental issues arising from urban growth. DS

GEOG 368 Geography of Hawai’i (3) Regional, physical, cultural geography. Detailed study of people and resources. DS

GEOG 370 Map and Aerial Photo Interpretation (3) (2 Lec, 1 3-hr Lab) Introduction to scale, datums, measurement and coordinate systems applied to the interpretation, analysis and use of large scale aerial photographs and topographic maps. Pre: sophomore standing or higher, or consent. DS

GEOG 375 Introduction to Cartography and Air Photo (3) (2 Lec, 1 3-hr Lab) Principles of cartography: compilation and measurement from aerial photographs, alternate forms of data presentation, symbolism, design, and map projection. DS

GEOG 376 Map Design and Production (3) (3 2-hr Lab) Computer graphics and design and production of maps for presentations, research, and illustration using artists and mapping software. Pre: junior standing or higher, or consent. DS

GEOG 380 Analytical Methods in Geography I (3) Analytical problems of and mathematical methods for describing and interpreting geographic phenomena: measurement and scaling; dimensional analysis; structural/related models; spatial sampling and statistics; matrix methods. Pre: 101 and 151 (or concurrent). DS

GEOG 385 Research Methods in Human Geography (3) Introduction to the methodologies and practice of research in human geography. Combines lectures, workshops, and assignments. Students will conduct and report upon their own research. Pre: 151. DS

GEOG 387 GIS Data Visualization (3) Display techniques for statistical and terrain data. Cartographic communication models, data models, algorithms and symbol conventions. Techniques for assessing map design. Pre: 380 or SOCS 225 or ECON 321, or consent. DS

GEOG 399 Directed Reading (V) Limited to senior majors with a minimum cumulative GPA of 2.7 or a minimum GPA of 3.0 in geography. DS

GEOG 400 Vegetation and the Climate System (3) Role of vegetation in the climate system; links to hydrology and biogeochemical cycling; vegetation and climate history; evolution of terrestrial ecosystems; effects of global warming. Pre: 101 or 300 or 401 or 402 or 405 or MET 101 or MET 200 or MET 302 or MET 303 or MET 310, or consent. DP

GEOG 401 Climate Change (3) Approaches to the study of past and future climate change. Pre: 101 or 300 or 401 or 402 or 405 or MET 101 or MET 200 or MET 302 or MET 303 or MET 310, or consent. DP

GEOG 402 Agricultural Climatology (3) Analyzing climatic data; relation to photosynthesis, physiological development, and crop yields. Crop-weather models as guides to improved land-use planning and agronomic practices. Pre: 101 or 300 or 400 or 401 or 405 or MET 101 or MET 200 or MET 302 or MET 303 or MET 310, or consent. DP

GEOG 403 Fluvial Geomorphology (3) Introduction to the single most important geomorphic agent shaping the terrestrial environment. Focus on fluvial process, fluvial dynamics, fluvial landforms, and sediment transport. Pre: 101/101L or 303 or GG 101/101L. DP

GEOG 405 Water in the Environment (3) Water fluxes in the environment. Occurrence and movement of water; methods of quantification. Water balance of soil-plant system: precipitation, interception, infiltration, runoff, soil moisture, evapotranspiration, and groundwater recharge. Pre: 101 or 300 or 401 or 402 or MET 101 or MET 200 or MET 302 or MET 303 or MET 310, or consent. DP

GEOG 408 Evolutionary Biogeography (3) Theories and techniques for the analysis of spatial microevolutionary patterns, taught from an interdisciplinary perspective. Examples and readings emphasize Hawai’i and the Pacific region. Pre: either 309, BIOL 265 or ZOOL 101, or consent. (Alt. years)

GEOG 409 Cultural Biogeography (3) Coevolution of human societies and plants over the last 10,000 years. Foraging, farming and urban societies; economies and modification of selected plants; issues of preservation of genetic resources and traditional plant knowledge. The form and function of gardens. A-F only. Pre: junior standing or higher, or consent. (Cross-listed as TPSS 409) DS

GEOG 410 Human Role in Environmental Change (3) Human impacts through time on vegetation, animals, landforms, soils, climate, and atmosphere. Special reference to Asian/Pacific region. Implications of long-term environmental change for human habitation. Pre: one of 101, BIOL 101, BIOL 123 and either 326 or BIOL 310; or consent. (Cross-listed as BIOL 410) DB

GEOG 411 Human Dimensions of Global Environmental Change (3) Past, present, and potential future effects of global environmental change upon humanity; anthropogenic causes and catalysts; past, current, and potential human responses and policy options. Pre: 101 or consent. DS

GEOG 412 Environmental Assessment (3) Survey of environmental issues in the U.S. and management responses focusing on implementation of the National Environmental Policy Act. Pre: 101 or consent. (Alt. years)

GEOG 421 Urban Geography (3) Origins, functions, and internal structure of cities. Problems of urban settlement, growth, decay, adaptation, and planning in different cultural and historical settings. Dynamics of urban land use and role of policies and perceptions in shaping towns and cities. Pre: 102 or 151 or 328, or consent. DS

GEOG 425 The Geography of Film (3) Landscapes of film. How movies work by conveying a sense of space and a sense of place. Genre and landscapes. Pre: junior standing or higher, or consent. DH

GEOG 435 Political Geography of Oceans (3) The oceans’ evolution and relation to problems of economic development, resources, seapower, shipping, trade. Pre: junior standing or higher, or consent. DS

GEOG 453 Geography of China’s Modernization (3) Applies geographic and historical approaches to explore the rapid transformation of the spatial structure of recent socio-economic development in China. Special emphasis given to resource management and environmental quality, which are important factors in sustainable development. Designed to explore China’s role in the world the 21st century and to meet the needs of students majoring in business administration, international trade, economics, political science and Asian studies. Pre: 102 or consent. DS

GEOG 455 Resource Management (3) (2 Lec, 1 3-hr Lab) Hands-on development of analytical models and tools for application to problems of water resource, coastal fisheries, agroforestry, and/or land management. Focus on problems facing Hawai’i and the Pacific. Pre: junior standing or higher. DS

GEOG 468 (Alpha) Topics in Geography (3) Selected topics in geography not offered in the regular
GEOG 470 Remote Sensing (3) (2 Lec, 1 3-hr Lab) Air photo interpretation, application in natural and social science research, electromagnetic spectrum, exotic sensors, satellite imagery interpretation. Research project, lab. Pre: 370 or 375, or consent. DS

GEOG 472 Field Mapping (3) Techniques for field measurement and recording of cultural and physical data. Field sketching, Brunton surveying, plane table mapping, oblique photo compilation, topographic mapping, and representation of field data. Pre: junior standing or higher, or consent. DS

GEOG 486 Advanced Cartography (3) (3 2-hr Lab) Special topics: computer mapping, relief representation, map reproduction methods, use of color, analytic map interpretation, experimental cartography. Pre: consent.

GEOG 488 Geographic Information Systems (3) Design, implementation, and use. Database construction and documentation. Techniques for spatial data manipulation and display. Evaluation of existing systems. Student research projects. Pre: 370 or 375, or consent. DS

GEOG 490 Senior Thesis (3) Preparation of research paper under individual faculty supervision. Recommended for admission to graduate program. Pre: 390.

GEOG 492 Practicum in Geography (V) Internship in applied geography under professional and faculty supervision. Field placement integrated with academic study. Repeatable up to six credit hours maximum. Pre: senior major and consent.


GEOG 600 Seminar in Climatology (3) Methods of determining energy budget and water balance. Applications in agriculture, hydrology, climatic classifications. Theory of climatic change. Bibliography. Pre: 300 or 400 or 401 or 402 or 405 or MET 303 or MET 310 or MET 320; or consent.

GEOG 618 Human Environment Systems (3) Role and potential of systems science in analysis of human environment interaction, especially resource management. Framework and methodology for problem structuring; overview of techniques. Pre: graduate standing or advanced undergraduate standing with consent.

GEOG 621 Coastal Planning and Management (3) Theories and practice of coastal planning and management in the U.S. and abroad. Case studies of various aspects of coastal planning will be used to investigate topics such as coastal land conservation, marine protected areas, coastal hazards and coastal aquaculture.

GEOG 622 Environmental Impact Assessment (3) Theory and practice of environmental impact assessment. Policy and planning frameworks supporting environmental assessment in the U.S. and abroad. Cumulative environmental effects and strategic environmental assessment. Pre: graduate standing. (Cross-listed as PLAN 622) DS

GEOG 628 (Alpha) Resource Systems (3) Resource development and use in a time perspective. Ecological and socioeconomic impacts, concepts, definitions, and methodology. (B) renewable; (C) nonrenewable. Pre: consent.

GEOG 630 Urban and Regional Planning in Asia (3) Key issues and policies in urban planning, rural-urban relations, rural regional planning, and frontier settlement in Asia and the Pacific. Repeatable one time. Pre: PLAN 600 or consent. (Cross-listed as PLAN 630)

GEOG 631 Environment and Development (3) Theories and practice of development; how changing development paradigms shape different ideas concerning the environment and the management of natural resources; emerging debates in development and environment in post-modern era. (Cross-listed as PLAN 637)

GEOG 632 China’s Economic and Regional Development (3) A review of contemporary China’s economic and regional development, examining the changing plans, policies and performances in the Socialist Development and Market Transition eras, and the implications on spatial patterns. Pre: 353 or PLAN 636 or consent. (Cross-listed as ASAN 638 and PLAN 638)

GEOG 639 Community-based Natural Resource Management (3) Concepts and theories of community, resource access, and governance. Practical challenges to Asia-Pacific CBNRM in contemporary political economy. Pre: PLAN 630 or consent.

GEOG 652 Contemporary Japan Seminar (3) Selected physical and human features that represent economic, social, and political life of modern Japan. Repeatable with consent of instructor. Pre: consent. (Cross-listed as ASAN 652)

GEOG 654 Seminar in Geography of Southeast Asia (3) Repeatable with consent of instructor. Pre: consent.

GEOG 665 Seminar in Geography of the Pacific (3) Investigation of geographic problems of Melanesia, Micronesia, Polynesia. Repeatable with consent of instructor. Pre: consent.

GEOG 680 Geospatial Analysis of Natural Resource Data (3) The application of geostatistics to estimate spatial dependence to improve soil and regional sampling; provide insight into underlying soil, geographic, and geologic process, and to provide quantitative scaling up of point measurements for fields, regions, and watersheds. (Cross-listed as TPSS 680)

GEOG 692 Faculty Seminar Series (1) Graduate seminar required of all MA students and recommended for PhD students. Single credit course in which faculty present ongoing research in their fields. Pre: consent. Co-requisite: 695.

GEOG 693 Technology and Natural Risks Methods of Analysis (3) Survey of tools for evaluating risks to human health from technological and natural hazards. Historical and international context of methods. Pre: 455 or consent.


GEOG 696 Research Design/Methods in Geography (3) Elements of research design, practical field experience, exposure to research and ideologies, broad exposure to heritage and ethos of the discipline. Pre: consent.

GEOG 699 Directed Research (V) CR/NC only. Pre: consent.

GEOG 700 Thesis Research (V) Pre: consent.

GEOG 701 (Alpha) Special Topics (V) Study and discussion of significant topics, problems. (H) Multi-objective decision analysis. Repeatable two times. Pre: 455 or 636, or consent of instructor. Pre: consent.

GEOG 728 Seminar: Resource Management in Asia-Pacific (3) Examination of resource management problems in Asia and the Pacific. Problems of resource use—agriculture, forestry, energy, minerals, ocean, air quality. Pre: graduate status.

GEOG 750 Research Seminar: Biogeography (3)

GEOG 752 Research Seminar: Resource Management (3)

GEOG 757 Research Seminar: Cultural Geography (3)

GEOG 758 Research Seminar: Conservation (3)

GEOG 761 Research Seminar: Cartography (3)

GEOG 762 Research Seminar: Remote Sensing (3)

GEOG 763 Research Seminar: Agricultural Geography (3)

GEOG 764 Research Seminar: Social Geography (3)

GEOG 766 Society and Space (3) Advanced seminar on social production of space. Topics include spatial metaphor in social theory, western spatiality from the Renaissance through the Enlightenment, modernity and post-modernity, and geography of the body, home, landscape, and nation. Pre: graduate standing or consent.

GEOG 800 Dissertation Research (V)

Geology and Geophysics (GG)

School of Ocean and Earth Science and Technology

GG 101 Dynamic Earth (3) The natural physical environment; the landscape; rocks and minerals, rivers and oceans; volcanism, earthquakes, and other processes inside the Earth; effects of human use of the Earth and its resources. Field trip. DP

GG 101L Dynamic Earth Laboratory (1) (1 3-hr Lab) Hands-on study of minerals, rocks, and topographic maps. Examine volcanism, hydrosphere, coastal processes and hazards, geologic time and earthquakes. Field trips to investigate landslides, beaches and O’ahu geology. A-F only. Pre: one of 101 (or concurrent), 103 (or concurrent), 108 (or concurrent), or 168 (or concurrent). DY

GG 102 Introduction to Global Change (3) Prepares students to be informed rational consumers, able to weigh media messages regarding our Earth, and to act appropriately. Topics include global change, fossil fuel, greenhouse gases, global ice, extinctions, human nutrition and industrial agriculture. A-F only. Spring only.

GG 103 Geology of the Hawaiian Islands (3) Hawaiian geology and geologic processes: origin of Hawaiian islands, volcanism, rocks and minerals, landforms, stream and coastal processes, landslides, earthquakes and tsunamis, groundwater, geologic and environmental hazards. Field trip. DP

GG 104 Volcanoes in the Sea (3) Lecture with field trips covering the manner in which geological conditions, resources, and events have affected past and present circum-Pacific societies. Credit not given for both 103 and 104.

GG 105 Voyage through the Solar System (3) An illustrated voyage through the Solar System. The origin, evolution, and present state of the sun and each planet based on recent results. Spring only. (Cross-listed as ASTR 150) DP

GG 106 Humans and the Environment (3) Prepares students to make decisions such as where to build/buy a house, sustainable use of natural resources, and what environmental actions relevant to society and Earth’s ecosystem are appropriate on a local and global scale. A-F only. DP

GG 130 Geological Hazards (3) Introductory covering the causes of, and effects from, earthquakes, tsunami, volcanic eruptions, landslides, rockfalls, and
other natural geologic phenomena. Open to nonmajors. Field trips. (Alt. years) DP

GG 170 Physical Geology (4) (3 Lec, 1-3 hr Lab) Structure, composition and evolution of Earth; processes responsible for formation, deformation and transformation of rocks; plate tectonics. Emphasis on quantitative methods, problem solving and critical thinking in geology. Laboratory and field trips required. DP DY

GG 200 Geological Inquiry (4) (3 Lec, 1-3 hr Lab) Origin and age of the solar system and earth; interior of the earth; plate tectonics and records of biological evolution and past environments. Pre: 170 (or 101L and 101L), or 105 and 101L; or consent. NI DP DY

GG 250 Scientific Programming (3) (2 Lec, 1-3 hr Lab) Introduction to scientific programming by computer programming. Overview of the MATLAB programming language and environment. Emphasis placed on good style, logical reasoning and applied mathematics. Pre: MATH 241 (or concurrent) or departmental approval. NI

GG 300 Volcanology (3) Volcanic eruptions and their consequences. Includes models for volcanic eruptions, like lava fountains and lava flows, monitoring of active volcanoes, evaluation and impacts of volcanic hazards, and mitigation of volcanic risk. Field trips. Normally fall. Pre: 200 or consent. DP

GG 301 Mineralogy (4) (3 Lec, 1-3 hr Lab) Crystallography, crystal chemistry, phase equilibria, and crystal structures. Also covers mineral optics and identification and includes an introduction to modern methods of mineralogy and crystallography. Pre: 200 and (CHEM 162/162L or CHEM 171/171L) or consent. DP

GG 302 Igneous and Metamorphic Petrology (3) (2 Lec, 1-3 hr Lab) Survey of composition, classification, and occurrence of igneous and metamorphic rocks. Hand-specimen identification and optical petrography of igneous and metamorphic rocks. Development of critical thinking and writing skills. Pre: 301 or consent. DP

GG 303 Structural Geology (3) (2 Lec, 1-3 hr Lab) Introduction to (a) the geometry, kinematics, and mechanics of crustal deformation, and (b) continuum mechanics in geology. Develops skills in three-dimensional thinking through geologic maps, cross sections, various projections, experiments, and vector analyses. Pre: 200, 250, MATH 241 or MATH 251A, and PHYS 151 or PHYS 170; or consent. DP

GG 304 Physics of Earth and Planets (4) (3 Lec, 1-3 hr Lab) Essentials of geophysics: formation of Solar System and Earth, gravity, seismology, heat flow, geomagnetism, isostasy, plate tectonics. Coursework involves application of basic physics to understanding Earth structure. Labs include field surveys and computer analyses. Pre: 250, 303, MATH 241, MATH 242, and PHYS 272; or consent. DP DY

GG 305 Geological Field Methods (3) Methods used in geological investigations in the field. Eight hours on Saturday in the field. Pre: 302, 303, and 309. Recommended: 302 and 309. DP

GG 309 Sedimentology and Stratigraphy (4) (3 Lec, 1-3 hr Lab) Principles of sedimentology, sedimentary petrology, geochemistry and stratigraphy. Description and comparison of modern and past processes and environments that form sedimentary rocks, properties of sedimentary rocks and interpretation of these properties and stratigraphic relationships in terms of Earth history. Repeatable one time. Pre: 200 and 301, or consent. Spring only. DP

GG 312 Geomathematics (3) Mathematical methods of geologic science. Emphasis on application to earth-science problems using linear algebra, vector calculus, ordinary differential equa-

tions, and numerical solutions. Pre: MATH 242 or consent. (Cross-listed as OCN 312)

GG 325 Geochemistry (3) Theory and applications of chemical principles and chemical analysis to Earth, ocean and environmental sciences; chemistry of hydrosphere-geosphere-biosphere system, origin/differentiation of Earth/Solar system, volcanic processes, natural radioactivity, organic/inorganic chemistry. Pre: 200, 250, MATH 241 or MATH 251A, CHEM 162 (or concurrent); or consent. Fall only. DP

GG 399 Directed Reading (V) Individual reading in geology and geophysics. Pre: consent.

GG 402 Hawaiian Geology (3) Consists of lectures, discussions, and field trips about the geology of the Hawaiian Islands. Focus on geological processes and the geologic history of all islands will be covered. Pre: 302 and 303; or consent. DP

GG 406 Natural Disasters: Geohazards and the Layman (3) Evaluates ethical practice of geoscience as it relates to studies of natural disasters that result from geologic and meteorological phenomena and the means that earth scientists interact with the laymen. Pre: 101, 103, 104, 108, or 170. (Offered every fall semester)

GG 407 Energy and Mineral Resources (3) Lecture and discussion on the origin, distribution and exploitation of fossil fuels, renewable energy resources and ore deposits. Coverage and detail will depend partly on student interest and background. Pre: 301 or consent. DP

GG 410 Undergraduate Seminar (2) Gain professional training, practical experience, and evaluate peers on giving scientific presentations emphasizing topics in geology, geophysics, and planetary science. 60% of the grade is based on the equivalent of three oral communication assignments. Pre: 170 (or 101 and 101L, or 105 and 101L) and 200.

GG 413 Geological Data Analysis I (3) Exploratory data analysis, probability theory and statistics, curve interpolation and approximation, simple and multiple regression, multivariate analysis, and analysis of directional data. Pre: 250 and MATH 242 (or concurrent) or consent.

GG 420 Coastal Geology (3) Recent records and physical processes of global and local environmental change; dating techniques; late Pleistocene and Holocene climate change; and ice volume. Repeatable one time. Pre: 309 or consent. DP

GG 421 Geologic Record of Climate Change (3) Explores the climatic responses of Earth’s major systems and subsystems (ice, water, vegetation, land) and traces their interactions through geologic history. Open to nonmajors. A-F only. Pre: 200 or MET 310, OCN 310, OEST 310; or consent. DP

GG 423 Marine Geology (3) Sediments, structure, geochemistry, history of ocean basins and margins. Pre: 302 or consent. (Cross-listed as OCN 423) DP

GG 425 Environmental Geochemistry (3) Theory and applications of geochemistry to contaminant/pollutant distribution in the hydrosphere-geosphere-biosphere system. Pre: 302, 309. Topics include aqueous geochemistry, thermodynamics, kinetics, and organic and isotopic chemistry of environmental contaminants. Pre: 325 or consent. Fall only. DP

GG 430 Geology and Mineral Resources of Asia (3) Geologic setting of ore, industrial mineral, and fuel deposits of Asia, its adjacent islands, and shallow seas. Topics include aquaeous geochemistry, kinetics, and organic and isotopic chemistry of environmental contaminants. Pre: 325 or consent. Fall only. DP

GG 444 Plate Tectonics (3) (2 Lec, 1-3 hr Lab) Quantitative geometrical analysis techniques of plate tectonics theory; instantaneous and finite rotation poles; triple-junction analysis; plate boundary stresses. Pre: 200 or consent. (Alt. years) (Cross-listed as OCN 444)

GG 450 Geophysical Methods (4) Combined lecture/lab covering basic geophysical theories, exploration, and interpretation. Seismic reflection and refraction, gravity, and electromagnetics. Constraints on models of Earth’s internal structure and composition. Pre: 250, 303, MATH 241, MATH 242, and PHY 272; or consent. DP DY

GG 451 Earthquakes (3) Earthquake seismology. Elastic properties of rocks, earthquake waves, causes, detection, location, and prediction of earthquakes; tsunami generation and other effects of earthquakes. Pre: 304 or consent. (Alt. years) DP

GG 455 Hydrology (4) (3 Lec, 1-3 hr Lab) Occurrence, characteristics, movement, quality, development, and contamination of water in the Earth’s crust. Pre: MATH 242 or MATH 252A, or consent. DP

GG 460 Geological Remote Sensing (4) (3 Lec, 1-3 hr Lab) Combined lecture/lab on the concepts behind, geologic uses for, and techniques of satellite and airborne remote sensing. Lab work will consist of computer image processing. Field trips. Open to nonmajors. Pre: 200 or consent. Spring only. DP

GG 461 Geospatial Information (3) Combined lecture/lab covering the collection, analysis and use of geospatially registered field data. Pre: 305 (or equivalent). (Alt. years)

GG 466 Planetary Geology (3) Comparative geology of the terrestrial planets (moon, Mars, Mercury, Venus, and Earth) impact cratering, volcanism, tectonism, geomorphology, weathering; manned and unmanned space exploration. Pre: any 100-level GG course. DP

GG 499 Undergraduate Thesis (3) Directed research in which the student carries out a scientific project of small to moderate scope with one or more chosen advisors. The student must complete a document in the style of a scientific journal article. Pre: consent.

GG 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

GG 593 Earth and Planetary Sciences Workshops (V) Designed for in-service school professionals to learn new approaches and tools in the fields of earth and planetary sciences. Repeatable for credit. Credits earned in these courses cannot be applied for graduate degrees.

GG 600 Equations of Geophysics (3) Least-square approximation of functions by orthogonal series; potential, wave field equations; boundary value problems; Bessel Hankel functions, spherical harmonics, potential theory, plane waves, spherical waves; emphasis on geophysics application. Pre: MATH 244 or MATH 253A, PHYS 400, or consent.

GG 601 Explosive Volcanism (3) Explosive volcanic eruptions: from causes to consequences. Review of current physical volcanology including ascent and fragmentation of magma, transport and deposition processes in pyroclastic eruptions, volcanic crisis management and volcanic eruption scenarios. Seven-day field trip. A-F only. Pre: 300 or consent.

GG 602 Theoretical Petrology (3) Derivation of phase diagrams from basic thermodynamics principles. Equilibria of natural silicate systems. Crystal chemistry, kinetics, diffusion, etc. Applied to igneous and metamorphic petrology. Pre: 302, 35, and CHEM 351 (or concurrent); or consent. (Alt. years)

GG 603 Petroleum of Ocean Lithosphere (3) (2 Lec, 1-3 hr Lab) Petrogenesis of the oceanic lithosphere, including mantle processes and rocks from mid-ocean ridges, seamounts, oceanic hotspots,
back-arc basins, and intra-oceanic arcs. Pre: 302 or consent. (Alt. years)

GG 604 Disaster Management: Understanding the Nature of Hazards (3) Combined lecture/discussion in disaster management focusing on the scientific understanding of the forces and processes underlying natural hazards; and human attempts to respond to these through mitigation and planning and management. Pre: PLAN 670 or consent. (Once a year) (Cross-listed as PLAN 671)

GG 605 Lava Flow Rheology and Morphology (3) Effusion eruptions: from eruption to final flow form. Includes: rheology, effusion rate, heat loss, and field measurements, followed by inflation, flow forms, lava lakes, domes, lava flow hazard and modeling, field trips to Kilauea and Makapuu. A-F only. Pre: 300 or consent. (Alt. years)

GG 606 Current Events in Volcanology (1) Discussion of active areas of volcanism and new publications on volcanology. Repeatable four times. Pre: 300 or (concurrent) or consent.

GG 608 Isotopes and Trace Elements (3) Principles of radiogenic and stable isotope, and trace element geochemistry as applied to igneous petrology, mantle dynamics, plate tectonics, and terrestrial evolution. Pre: 302 and 325. (Alt. years)

GG 609 Graduate Teaching Geology (V) For GG graduate students who lead, under faculty supervision, a scheduled class in Geology and Geophysics. The instructor will define the student’s responsibilities when offering GG 609, and the responsibilities must be met for a passing grade. As the consent to take the class must also be granted by the department's chair, the chair will also review the responsibilities required by the instructor. GG graduate students only. CR/NC only. Pre: consent of instructor and department chair.

GG 610 Graduate Seminar (1) Seminar in which students present a 15- to 20-minute talk on their research or a related topic. Meets once a week with two to three talks per meeting. Graduate students are required to register for this course once per year. Repeatable eight times.

GG 611 Accelerated Introduction to Geology I (3) Lecture presenting a rapid-paced survey of geology and geophysics for graduate students. Includes origin of the Solar System, tectonics, volcanology, whole-earth composition, stage transformations, petrology (igneous, metamorphic, and sedimentary), historical geology, and hydrology. Saturday field trips. Fall only.

GG 612 Accelerated Introduction to Geology II (3) Lecture presenting a rapid-paced survey of geology and geophysics for graduate students. Includes Earth structure, rheology, seismology, dynamics, origin of continents, global change, energy sources, environmental geology, and natural hazards. Saturday field trips. Spring only.

GG 614 Advanced Field Study (V) Shipboard and land-based projects. Repeatable eight times. Pre: consent.

GG 621 Electron Microprobe Analysis (2) Combined lecture-lab on the principles of chemical analysis by electron microscope and X-ray fluorescence. Hands-on experience with the electron microprobe. Required to register for the UM electron microprobe. Pre: 301 or consent.

GG 625 Seminar in Marine Geology and Geophysics (V) Current research topics. Repeatable eight times. Pre: 423 or OCN 622, or consent.


GG 637 Macroevolution and Earth History (3) Evolutionary biology in the context of Earth history; fossil record of life; fundamentals of microevolution; speciation, molecular evolution and phylogeny; geology and evolution of genomes, development, and behavior; and case studies in evolution. A-F only Pre: BIOL 171 or equivalent. (Alt. years)

GG 638 Earth System Science and Global Change (3) Global view of the planet and how it functions as an integrated unit. Biogeochemical processes, dynamics, feedback mechanisms and natural and human-induced environmental change. Chemical history of ocean-atmospheric-sediment system and co-evolution of the biota. Repeatable one time. Pre: BS in environmentally related science or one year of chemistry, physics, and calculus; or consent. (Cross-listed as OCN 638)

GG 639 Stable Isotope Biogeochemistry (3) Stable isotope geochemistry applied to questions of biogeochemical cycling in the oceans, sediment diagenesis, paleoceanography, environmental geochemistry and ecology. Pre: 325 or consent. (Alt. years)

GG 641 Origin of Sedimentary Rocks (3) (2 Lec, 1 3-hr Lab) Environment of deposition and subsequent diagenesis and ancient sediments. Petrogenesis of siliciclastic, carbonate and orthochemical rocks. Sedimentology, sedimentary petrography and geochemistry. Repeatable one time. Pre: consent. (Alt. years) (Cross-listed as OCN 641)

GG 642 Elemental Composition Changes (2) Changes in the chemical composition of meteorites, bulk Earth, Earth's mantle and crust, sedimentary rocks, hydrosphere and biosphere, and underlying principles. Pre: 325 or OCN 623. (Alt. years) (Cross-listed as OCN 642)

GG 644 Sedimentary Geochemistry (3) Geochemical thermodynamics and kinetics and their use in interpreting the origin of sediments, sedimentary rocks, and natural waters over a range of pressure-temperature conditions. Pre: CHEM 171, or CHEM 161 and CHEM 162; PHYS 152; and MATH 242 or MATH 252A; and consent. (Alt. years) (Cross-listed as OCN 644)

GG 650 Seismology (3) Elasticity, wave equations, body waves, surface waves, free oscillations, seismometry, seismogram interpretation, tectonics, inversion, source theory, and waveform modeling. Pre: 600 or consent.

GG 651 Geomagnetism and Cosmic Magnetism (3) Magnetic fields of Earth, planets, stars, and galaxies; dynamo theories; paleomagnetism; terrestrial and lunar rock magnetism; planetary, regional, and local geomagnetic sounding. Pre: consent. (Alt. years)

GG 652 Gravity, Magnetics, Heat Flow (3) Uses of selected potential magnetostatic methods in tectonics or in exploration. Processing and interpretation techniques; modeling and inversion. Pre: consent. (Alt. years)

GG 655 Groundwater Modeling (3) Introduction to the finite-difference method; steady-state and transient groundwater flow in saturated and unsaturated media; numerical solution of storage and exchange and aquifer evaluation. A-F only. Pre: CEE 627 or consent. Fall only. (Cross-listed as CEE 623)

GG 657 Astrochemistry - A Molecular Approach (3) Formation of astrobiologically important molecules and their precursors in the interstellar medium and in our solar system: first principles and latest trends. Pre: consent. Fall only. (Cross-listed as ASTR 657 and CHEM 665)

GG 666 Planetary Surfaces (3) Comparative geology of terrestrial planets (moon, Mars, Mercury, Venus, and Earth); impact cratering, volcanism, geomorphology; remote sensing; manned and unmanned space exploration. Pre: 601, ASTR 630; or consent. (Alt. years)

GG 669 Formation of the Solar System (3) Nucléo-synthesis; collapse of interstellar clouds, accretion of planets, meteorites, asteroids, comets as probes of the early solar system; cosmochronological dating and radioactivity; asteroids and comets; other solar systems. Pre: 325, ASTR 630; or consent. (Alt. years)

GG 670 (Alpha) Geology of Planetary Bodies (3) Composition and geologic evolution of the planets and their moons; impact cratering; volcanism; tectonics; remote sensing; manned and unmanned exploration and future missions. (B) the moon; (C) Mars. Pre: 666 or consent.

GG 671 (Alpha) Remote Sensing (3) Spectroscopic, radar, thermal, and other methods for remote sensing applied to geologic problems; instrumental design and data analysis. (B) planets; (C) volcanoes. Pre: 666 or consent.

GG 672 Seminar in Tectonics (3) Evolution of ocean basins, margins, foldbelts, and platforms, from plate tectonics and regional syntheses of structure, petrology, geophysics, and stratigraphy. Repeatable eight times. (Alt. years)

GG 673 (Alpha) Extraterrestrial Material (3) Mineralogical and compositional characteristics of extraterrestrial material and the implications for the origin and history of the solar system. The subject is treated in two full-semester courses: (B) meteorites; (C) petrology of the Moon and Mars. Pre: consent.

GG 674 Paleoeceanography (3) Study of the paleoceanographic and paleoclimatic evolution of the Earth’s oceans, atmosphere and biosphere. Repeatable one time. Pre: consent. (Alt. years) (Cross-listed as OCN 674)


GG 681 Continuum Mechanics (3) Continuum mechanics in geophysics, planetary physics, and structural geology. Tensors; stress, strain, flow; conservation of mass, momentum, and energy; rheology; geophysical fluid dynamics. Pre: PHYS 400, MATH 402, or consent.

GG 685 Geophysical Inverse Theory (3) Least squares, the generalized inverse, singular value decomposition, maximum likelihood, Backus-Gilbert, Franklin, and Tarantola methods; applications. Pre: 600 or consent. (Alt. years)

GG 691 Geological Data Analysis II (3) Analysis of sequential data, Markov processes, series of events, spectral analysis, filtering, quantitative map analysis, and introduction to fractals. Pre: 413, MATH 241 or MATH 251A; or consent.

GG 699 Directed Research (V) CR/NC only. Pre: consent.

GG 700 Thesis Research (V)

GG 701 Physics of the Earth’s Interior (3) Interpretation of geophysical and laboratory data used to understand elastic and anelastic properties, compositional, phase relationships, temperature distribution in the Earth. Pre: 653 or consent. (Alt. years)

GG 703 Fractures and Faults (3) Lecture on elasticity theory, fracture mechanics and boundary element modeling, with application to faults and fractures in the Earth. Pre: consent.

GG 710 Selected Topics in Geology and Geophysics (2) Content to be announced. Repeatable eight times. Pre: consent.
GG 711 Special Topics in Geology and Geophysics (3) Content to be announced. Repeatable eight times. Pre: consent.

GG 800 Dissertation Research (V)

Geriatric Medicine (GERI)

School of Medicine

GERI 541 Geriatric and Palliative Care (V) This four-week rotation provides medical students with an overview of geriatric and palliative medicine in outpatient, inpatient, home care and nursing home settings. Students will receive one half-day per week of geriatric medicine didactic seminars and one half-day per week of palliative medicine didactic sessions. The clinical placements will be provided at several teaching sites including Kuakini Medical Center, Queen’s Medical Center, the VA, several nursing homes on Oahu, Kaiser Permanent, Hospice Hawai’i, St. Francis Hospice, Kapiolani Hospital, Straube Hospital, and the Pain & Symptom Management Program at Queen’s Medical Center. CR/NC only. Pre: 104.

GERI 542 Geriatric Medicine Research (V) Medical students will have the opportunity to complete a research project in the field of epidemiology of aging, and present an abstract at a local meeting. Basic principles of epidemiology and statistics will be taught. Repeatable one time. CR/NC only. Pre: departmental approval.

GERI 595 Medical Student Training in Aging Program (2) Introduces medical students to clinical, research, and academic experiences in geriatrics, under the mentorship of faculty members. MD majors only. CR/NC only. Pre: MEDD 554 or consent. Fall only.

German (GER)

College of Languages, Linguistics and Literature

All courses are conducted in German. A grade of C- or better in the prerequisite courses is required for continuation.

GER 101 Elementary German (3) Conversation, grammar and reading. HSL

GER 102 Elementary German (3) Conversation, grammar and reading. Pre: GER 101. HSL

GER 201 Intermediate German (3) Conversation, grammar, reading and writing. Pre: 102. NI HSL

GER 202 Intermediate German (3) Conversation, grammar, reading and writing. Pre: 201. NI HSL

GER 260 Intensive Intermediate German Abroad (V) Intensive course of formal instruction on the second-year level in German language and culture in Germany. Pre: 102. NI HSL


GER 303 Reading and Writing (3) Further development of reading and writing skills through the study of modern short stories by major German authors such as: Böll, Borchert, Frisch, Kafka, and Novak. Pre: 202. DL

GER 304 Advanced German: Business and Related Fields (3) Advanced German conversation, reading, and writing with a special emphasis on the vocabulary and cultural context of the German business world. Pre: 202.

GER 305 Media Topics in Composition and Conversation (3) Further development of listening, comprehension, speaking and writing skills through analysis and discussion of videotapes, Internet material and magazine articles. Frequent oral and written reports. Pre: 202 or consent.

GER 306 Conversation and Composition (3) Intensive practice in speaking and writing with selected grammar review. Pre: 202 or consent.

GER 307 German for Reading I (3) Development of reading skills through the study of short scholarly, technical, and literary texts. Pre: 202 or consent.

GER 308 German for Reading II (3) Pre: 202 or consent.

GER 312 Introduction to German Literature (3) Representative reading and discussion of cultural periods in chronological order from c.1700; brief reference to earlier periods. Pre: 303 or concurrent with consent. DL

GER 313 Introduction to German Literature (3) Continuation of 312. Pre: 312 or approval of instructor. DL

GER 360 Intensive Third-Level German Abroad (V) Intensive course of formal instruction on the third-year level in German language and culture in Germany. Pre: 202 or 260.

GER 361 Germanic Civilization to World War II (3) German cultural heritage and history in Germany, Austria, and Switzerland until World War II. Pre: 202 or consent. DH

GER 362 Modern Germanic Civilization (3) German cultural heritage and civilization in Germany, Austria and Switzerland since World War II. Pre: 202 or consent. (Once a year) DH

GER 371 Practical German for use in Hawai’i (3) Use of German in practical situations in Hawai’i, e.g., in travel industry. Pre: 305 (or concurrent).

GER 409 Enlightenment—Sturm und Drang (3) Lessing and his contemporaries; early dramas of Goethe and Schiller; Goethe’s early lyrics. Pre: 306 or consent. DL

GER 410 Classicism (3) Classical writings of Goethe and Schiller; some reference to other writers. Pre: 306 or consent. DL

GER 411 Romanticism (3) Novalis, Tieck, E. T. A. Hoffmann, Eichendorff, etc. Pre: 306 or consent. DL

GER 412 Poetic Realism (3) Masterworks by Büchner, Raabe, Storm, Keller, Meyer, Hebbel, and others. Pre: 306 or consent. DL

GER 415 Contemporary German Literary Activity (3) Handke, Becker, Weiss, Bernhard, Walser, Böll, Grass. Pre: 306 or consent. DL

GER 428 Survey of German Lyric Poetry (3) Individual interpretation complements lectures on theoretical and historical background. Pre: 306 or consent. DL

GER 432 Stylistics (3) Analysis of prose selections through identification of their structural and semantic elements. Written and oral styles; specific structural elements and their semantic effect. Pre: 306 or consent. DL

GER 450 The Structure of German (3) Analysis of German phonology, syntax, and semantics. Pre: 301 and 306; or consent. DH

GER 460 Intensive Fourth-Level German Abroad (V) Intensive course of formal instruction on the fourth-level in German language and culture in a German-speaking country. Pre: 360 or equivalent.

Key to symbols & abbreviations: see the first page of this section.

Greek (GRK)

College of Languages, Linguistics and Literature

A grade of C- or better in the prerequisite courses is required for continuation.

GRK 101 Elementary Greek (3) Grammar and vocabulary, with reading of simple Greek. HSL

GRK 102 Elementary Greek (3) Continuation of 101. Pre: 101. HSL

GRK 201 Intermediate Greek (3) Development of reading and translation skills. Emphasis on prose. Pre: 102 or equivalent. NF HSL

GRK 202 Intermediate Greek (3) Continuation of 201: emphasis on poetry. Pre: 201. NF HSL

GRK 303 Greek Historians (3) Selections from Herodotus, Xenophon, and others. Pre: 201 and 202, or consent. DL

GRK 304 Greek Epic (3) Selections from Homer, Hesiod, and others. Pre: 201 and 202, or consent. DL

GRK 325 Greek Philosophy (3) Selections from Plato, Aristotle, and others. Pre: 201 and 202, or consent. DL

GRK 332 Greek Drama (3) Selections from Aeschylus, Sophocles, and Euripides. Pre: 201 and 202, or consent. DL

GRK 333 Greek Lyric (3) Selections from Sappho, Alcaeus, and others. Pre: 201 and 202, or consent. DL

GRK 490 Seminar in Greek Studies (3) Study of an author or phase in Greek studies. Repeatable unlimited times with consent. Pre: any two 300-level GRK courses, or consent.

Hawaiian (HAW)

School of Hawaiian Knowledge

HAW 100 Language in Hawai‘i: A Survival Kit for Life in Hawai‘i (3) Introduction to Hawaiian language and language related issues to enhance communicative experience in Hawai‘i, including an examination of place names, pronunciation, common expressions, relation to Pidgin, Polynesian and Asian languages, political issues and intercultural conflict. DS

HAW 101 Elementary Hawaiian (4) Listening, speaking, reading, writing. Meets five hours weekly; daily lab work. HSL

HAW 102 Elementary Hawaiian (4) Continuation of 101. Pre: 101 or exam or consent. HSL

HAW 105 Intensive Elementary Hawaiian (8) Content of 101 and 102 covered in one semester. Meets two hours daily, Monday–Friday, plus lab work. HSL

HAW 131 Hawaiian for Reading Proficiency (3) Elementary course; emphasis on reading and translation.

HAW 132 Hawaiian for Reading Proficiency (3) Continuation of 131. Pre: 131 or consent.

HAW 201 Intermediate Hawaiian (4) Continuation of 102. Meets five hours weekly; reading of traditional texts; daily lab work. Pre: 102 or exam or consent. NF HSL

HAW 202 Intermediate Hawaiian (4) Continuation of 201. Pre: 201 or exam, or consent. NF HSL

HAW 206 Intensive Intermediate Hawaiian (8) Content of 201 and 202 covered in one semester. Meets two hours daily, plus lab work. Pre: 102 or 105, or exam. NF HSL

HAW 261 Hawaiian Literature in Translation (3) Survey of Hawaiian literature, including prose narration and poetry with reference to Polynesian and Western themes and forms. DL
HAW 262 Hawaiian Literature (3) Hawaiian tradition in Hawaiian text and English translation featuring the selected works of American missionaries and Hawaiian authors emphasizing the period following discovery (1778–79), into the nineteenth and early twentieth centuries. A-F only. Pre: 261. Spring only. NF

HAW 284 Papa Mele I (Mele in the Hawaiian Language Classroom) (3) The incorporation of mele and the performance thereof for the enhancement of second language acquisition in Hawaiian. Pre: 102. NF


HAW 302 Third-Level Hawaiian (3) Continuation of 301. Pre: 301 or exam, or consent.

HAW 321 Hawaiian Conversation (3) Systematic practice on various topics for control of spoken Hawaiian. Repeatable up to six credit hours. Pre: 202 or consent.


HAW 332 Listening Comprehension and Transcription (3) Development of listening comprehension through transcription and discussion of tape recordings. Pre: 202.

HAW 345 Ulu ka Hoi (3) Lecture offering focused study and creation of Hawaiian language newspapers with a concentration on the characteristics of writing in this genre. Students will produce a monthly newsletter in Hawaiian. Repeatable one time. Pre: 302 (or concurrent) or consent. DH

HAW 373 Ka Mo’omehe Hawaiian (3) A survey course on the study of traditional Hawaiian culture including origins, the socioeconomic system, land tenure, religion, values, and the arts. The course will be taught in Hawaiian. Pre: 302 (or concurrent) or consent. DH

HAW 383 Hana ‘Oe a Kani Pono-Hawaiian Radio Broadcasting (3) Combined lecture/lab involving students in the planning and production of a weekly Hawaiian language radio broadcast. Includes research, writing, and voicing of mele and their stories on live radio. Repeatable one time. Pre: 302 or 384 (or concurrent with consent), or consent. DH

HAW 384 Ka Haku Mele (3) Composers and Their Compositions. Provides a venue which will allow students to analyze, dissect and discuss mele (song, poetry and chant), paying close attention to the style of composition by identifying reoccurring nuances found in mele composed by the same as well as various authors. Pre: completion of 202 or consent. (Once a year)

HAW 401 Fourth-Level Hawaiian (3) Advanced reading, writing, and discussion in Hawaiian. Transcribing and translating Hawaiian language tapes. Translating English into Hawaiian, and Hawaiian into English. Pre: 302 or exam, or consent.

HAW 402 Fourth-Level Hawaiian (3) Continuation of 401. Pre: 401 or exam, or consent.

HAW 425 Mo’olelo Hawai’i (3) Survey of the major works by Hawaiian scholars writing about the history and culture of Hawai‘i including David Malo, Kamakau, Kepelino, and John Papa II. Pre: 302. DH

HAW 426 Ka’ao Hawai’i (3) Survey of the core literature written by Hawaiian scholars, including both historical and mythological epics and folk tales. Pre: 302. DL

HAW 427 I Le‘a ka Hula I Ka Ho‘opua’a (Mo‘olelo, Ka‘ao, Mele and Hula) (3) The incorporation of mele and hula performance with mo‘olelo and ka‘ao. Pre: 302 or consent.

HAW 428 Ka Mana‘o Politika Hawai’i - Political Thought in Hawaiian (3) Intensive study of Hawaiian political thought in writing and speech. Pre: 302 (or concurrent) or consent. (Cross-listed as POLS 305C) DH

HAW 429 Ka Hō‘ike Houma (3) Study of Hawaiian land tenure practices through readings and discussions of audioteapes, written primary sources, maps, wind names, rain names, ‘ōlelo no’eau (wise sayings), and mele (poetry). Readings are drawn from 19th and 20th century Hawaiian newspapers and other primary sources. Pre: 302 (or concurrent) or consent.

HAW 430 Ma Ka Hana Ka ‘Ike (3) Study of traditional Hawaiian language and cultural practices through hands-on applications and lectures. Pre: 302 (or concurrent) or consent.

HAW 435 (Alpha) Problems in Translation (3) Problems in translation of: (B) legal documents; (C) newspapers; (D) religious writings. Pre: 302 or consent.

HAW 445 Nā Politiika ma ka Nīhau Hawai‘i - Politics in Hawaiian Language Media (3) Study of Hawaiian newspapers and media with emphasis on political content. Includes field trips to various archives. Pre: 302 (or concurrent), or consent. (Cross-listed as POLS 344) DH

HAW 452 Structure of Hawaiian (3) Descriptive linguistic analysis. Intensive exercises in advanced grammar. Pre: 302 (or concurrent) and LING 102, or consent. DH

HAW 454 History of the Hawaiian Language (3) Development from proto-Polynesian. Phonology, morphology, and grammar; history of research. Pre: 302 (or concurrent) and 452, or consent. DH

HAW 462 (Alpha) Ha‘uki: Sports Education Through the Medium of Hawaiian (2) Provide Hawaiian language students with linguistic tools necessary to provide sports education to Hawaiian immersion schools and for basic intergenerational use of Hawaiian in the linguistic domain of sports. (B) basketball; (C) volleyball; (D) football; (E) baseball. Repeatable for other topics.

HAW 463 Language for the Classroom (3) Examination of language needs in various classroom settings and introduction to new vocabulary in school content areas. Pre: 302, 452, and consent.

HAW 466 Kuleana Kula Kaiapuni (3) Examination of the political struggles of the Kula Kaiapuni (Hawaiian Immersion Program)—past and present. Special attention given to federal and state governments, Department of Education, and internal political struggles. Pre: 401 (or concurrent with consent).

HAW 470 Ho‘omōhala Ha‘awina Kaiapuni Curriculum Development (3) Examination of curricular issues of indigenous language programs; weekly participation in an immersion classroom; development of materials. Repeatable one time. Pre: 302 or consent.

HAW 471 Teaching in Hawaiian Language Immersion Program (3) Knowledge base for professional education; secondary school organization, curriculum, and program goals. A-F only. Pre: 302 and consent.

HAW 475 Teaching Residency (12) Full-time student teaching in the secondary school. CR/NC only. Pre: 302 and 463; or consent. Co-requisite: 476.

HAW 476 Seminar in Teaching Residency (3) Analysis and resolution of issues in teaching residency; teaching strategies and techniques; curriculum planning, professional growth and development. CR/NC only. Pre: 302 and 463; or consent. Co-requisite: 475.

HAW 483 Papa Mele Wahi Pana (3) Will provide students with the opportunity to learn mele, mainly poetry and song, composed specifically for a certain area of Hawai‘i. Pre: 302 or consent.

HAW 484 Hawaiian Poetry (3) Historical survey and analysis of poetry found in traditional chants, folk songs, modern poetry written in Hawaiian. Interpreting and composing Hawaiian poetry. Pre: 302 and consent, or 401. DL

HAW 485 Haku Hanakeaka - Hawaiian Language Playwriting (3) The creation and authoring of Hawaiian language play scripts based on traditional motifs. Repeatable one time. Pre: 402 (or concurrent) or consent. DA

HAW 486 Kahua Hanakeaka (Hawaiian Medium Stage Production) (3) From design to performance, students mount an original production based on traditional motifs. Repeatable one time. Pre: 402 (or concurrent), or consent.

HAW 488 ‘Ōlelo No‘eau (3) Survey and analysis of traditional proverbs and their kaona or symbolic meanings. A-F only. Pre: 402 or consent. DH

HAW 490 Ka Makau ‘olelo ‘A’a Kula Kaiapuni Hawai‘i (1) Assess the linguistic competence of prospective Hawaiian language immersion teachers to assure that all teachers entering the state DOE Hawaiian Immersion Program meet the requirements of the program with respect to Hawaiian language proficiency. CR/NC only. Pre: 402 (or concurrent), and 463 (or concurrent), or consent.


HAW 499 Directed Studies (V) Study of Hawaiian language through vernacular readings in various academic fields. Repeatable up to 6 credits. Pre: 302 and consent.

HAW 601 Kākau Mo‘olelo (3) Analyzes various genres of written Hawaiian literature. HAW majors only. Pre: graduate standing and 402, or consent.

HAW 602 Kākā‘olelo Oratory (3) A survey of oral performance styles to build increased oral skills. Pre: graduate standing and 601, or consent.

HAW 603 Ka Hana Noi‘i’ (Research Methods) (3) Research methodology course utilizing active research in the major repositories of Hawaiian language materials and Hawaiian-related knowledge. A-F only. Pre: graduate standing and consent. (Cross-listed as POLS 612)

HAW 615 Ku‘anakale (3) The examination of Hawaiian ways of speaking, as contrasted with English focusing on those features that are uniquely Hawaiian and can be said to constitute a Hawaiian worldview. Pre: 452 and 601, or consent.

HAW 625 Mo‘olelo Hawai‘i (3) Intensive study, research, and analysis of Hawaiian history. Repeatable two times with consent of advisor. Pre: 402 or consent.

HAW 638 Mea Kakau: Kamakau (3) Intensive study of an individual author, his/her works and nuances of his/her works. (E) J. H. Kanepu‘u; (I) S. M. Kamakau. Pre: 601 or consent. (Once a year)

HAW 643 Ke A‘o ‘Ōlelo Hou ‘Ana (Teaching Hawaiian As a Second Language) (3) Survey of existing texts and teaching resources; analysis of student clientele and needs; review of pedagogical
approaches for heritage and non-heritage learners: syllabus and materials development; practicum. Pre: 401 and 452 or consent.

HAW 652 Pilina 'Olelo (3) In-depth examination and research into the grammar of Hawaiian including discussion of theories of language and incorporation of meta-language. Pre: 452 and 602, or consent. (Once a year)

HAW 684 Nioni Mele (3) Intensive study focusing on original compositions of Hawaiian poetry and song. Pre: 402 and 484, or consent.

HAW 695 Papahanu Lao'o (V) Internship with cultural practitioner for MA students choosing Plan B. Repeatable up to six credits. CR/NC only. Pre: consent of graduate advisor.

HAW 699 Directed Research (V) Repeatable unlimited times. A-F only. Pre: consent of instructor and graduate chair.


Hawaiian Studies (HWST)

School of Hawaiian Knowledge

HWST 107 Hawai'i: Center of the Pacific (3) An introduction to the unique aspects of the native point of view in Hawai'i and in the larger Pacific with regards to oral and written language, religion, land, history, and modern issues. (C) Introduction to Hawaiian Art, Artist’s Relationship to Place. A-F only for (C). Pre: consent for (C). DH

HWST 207 Mālama Ahupua'a: Resource Management (3) Examination of the ahupua'a system: its mythologies, place names, history, poetry and early documents of the Hawaiian nation, as it was conceptualized by the ancient Hawaiians and exploration of its relevance in modern society. A-F only. Pre: 107. NI

HWST 220 Introduction to Hawaiian Visual Culture Studio (3) Introduction to a variety of material (fiber, bone, wood, and stone) and skills in the media used in the Hawaiian culture. Research and explore basic techniques within the media with emphasis on cultivation, preparation, uses, and conservation. Repeatable one time. A-F only. Pre: 107(C) or consent. NI

HWST 222 Introduction to Hawaiian Fiber Arts Studio-Hana No'eau Ma'awe (3) Introduction to a variety of fiber used in the Hawaiian culture. Emphasis on cultivation, preparation, uses and conservation of the fibers. Areas explored are kapa, plaing, netting and twining. A-F only. Pre: 107 or 107C, or consent. (Once a year) NI DA

HWST 224 Introduction to Hawaiian Painting and Drawing Studio (3) Research and express personal relationship to specific Hawaiian paradigms through Hawaiian visual culture. Introduction to painting and drawing media and exploration of various materials and techniques as applied to individual student styles. A-F only. Pre: 107 or 107C, or consent. (Once a year) NI DA

HWST 225 Introduction to Hawaiian Printmaking Studio (3) Introduction to Native Hawaiian perspective and world view in images used in print and the basic material, technical, and conceptual aspects of hand printed imagery through the indigenous eyes. A-F only. Pre: 107 or 107C, or consent. (Once a year) NI

HWST 270 Hawaiian Mythology (3) Survey of gods, heroes, heroines, and their kinolu as the basis of traditional Hawaiian metaphor. Pre: 107 or HAW 102. NI DL

HWST 281 Ho'oikele I: Hawaiian Astronomy (3) Introduction to Hawaiian studies of astronomy and the stars used by Polynesian Voyaging Society navigators. Introduction and comparison to various Pacific island non-instrument navigation systems and star names. Restricted to majors.

HWST 281L Ho'okele I Laboratory (1) (3 hr Lab) Stargazing laboratory to accompany 281. Pre: 281 (or concurrent). NI

HWST 282 Ho'okele II: Hawaiian Navigation (3) Hawaiian and other Oceanic canoe design, navigation, Pacific weather, sailing dynamics for canoes, and sail planning strategies used by Polynesian Voyaging Society navigators for long voyages.

HWST 282L Ho'okele II Laboratory (1) (3 hr Lab) Hands on experience on voyaging skills and sailing canoes to accompany 282. Pre: 282 (or concurrent). NI

HWST 285 Lā'au Lapa'au: Hawaiian Medicinal Herbs (4) Presentation of Hawaiian medicinal herbs including basic philosophy, identification, utilization, and preparation of such herbs for human ailments. Pre: 107 or consent. NI

HWST 301 Perspectives in Hawaiian Studies (3) Interdisciplinary lectures and discussions examining traditional and contemporary experiences in Hawaiian society and setting; resources, methods, and techniques. Repeatable one time. Pre: HAW 202 or consent. DH

HWST 320 Advanced Art Media (3) Examine and explore advanced techniques within the media and the customary and contemporary uses of a variety of material and skills used in traditional Hawaiian everyday life. Repeatable six times. A-F only. Pre: 107(C) or 220, or consent. (Once a year)

HWST 322 Advanced Hawaiian Fiber Arts Studio-Hana No'eau Ma'awe (3) Examine the customary and contemporary use of fiber materials and the skills used in Hawaiian culture. Research and explore advanced techniques within the media used in traditional Hawai'i. A-F only. Repeatable one time. Pre: 107 or 107C, 222; or consent. (Once a year)

HWST 324 Advanced Hawaiian Painting and Drawing Studio (3) Advanced research and expression of personal relationship to specific Hawaiian paradigms through visual culture and language. Students will further their definitions, analysis skills, research, and understandings through painting and drawing media. Repeatable one time. A-F only. Pre: 107 or 107C, 224; or consent. (Once a year)

HWST 325 Advanced Hawaiian Printmaking Studio (3) Advanced Native Hawaiian perspective in imagery in print and the material, technical, and conceptual aspects of hand printed imagery. Lecture/lab with studio work time. Repeatable one time. A-F only. Pre: 107 or 107C, 225; or consent. (Once a year)

HWST 341 Hawaiian Genealogies (3) Survey of major Hawaiian chiefly lineages from the four main islands: Hawai'i, Maui, O'ahu and Kaua'i. Political history from the Kuhulani to Western contact. Pre: HAW 202.

HWST 342 Chiefs of Post-Contact Hawai'i (3) Survey of Hawaiian chiefs from 1778 to the present, including genealogy, political function, and historical impact. Pre: 107, 341, or HAW 201.

HWST 343 Myths of Hawaiian History (3) Thematic exploration of some common myths of Hawaiian history, including infanticide, slavery, feudalism, constant warfare, human sacrifice, and a limited pre-contact population, to determine the role of myth making in perceptions of Hawaiian history. Pre: junior or senior standing or consent. DH

HWST 351 Mahi'ai Kalo I: Taro Cultivation (3) Historical, cultural and philosophical foundations of the cultivation and uses of taro. A-F only. Pre: 107. Fall only.

Key to symbols & abbreviations: see the first page of this section.
HWST 459 Strategies in Hawaiian Resource Use (3) Analyzing diverse land and water use strategies of O‘ahu, from traditional Hawaiian, scientific and economic perspectives, through classroom and on-site lectures. Topics include traditional Hawaiian methods, modern development, threatened ecosystems, ecotourism and scientific research. A-F only. Pre: 457 or BOT 457 (or concurrent), or consent. (Cross-listed as BOT 459)

HWST 460 Hui Konoiki Pracdictum (3) A “hands-on” internship in an environmental or resource-management organization in Hawai‘i. The experience will be broadened and supplemented by classroom lectures, discussions and analysis from traditional Hawaiian, scientific and economic perspectives. A-F only. Pre: 457 or BOT 457, 458 or BOT 458 (or co-requisite), 459 or BOT 499; or consent. Spring only. (Cross-listed as BOT 460)

HWST 478 Mele Au Hou: Music and Native Identity (3) Presents Hawaiian music as it has been an avenue for native social, cultural and political expression in traditional and contemporary society. A-F only. Pre: 107 or 343 or 390; or consent.

HWST 485 Mahi L‘a‘au Lapa‘au Hawaiian Medicinal Horticulture (4) The science of planting and harvesting Hawaiian medicinal plants and exploring production and marketing strategies. Pre: 107, 285 and 385; or consent. Fall only.

HWST 487 Hawaiian Aquatic Medicine (4) Identification, extraction and preparation of complexes of aquatic herbs to formulate a healing combination to contribute to maintaining overall health. A-F only. Pre: 107, 285; or consent. Fall only.

HWST 490 Senior Seminar in Hawaiian Studies (3) Critical examination of existing research; individual or team direction, and evaluation of selected projects. Repeatable three times. Pre: senior major in Hawaiian studies or consent.

HWST 493 Hawaiian Historical Political Speech: Hā‘i ‘Ole-lo Ku‘e (3) Senior seminar in short, extemporaneous speeches in persuasive, passionate and dynamic styles of Native Hawaiian orators. A-F only. Pre: 107, 270, 341, 342, or HAW 202; or consent. (Once a year)

HWST 494 Modern Pacific Women’s Poetry (3) Critical examination of modern indigenous women’s poetry from the Pacific Islands. Thematic concentration on land, family, sexual and national oppression. Pre: two ENG DL courses; second may be taken concurrently; or consent. (Cross-listed as ENG 479) DL

HWST 495 Kumu Kānawai: Western Law and Hawai‘i (3) The rise of Western law in Hawai‘i, its contribution to nation building and colonialism. Pre: 342 or 343 or 390; or consent.

HWST 496 Kānāwai II: Practical Application of Rights (3) Historical analysis of land use, race and self-determination; introduced to legal case briefing, analysis of legal precedent, practical impacts of rules and regulations and the socio-political factors that influence law and law enforcement. A-F only. Pre: 390 or consent.

HWST 499 Directed Reading/Research (V) Individual reading/research. Pre: 301, two upper division Hawai‘i-related courses, and consent.

HWST 601 Independent Research Methodologies (3) Reading seminar for developing a Native Hawaiian epistemology from sources in comparative indigenous thought. A-F only. Pre: 107, 270, 341 (or concurrent), 342 (or concurrent), and one of the following: 343 (or concurrent) or 390 (or concurrent) or 490 (or concurrent); or consent.

HWST 602 Hawaiian Archival Research (3) Research seminar aimed at familiarizing students with the rich historical primary sources existent in various archives in Honolulu. A-F only. Pre: 107, 270, 341 (or concurrent), 342 (or concurrent), and one of the following: 343 (or concurrent) or 390 (or concurrent) or 490 (or concurrent); or consent.

HWST 603 Review of Hawaiian Literature (3) Seminar in review of Hawaiian literature to understand the significance of secondary sources in Hawaiian subjects. This makes up part of the Hawaiian Studies graduate core. A-F only. Pre: 107, 270, 341 (or concurrent), 342 (or concurrent), and one of the following: 343 (or concurrent) or 390 (or concurrent) or 490 (or concurrent); or consent.

HWST 604 Writing a Hawaiian Thesis (3) Seminar to help fashion student’s research and thesis proposal. To be taken by all HWST MA students as they begin designing their capstone project. Course will be team-taught by HWST faculty. Repeatable one time. A-F only.

HWST 620 ‘Ike Pono/Visual/Cultural Interpretations (3) Graduate seminar and visual studio that examines (from a Kanaka Maoli viewpoint) colonial imaging; collecting and site of contestation; resilience and re-righting. A-F only. Pre: 107C, and one course from 240-245, and one course from 320-325; or consent. Fall only.

HWST 621 ‘Ike Maka/Visual/Cultural Knowledge (3) Graduate seminar and visual studio that carefully examines and develops critical consciousness from a Kanaka Maoli viewpoint—visual hegemony, rhetorical tropes; and representation—imag(in)ing and re-image(in)ing. A-F only. Pre: 620 or consent. Spring only.

HWST 640 Mo‘olelo ‘Oiwi: Historical Perspectives (3) Research seminar for developing interpretations of the past from Native Hawaiian and foreign world views with particular emphasis on understanding the meaning of culturally-based knowledge systems. A-F only.

HWST 650 Hawaiian Geography and Resource Management (3) Seminar in geography of Hawai‘i from a Native Hawaiian perspective that will enable the researcher to define and develop resource management methods consistent with Native Hawaiian understandings and traditions. A-F only. Pre: 107, 270, 341 (or concurrent), 342 (or concurrent), and one of the following: 343 (or concurrent) or 390 (or concurrent) or 490 (or concurrent). (Once a year)

HWST 670 Kumu Kahiki: Comparative Hawaiian and Tahitian Cosmogenies (3) Seminar comparing Gods/myths from Ancient Tahiti by Teiura Henry (600 pages) with the six volumes of Hawaiian historians Kamakau and Malo. A-F only. Pre: 341 or consent. (Alt. years)

HWST 690 Kūkulu Aupuni: Sovereign Hawai‘i (3) A research seminar designed to provide an overview of community activism and Native Hawaiian empowerment in Hawai‘i in contexts that range from local to international, and to provide a framework for study and professional growth. A-F only. Pre: 107, 270, 341 (or concurrent), 342 (or concurrent), and one of the following: 343 (or concurrent) or 390 (or concurrent) or 490 (or concurrent); or consent.

HWST 691 Kūkulu Aupuni: Sovereign Hawaiian State, Domestic Kingdom Law, Governance and Politics (3) Research seminar on the subject of domestic law, governance, and politics of the Hawaiian Kingdom and the historical relevance of this to the contemporary case for independent, sovereign state continuity under public international law. A-F only. (Alt. years)

HWST 695 Practicum Research Plan B (V) Practicum for Plan B. Repeatable unlimited times. CR/NC only. Pre: consent.

HWST 699 Directed Reading and Research (V) Repeatable unlimited times. A-F only. Pre: consent.

HWST 700 Thesis Research (V) Research for master’s thesis. (F) Full-time. S/U for (F) only. Repeatable up to eight credits; Repeatable two times for (F). Pre: 700 for (F).

Health Sciences and Social Welfare (HSSW)

College of Health Sciences and Social Welfare

HSSW 477 Southeast Asian Cultures in Health/Social Welfare (3) The study of cultures and their implications in the health and social welfare context for a number of countries in Southeast and South Asian region.

HSSW 487 Pacific Cultures in Health/Social Welfare (3) The study of cultures and their implications in the health and social welfare context for a number of countries in the Pacific region.

Hebrew (HEB)

College of Languages, Linguistics and Literature

Students choosing Hebrew should realize it may not be offered if demand is limited.

HEB 101 Elementary Hebrew (3) Conversation, grammar, reading and writing. Fall only. Pre: consent.

HEB 102 Elementary Hebrew (3) Conversation, grammar, reading and writing. Spring only. Pre: 101 or consent.

HEB 201 Intermediate Hebrew (3) Conversation, grammar, reading and writing. Fall only. Pre: 102 or consent. NF

HEB 203 Intermediate Hebrew (3) Conversation, grammar, reading and writing. Intro to biblical Hebrew. Spring only. Pre: 201 or consent. NF

Hindi (HNDI)

College of Languages, Linguistics and Literature

Students choosing Hindi for the language requirement should realize it may not be offered if demand is limited.

HNDI 101 Elementary Hindi (4) Listening, speaking, reading, writing. Structural points introduced inductively. Meets five hours weekly; daily lab work.

HNDI 102 Elementary Hindi (4) Continuation of 101.

HNDI 201 Intermediate Hindi (4) Continuation of 102. Meets five hours weekly; daily lab work. Pre: 102 or equivalent. NF/HSL

HNDI 202 Intermediate Hindi (4) Continuation of 201. NF/HSL


HNDI 302 Third-Level Hindi (3) Continuation of 301.

History (HIST)

College of Arts and Humanities

HIST 151 World History to 1500 (3) Historical narratives and global perspectives on human societies and cross-cultural interactions from prehistory to 1500: includes ways to think about the past and ways to use primary sources. FGA

HIST 152 World History since 1500 (3) Continuation of 151. Historical narratives and global perspectives on human societies and cross-cultural interactions from 1500 to present; includes ways to think about the past and ways to use primary sources. FGB
HIST 155 Issues in World History (3) In examining aspects of the histories of Africa, Asia, the Americas, Europe and Oceania, this course highlights the myriad ways in which global contact has transformed our world and narratives of the past. FG

HIST 161A World Cultures in Perspective (3) Development of civilizations from prehistoric origins to 1500. Offered as discussion and/or problems course. Alternative for 151 and 152; freshmen in SSP only. FGA

HIST 162A World Cultures in Perspective (3) Continuation of 161A. Development of civilization from 1500 to the present. Offered as discussion and/or problems course. Alternative for 151 and 152; freshmen in SSP only. FGA

HIST 231 European Civilization 1500-1800 (3) Political evolution and major economic, social, and cultural development of European states. 1500–1800. DH

HIST 232 Modern European Civilization 1800- (3) Continuation of 231. Major political, social, economic, and cultural trends from Napoleon to the present. DH

HIST 241 Civilizations of Asia (3) Survey of major civilizations of Asia from earliest times to 1500; East Asia, Southeast Asia, South Asia. (Cross-listed as ASAN 241) DH

HIST 242 Civilizations of Asia (3) Continuation of 241. Survey of major civilizations of Asia from 1500 to the present; East Asia, Southeast Asia, South Asia. (Cross-listed as ASAN 242) DH

HIST 282 Introduction to American History (3) Interpretive survey from earliest settlement to 1865. A-F only. DH

HIST 284 History of the Hawaiian Islands (3) Survey of state and local history from Polynesian chieftains to Hawaiian Kingdom to American territory and state. DH

HIST 288 Survey of Pacific Islands History (3) Survey of Pacific Islands from pre-colonial to modern times; early settlement, cultural contact, colonialism, contemporary problems. DH

HIST 294 History of the Philippines (3) Continuation of 231. Period after 1500. DH

HIST 301 India and South Asia to 1700s (3) Historical survey of India and South Asia from Mohenjo-Daro to the Mughal Empire, tracing political, social, religious, economic, cultural, and intellectual developments from ancient times to the 18th century. DH

HIST 302 India and South Asia since 1700s (3) Historical survey of India and South Asia from the Mughal Empire to the new millennium, tracing political, social, religious, economic, cultural, and intellectual developments from the 18th century to the present. DH

HIST 305 History of Southeast Asia (3) Survey of development of civilizations and growth of nations in Southeast Asia, to the 18th century. DH

HIST 306 History of Southeast Asia (3) Continuation of 305, from 18th century to the present. DH

HIST 309 East Asian Civilizations (3) Characteristics of East Asian civilizations as they developed in pre-modern China; variant patterns in Japan and Korea; the modernization process to 1500. DH

HIST 310 East Asian Civilizations (3) Continuation of 309. Period after 1500. DH

HIST 311 History of China (3) Chinese civilization to the 17th century. DH

HIST 312 History of China (3) Continuation of 311. Period since the 17th century. DH

HIST 321 History of Japan (3) Survey of culture, government, economics, and institutions, to 1700. DH

HIST 322 History of Japan (3) Continuation of 321. Period from 1700. DH

HIST 323 Way of Tea in Japanese History and Culture (3) History and culture of Japan as revealed in the tea ceremony. (Cross-listed as ASAN 323) DH

HIST 328 History of Korea (3) Continuation of 287. From 1400 to the present. DH

HIST 331 Ancient Greece I (3) Political, social, and cultural history of the Minoan, Mycenean, and Archaic periods. DH

HIST 332 Ancient Greece II (3) Political, social, and cultural history of the Classical and Hellenistic periods. DH

HIST 333 Ancient Rome: The Republic (3) Political, social, cultural history from the Etruscans to Augustus. Emphasis on discussion of literary and archaeological materials. (Alt. years: fall) DH

HIST 334 Ancient Rome: The Empire (3) Political, social, and cultural history from Augustus to 476 A.D. Emphasis on literary and archaeological materials. (Alt. years: spring) DH

HIST 335 Early Middle Ages 300–900 (3) Interac tion of three major forces forming Western European civilization: Classical tradition, Christian religion, Germanic society. DH

HIST 336 High Middle Ages 900–1300 (3) Topical examination of Medieval European culture: economy, society, religion, politics, thought, and the arts. DH

HIST 337 European Intellectual History (3) Undergraduate seminar on great debates in Western thought. Discussion of primary source materials; the scientific revolution and Enlightenment. DH

HIST 338 European Intellectual History (3) Continuation of 337. European thought from French Revolution to the present. DH

HIST 339 Renaissance and Reformation (3) Political, social, cultural, and intellectual developments in Europe from 1300 to 1600. Emphasis on cultural and intellectual history and its impact on social and political developments; humanism and its influence on thought and reforming movements, Protestant and Catholic Reformations. (Alt. years: fall) DH

HIST 340 Comparative Economic History (3) Comparative historical study of economic ideas and change since around 1700. Considers the histories of capitalism, poverty, industrialization and labor in Europe, Asia, the U.S., and other regions. DH

HIST 344 Modern Germany (3) Political, social, economic, and cultural history since 1547. Rise of Austria and Prussia, unification, Bismarckian era, World War I and Weimar Republic, Hitler's Third Reich, post-World War II. DH

HIST 345 France in the Old Regime (3) Major social, political, and intellectual developments: Renaissance, Reformation, religious wars, Richelieu, Louis XIV, Enlightenment, and Revolution. DH

HIST 346 Modern France (3) Political, social, economic, and intellectual developments from Revolution and Napoleon to the present. DH

HIST 347 Tudor-Stuart Britain (3) Traces major developments in British politics, society, and culture between the late Medieval and Modern Eras. DH

HIST 348 Modern England (3) Interaction of 17th-, 18th-, and 19th-century intellectual, political, economic, and social changes, which together produced the British Empire and modern Britain. DH

HIST 349 British Empire (3) Origins and expansion of the British empire between the seventeenth and twentieth centuries. Includes imperial policies affecting Britain, Australia, India, Ireland, and Southern Africa. Open to nonmajors. DH

HIST 351 Introduction to Islamic History (3) Muhammad, the Arab conquests, the Caliphate; fundamentals of Islam; classical Islamic civilization; development of Islam into modern times with emphasis on the Middle Eastern heartland. DH

HIST 355 The Making of the Modern Middle East (3) Survey of developments that created the system of nation-states in the Middle East. History of the Ottoman Empire and the Republic of Turkey; Egypt; the Arab world; Israel and Iran. Recommended: 354. DH

HIST 356 Survey of African History (3) The history of Africa from earliest times to the present: the rise of indigenous civilizations, European and Muslim impact, colonialism and nationalism, and current issues. DH

HIST 358 The World of Mekong (3) Historical survey from BC period to present of the peoples of the Mekong region, an area covering southwestern China, Thailand, Cambodia, Laos, and southern Vietnam. Open to nonmajors. Pre: upper division standing or consent. DH

HIST 361 U.S. Women's History (3) History of U.S. women and gender relations. Topics include women's work in and outside the household, women's involvement in social movements, changing norms about gender and sexuality, and shared and divergent experiences among women. Pre: AMST 201 (or concurrent), 201A (or concurrent) or AMST 202 (or concurrent), 202A (or concurrent) or WS 151 (or concurrent) or consent. (Cross-listed as AMST 316 and WS 311) DH

HIST 371 U.S. Foreign Relations to 1898 (3) Survey of U.S. foreign relations from initial encounters between Europeans and Native Americans through the 1890s. DH

HIST 372 U.S. Foreign Relations From 1898 (3) Survey of U.S. foreign relations from the wars of 1898 to the present. DH

HIST 373 American Thought and Culture (3) Politics, family, philosophy, technology, etc.; their interrelationship within the total society. Pre-Colo nial to end of the 19th century. Pre: 151 or HIST 152 or AMST 150 or AMST 201 or AMST 202 or AMST 211 or AMST 212; or consent. (Cross-listed as AMST 343) DH

HIST 374 American Thought and Culture (3) Continuation of 373: the 20th century. Pre: 151 or 152 or AMST 150 or AMST 201 or AMST 202 or AMST 211 or AMST 212 or consent. (Cross-listed as AMST 344) DH

HIST 375 The American City (3) Evolution since 17th century; role in contemporary American culture. Related problems, perceptions, values. (Cross-listed as AMST 321) DH

HIST 378 History of American Business (3) The evolution of business enterprise from colonial times to the present. Emphasis on entrepreneurship, technological change, labor-management relations, gov-
ernment-business relations, and economic thought. Case studies of industrial development. (Cross-listed as MGT 348) DH

HIST 379 American Empire (3) Examines the interplay between an “American culture of empire” and the rise of the U.S. as a superpower. Topics: imperialism and political culture, social movements and international affairs, race, gender, and class relations. (Cross-listed as AMST 365) DH

HIST 391 History of Warfare (3) Classical and guerrilla warfare, revolution, and military systems and institutions. DH

HIST 392 History of Warfare (3) Continuation of 391, from 1850 to present. DH

HIST 393 U.S. Military History (3) Survey of development of American military forces from War of Independence to war in Vietnam. DH

HIST 394 History of Science to 1700 (3) Evolution of scientific thought and its cultural context. Antiquity to 1700. DH

HIST 395 History of Science Since 1700 (3) Continuation of 394; science, technology, and society since 1700. DH

HIST 396 (Alpha) Introduction to the Study of History (3) Introduction to the discipline; current trends in Asian, European, American, and Pacific historiography; preparation for senior thesis (496). (B) historiography; (C) education. Pre: history major or consent.

HIST 401 History of the Indian Ocean World (3) Explores the transnational history of the Indian Ocean world, especially the region connected by the western monsoon. Topics include travel, trade, religion, colonialism, nationalism, diaspora, and globalization, including actors like slaves, sailors, women, and merchants. A-F only. Pre: junior or senior standing or consent. (Alt. years) DH.

HIST 403 Vietnam: History and Memory (3) Survey of Vietnamese history with particular attention to the multiple ways that the Vietnamese past has been remembered and represented by different peoples. Open to non-majors. DH

HIST 406 Modern Philippines (3) Survey of major developments from pre-colonial through Spanish and American colonial periods, the revolution, Japanese occupation, and post-war republic. DH

HIST 407 Modern Malaysia (3) History of Malay peninsula and northern Borneo, emphasizing developments since 18th century: trade, commerce, foreign migrations, pluralism, nationalism, and Islam. DH.

HIST 408 Modern Indonesia (3) Indonesia from 14th century to present. Emphasis on period from late 18th-century Western colonial influence to struggle for independence and problems of nationhood.

HIST 410 Twentieth-Century China (3) An examination of the political, intellectual, economic, cultural, and social transformations of China in the twentieth century. This lecture studies critical events in the making of modern China and explores important issues in the modernization of Chinese life in the twentieth century. DH

HIST 411 Local History of Late Imperial China (3) Chinese government and Chinese society from local and regional perspectives; modes of control and disorder during the 19th century. DH

HIST 412 Local History of 20th-Century China (3) Sociopolitical change and continuity at local and regional levels since 1900, stressing provincial reform, Hsin and sub-Hsin politics, warlordism, Kuomintang tutelage, and the Chinese Communist movement and rule. DH

HIST 416 Chinese Intellectual History (3) An interpretive survey of Chinese ideas and values in their cultural, social, and political settings from classical age to 1600. Pre: upper division standing or consent. DH

HIST 417 Chinese Intellectual History (3) Interpretive survey of Chinese thought from 1600 to the contemporary period, with special emphasis on the themes of cultural collision and change. DH

HIST 418 China’s Foreign Relations (3) Systematic review from traditional times, with emphasis on modern and contemporary history, analyses of foreign policy formulation, objectives, and implementation. Recommended: 312. DH

HIST 419 The Chinese Revolution (3) Origins, development, and meaning of modern revolution in China, 19th century to People’s Republic. Recommended: 311 and 312. DH

HIST 420 People’s Republic of China (3) Salient developments from 1949 to the present. Social revolution and modernization, critically relevant foreign relations. Recommended: 312 or 419. DH

HIST 422 Tokugawa Japan (3) Japanese history and culture, 1600-1867. Recommended: 321. DH

HIST 423 Okinawa (3) Survey of social, cultural, economic, and political history from earliest times to present. DH

HIST 424 20th-Century Japan (3) Problems of Japan’s political, economic, and social development since institutional consolidation of Meiji state (c.1890). Pre: upper division standing or consent. DH

HIST 425 Women in Japanese History (3) Survey of the changing political, social, economic, and cultural positions of women in Japan from ancient times to the present. Pre: one course in Japanese history or consent. DH

HIST 431 Ancient Near East: Pyramids and Writing Tablets (3) Civilizations of the Sumerians, Babylonians, Assyrians, ancient Egyptians, Hittites, Hebrews, and Achaemenid Persians. Emphasis on discussion of literary and archaeological materials. DH

HIST 432 Crisis and Conflict in the Middle East (3) In depth study and analysis of major crises and conflicts in the Middle East since World War II: the Arab-Israeli Wars, revolutions in the Arab countries, the Turkish experiment with secularism, the Iranian/Islamic revolution, Afghanistan, the Gulf War. Recommended: 354 or 355. DH

HIST 433 Medieval Cultures (3) Topical study of cultural and cross-cultural issues in the medieval period (circa 300-1500). Class discussion and written work on primary sources and documents using cultural and world history theories. Regional focus and readings vary by semester. Repeatable one time. DH

HIST 434 History of Christianity to 1500 (3) Historical analysis of the main traditions of Christianity and elements of diversity within Europe and in relation to other parts of the world. Focus on the interpretation of primary sources and discussion of cultural issues. (Alt. years: spring) DH

HIST 436 World Environmental History, 1500 to Present (3) Explores interactions between humans and the natural world from early modern era to the present. Topics include invader species and biotic exchange; environmental politics; and the ecological impact of industrialization, urbanization, science, technology, war, etc. Pre: junior standing or consent. (Once a year) DH

HIST 438 European Cult of the Primitive (3) Historical investigation of European beliefs in the superiority of primitive societies. Topics include how primitivist ideas shaped historiography, religion, art, gender, political economy, and empire. Pre: upper division standing or consent. (Alt. years: spring) DH

HIST 439 The Darwinian Revolution (3) Social and intellectual origins of evolutionary thought and its continuing impact; emphasis on Darwin and the Victorian scientific community. Pre: upper division standing or consent. DH

HIST 440 20th-Century Europe (3) Contemporary problems and their historical background. DH

HIST 441 Expansion of Europe (3) Historical processes in modern European colonization from 16th to 20th century; impact on non-Europeans in Asia and Africa. (Alt. years: fall) DH

HIST 443 Nazi Germany (3) Origins, establishment, and impact of Hitler’s Third Reich. Recommended: 344. (Alt. years: spring) DH

HIST 444 The History of the Holocaust (3) The origins and progression of the Holocaust, the almost complete destruction of European Jews, and other Nazi genocidal policies. Open to nonmajors. DH

HIST 445 French Revolution and Napoleon (3) Causes, course, and conduct of the Revolutionary and Napoleonic periods, their impact upon Europe; emphasis on the conflict of ideologies inherent in the Revolutionary process. DH

HIST 448 Imperial Spain and Portugal (3) The influence of Spain and Portugal on people and cultures in Europe, Africa, America, and Asia; Portugal’s captivity and the defeat of the Spanish Armada. DH

HIST 451 (Alpha) History and Literature (3) Explores the many relationships between history and literature, including how literature has reflected and shaped society in the past and our relationship to the past; (B) United States; (C) Europe; (D) Asia/Pacific; (E) World/Comparative; (F) Provisional topics. Repeatable one time for different alphas, not repeatable for (C). Pre: 151 or 152, or consent. DH

HIST 452 (Alpha) History and Film (3) Explores the many relationships between history and film including how film has reflected and shaped society in the past and our relationship to the past. (C) Europe. Repeatable one time for different alphas. Pre: junior standing or consent. DH

HIST 454 Tsarist Russia (3) Development of the Russian state to the 19th century. Kievian state and early development of culture and art; Mongol era; rise of Moscow, autocracy, and serfdom; Petrine reforms; Western impact; emergence as a major European power. DH

HIST 455 Medieval Russia (3) Creation of the Soviet Union, Stalinization, the Cold War, the collapse of the empire, the post-Soviet era. DH

HIST 457 Russia in East Asia and the Pacific (3) Siberia, Russian/Soviet Far East, Russian activities in Pacific basin; evolving relations with Asian and Pacific powers. DH

HIST 459 African American History (3) Lecture/discussion on the origins of racial slavery, slave and free black culture, slave resistance and antislavery, post-emancipation black life, the rise of Jim Crow, the Harlem Renaissance, and the Civil Rights Movement. DH

HIST 460 Native American History (3) Lecture/discussion on the history of North American Indians from the seventeenth century to the present. Open to nonmajors. DH

HIST 461 Early America (3) Lecture/discussion on Native Americans, Africans, and Europeans in North America from contact to independence. Social, cultural, and economic themes and intersections of race, class, and gender explored. DH

HIST 462 The Early American Republic (3) Lecture/discussion on the Constitution, the growth of partisan politics, the market revolution, religious revivalism, abolitionism and the expansion of slavery in the U.S. during the age of Jefferson and Jackson. DH
HIST 463 American Civil War Era 1841–1877 (3) The crisis of the Union: antebellum society and culture, slavery, reform, sectionalism, the Civil War and Reconstruction. DH

HIST 464 Transformation of America 1877–1920 (3) Selected themes that explain major changes in American life during the late 19th and early 20th centuries, including the growth of central government, the consolidation of capitalism, world power diplomacy, popular culture, progressivism, and World War I. DH

HIST 465 The United States 1920–1948 (3) The Roaring Twenties, the Depression, New Deal, coming of World War II, America during the war, origins of the Cold War. DH

HIST 466 The U.S.: 1948 to the Present (3) The atomic age and the Cold War, the age of anxiety, the 1960s, the Vietnam War, the Reagan-Bush era, and beyond. DH

HIST 467 American Television History (3) Lecture/discussion examining the impact of television on American society, culture and politics. Analyzed in depth are family sitcoms, presidential politics, Vietnam and the presentation of gender and ethnicity. Open to nonmajors. DH

HIST 468 Viva Las Vegas! (3) Upper-division lecture on the historical and cultural significance of Las Vegas in twentieth-century America. Open to nonmajors. DH

HIST 471 Music, Industry, and Society (3) History of U.S. music and recording industry. How industry relates to economy as a whole, and how it reflects broad patterns and trends in American culture and society. (Cross-listed as MUS 440) DH

HIST 472 American Social History (3) Introduction to the new social history; interdisciplinary approaches to the study of the everyday lives of ordinary Americans in past generations. DH

HIST 473 Slavery in History and Memory (3) Examines the history of African slavery in the Americas from its earliest development to its abolition with an emphasis on the U.S. Examines the memory of slavery as conveyed in literature, film, and music. (Cross-listed as AMST 432) DH

HIST 474 The American West Lecture/discussion surveying the conquest, colonization, and consolidation of North American frontiers and the post-frontier development of the American West. DH

HIST 475 Constitutional History of the U.S. (3) Origins, development of Constitution, Colonial to modern times. DH

HIST 476 Race and Racism in America (3) Racial ideas and ideologies, and their effects throughout American history. Fall only. (Cross-listed as AMST 440) DH

HIST 477 American Labor History (3) Conditions of labor in major phases of American development; response of labor and community to changing work environment. Capitalism, unionism, race, gender, law, etc. Emphasis on 20th century. (Cross-listed as AMST 431) DH

HIST 478 Colonial Latin America (3) Pre-Columbian civilizations; Spanish and Portuguese colonization; political, economic, social, and religious evolution to 1810; independence. (Cross-listed as LLEA 468) DH

HIST 479 Latin America Since Independence (3) Political, economic, and social development since 1825; case studies from Brazil, Mexico, and Cuba. DH

HIST 481 Pacific Islands I (3) The Pacific past from first human settlement to the start of the colonial period; emphasis on historiography and analysis of islanders' responses to Euro-American intrusion. DH

HIST 482 Pacific Islands II (3) The colonial experience to the present. DH

HIST 483 United States in the Pacific (3) Growth of economic and political interests and policies. DH

HIST 484 The Hawaiian Kingdom 1819–1893 (3) Transformation of Hawai‘i into a state influenced by American and European ideas and institutions and Asian peoples. Pre: upper division standing or consent. DH

HIST 485 History of 20th-Century Hawai‘i (3) Formation of an American Hawai‘i with its unique local culture from 1898 to the present. Pre: upper division standing. DH

HIST 489 World Maritime History (3) Survey of world maritime history from earliest times to the present, with emphasis on the evolution of nautical technology, motives from maritime enterprises, and the impact of cross-cultural encounters between oceanic peoples. (Cross-listed as AMST 489) DH

HIST 490 Maori and American Indians (3) Compares indigenous sovereignty issues arising among the Maori or Aotearoa-New Zealand and Indian tribes of the U.S. from 1776 to the present. (Once a year) DH

HIST 492 Women in Revolt (3) Conditions under which women’s activism and participation in protest and revolutions were developed in the 19th- and 20th-centuries. Cross-cultural comparisons. (Cross-listed as WS 492) DH

HIST 495 (Alpha) History Colloquium (3) Extensive or intensive treatment of special problems. (B) Philippines and Indonesia; (C) U.S. foreign relations; (D) history in Oceania; (E) Chinese traditional government. Recommended for honors students. Pre: 372 (or concurrent) or consent for (C); consent for (B) and (E). DH

HIST 496 (Alpha) Senior Tutorial in History (3) Analysis of sources and evaluation of methods of historical writing. Research in field of special interest. Required for majors except those in Honors Program. (B) United States; (C) Europe; (D) Asia/Pacific; (E) comparative/World. Pre: 396 (or concurrent). DH

HIST 499 Directed Reading (V) Individual projects in various fields. History majors with consent. Maximum 5 credit hours. (1) American; (2) Pacific; (3) Japanese; (4) European; (5) English; (6) Chinese; (7) Russian; (8) Hindu; (9) South Asian; (10) Southeast Asian; (11) Korean.

HIST 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

HIST 602 Seminar in Historiography (3) History of history and historians; philosophies of history.

HIST 609 Seminar in World History (3) Analysis, research, and discussion of themes and issues in study of history of humankind. Repeatable one time. Pre: graduate standing or consent.

HIST 610 Topics in World History (3) Selected themes—feudalism, economic and industrial development, etc.—important in global history. Topics pre-announced. Repeatable one time. Pre: 609.

HIST 611 (Alpha) Advanced Readings in European History (3) Selected topics for advanced reading; (B) ancient; (C) medieval; (D) early modern; (E) modern; (G) intellectual. Pre: graduate standing or consent. (Alt. years: fall for (D)); (Alt. years: fall for (E)).

HIST 612 Ethnographic History (3) Critical inquiry into historical representations of the “other” and ways in which modern historians have used culture and other anthropological concepts to write and think about the past.

HIST 613 Introduction to Cultural Studies (3) Graduate seminar designed to introduce history students to the multidisciplinary theories that are appropriate to cultural studies. A-F only. Repeatable one time. Pre: history major or consent.

HIST 614 (Alpha) Research in European History (3) Selected topics for advanced research; (B) ancient; (C) medieval; (D) early modern; (F) modern; (G) intellectual. Repeatable one time. Pre: graduate standing or consent. (Once a year)

HIST 615 (Alpha) Topics in European Colonialism (3) Selected topics for comparative advanced reading and research. (D) early modern; (E) modern. Repeatable one time. Pre: graduate standing or consent. (Alt. years)

HIST 618 (Alpha) Advanced Readings in Russian History (3) (B) early Russia; (C) modern. Pre: 350 and graduate standing, or consent.

HIST 621 (Alpha) Russia in East Asia and the Pacific (3) (B) advanced readings; (C) advanced research on Siberia, Russian activities in the Pacific basin, evolving relations with Asian and Pacific powers. Repeatable one time. Pre: 457 and either 454 or 456; or consent.

HIST 632 (Alpha) Advanced Readings in American History (3) Interpretations and literature of important themes and problems. (B) early America; (C) the Republic to 1877; (D) industrial America; (E) recent America. Repeatable one time per alpha. Pre: appropriate 400-level U.S. history course or consent; graduate standing or consent for (B). (Alt. years for (B)) (B) Cross-listed as AMST 610)

HIST 634 (Alpha) Research in American History (3) (B) early America; (C) the Republic to 1877; (D) industrial America; (E) recent America; (F) foreign relations. Repeatable one time. Pre: appropriate 400 level course or consent.

HIST 639 (Alpha) Advanced Topics in American History (3) Seminar in advanced research and readings; (B) social and intellectual; (C) foreign relations; (E) the American city; (F) the West; (K) business, labor, and technology. Repeatable one time for (B), (C) and (K). Pre: graduate standing and consent. (B) Cross-listed as AMST 646); (E) Cross-listed as AMST 627 and ARCH 627; (K) Cross-listed as AMST 614); (K) Cross-listed as AMST 647)

HIST 650 Seminar: Comparative Asia (3) This reading seminar in the comparative history of modern Asia will introduce graduate students to themes, particularly in social, cultural, and intellectual history, which lend themselves to comparison across the region. Repeatable one time. Pre: graduate standing or consent. (Alt. years)

HIST 656 Topics in Southeast Asia (3) Reading and research seminar on themes about the past and present of Southeast Asia in a comparative framework. Pre: graduate standing or consent.

HIST 657 Historiography of Southeast Asia (3) Examination of contested boundaries of Southeast Asia, the various historiographic traditions, the colonial legacy, and the current issues emerging from a dialogue of historians from the “region” and the outside world. Repeatable one time.

HIST 658 Seminar in Modern Southeast Asian History (3) Graduate level reading seminar in modern Southeast Asian history. Repeatable one time. Pre: graduate standing or consent.

HIST 661 (Alpha) Seminar in Chinese History (3) Problems and readings in political, social, and cultural history. (B) early; (C) medieval; (D) modern. Repeatable one time.

HIST 662 Seminar: Islam and Islamic Civilization (3) Readings on the rise, spread, and development of Islamic cultures and civilizations throughout the world down to modern times. Repeatable one
time. Pre: graduate standing or consent. Recommended: 354.
HIST 663 Seminar in Indian History (3) Problems and readings; influence of Indian culture on Southeast Asia. Individual reports. Repeatable one time.

HIST 665 (Alpha) Seminar in Japanese History (3) Problems, principal sources of bibliographic information. (B) traditional period to c.1600; (C) early modern 1600–1868; (D) 1868 to present; (E) 20th-century diplomatic.

HIST 667 (Alpha) Seminar in Korean History (3) Reading major interpretive works, and research in selected topics. (B) reading; (C) research. Pre: graduate standing or consent.

HIST 675 (Alpha) Seminar in Pacific History (3) Reading and research on major themes and issues. (B) South Pacific; (C) Micronesia; (D) 19th century; (E) 20th century. Pre: graduate standing or consent.

HIST 677 Seminar in History of Hawai‘i (3) Reading seminar with short papers required. Covers Kingdom of Hawai‘i and 20th-century Hawai‘i in alternate years. Pre: 284. Repeatable one time. (Alt. years: fall)

HIST 699 Directed Research (V) Individual research topics. (1) American; (2) Pacific; (3) Japanese; (4) European; (5) English; (6) Chinese; (7) Russian; (8) Hawaiian; (9) South Asian; (10) Southeast Asian; (11) Korean. Restricted to plan A (thesis) students. Maximum 2 credit hours. Repeatable one time. Pre: consent.

HIST 700 Thesis Research (V)

HIST 702 Institutional History of Korea (3) Major political, economic, and social institutions. Repeatable one time. Pre: graduate standing or consent. (Alt. years: spring)


HIST 790 Teaching History (1) HIST 151-152 faculty supervisors mentor their Teaching Assistants who teach the discussion labs. Course addresses issues of teaching strategy, grading and historical content. Enrollment limited to current Teaching Assistants in the World History Program. Repeatable seven times. A-F only. Pre: History graduate Teaching Assistants assigned to 151-152.

HIST 800 Dissertation Research (V) Pre: consent.

Honors (HON)

Honors Programs

These courses are limited to students in the Honors Programs.

HON 101 Introduction to Research and Creative Work at Mānoa (3) Combines lectures by instructors and faculty guests with workshops and hands-on experience in small group projects, including bibliographic searches, laboratory science, social surveys and interviews. A-F only.

HON 120 Mathematical Modes of Thinking (3) Mathematics as both a language and a thought process expressed in that language. Historical and contemporary relations to culture.

HON 190 Honors Tutorial (1) Supplements a 100 or 200 lecture course or standard lab time with discussion section, instructor-intensive lab time or directed research. Limited enrollment. Repeatable three times.

HON 291 (Alpha) Sophomore Seminar (3) Special topics for lower-division honors students in seminar format. Development of critical thinking skills emphasized. (B) biological science; (H) humanities; (P) physical science; (R) arts; (S) social science; (T) literature. Repeatable two times. A-F only. Pre: ENG 100 or ENG 100A or departmental approval. V/DB for (B); DH for (H); DP for (P); DA for (R); DS for (S); DL for (T)

HON 301 Research and Public Policy (3) A disciplined inquiry on issues of ethical principle or public policy. Students will learn the research process by engaging in it: finding resources, using these resources critically, exploring implications suggested by the issues and resources and communicating their results in a precise and effective manner. Repeatable one time. A-F only. (Cross-listed as POLS 386)

HON 303 Civil Engagement, Volunteerism & Community Service (3) Seminar on history and theory and practice of volunteerism in the U.S. Involves comparative study of volunteerism, individual research projects on volunteerism, and conduct of field service activities together with written reports. Repeatable one time. A-F only. Pre: 101 or 291, or departmental approval.

HON 380 Peer Mentoring (3) Students function as peer mentors in and out of class sessions. Emphasis on understanding dynamics of leadership skills within the context of small groups. Pre: 101 or 291, or departmental approval.

HON 491 Junior Honors Seminar (3) Students from different disciplinary fields for discussion of material presented by a faculty in a multi-disciplinary format. Topics vary each semester. Required of, and limited to, candidates for Honors degree. A-F only.

HON 492 Honors Colloquium (3) Weekly meetings for discussion of enduring issues and problems of an interdisciplinary nature. Limited to candidates for Honors degree. CR/NC only.

HON 495 Introduction to Research (3) Library research skills; lectures on research within a university setting; methodological issues for and across disciplines; special attention to definition of specific research problem. Limited to candidates for the Honors degree. CR/NC only.

HON 496 Senior Honors Project (3) Preparation of a research project or a performance project (with a research component) supervised by a faculty member. Limited to candidates for Honors degree. Repeatable one time for each major. A-F only. Pre: 101 or 291, or departmental approval.

HON 497 Honors Special Projects (1) Restricted to Plan A (thesis) students. One time. A-F only. Pre: consent. (Cross-listed as POLS 386)

HON 498 Honors Independent Study (1-3) Limited to candidates for Honors degree. CR/NC only.

HON 499 Honors Independent Research (1-3) Limited to candidates for Honors degree. CR/NC only.

HON 500 Honors Independent Work (1) Limited to candidates for Honors degree. CR/NC only.

Selected Studies students also have the option of taking A-section courses from the following list when they are offered by departments:

- AMST 202A Diversity in American Life
- ANTH 151A Emerging Humanity FGA
- ANTH 152A Culture and Humanity FGB
- ART 101A Introduction to Visual Arts
- ASAN 241A Civilizations of Asia
- ASAN 242A Civilizations of Asia
- ASAN 312A Contemporary Asian Civilizations DS
- ASTR 110A Survey of Astronomy
- ASTR 120A Astronomical Origins
- BOT 101A General Botany
- BOT 105A Ethnobotany FG
- CHEM 181A Honors General Chemistry
- ECON 130A Principles of Microeconomics
- ECON 131A Principles of Macroeconomics
- ECON 300A Intermediate Economics: Macroeconomics Analysis
- ECON 301A Intermediate Economics: Price Theory DS
- ECON 317A the Japanese Economy DS
- ENG 100A Composition I
- ENG 270A Introduction to Literature: Literary History N/FL
- ENG 271A Introduction to Literature: Genre N/FL
- ENG 272A Introduction to Literature: Culture and Literature N/FL
- ENG 273A Introduction to Literature: Creative Writing and Literature N/FL
- GG 101A Introduction to Geology
- HWST 107A Hawai‘i: Center of the Pacific
- HIST 161A World Cultures in Perspective
- HIST 162A World Cultures in Perspective
- ICS 101A Tools for the Info Age
- ICS 111A Introduction to Computer Science
- ICS 211A Introduction to Computer Science II N
- MATH 100A Survey of Mathematics
- MATH 242A Calculus II N
- MATH 251A Accelerated Calculus I N
- MATH 252A Accelerated Calculus II N
- MATH 253A Accelerated Calculus III
- MICR 140A Microbiology Laboratory
- PHIL 100A Introduction to Philosophy: Survey of Problems
- PHIL 101A Introduction to Philosophy: Moral and Society
- PHIL 102A Introduction to Philosophy: Asian Traditions DH
- PHIL 110A Introduction to Deductive Logic
- PHYS 272A General Physics II DP
- POLS 110A Introduction to Political Science
- POLS 335A Political Philosophy and Theory DS
- PSY 371A Abnormal Psychology DS
- REL 151A Religion and the Meaning of Existence
- REL 210A Understanding Christianity DH
- SOC 100A Introduction to Sociology
- SOC 300A Principles of Sociology Inquiry
- SP 251A Principles of Effective Public Speaking

Key to symbols & abbreviations: see the first page of this section.

Human Resources Management (HRM)

Shidler College of Business

HRM 200 Career Development (1)
HRM 351 Human Resource Management (3) Survey of the field covering recruitment, selection, training, appraisals, grievance handling, communications, discipline, safety, compensation, and benefits.
HRM 353 Leadership and Group Dynamics (3) Develop understanding of theory and research on managerial, entrepreneurial leadership and creativity in organizations. Topics include leadership, decision making, motivation, personality, and rewards within group settings.
HRM 354 Organizational Change and Effective-ness (3) Identify and evaluate methods to promote an effective change transition through efficient
HRM 361 Labor Problems (3) Problems and economics of labor; history, structure, government, activities of trade unions. DS

HRM 399 Directed Reading and Research (V) Reading and research in a special area within the major field under direction of faculty member(s). Project must include statement of objectives, outline of activities planned, results expected, and how they are to be reported and evaluated. Must be approved in advance by the department chair and faculty advisor.


HRM 455 The Staffing Process (3) Contemporary practices and trends in personnel planning for a competent work force; legal constraints, recruitment and selection, differential placement, training, career programming. Pre: 351.

HRM 463 Negotiation and Workplace Dispute Resolution (3) Theory and practice in negotiating: design and operation of different kinds of workplace dispute resolution (such as mediation, arbitration, and various alternatives); features exercises on bargaining and negotiation and advocacy and decision skills. Pre: 361 or consent. Spring only.


HRM 467 Labor-Management Relations/Public Sector (3) Review and analysis of basic factors that distinguish private from public employment relations; examination of the development of recent legislation and programs at the federal, state, and municipal levels. Specific consideration given to current problems on the mainland and Hawai‘i. Pre: 361 or consent.

IP 101 Beginning Ilokano (4) Conducted in Ilokano, this course explores the literary landscape of Ilokano literature from the perspective of Ilokano writers based in the Philippines as well as those outside of the country. Pre: 301 or consent.

IP 301 Third-Level Ilokano (3) Continuation of 300. Conversation, advanced reading, composition. Meets three times weekly. Pre: 302 or exam, or consent.

IP 302 Third-Level Ilokano (3) Continuation of 301. Pre: 301 or exam, or consent.

IP 315 Ilokano through Contemporization (3) Training in listening comprehension of different authentic and simulated materials as presented in documentaries, soap operas, radio and television news and other broadcasts, formal lectures, plays, natural conversations, songs, and student-created sitcoms and dramas. Pre: 202 or consent.

IP 331 Contemporary Ilokano Literature (3) Conduction in Ilokano, this course explores the literary landscape of Ilokano literature from the perspective of Ilokano writers based in the Philippines as well as those outside of the country. Pre: 301 or consent.


IP 402 Fourth-Level Ilokano (3) Continuation of 401. Pre: 401 or exam, or consent.


IP 425 Ilokano Interpretation Field Practicum (3) Provide extensive practical training in consecutively, simultaneous, sight and telephonic interpreting. It requires observation and study of interpretation strategies and techniques in relevant situations. Pre: 301 or consent.

IP 451 Structure of Ilokano (3) Introduction to phonology, morphology, and syntax. Pre: 202 or consent. DH

Indo-Pacific Languages (IP)

In addition to the languages normally offered by the department, other languages commanded by individual faculty members may be offered if demands and staff permit, e.g., classical Arabic, Ashala, Avestan, Balinese, Javanese, Malayalam, Old Persian, Sranan Dutch, and Tongan. Interested students should consult the department chair. Language concentrations in certain other degree programs, e.g., through the Interdisciplinary Studies Program, may be arranged. Inquire at the department office.

IP 101 Directed Elementary Language Study (4) Directed study of a South Asian, Southeast Asian, or Pacific language not regularly listed by the department. Pre: consent.

IP 102 Directed Elementary Language Study (4) Continuation of 101.

IP 199 Introductory Language Study (V) Introduction to a South Asian, Southeast Asian, or Pacific language not regularly offered. Contact hours and credits determined by student interests and faculty resources. Repeatable up to eight credit hours. Pre: consent.

IP 201 Directed Intermediate Language Study (4) Continuation of 200.

IP 202 Directed Intermediate Language Study (4) Continuation of 201.

IP 261 Topics in Indo-Pacific Language/Culture (V) Study of a literature or culture of the Indo-Pacific area through readings in various fields in English. Repeatable up to six credit hours. Pre: consent.

IP 273 (Alpha) Introduction to Indo-Pacific Language and Culture (3) Introduction in English to language(s) and culture(s) of Indo-Pacific country or region. A: (A) Indian; (B) Southeast Asian; (D) Polynesian; (E) Philippines. Pre: 101 and 102 courses in relevant language or consent. DH

IP 299 Intermediate Language Study (V) Intermediate study of a South Asian, Southeast Asian, or Pacific language not regularly offered. Contact hours and credits determined by student interests and faculty resources. Repeatable up to eight credit hours. Pre: at least six credit hours of elementary study in the same language. DH

IP 301 Directed Third-Level Language Study (3) Continuation of 202. Pre: consent.

IP 302 Directed Third-Level Language Study (3) Continuation of 301.

IP 361 Southeast Asian Literature in Translation (3) Survey in English of traditional and modern literatures of Southeast Asia. (Cross-listed as ASAN 361) DL

IP 362 Philippine Drama: History, Art, Culture (3) Historical survey from precolonial to contemporary periods. Studies forms, conventions, and literature within the social, political, and cultural context of the times as reflected in the history of Philippine drama. Emphasizes plays in the diaspora. A-F only. Pre: ILO 101 or consent. Fall only: DL

IP 363 Philippine Contemporary Literature in English (3) Critical survey of 20th-century Philippine literature written in English; cultural values. Pre: one ENG DL course or consent. (Cross-listed as ENG 375) DL

IP 364 Philippine Popular Culture (3) Appreciation, re-examination, and analysis of Philippine popular culture produced in the Philippines and in the diaspora; an analysis of such forms using critical hermeneutic frames. A-F only. Pre: sophomore standing or consent. DH

IP 365 South Asian Literature in Translation (3) Survey of traditional and modern literatures of South Asia; literature written originally in English. DL

IP 366 South Asian Literature in Translation (3) Survey of traditional and modern literatures of South Asia; a vernacular literature to be determined by faculty resources and student interest. DL

IP 368 Introduction to South/Southeast Asian Film, History, Theory and Appreciation (3) Study and analysis of South/Southeast Asian films—history, forms, development, theoretical framework and relationship to cultural, social, philosophical and aesthetic context. Pre: FILIPINO. A-F only: Pre: one of ENG 270-272, or consent. DH

IP 369E Study Abroad: Vietnam (3)

IP 373 Vedic Hindu Mythology (3) Study of major Hindu myths of the Vedic Sanskrit literature within

Key to symbols & abbreviations: see the first page of this section.
the perspective of ancient Indian civilization. Literary sources will be tapped for understanding creation, cosmogony and celestial, atmospheric and terrestrial divinities. A-F only. Pre: ANTH 200, ANAN 202, HIST 151, LEEA 122, or PHIL 102; or consent. Fall only.

IP 374 Classical Hindu Mythology (3) Study of major myths of Epic Sanskrit literature, primarily with focus of the Ramayana and Mahabharata. Literary sources will be tapped for appreciating myths and epics, especially with reference to dharma, karma, ways of life. Pre: ANTH 200, ANAN 202, HIST 151, LEEA 122, or PHIL 102; or consent. Spring only.

IP 377 Critical Discourses in IPLL Studies: Philippines (3) Revaluation and analysis of critical discourses in Philippine languages and literatures and an examination of alternative perspectives to the prevailing studies on Philippine culture; an appreciation of emerging knowledge on the Philippines. Pre: sophomore standing or higher, or consent.

IP 395 Polynesian Folklore in Translation (3) Traditional Polynesian genres (legends, myths, folktales, fables, proverbs, songs, riddles, jokes) examined in translation and culturally and structurally interpreted. Pre: one of ENG 270–272. DL

IP 396 Philippine Literature and Folklore in Translation (3) Philippine folk literature translated into English; epics, myths, legends, and other folklore. Classic works of vernacular writers. Pre: one ENG DL course or consent. (Cross-listed as ENG 376) DL

IP 399 Third-Level Language Study (V) Third-level study of a South Asian, Southeast Asian, or Pacific language not regularly offered. Contact hours and credits determined by student interests and faculty resources. Repeatable up to six credits. Pre: at least 6 credits of intermediate study of the same language.

IP 401 Directed Fourth-Level Language Study (3) Continuation of 302. Pre: consent.

IP 402 Directed Fourth-Level Language Study (3) Continuation of 401.

IP 411 Ilokano Literature in Translation (3) Overview of Ilokano literature from the early writings to the major works of contemporary writers. A-F only. Pre: ILO 201 or consent. DL

IP 427 (Alpha) Topics in Samoan Literature (3) (B) Writings of Albert Wendi; (C) Samoan women writers. Pre: SAM 227 or one of ENG 270–272; or consent for (B). Pre: SAM 227 or one of ENG 250–257 or WS 254; or consent for (C). DL

IP 431 Rizal’s Literary Works in Translation (3) Interpretation and analyses of Rizal’s novels Niní and Fili as they relate to the social, political, and historical context of the Spanish regime in the Philippines. Pre: one DL course, or consent. DL

IP 432 The Writings of Carlos Bulosan (3) Intensive study of the major writings of Carlos Bulosan; his literary and cultural milieu with thematic concentration on aesthetics and the issues of diasporic experiences (e.g., immigration, assimilation, nation, etc.) and transnationalism. Pre: 361 or 363 or 396 or 431 or any ENG DL. DL

IP 465 (Alpha) Hawaiian and Indo-Pacific Teaching Practicum (3) An experienced-based introduction to various approaches in language teaching methodologies and techniques. Students’ skills in teaching the Hawaiian or an Indo-Pacific language are developed through supervised teaching, class planning and evaluation. (B) Southeast Asian languages. Repeatable one time. CR/NC only. Pre: 402-level of the language practicum or consent; (B) CAM 402 or IND 402 or THAI 402 (or concurrent) and consent of instructor or equivalent language skills.

IP 470 Folklore (3) Theory and method of comparative and analytical folklore study, with special applications to Pacific traditions. Pre: ANTH 200.


Indonesian (IND)

IND 101 Elementary Indonesian (4) Emphasis on the development of communicative competence in both oral and written language. HSL

IND 102 Elementary Indonesian (4) Continuation of 101. Pre: 101. HSL

IND 103 Beginning Indonesian I (3) Introduction into the Malay-Indonesian language for the purpose of communication, travel, further study, and enjoyment. Fall only. HSL

IND 104 Beginning Indonesian II (3) Introduction into the Malay-Indonesian language for the purpose of communication, travel, further study, and enjoyment. Spring only. Pre: 103. HSL

IND 201 Intermediate Indonesian (4) Continuation of 102 or 104. Pre: 102 or equivalent. NF HSL

IND 202 Intermediate Indonesian (4) Continuation of 201. Pre: 201. NF HSL

IND 203 Intermediate Indonesian I (3) Intermediate Indonesian language study for the purpose of communication, travel, further study, and enjoyment. Pre: 102 or 104 or equivalent language skills in Indonesian or Malay, or consent. Fall only. NF HSL

IND 204 Intermediate Indonesian II (3) Intermediate Indonesian language study for the purpose of communication, travel, further study, and enjoyment. Pre: 201 or 203 or equivalent language skills in Indonesian or Malay. Spring only. NF HSL

IND 301 Third-Level Indonesian (3) Continuation of 202. Conducted in Indonesian. Meets three hours a week. Reading, discussion, composition, and projects. Pre: 202 or consent.

IND 302 Third-Level Indonesian (3) Continuation of 301. Pre: 301.

IND 305 Third Level Indonesian (2) Online course consists of thematic, proficiency-based units exploring the language of the contempor-

ary Indonesian media with an emphasis on reading, writing, and listening comprehension. Pre: 302, 306, or consent. Co-requisite: 405. Fall only.

IND 402 Fourth-Level Indonesian Conversation (1) Topic-based course aimed to enhance students’ listening and speaking skills in the Indonesian language. Pre: 302, 306, or consent. Co-requisite: 405. Fall only.

IND 405 Fourth Level Indonesian (2) Online course consists of modular, thematic, proficiency-based units exploring the language of the contemporary Indonesian media with an emphasis on reading, writing, and listening comprehension. Pre: 302, 306, or consent. Fall only.

IND 407 Fourth Level Indonesian Conversation (1) Topic-based course aimed to enhance students’ listening and speaking skills in the Indonesian language. Pre: 302, 306, or consent. Co-requisite: 405. Fall only.

IND 452 Structure of Indonesian (3) Introduction to grammar; some sociolinguistic background. Pre: 302 or equivalent, or consent. DH

IND 454 History of Indonesian (3) Social and linguistic development of Indonesian from roots in earlier Malay to contemporary form and function. Pre: 202 and 452, or consent. DH

IND 461 Modern Indonesian Literature (3) Selected readings, 1900 to present. Discussion and composition. Pre: 402 or consent. DL

Information and Computer Sciences (ICS)

College of Natural Sciences

ICS 101 Tools for the Information Age (4) Fundamental concepts and terms of computer technology, application software for problem solving, computer technology trends and impact on individuals and society.

ICS 110 Introduction to Programming Through 3D Animations (3) Introduction to computer programming and object-oriented programming concepts using movies and games where the concept of “object” is visible and animated in 3D. (Once a year)

ICS 111 Introduction to Computer Science I (4) Overview of computer science, writing programs. Pre: Recommended: computer experience.

ICS 141 Discrete Mathematics for Computer Science I (3) Logic, sets, functions, matrices, algorithmic concepts, mathematical reasoning, recursion, counting techniques, probability theory. FS

ICS 210 Information Systems in Society (3) Lecture/discussion critically explores socio-political dimensions of Information and Communication Technology (ICT), and the information professions. A-F only. Pre: departmental approval. (Once a year)

ICS 211 Introduction to Computer Science II (3) Algorithms and their complexity, introduction to software engineering, data structures, searching and sorting algorithms, numerical methods. Pre: grade of “B” or higher in 111 or consent. NF

All students wishing to enroll in ICS courses above 211 except ICS 241 must meet the prerequisite grade requirement of B or higher in ICS 111 and 211 prior to registering for the course.

ICS 212 Program Structure (3) Program organization paradigms, programming environments, implementation of a module from specifications, the C and C++ programming languages. Pre: 211 or consent. NF

ICS 215 Introduction to Scripting (3) Introduction to scripting languages for the integration of applications and systems. Scripting in operating systems, web pages, server-side application integration, regular expressions, event handling, input validation, selection, repetition, parameter passing, Perl, Java-
Crip, and PHP. A-F only. Pre: 211 (or concurrent), or consent. (Once a year) NI

ICS 241 Discrete Mathematics for Computer Science (3) Program correctness, recurrence relations and their solutions, divide and conquer relations, relations and their properties, graph theory, trees and their applications, Boolean algebra, introduction to formal languages and automata theory. Pre: 141 or consent. N FI

ICS 290 Computer Science Careers: An Exploration of the Specialties of Computer Science (1) Exploration of the specialties of computer science. Meets every two week for 2.5 hours to explore specific areas in computer science. CR/NC only. (Once a year) NI

ICS 311 Algorithms (3) Design and correctness of algorithms, including divide-and-conquer, greedy and dynamic programming methods. Complexity analyses using recurrence relations, probabilistic methods, and NP-completeness. Applications to order statistics, disjoint sets, B-trees and balanced trees, graphs, network flows, and string matching. Pre: 211 and 241, or consent.

ICS 312 Machine-Level and Systems Programming (3) Machine organization, machine instructions, addressing modes, assembler language, subroutine linkage, linking to higher-level languages, interface to operating systems, introduction to assemblers, loaders and compilers. Pre: 212 (or concurrent), or consent.

ICS 313 Programming Language Theory (3) Syntax, control structures, data binding and scope, language styles, programming in LISP and Prolog, language and automata theory. Pre: 212 and 241, or consent.

ICS 315 Web Design and Management (3) Web design principles, XML and HTML, tables, forms, and frames, multimedia objects, security, scripting for web applications, web servers, commercial aspects, new technology. A-F only. Pre: 215 or consent. (Once a year)

ICS 321 Data Storage and Retrieval (3) Data storage devices, timing and capacity, programming for files, hashed and indexed files, introduction to relational database systems. Pre: 211 and 241, or consent.

ICS 331 Logic Design and Microprocessors (4) (1 3-hr Lab) Basic machine architecture, microprocessors, bus organization, circuit elements, logic circuit analysis and design, microcomputer system design. Pre: 312 or consent.

ICS 351 Network Design and Management (3) Overview of the internet and its capabilities; introduction to HTTP, TCP/IP, ethernet, and wireless 802.11; routers, switches, and NAT; network and wireless security; practical experience in designing and implementing networks. Pre: 141 and 211, or consent. (Once a year)

ICS 390 Computing Ethics for Lab Assistants (3) A lecture/discussion/internship on ethical issues and instructional techniques for students leading a laboratory section of ICS 101 (Tools for the Information Age). Pre: 101 and consent.

ICS 412 Operating Systems (3) Operating system structure, process creation and management, memory allocation and management, scheduling, protection. Pre: 212 and 312, or consent.

ICS 413 Software Engineering I (3) System specification, modeling and analysis, prototyping, hierarchical design, program design methods, cost estimation, project management, computer-aided software design. Team-oriented software-design project. Pre: 311 or consent.

ICS 414 Software Engineering II (3) Continuation of 413. Project management, quality, and productivity control, testing and validation, team management. Team-oriented software-implementation project. Pre: 413.

ICS 415 Introduction to Programming for the Web (3) Introduction to emerging technologies for construction of World Wide Web (WWW)-based software. Covers programming and scripting languages used for the creation of WWW sites and client/server applications. Students will complete a medium-sized software project that uses languages and concepts discussed in class. Pre: 311 or consent.

ICS 419 The Science, Psychology and Philosophy of Systems Design (3) Scientific, psychological and philosophical bases of systems design, including a survey of human-factors and ergonomic standards; the impact of innovation and creativity as it relates to systems design. Web-enhanced course. Pre: two ICS 300-level courses with grade of B or better, or consent. (Once a year)

ICS 421 Database Systems (3) Principles of database systems, data modeling, relational models, database design, query languages, query optimization, concurrency control data security. Pre: 311 and 321, or consent.

ICS 422 Data Processing (3) Role of data processing in organizations, programming practices, ethics, sequential and indexed file processing, report writing, online transaction processing. Pre: 321 or consent.

ICS 423 Computer Security (3) Legal, ethical and technical issues in computer access, confidentiality, authentication, privacy and intellectual property. Pre: both 311 and 312, or consent.

ICS 424 Application Frameworks (3) Experience producing applications with at least two different applications frameworks. A-F only. Pre: 212, 311, and 313; or consent.

ICS 425 Computer Security and Ethics (3) Theoretical results, security policy, encryption, key management, digital signatures, certificates, passwords. Ethics: privacy, computer crime, professional ethics. Effects of the computer revolution on society. A-F only. Pre: at least two ICS 300-level courses or consent. (Once a year)

ICS 426 Computer System Security (3) Information flow, confinement, information assurance, malicious programs, survivability analysis, network security, writing secure programs. A-F only. Pre: 351 or 451, or consent. (Once a year)


ICS 432 Concurrent and High-Performance Programming (3) Principles of concurrent and high performance programming. Multi-threading in C and Java for shared-memory programming. Distributed memory programming with Java. Introduction to cluster computing. A-F only. Pre: 311 or consent. (Once a year)

ICS 441 Theory of Computation (3) Grammars, sequential machines, equivalence, minimalization, analysis and synthesis, regular expressions, computability, unsolvability, Gödel's theorem, Turing machines. Pre: 313.

ICS 442 Analytical Models and Methods (3) Applications of mathematical methods in computer science with emphasis on discrete mathematics, numerical computation, algebraic models, operations research. Pre: 311 or consent.

ICS 451 Data Networks (3) Network analysis, architecture, digital signal analysis and design; circuit switching, packet switching, packet broadcasting; protocols and standards; local area networks; satellite networks; ALOHA channels; examples. Pre: 212 and 311, or consent.

ICS 452 Software Design for Robotics (3) Sensors, actuators, signal processing, paradigms of robotic software design, introduction to machine learning, introduction to computer vision, and robot-to-human interaction. A-F only. Pre: 351 or consent. Recommended: 312 and 313. (Once a year)

ICS 461 Artificial Intelligence (3) Survey of artificial intelligence: natural language processing, vision and robotics, expert systems. Emphasis on fundamental concepts: search, planning, and problem solving, logic, knowledge representation. Pre: 311 or consent.

ICS 464 Human Computer Interaction I (3) Application of concepts and methodologies of human factors psychology and human-computer interaction to address ergonomic, cognitive, and social factors in the design and evaluation of human-computer systems. Pre: 311 or consent.

ICS 465 Introduction to Hypermedia (3) Basic issues of interactive access to information in various formats on computers. Available hardware and software: editing, integration, programming, implementation of a sample information system. Pre: 311.

ICS 466 Design for Mobile Devices (3) Lecture introducing design issues, programming languages, operating systems and mark-up languages for internet-enabled mobile devices, such as cell phones and PDAs. A-F or Audit. Pre: 311 or consent. Spring only.

ICS 469 Cognitive Science (3) Introduces basic concepts, central problems, and methods from cognitive science. Identifies contributions from disciplines such as cognitive psychology, linguistics, artificial intelligence, philosophy, and neuroscience. Pre: 311 or consent.

ICS 471 Probability, Statistics, and Queuing (3) A hands-on introduction to probability, statistical inference, regression, Markov chains, queueing theory. Use of an interactive statistical graphics environment such as R. Pre: 241 and 311, or consent.

ICS 475 Introduction to Bioinformatics Sequences and Genomes Analysis (3) Introduction to bioinformatics to computer science students by focusing on how computer sciences techniques can be used for the storage, analysis, retrieval, and simulation of biological sequences (DNA, RNA and proteins). A-F only. Pre: 311 or consent. Once a year.

ICS 481 Introduction to Computer Graphics (3) Fundamentals of computer graphics including graphics hardware, representation, manipulation, and display of two- and three-dimensional objects, use of commercial software. Pre: 311 and either MATH 216, MATH 242, or MATH 252A; or consent. (Once a year)

ICS 483 Computer Vision (3) Introductory course in computer vision. Topics include image formation, image processing and filtering, edge detection, texture analysis and synthesis, binocular stereo, segmentation, tracking, object recognition and applications. A-F only. Pre: 212 and 311, or consent. Once a year.

ICS 491 Special Topics (3) Reflects special interests of faculty. Oriented toward juniors and seniors. Repeatable one time for B/SCI students. Pre: at least two 300-level ICS classes or consent.

ICS 499 Computer Project (V) Individual or small group projects in system design or application under faculty supervision. Pre: consent.

ICS 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

ICS 606 Intelligent Autonomous Agents (3) Theory, methods and practical applications of autonomous agents, including common applications of both software and hardware (robotic) agents. Indepth practical experience with autonomous agents.

Key to symbols & abbreviations: see the first page of this section.
through programming assignments and projects. Pre: 313 or EE 467 (or equivalent), graduate standing; or consent. (Once a year) (Cross-listed as EE 606)

ICS 611 Compiler Theory and Construction (3)
Design and implementation of compilers, syntactic and semantic descriptions of programming languages, algorithms for syntactic analysis and object code generation. Pre: 312 or consent.

ICS 612 Theory of Operating Systems (3)
Advanced study in operating systems theory and design with emphasis on case studies and distributed systems. Pre: 412.

ICS 613 Advanced Software Engineering (3)
Fundamental software engineering procedures, including planning, estimation, design, testing, process definition and improvement, and software quality assurance. Measurement techniques are used to support empirically-driven software process improvement throughout the course. Pre: 414 or consent.

ICS 614 Medical Informatics I (3)
Introduction to the field of medical informatics, which is found at the intersection of clinical science, public health, information science, computer technology, and communications technology. Concentration on current issues. Pre: consent.

ICS 616 Information Architecture and Web Design (3)
User-centered design of websites; survey Information Architecture (IA) systems (organization, navigation, labeling, searching); gain experience in methodologies for creating IA, tools for IA, web standards and usability tests. ICS and LIS majors only. A-F only. Pre: graduate standing in ICS or LIS or related field or consent. (Once a year)

ICS 621 Analysis of Algorithms (3)
Analysis and design of algorithms: modeling, comparison, measures, applications. Pre: 311.

ICS 622 Systems Modeling and Evaluation (3)
Mathematical modeling, analysis, optimization, and simulation techniques, applications to design and evaluation of computer software systems. Pre: 311 or consent.

ICS 623 Data Security (3)
Symmetric encryption algorithms, secure hashing, algorithms, unicity distance, large number and finite field algebra and arithmetic, public key algorithms for encryption, digital signatures, and key exchange. Pre: 311 or consent.

ICS 624 Advanced Data Management (3)
Exploration of information retrieval and object-relational tools and methods for the management of distributed multimedia database systems. Pre: 321 or 421 or LIS 670, or consent.

ICS 632 Principles of High Performance Computing (3)
Principles of high performance computing for single-processor and parallel architectures. Detailed coverage of parallel architectures and exposure to shared-memory, distributed-memory, and hybrid parallelism. Hands-on experience with message-passing and multi-threaded programming. A-F only. Pre: graduate standing in computer science or closely related field, or consent. (Once a year)

ICS 635 Machine Learning (3)
Introduction to key theoretical concepts of machine learning. Practical experience with decision free methods, artificial neural networks, Bayesian belief networks and contemporary statistical methods including regression, clustering and classification. Pre: consent. (Once a year)

ICS 636 Information Theory in Machine Learning (3)
Basics of information processing and learning in the brain; neural networks; learning algorithms based on information maximization; applications in molecular biology and bioinformatics. A-F only. Pre: graduate standing in computer science or mathematics background, or consent. (Once a year)

ICS 641 Advanced Theory of Computation (3)
Advanced topics in formal languages, automata, computability, computational complexity. Pre: 441 or consent.

ICS 651 Computer Networks (3)
Elementary principles of modern computer networking. Detailed coverage of overall architecture and the physical, data link, and network layers, with emphasis on the network layer. Pre: 451.

ICS 661 Advanced Artificial Intelligence (3)
Current issues in artificial intelligence, including expert systems, knowledge representation, logic programming, learning, natural language processing. Pre: 461 or consent.

ICS 663 Pattern Recognition (3)
Nature of the pattern recognition problem and clustering of data. Pre: MATH 371.

ICS 664 Human-Computer Interaction II (3)
Studies of human performance in designing and using information systems. Emphasizes concepts and methodologies from human factors, psychology, and software engineering relating to human performance. Pre: 413 or consent.

ICS 665 User Interfaces and Hypermedia (3)

ICS 667 Advanced HCI Design Methods (3)
Advanced analytical and empirical methods for the design and evaluation of usable, useful, and robust human-computer interfaces. Students will apply selected methodologies to a major system design project. Pre: 463 or 465, or consent.

ICS 668 Social Informatics (3)
An advanced introduction to the design of human-computer systems and other technological artifacts for supporting human collaboration in learning, work and social contexts, and to theoretical perspectives and empirical studies of collaboration that inform such design. A-F only. Pre: 463 or 465 or 664 or 665 or 667 or LIS 677; or consent.

ICS 674 Evolutionary Computation I: Survey of Methods (3)
Evolutionary computation surveys in the field to prepare students for research. Topics include diverse engineering applications, theories and concepts including search spaces, representation, objective functions, variation operators, selection, and population based search. Pre: 211 (B or better) and 241 (C or better) and admitted to a graduate program or capable of graduate work in computer science. Pre: 413 (Once a year: fall)

ICS 675 Bioinformatics: Sequences Analysis (3)
To expose students to bioinformatics at the biological sequences analysis level (DNA, RNA, proteins). Several bioinformatics methods and algorithms are introduced. Students are required to present one paper and to participate in a small group project. A-F only. Pre: 475 or MBBE 683, or consent. (Once a year)

ICS 676 Bioinformatics: Microarrays (3)
Introduction to the basic principles of biology relevant to microarray gene expression data and to Biosensor and Collaborative open-source project to develop a modular general framework for the analysis of cDNA arrays and gene chips. A-F only. Pre: 311 or background in biology, or consent. (Once a year)

ICS 681 Computer Graphics (3)
Selected advanced topics in computer graphics. Substantial project required. Pre: 481 or consent.

ICS 682 Numerical Computation (3)
Selected topics in numerical analysis, mathematical software, and scientific computation; examples include sparse matrix methods, finite element methods, mathematical programming. Pre: consent.

ICS 683 Advanced Computer vision (3)
Fundamental problems and core concepts and techniques in computer vision, covering both theoretical and practical issues in the field. A-F only. Pre: 483 or consent. (Once a year)

ICS 690 Seminar in ICS (1)
Series of talks on advanced research topics. CR/NC only.

ICS 691 Topics in Software (3)
Reflects special interests of faculty in the field of computer science. Repeatable in different topics. Pre: consent.

ICS 699 Directed Reading/Research (V)
Pre: graduate standing and consent.

ICS 700 Thesis Research (V)
Research for master's thesis.

ICS 800 Dissertation Research (V)

Information Technology Management (ITM)
Shidler College of Business

ITM 115 Introduction to Business Programming (3)
Introduction to programming with business-oriented applications. Software development tools, object-oriented software development, program flow and logic. A-F only.

ITM 352 Programming Application Systems (3)
Introduction to application programming. Fundamentals, essential logic, file handling, report writing. Emphasis on systems development and disciplined programming. A-F only. Pre: ICS 101 or equivalent, or consent.

ITM 353 Information Systems Analysis and Design (3)
Analysis and design of systems in organizations. Includes role of general systems concepts, systems development life cycle, identifying systems requirements, logical and physical design. Pre: 352 and BUS 311, or consent.

ITM 354 Database Systems (3)
Introduction to database management and data structures, including database planning and design, normalization, relational and network data models, and physical organization and implementation. Pre: 352 and 353, or consent.

ITM 360 Current Topics in ITM (3)
Repeatable with permission of department chair. Pre: varies with topic.

ITM 366 Information Systems in Organizations (3)
Practice of information systems in organizations. Capstone course for MIS majors. A-F only. Pre: 352, 353, 354 (or concurrent), and 431.

ITM 385 Electronic Commerce (3)
Survey of electronic commerce technologies and business strategies, with an emphasis on technology and application development. The development of web-based and multimedia applications; the impacts of EC on business strategy; legal and ethical issues. A-F only. Pre: BUS 311 or consent.

ITM 387 (Alpha) Advanced Topics in Information Systems (3)
Computerized management information systems, operations research or business statistics: (B) software systems economics; (C) advanced topics in programming; (D) web-based application development; (E) advanced technology in MIS; (F) systems development; (G) database systems; (H) advanced business applications; (I) simulation modeling and analysis; (K) business intelligence. Repeatable with permission of department chair. Pre: varies with topic.

ITM 399 Directed Reading and Research (V)
Reading and research in special area of major under direction of faculty member(s). Project must include statement of objectives, outline of activities planned, results expected, and how they are to be reported.
and evaluated. Must be approved in advance by the department chair and the faculty advisor.

ITE 431 Networking (3) Basic concepts in data networking, standards, architectures. Local and wide area networks. PC networking. The internet. Telephony and carriers.

ITE 433 Information Security (V) Fundamentals of corporate computer and network security management and technologies, viruses, worms, hacking, firewalls, cryptographic protections, incident and disaster response cyberwar. Repeatable one time. Prereq: 431 or consent. (Once a year)

ITE 660 Current Topics in Information Systems (3) Selected current practices and trends in decision sciences and MIS. May be repeated with change in topic. Prereqs: BUS 630 and BUS 631, or consent.

ITE 685 Electronic Commerce (3) Overview and discussion of the latest developments in e-commerce, hardware and software developments to support e-commerce, case studies of successes and failures, and e-commerce applications with special emphasis on developing countries in Asia. A-F only. Prereq: BUS 630 or consent. (Once a year only)

ITE 699 Directed Research (3) Reading and research in ITE under the direction of a faculty member. A-F only.

ITE 704 Doctoral Seminar in Information Systems (3) Extensive and critical review of the IS research literature. Can be retaken for credit. Repeatable three times. A-F only. Prereq: CIS 703 (or concurrent) or consent.

ITE 706 International IT Organizational Research Methods (3) Overview of current survey methodology and analysis in global information systems research. A-F only. Prereq: PhD student status in international management or consent.

ITE 799 Directed Reading and Research (V) Reading and research in an area of information technology management under the direction of faculty member(s). A-F only. Prereq: PhD student status in international management or consent.

Institute for Teacher Education (ITE)

College of Education

ITE 319 Children's Literature (2) Acquaintance with wide range of children's books; criteria for evaluation literature; using literature in the classroom. DL.

ITE 322 Social Studies, Elementary (V) Purposes, methods, curriculum, and assessment in teaching social studies. Focus: enriching children’s understanding of the complexities of the world through inquiry, investigation, collaboration, and expository skills. Emphasis on writing instruction. Repeatable two times. A-F only.

ITE 323 Science, Elementary (V) Science education in elementary school; methods and materials; laboratory activities selected from new science curricula. Repeatable one time. A-F only.

ITE 324 Mathematics, Elementary (V) Inquiry-based approach to concepts and algorithms of whole numbers and introduction to geometry/measurement. Laboratory experiences on appropriate manipulatives. Repeatable two times. Prereq: MATH 111 (strongly recommended) or MATH 100 or consent.

ITE 325 Mathematics, Elementary II (V) Inquiry-based approach to concepts and algorithms of fractions, decimals, graphing, and probability and statistics. Laboratory experiences on appropriate manipulatives. Repeatable two times. Prereq: MATH 324 or consent.

ITE 326 Visual Art, Elementary (V) Scope and organization of art in PK-6 school curriculum, creative use of art media through laboratory experiences. Repeatable two times.

ITE 329 Performing Arts Expression, K-6 (V) Standards-based teaching, with, in, through, and about music, dance, and drama. Developing verbal and non-verbal communication skills through creative expression with an emphasis on planning, teaching, and assessing preK-6 lessons that integrate the performing arts. Repeatable two times. A-F only.

ITE 343 Personal and Social K-6 Health Skills (V) Standards-based planning, teaching, assessment in health education. Developing interactive learning opportunities to teach personal and social responsibility for health through curriculum integration. Training, practice and evaluation of oral communication skills. Repeatable two times.

ITE 346 Methods of Instruction, Industrial/Agricultural Education (3) Techniques of individual and group instruction in laboratory and related classes, evaluation of various methods.

ITE 347 Management of Industrial/Agricultural Facilities (3) Organization of instruction; handling supplies; maintaining equipment and tools; purchasing materials; keeping records; making inventories.


ITE 349 Teaching Marketing and Distribution (3) Theory and methods of teaching marketing and distribution courses. Prereqs: MKT 341 or MKT 351.

ITE 353 Music in the Elementary School (2) Goals, concepts, literature, materials, procedures, and evaluation for teaching music in grades K-6. For students in elementary education. Not intended for elementary music majors.

ITE 360 Introduction to Multicultural Education (2) Concepts and methods to develop sensitivity and awareness of cultural influences on behavior as these relate to the school process. (Cross-listed as EDEF 360) DS.


ITE 380 Managing Classrooms (3) Analysis of the factors that contribute to learning in the classroom and the development of teacher behaviors that promote such learning.

ITE 390 (Alpha) Student Teaching (V) Full-time supervised experience in school. (B) dual preparation in ECE and elementary education; (C) elementary; (D) secondary; (E) community college; (F) dual preparation in elementary and special education. Prereq: completion of all other program requirements. Co-requisite: 391. CR/NC only.

ITE 391 (Alpha) Seminar for Student Teaching (V) With student teaching as context, examination of knowledge, skills, and dispositions for teaching: standards-based planning, teaching, assessment, and reflection; inclusive classroom management; professional growth and development; integration of research, theory, and practice. Emphasis on writing instruction and ethical issues in teaching. (B) dual preparation in ECE and elementary education; (C) elementary; (D) secondary; (S) dual preparation in elementary and special education. Co-requisite: 390. Repeatable nine times. CR/NC only.

ITE 392 (Alpha) Student Teaching Modified (6) Modified student teaching for individuals who have had prior extensive teaching experience or wish to repeat student teaching. CR/NC only. (C) elementary; (D) secondary. Prereq: extensive teaching experience; requirements listed under “student teaching”; approval of review committee; consent. Co-requisite: 391.

ITE 399 Directed Study (V) Individual work supervised by instructor. May consist of reading, research, observation/participation, teaching, and/or projects. Prereq: consent of instructor.

ITE 401 Introduction to Teaching (3) Knowledge base for professional educators; educational needs of adolescents in a unique multicultural environment; curriculum planning, implementation, and assessment; school organization; development of individual and program goals. Minimum 30 hours field experience in secondary classrooms. A-F only. Prereq: admission to secondary program.

ITE 402 (Alpha) Teaching Practicum (3) Observation, analysis, participation and teaching in middle or high school. Seminar accompanies the field experience. Subject fields: (B) art; (C) business and marketing; (D) language arts; (E) physical education; (F) industrial arts/agriculture; (G) mathematics; (H) science; (I) social studies; (J) foreign language; (K) music; (M) home economics; (N) interdisciplinary; (P) English as a Second Language. Repeatable one time. CR/NC only. Prereq: admission to COE Secondary Teacher Education Program and 401. Co-requisite: 404 or consent. 404P for (P).

ITE 403 Seminar in Educational Inquiry (3) Study and discussion of general school-related topics and issues, e.g., dimensions of elementary and/or secondary schooling, school governance, curriculum design and development, the student learner, classroom management. Repeatable one time. A-F only. Prereq: 401 or consent.

ITE 404 (Alpha) Teaching in the Subject Field (3) Purposes, procedures, curriculum, evaluation in secondary school subject field: (B) art; (C) business and marketing; (D) language arts; (E) physical education; (F) industrial arts/agriculture; (G) mathematics; (H) science; (I) social studies; (J) foreign languages; (K) music; (M) home economics; (N) interdisciplinary; (P) English as a Second Language. Repeatable seven times for (P). A-F only. Prereq: 401 or consent. Co-requisite: 402.

ITE 405 Teaching Residency, Secondary (9) Full-time student teaching experience in school. Student teachers will receive training and evaluation for oral communication, organization and planning skills. CR/NC only. Prereq: successful completion of all required courses or consent. Co-requisite: 406.

ITE 406 Seminar in Teaching Residency (3) Analysis and resolution of current ethical issues and
practices in classrooms; teaching skills and strategies; curriculum planning, professional growth and development; and integration of teaching experiences with professional standards. Instruction in preparing an extensive written portfolio. A-F only. Pre: successful completion of all required courses or consent. Co-require: 405.

ITE 410 Supervision of the Observation-Participation Student (2) Basic guidelines for developing effective team relationships between the professional teacher and the observation-participation student. Pre: two years’ teaching experience and consent.

ITE 415 Early Childhood: Foundations and Curriculum (3) Introduction to the field of ECE, birth to 8 years. Examines foundations of the field, historical roots, issues and trends influencing policy and practice, play theory, observation, documentation, and assessment in early childhood settings. Pre: FAMR 331 or consent. (Cross-listed as EDCS 415)

ITE 415L Early Childhood: Foundations and Curriculum Lab (3) Direct experience with children in early childhood settings in order to apply concepts from 415, develop skills in observation and assessment and gain perspective on the role of the teacher in ECE settings. Co-require: 415. (Cross-listed as EDCS 415L)

ITE 416 Early Childhood: Foundations and Curriculum (3) Continuation of 415: focuses on the design, implementation, and evaluation of meaningful, challenging integrated curriculum that promotes comprehensive developmental and learning outcomes for diverse young children (pK-3). Pre: 415 or consent. (Cross-listed as EDCS 416)

ITE 416L Early Childhood: Foundations and Curriculum Lab (3) Continuation of 415L. Co-require: 416. (Cross-listed as EDCS 416L)

ITE 417 Developmentally Appropriate Practice: Ages 3–8 (3) History and current trends in developmentally appropriate programs for young children, including the design of the learning environment; integrated, thematic planning; child guidance; assessment; and parent involvement. Pre: 415 or 416, or consent.

ITE 420 Supervision of Student Teaching (3) Principles and methods: role of supervisor; human resources support supervision. Open to teachers interested in pre-service teacher education. Pre: three years teaching experience and consent.

ITE 425 Family and Community Centered Programs (3) Knowledge and appreciation for the complex characteristics of children, families, and communities. Analysis and development of skills for creating respectful, reciprocal developmental relationships with diverse children and families from diverse backgrounds. Pre: FAMR 331 or consent.

ITE 427 Classroom Teaching Models in Affective Education (3) Different approaches to affective education within conceptual framework useful to teachers. Teaching models include non-directed, self-concept, consciousness expansion, group communication, moral and value development, human relations training. Conceptual framework includes theoretical orientation and major theorists, activities and classroom applications, teacher’s role, application to curriculum. Pre: observation/participation, and student teaching or teaching experience; or consent.

ITE 430 Advanced Supervision of Student Teaching (3) Advanced principles and methods: clinical supervision, observation recording, analysis, interpretation of classroom teaching; human resources supervision in student teaching. Pre: 420, successful supervision of two or more student teachers, and consent.

ITE 436 Cooperative Vocational Education (3) Planned work experience program for special areas of vocational technical education. Acceptable type of wage-earning employment. Minimum of six 40-hour weeks or 240 work hours required. Repeatable unlimited times. Pre: consent.

ITE 438 Foundations of Vocational Education (3) Historical and philosophical foundations of vocational technical education, overview of federal and state legislation and contemporary practices. Special emphasis on vocational education program in Hawaii.

ITE 439 Office and Marketing Technology (3) Understanding and use of word processing, spreadsheet, and database software for business applications. Explore software across the office and marketing content areas.

ITE 440 Curriculum Implications of Multicultural Education (3) Examination of trends, issues, school practices, and multicultural education and its related area of study—bilingual-bicultural education. (Cross-listed as EDCS 440)


ITE 444 Education of Exceptional Children in Regular Classroom (3) Practices that facilitate teaching special needs students in regular classrooms. Techniques for meeting academic needs, managing behavior, motivating students, increasing peer interactions, communication between special and regular educators. Includes an emphasis on instruction in writing. (Cross-listed as SPED 444)

ITE 445 Educating Exceptional Students in Regular Classrooms, Secondary (3) Teaching secondary students with disabilities and those who are gifted/talented. Meeting academic/social needs, classroom management, motivation, peer interaction, collaboration, and evaluation. Plan for multicultural education. (Cross-listed as SPED 445)

ITE 480 Issues in Computer Education (3) Integration of microcomputers into school curriculum and key issues related to microcomputer use in education. Pre: ETEC 442 or consent. (Cross-listed as EDCS 480)

ITE 499 Directed Activity (V) Individual work supervised by instructor. May consist of reading, research, teaching, and/or projects. Pre: consent of division director.

ITE 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. CR/NC only. Pre: master’s Plan B or C candidate and consent.

ITE 550 Newspaper in the Classroom (2)

ITE 563 (Alpha) Practicum in Curriculum Development: Bilingual/Bicultural (1) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 564 (Alpha) Practicum in Curriculum Development: Bilingual/Bicultural (2) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 565 (Alpha) Practicum in Curriculum Development: Bilingual/Bicultural (3) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 566 (Alpha) Practicum in Curriculum Development: Career Education (1) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 567 (Alpha) Practicum in Curriculum Development: Career Education (2) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 568 (Alpha) Practicum in Curriculum Development: Career Education (3) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 569 (Alpha) Practicum in Curriculum Development: Computer Science (1) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 570 (Alpha) Practicum in Curriculum Development: Computer Science (2) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 571 (Alpha) Practicum in Curriculum Development: Computer Science (3) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 572 (Alpha) Practicum in Curriculum Development: Humanities (1) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 573 (Alpha) Practicum in Curriculum Development: Humanities (2) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 574 (Alpha) Practicum in Curriculum Development: Humanities (3) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 575 (Alpha) Practicum in Curriculum Development: Language Arts (1) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 576 (Alpha) Practicum in Curriculum Development: Language Arts (2) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 577 (Alpha) Practicum in Curriculum Development: Language Arts (3) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 578 (Alpha) Practicum in Curriculum Development: Mathematics (1) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 579 (Alpha) Practicum in Curriculum Development: Mathematics (2) For in-service teachers
to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 580 (Alpha) Practicum in Curriculum Development: Mathematics (3) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 581 (Alpha) Practicum in Curriculum Development: Natural Science (1) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 582 (Alpha) Practicum in Curriculum Development: Natural Science (2) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 583 (Alpha) Practicum in Curriculum Development: Natural Science (3) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 584 (Alpha) Practicum in Curriculum Development: Occupational Development (1) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. CR/NC only. Repeatable unlimited times. Pre: teaching experience.

ITE 585 (Alpha) Practicum in Curriculum Development: Occupational Development (2) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. CR/NC only. Repeatable unlimited times. Pre: teaching experience.


ITE 587 (Alpha) Practicum in Curriculum Development: Social Science (1) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 588 (Alpha) Practicum in Curriculum Development: Social Science (2) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 589 (Alpha) Practicum in Curriculum Development: Social Science (3) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. Repeatable unlimited times. CR/NC only. Pre: teaching experience.

ITE 601 Professional Studies Seminar I (V) Development of theoretical and practical knowledge based on skills development, discipline, understanding, and responding to teaching issues and problems. Co-requisite: 602.

ITE 602 Field Experience and Seminar I (V) Supervised field study of a school. Repeatable up to 12 credits. Co-requisite: 601.


ITE 604 Field Experience and Seminar II (V) Team collaboration on responding to identified school need; supervised experience in mini-teaching. Repeatable up to 12 credits. Pre: 601 and 602. Co-requisite: 603.

ITE 610 Pre-internship Practicum (V) Supervised experience in instructional planning and practice teaching. Pre: 603 and 604. Co-requisite: 611.


ITE 699 Directed Reading and/or Research (V) Individual reading and/or research. Repeatable 5 times. A-F only. Pre: written consent.

Insurance (INS) Shidler College of Business

INS 300 Principles of Insurance (3) Analysis and treatment of pure risks; utilization of insurance programs to protect against financial losses caused by property losses; third-party claims and premature death.

INS 411 Property and Casualty Insurance (3) Treatment of risk of financial loss of personal and business property and resulting loss of income occasioned by fire and allied perils. Forms of insurance used by individuals and business executives and firms including crime, transportation, liability, and worker compensation. Pre: 300.

INS 431 Life Insurance (3) Treatment of the risk of premature death through use of various life insurance policies. Policy forms, calculation of premiums, reserves, non-forfeiture values, underwriting, regulation of policy provisions, related coverage. Pre: 300.

Interdisciplinary Studies (IS) Colleges of Arts and Sciences

IS 100 Marine Option Program Seminar (1) Statewide overview of ocean issues and organizations involved with marine activities, management, education, research. Exploration of opportunities for internships, research projects, study and careers. Proposal writing, project implementation, and report preparation guidelines. Orientation to the Marine Option Program.

IS 250 Personal Development for Effective Teams (3) Exploration and application of basic leadership theories and processes which foster personal and interpersonal development via cognitive experiential classroom methods and mentoring relationships with experienced peer leaders. (Cross-listed as ENGR 250)

IS 291 Community Service Practicum (V) Supervised fieldwork in community agency, arranged by student. Repeatable one time. Pre: written proposal approved by Honors director and appropriate faculty advisor.

IS 300 Field Study (V) Pre-arranged systematic field investigation of selected topics. Pre: written proposal approved by Honors director and appropriate faculty member. Repeatable up to three credits.

IS 311 Independent Study Tutorial (V) Independent study tutorial. A-F only.

IS 321 Native Americans and Native Hawaiians (3) Comparative-contrastive examination of similarities and differences between Native Americans and Native Hawaiians as the only indigenous peoples of the U.S. with special attention to sociohistorical parallels and mutual contacts since contact with Europeans. Perspective is explicitly interdisciplinary by drawing not only on sociology and history, but also on archaeology, ethnology, linguistics and other disciplines. A-F only. Pre: HIST 152 and an introductory course in cultural anthropology, political science or sociology; or consent. (Alt. years) DS

IS 322 Ethnohistory (3) Review of ethnography, i.e. the interdisciplinary, holistic and inclusive investigation of the histories of native peoples drawing not only on documented sources, but also on ethnography, linguistics, archaeology, ecology and other disciplines as an alternative to conventional Eurocolonial history. A-F only. Pre: HIST 152, or consent. (Alt. years) DS

IS 330 Information Technology and Culture (3) Investigation of the impact of information technologies on contemporary culture from a variety of perspectives. A-F only. Pre: upper division or consent.

IS 331 Science and Culture (3) Cultural studies of science from historical, philosophical, sociological and literary perspectives. Examination of intersections of science, race, gender and environment. A-F only. Pre: upper division or consent.

IS 361 People, the Ocean and the Environment (3) People’s impact on quality of coastal and ocean environments, especially Hawaiian; scientific, legal, socioeconomic aspects. Ocean pollution, ocean technology. Pre: OCN 201, ORE 202, or ZOOL 200; or consent.

IS 369 British Life and Culture (3) For Study Abroad Program students participating in the UH Mānoa Semester in London. Emphasis is placed on understanding and appreciating chosen subject matter through first-hand contact with British society—particularly those of class, gender, race, and age. A-F only. Pre: participation in London Semester Program.

IS 374 Pidgin and Creole Languages (3) Nature, history, structure, and geographic distribution of pidgins and creoles. Pre: LING 102 or consent. (Alt. years) (Cross-listed as LING 347)

IS 399 Directed Reading and Research (V) Directed reading and research. Repeatable 5 times.

IS 400 Ocean Internships and Research (V) Students carry out marine-related internships, practica, research projects or field experience on-or off-campus with faculty guidance. Repeatable one time. A-F only. Pre: minimum cum GPA of 2.5, junior or senior standing in any field of study and IS 100 or consent, project proposal.

IS 405 Africana Studies I: Africans in the New World (3) Comparative interdisciplinary exploration of black voices examining African civilization before slavery, the slave trade, slavery in the Americas (US, Caribbean, S. America) resistance, cultural carriers and hybridity in culture and identity. A-F only. Pre: junior standing or departmental approval.

IS 406 Africana Studies II: Africans in the New World (3) Comparative interdisciplinary exploration of black voices testifying to the political, historical and cultural experiences of the African diaspora; through an exploration of Black literature, biography, poetry, political, religious and philosophical texts, journalism, the blues, jazz and rap! A-F only. Pre: junior standing or departmental approval.

IS 407 Black Women Writers (3) Comparative interdisciplinary exploration of black women’s writing across the African diaspora, scientific, legal, historical, and philosophical texts, journalism, the blues, jazz and rap! A-F only. Pre: MIN 152 or consent, project proposal.

IS 410 The Humboldt Brothers’ Legacy (3) Life and thought of the two Humboldt brothers. Alexander (1769-1859) helped to lay the foundations
Key to symbols & abbreviations: see the first page of this section.
skills in Japanese were acquired informally. Emphasis on reading and writing through 301 level. Pre: placement test.

JPN 308 Special Japanese Reading and Writing (3) Continuation of 307. Pre: 307 or placement test.

JPN 315 Third-Year Japanese Aural Comprehension (3) Training in strategies for listening to various types of spoken material presented in narrations, interviews, new broadcasts, and lectures, etc. Pre: 302 or consent.

JPN 318 Oral Fluency Through Film (3) Training in oral communication and comprehension skills utilizing the spoken text and visual segments from Japanese film and television dramas. Pre: 301 or consent.

JPN 332 Advanced Japanese Reading and Writing (5) Web-based training in Japanese reading and writing to develop skills at the advanced level. Course activities combine independent work with communicative activities on the website. Ideal for in-service professionals seeking language development and maintenance. Repeatable one time. Pre: 301 (or concurrent) or consent.

JPN 350 Introduction to Japanese Linguistics (3) Introduction to major areas of linguistic description as applied to Japanese language. Pre: 302 or 305.


JPN 359 Third-Level Japanese Abroad (4) Continuation of 358. Pre: 301 or 358.


JPN 399 Directed Third-Level Reading (V) For those who need special assistance, e.g., reading texts in area of specialization or at a pace more rapid than those of standard courses. CR/NC only. Repeatable three times. Pre: consent.

JPN 401 Fourth-Year Japanese I (4) Continuation of 302 and 305 emphasizing all four skills. Transition to longer and more complex written and spoken Japanese. Meets 50 minutes, four times a week. Pre: 302, 305, 308, or placement test; or consent.

JPN 402 Fourth-Year Japanese II (4) Continuation of 401. Transition to longer and more complex written and spoken Japanese. Meets 50 minutes, four times a week. Pre: 401 or placement test; or consent.

JPN 405 Fourth-Level Japanese Reading: Accelerated (6) Consent of 401 and 402 covered in one semester. Meets two hours, three times a week. Pre: 302, 305, 308, or placement test.

JPN 407 (Alpha) Readings in Original Texts (3) (B) newspapers and magazines; (C) social sciences; (D) humanities; (E) modern literature. Pre: 402 or 405; or consent.

JPN 415 Japanese Aural Comprehension (3) Training in comprehension of spoken material presented in news broadcasts, documentary narrations, formal lectures, etc. Pre: 402 or 405; or consent. May be concurrent with 407.

JPN 420 Fourth-Level Spoken Japanese (3) Training in oral communication skills in varied social contexts. Pre: 402 or 405.

JPN 421 Japanese Composition (3) Writing skills refined through practice in various styles (essays, letters, etc.). Pre: 402 or 405; or consent.

JPN 423 Advanced Listening and Speaking (3) Training in listening and speaking for bilingual and other advanced learners. Emphasis on formal Japanese such as academic lectures, news, exchanges

in business settings, public speaking, etc. Pre: 421 or consent.


JPN 451 Structure of Japanese (3) Introduction to phonology, morphology, syntax, and semantics of modern colloquial Japanese. Pre: 402 or 405, and 350 or LING 320; or consent.

JPN 452 Introduction to Japanese Pedagogical Grammar (3) Introduction to teaching of basic Japanese grammatical patterns. Pre: 350 or LING 320, or 407; or consent.


JPN 461 Introduction to Classical Japanese (3) Basic classical Japanese grammar to develop reading skills. Pre: 407 or consent.

JPN 466 Readings in Classical Japanese (3) Introduction to major genres of prose and poetry. Repeatable one time with permission. Pre: 461 or consent. DL.

JPN 471 Okinawan Language and Culture I (3) The first of a series of two courses (JPN 471-472) focusing on the language, heritage, and folk culture of Okinawa. Pre: 302, 305, 308, or consent. DH.

JPN 472 Okinawan Language and Culture II (3) The second of a series of two courses (JPN 471-472) focusing on Okinawan literature, language skills, heritage, and cultural understanding. Pre: 471 or consent. DL.

JPN 475 Introduction to Japanese Sociolinguistics (3) Application of general linguistics to social phenomena such as group identity, language and gender, dialects and intercultural communication. Pre: 350 and 370, or consent.

JPN 485 Advanced Readings in Modern Japanese Literature (3) Advanced course to foster speed, accuracy and attention to stylistic issues in modern Japanese literature. Pre: 407E and one of 407B, 407C, or 407D; or consent. DL.

JPN 486 Advanced Readings in Modern Japanese Contemporary Topics (3) Advanced course to foster speed, accuracy, and attention to content in reading modern discursive texts. Pre: two of 407B, 407C, 407D, or 407E; or consent. DH.


JPN 493 Project Work in Japanese (3) Enhances Japanese language skills through a field-based research project on a topic of the individual student’s choice. Interviews, surveys, observations, written materials and A/V-assisted oral presentations. Repeatable one time. Pre: 402 or 405 or equivalent, or consent.

JPN 495 (Alpha) Internship Program (3) Analysis of intercultural communication processes under faculty supervision in an organization serving native speakers of Japanese. (B) business, repeatable one time; (C) travel industry internship. Repeatable one time. A-F only. Pre: 370 or consent for (C); 431 for (B).

JPN 499 Directed Fourth-Level Reading (V) For those who need special assistance, e.g., reading texts in area of specialization or at a pace more rapid than those of standard courses. Primarily for graduate students from other departments. CR/NC only. Repeatable three times. Pre: consent.

JPN 601 Japanese Phonology and Morphology (3) Introduction to the phonology and morphology of modern colloquial Japanese. Pre: 451 or consent.

JPN 602 Japanese Syntax and Semantics (3) Introduction to theories of syntax, sentence structure, parts of speech, constituency, grammatical relations and case marking, word order, passives, causatives, tense, aspect, and embeddings. Pre: 451 or consent.

JPN 604 Introduction to Japanese Language Pedagogy (3) Training in the identification and analysis of general problems in Japanese language learning, teaching, and testing by examining theoretical issues and conducting classroom research. Pre: 407 or equivalent, 451 and 605 (or concurrent); or consent.

JPN 605 Research Methodology in Japanese Linguistics and Language Teaching (3) Japanese-specific training in the formulation of testable hypotheses, in basic statistical and other evaluation techniques, and in the organization and presentation of ideas and data in paper, abstracts, etc. Pre: 407 or equivalent.

JPN 606 Japanese Sociolinguistics (3) Introduces theories of language use and provides training in the methodology and analysis of Japanese sociolinguistics. Pre: 407 and 475 or equivalent, and 605 (or concurrent); or consent.

JPN 610 (Alpha) Japanese Poetry (3) Historical survey of major poetic types. Repeatable one time with consent. (B) classical; (C) medieval and Edo; (D) modern. Pre: 466 or consent for (B) and (C); 485 or consent for (D).

JPN 611 (Alpha) Modern Japanese Literature (3) Representative literary works, emphasis on fiction. Repeatable one time with consent. (B) Meiji-Taisho (1868–1926); (C) Showa–Heisei (1926–present). Pre: 485 or consent.

JPN 612 Edo Literature (3) Critical reading and analysis; emphasis on prose. Repeatable one time with consent. Pre: 466 or consent.

JPN 613 Medieval Japanese Literature (3) Critical reading and analysis of Kamakura and Muromachi literature, emphasis on prose. Repeatable one time with consent. Pre: 466 or consent.

JPN 614 Classical Japanese Literature (3) Critical reading and analysis of Heian literature; emphasis on prose. Repeatable one time with consent. Pre: 466 or consent.

JPN 620 Practicum: Teaching Japanese Language (Alpha) (3) For graduate students who are planning to teach Japanese as a foreign language. Through lectures and discussions on language learning and teaching, and through observation and teaching of a Japanese language class, students will learn to make informed decisions about curriculum and instruction, and will develop instructional skills and practices for analyzing their teaching experiences. (B) beginning level Japanese instruction; (C) advanced level Japanese instruction. Repeatable one time per alpha. Pre: 604 or EALL 601, or consent. (Once a year for (B) and (C)).

JPN 626 Introduction to Japanese Manuscripts and Xylographs (3) Introduction to Classical Japanese writing system as found in the xylographs and manuscripts of the Heian and Kamakura periods; reading and analysis of the texts in original script. Repeatable one time. Pre: 461 or 466, or consent. (Alt. years).
JPN 631 History of the Japanese Language (3) Survey, theories of origin; related topics in linguistic methodology. Pre: 461 and 601, or consent.

JPN 632 Teaching Japanese as a Second Language (3) Practical overview of major problems; motivation; adult second language learning; communicative and linguistic competence; practical classroom techniques of teaching and testing. Pre: 604 and 605, or consent.

JPN 633 Advanced Japanese Sociolinguistics (3) Variations in language form and use depending on social factors. Pre: 601 or 602 (or concurrent), 605 and 606; or consent.

JPN 634 Advanced Japanese Syntax and Semantics (3) Theoretical problems in description of Japanese; contributions of Japanese linguistic study to syntactic theory. Pre: 602 or consent.

JPN 640 Themes in Japanese Literature (3) Intensive study of selected themes in Japanese literature, primarily in the modern period. Repeatable with consent. Pre: 485 or equivalent, or consent.

JPN 641 Traditional Literary Theory (3) Reading and analysis of major works of literary theory and criticism from the classical, medieval, and Edo periods. Pre: 466 or consent.

JPN 642 Kambun (3) Introduction to kambun [the Japanese manner of reading and writing Classical Chinese], with critical reading of kambun by Japanese authors. Pre: 461 or consent.

JPN 650 (Alpha) Topics in Japanese Linguistics (3) (C) Japanese/English contrastive analysis; (G) structure; (H) historical change; (K) history of Japanese language studies (Kokugo-gaku-shi); (M) morphophonemics; (P) pedagogy; (S) sociolinguistics. Pre: 601 and 602 for (C); 634 for (G); 631 for (H) and (K); 601 for (M); 632 for (P); 633 for (S).

JPN 699 Directed Research (V) CR/NC only. Pre: consent of chair.

JPN 710 (Alpha) Research Seminar in Japanese Literature (3) (M) modern; Pre: 611 (P) pre-modern; Pre: 612, 613, or 614.

JPN 730 (Alpha) Research Seminar in Japanese Linguistics (3) (C) Japanese/English contrastive analysis; (G) structure; (H) historical change; (K) history of Japanese language studies (Kokugo-gaku-shi); (M) morphophonemics; (P) pedagogy; (S) sociolinguistics. Pre: 451, or 601 and 602 for (C); 634 for (G); 631 for (H) and (K); 601 for (M); 632 for (P); 633 for (S).

JOURNALISM (JOUR)

College of Social Sciences

JOUR 150 The Media and Society (3) Communications media in theory and practice. Development, role, influence; rights, responsibilities, problems, issues, and trends. DS

JOUR 301 Fundamentals of Journalism (6) Theory and extensive practice in reporting, writing and editing news stories across multiple media platforms. Fall only.

JOUR 302 Journalism Tools and Platforms (6) Tools for contemporary newsgathering and technologies for presentation across multiple media platforms. Pre: 301 or departmental approval.

JOUR 307 Photojournalism (3) Production, selection, and use of digital photographs for publications. Storytelling activity and feature photography with digital cameras, worked up through Adobe Photoshop and InDesign programs. Students must have a digital camera/ Mac OS X advised. A-F only.

JOUR 316 Advanced Editing (3) Intensive training in editing, planning, and organizing stories and visual elements for publication; news judgment; managing projects. Pre: consent.

JOUR 325 Magazine Writing (3) Writing nonfiction articles for magazines, newspapers, and newsletters; preparing material for specific audience; marketing articles.

JOUR 327 Interpretive Journalism (3) Writing articles of news analysis, editorials, and critical reviews. Pre: consent.

JOUR 360 Journalism History and Trends (3) Development of the news media and trends that may affect the future of journalism. Pre: upper division standing. DS

JOUR 365 Media and the Law (3) Function of American legal system as it relates to news media. Legal, copyright, freedom of information, free press vs. fair trial, regulation of broadcasting. Pre: upper division standing or consent. (Cross-listed as COM 451) DS

JOUR 385 Practicum (1) Working on campus student or quasi-professional publications under professional and faculty supervision. CR/NC only. Repeatable up to three credits. Pre: consent.

JOUR 390 (Alpha) Journalism/Communications Workshops (V) Short-term intensive workshops in journalism and mass communication skills and projects. (B) workshop in new media; (C) workshop in reporting; (D) workshop in editing; (E) workshop in broadcast journalism; (F) workshop in public relations. Repeatable one time. Pre: COM 201 or consent. (Cross-listed as COM 390)

JOUR 401 Journalism Projects/Production (6) Intense problem-based application of skills and knowledge to production of a major journalism project across multiple media platforms. Pre: 302 or departmental approval. Fall only.

JOUR 402 Intellectual Foundations (6) Intellectual, historical, social and cultural contexts of contemporary journalism. Pre: 302 or departmental approval.

JOUR 407 Advanced Photojournalism (3) Computer experience in the creation, manipulation, and editing of color news, feature, sports, and documentary images. Study of the ethical and legal dimensions of electronic imaging. Pre: 307 or consent.

JOUR 425 Publication Layout and Design (3) Visual display concepts and procedures for newsletters, brochures, newspapers, magazines. Pre: upper division standing.

JOUR 460 Media Ethics (3) Ethics and social responsibility for media professionals. Application of ethical theories and principles to case studies and research projects. A-F only. Pre: any 300-level course in ACM, COM or JOUR and junior standing or consent. (Cross-listed as ACM 460 and COM 460)

JOUR 475 Global Communication (3) Problems and opportunities of communication in a variety of international contexts. Focus on commerce, diplomacy, and mass communication. Pre: COM 201 or consent. (Cross-listed as COM 475) DS

JOUR 485 Fieldwork (3) Internship in media or PR operations under professional and faculty supervision. Repeatable two times. CR/NC only. Pre: 302 and consent.

JOUR 499 Directed Research (V) Individual research projects. Pre: senior standing and consent of department chair.

KINESIOLOGY AND REHABILITATION SCIENCE (KRS)

College of Education

Students registering for 101-186, 323, 331-338, 371-374, and 487 will be required to complete a medical history form and a liability disclaimer form on the first day of instruction. All students taking 393, 394, 493, and 494 must be immunized for hepatitis B virus prior to admission in the class.

KRS 101 Physical Fitness (1) Conditioning exercises and activities to develop and maintain physical efficiency. Moror fitness tests administered to measure status and progress. Repeatable unlimited times, but credit earned one time only.

KRS 102 Aerobic Fitness: Beginning (1) Aerobic fitness improvement upon completion of course. Learning and practicing safe total body workout routines done to music. Developing an individual fitness program and recording progress in that program. Repeatable unlimited times, but credit earned one time only.

KRS 103 Swimming: Beginning (1) Adjusting to and immersing in water, floating, sculling; correcting arm stroke, leg kick, breathing techniques and their coordination. (Student to provide own swimming attire approved by instructor.) Repeatable unlimited times, but credit earned one time only.

KRS 104 Swimming: Intermediate (1) Perfecting and integrating basic strokes with added emphasis for distance and speed. (Student to provide own swimming attire approved by instructor.) Repeatable unlimited times, but credit earned one time only. Pre: 103 or consent.

KRS 105 Swimming: Advanced (1) Correct techniques used in competitive swimming, racing starts, correct turning techniques, long-distance swimming. (Student to provide own swimming attire approved by instructor.) Repeatable unlimited times, but credit earned one time only. Pre: 104 or consent.

KRS 106 SCUBA Diving: Beginning (1) Learning watemanship, equipment handling skills, and the knowledge to become safe divers. Additional costs for equipment, diver manual, dive tables, and certification fee. Repeatable unlimited times, but credit earned one time only.

KRS 107 Aqua-Aerobic Fitness (1) Combined lecture/lab-physical activity with emphasis on aerobic fitness improvement through total body aquatic workouts with music, and development of an individualized aquatics fitness program. Open to all students. Repeatable unlimited times, but credit earned one time only.

KRS 110 Golfl Beginning (1) Rules, etiquette, grip, stance, drive, normal iron shots, approach shots, putting. Repeatable unlimited times, but credit earned one time only.

KRS 111 Golf Intermediate (1) Corrective work on basic swing mechanics and rhythm; adjustments for bunker play, uphill lies, downhill lies, short game around and on the green; handicapping and match play competition. Repeatable unlimited times, but credit earned one time only. Pre: 110 and consent.

KRS 112 Golf: Advanced (1) Improving drive, fairway wood shots, long iron shots, control shots, trouble shots, putting. Course management, competitive strategy, problems in rules. Greens fees paid by students for play on courses. Repeatable unlimited times, but credit earned one time only. Pre: 111 and consent.

KRS 115 Bowling (1) Rules, etiquette, arm swing, approach, execution, scoring, spare pickups. Students pay charge for use of alley. Repeatable unlimited times, but credit earned one time only.

KRS 120 Badminton (1) Rules, etiquette, grip, forehand and backhand strokes, serving, smash,
drive, net play, offensive and defensive strategy; 
singles and doubles play. Repeatable unlimited times, 
but credit earned one time only.

KRS 123 Folk and National Dances (1) Popular
dances of various national groups, including square 
dances. Repeatable unlimited times, but credit 
earned one time only. DA

KRS 124 Dances of Hawai’i (1) Background and 
fundamentals of hula. Selected dances with and 
without instruments. Repeatable unlimited times, 
but credit earned one time only. DA

KRS 125 Dances of Hawai’i: Advanced (1) 
Advanced techniques in hula movements. Selected 
dances taught will be more complex, including work 
with instruments. Individual choreography will be 
emphasized. Repeatable unlimited times, but credit 
earned one time only. Pre: 124 or consent. DA

KRS 126 Social Dance: Ballroom (1) Social dances 
including fox trot, waltz, swing, and other popular 
dances. Basic steps, rhythm pattern, styling, and 
variations are taught. Social etiquette is stressed. 
Repeatable unlimited times, but credit earned one 
time only. DA

KRS 127 Social Dances Latin (1) Social dances 
of a Latin flavor including cha-cha, tango, samba, and 
others. Basic steps, rhythm pattern, styling, and 
variations are taught. Social etiquette is stressed. 
Repeatable unlimited times, but credit earned one 
time only. DA

KRS 130 Tennis Beginning (1) Rules, etiquette, 
grip, forehand and backhand strokes, serving, volley-
ing; singles and doubles play. Repeatable unlimited 
times, but credit earned one time only. Pre: 130 or consent.

KRS 131 Tennis Intermediate (1) Corrective work 
in three basic strokes and in net play; the lob, drop 
shot, overhead smash, and half-volley; applying spin 
in basic strokes; basic strategy in singles and doubles 
play. Repeatable unlimited times, but credit earned one 
time only. Pre: 131 or consent.

KRS 132 Tennis Advanced (1) Improving upon 
the strokes introduced in 130 and 131; advanced 
competitive strategy; problems in rules; officiating; 
elements of tournament play. Repeatable unlimited 
times, but credit earned one time only. Pre: 130 or consent.

KRS 135 Volleyball Beginning (1) Combined 
lecture-lab-physical activity with emphasis on 
beginner skills, game strategy, and competitive 
work relative to serving, passing, spiking, digging, 
blocking, and offensive and defensive strategy. Open to all students. Repeatable 
unlimited times, but credit earned one time only. Pre: 131 or consent.

KRS 136 Volleyball: Intermediate (1) Combined 
lecture-lab-physical activity with emphasis on 
 improving skills and knowledge through practice and 
cognitive activities relative to serving, passing, spik-
ing, digging, blocking, and offensive and defensive 
strategy. Open to all students. Repeatable unlimited 
times, but credit earned one time only. Pre: 135 or consent.

KRS 137 Basketball (1) Rules, passing, shooting, 
dribbling, rebounding, individual defensive and 
offensive maneuvers; team offense and defense. 
Repeatable unlimited times, but credit earned one 
time only.

KRS 151 Adapted and Prescribed Exercises (1) 
Small group and individual guidance and instruction 
for students recommended by student health service. 
Repeatable unlimited times, but credit earned one 
time only. Pre: consent.

KRS 152 Weight Training (1) Kinesiology of 
lifting and weight training; various types of exercises 
and methods of training with resistance. Repeatable 
unlimited times, but credit earned one time only.

KRS 153 Olympic and Power Lifting (1) Exercise 
technique and prescription with an emphasis on 
aerobic exercise. Explores advanced periodization 
models and their utilization, mastery of Olympic 
lifts, and plyometric programs. Repeatable unlimited 
times, but credit earned one time only. Pre: 152 or consent.

KRS 154 Tumbling and Rebound Tumbling (1) 
Single and combination stunts on tumbling mats and 
trampoline, balancing stunts; techniques of spotting; 
safety procedures. Repeatable unlimited times, 
but credit earned one time only.

KRS 156 Heavy Apparatus (1) Single and 
combination stunts on side horse, horizontal bar, 
parallel bars, still rings; techniques of spotting; safety 
procedures. Repeatable unlimited times, but credit 
earned one time only.

KRS 160 Judo (1) Rules, etiquette, method of 
falling and breaking the fall, simple throws and their 
counters, simple holds and breaking of such holds, 
randori. (Student to provide own gi.) Repeatable 
unlimited times, but credit earned one time only.

KRS 161 Aikido (1) Rules, etiquette, basic rolls, 
simple holds and the breaking of such holds, specific 
physical conditioning exercises. (Student to provide own gi.) Repeatable 
unlimited times, but credit earned one time only.

KRS 164 Karate: Beginning (1) Rules, etiquette, 
basic stances, blocks, thrusts, kicks, ippon kumite, 
and selected kata. (Student to provide own gi.) 
Repeatable unlimited times, but credit earned one 
time only. Pre: 164.

KRS 165 Karate: Intermediate (1) Emphasis on 
 improving the basic techniques (stances, punches, 
kicks, forms, and sparring); introduction to combi-
nation techniques. (Student to provide own gi.) 
Repeatable unlimited times, but credit earned one 
time only. Pre: 165.

KRS 166 Wrestling: Beginning (1) Rules: funda-
mental defensive and offensive maneuvers and com-
petitive strategy; i.e., takedowns, reversals, escapes, 
and pinning combinations; conditioning exercises. 
Repeatable unlimited times, but credit earned one 
time only.

KRS 170 Yoga: Beginning (1) Experiencing yoga 
and its effects on body, mind and consciousness 
of individual. Encompasses exercise, breathing 
technique, meditation, practice in concentration, and 
yogic postures. Repeatable unlimited 
times, but credit earned one time only.

KRS 171 Yoga: Intermediate (1) Corrective work 
and improvement of basic techniques. Exercise sets 
and combinations designed to develop endurance, 
flexibility, muscle and nerve strength, meditation, 
and deep relaxation technique. Repeatable unlimited 
times, but credit earned one time only. Pre: 170 or consent.

KRS 173 Water Polo (1) Fundamentals of basic 
water polo skills, namely, ball handling, passing, 
shooting, dribbling plus a brief introduction into 
beginning techniques of individual offense and defense. 
Repeatable unlimited times, but credit earned one 
time only. Pre: 104 or consent. (Student to provide 
own swimming attire approved by instructor.)

KRS 181 Sport Proficiency I: Invasion (3) 
Knowledge, skill development, position, and strategy 
of various invasion type games/sports. The core 
sports, basketball, soccer, speedball, flag football, 
and ultimate frisbee, are introduced within a tactical 
framework. Prerequisite: for KRS majors. Repeatable one 
time. A-F only.

KRS 182 Sport Proficiency II: Net, Field and 
Target (3) Knowledge, skill development, position, 
and strategy of net, field and target sports. The 
core sports, volleyball, tennis, softball, and golf are 
introduced within a tactical framework. Primarily for 
KRS majors. A-F only.

KRS 185 Floor Exercise Gymnastics (1) An entry-
level course designed to develop students’ knowledge 
of men’s and women’s gymnastics floor exercise 
routines, including injury prevention, skill progres-
sion, spotting techniques, and routine choreogra-
phy. Primarily for KRS majors; others admitted on 
space-available basis. Repeatable unlimited times, but 
credit earned one time only.

KRS 186 Track and Field for Physical Education 
(1) Knowledge, skills, and rules of various track and 
field events. Organization of track meets and strategy 
in competition. Primarily for KRS majors; others ad-
mitted on space-available basis. Repeatable unlimited 
times, but credit earned one time only.

KRS 187 Softball (1) Combined lecture-lab-
physical activity with emphasis on basic skills, rules, 
etiquette, offensive and defensive strategies, position 
play, and game situations. Open to all students. 
Repeatable unlimited times, but credit earned one 
time only.

KRS 201 School Health Problems: Elementary 
(2) Responsibilities of elementary school teacher in 
recognizing and meeting pupils’ needs, emphasizing 
teacher’s role in health instruction, health services, 
school health policies. Repeatable one time.

KRS 202 School Health Problems: Secondary 
(2) Responsibilities of secondary school teacher in recog-

KRS 204 Programming and Leadership (3) 
Theories and philosophies in recreation: history; 
contemporary issues; roles in modern society; 
relationship to health, physical education, and 
exercise science.

KRS 210 Leisure Education and Life Skills 
Development (2) Using sports as a learning tool, 
students will gain awareness, acquire knowledge and 
develop skills to enhance their classroom, athletic 
and personal performance. Class topics include 
current issues and strategies for maintaining healthy 
lifestyles. Repeatable one time.

KRS 220 Safety and Risk Management (2) 
Understanding the fundamental principles and techniques 
of safety and accident-prevention programming 
emphasizing school, home, public places, on the job, 
and motor vehicle situations. Repeatable one time.

KRS 230 Outdoor Recreation Management 
(3) Objectives and values of outdoor recreation; char-
acteristics and determinants of programs; planning, 
organization, leadership, and facilities for recreational 
uses of natural environments. Repeatable one time. 
Pre: 208 or consent.

KRS 232 School Health Problems: Elementary 
(2) Objectives of school health program, emphasizing 
scope and sequence of health instruction; critical examina-
tion of health curriculum guides from various states. 
Repeatable one time. Pre: 208 or consent.

KRS 241 Health Education Curriculum (2) 
A-F only.

KRS 249 Programming and Leadership (3) 
Factors in planning and leading recreation programs; 
characteristics and responsibilities of leadership in 
relation to nature, scope, and resources of a variety of 
programs. Repeatable one time. Pre: 208 or consent.
KRS 270 Introduction to Physical Education
(4) Introduction to foundational knowledge related to the concepts and skills necessary for effective teaching, management, and assessment in physical education, K-12. Develops the foundation necessary for later coursework. Required field experience. Repeatable one time. A-F only. Pre: consent. Fall only.

KRS 271 Evaluation in Health Education (2)
Processes involved in assessing school health education program with emphasis on measurement criteria and instruments, interpretation of data and content, organization and conduct of evaluation program. Repeatable one time. Pre: 201 or 202. NF

KRS 302 School's Role in Community Health (2)
Functional interrelationships between school and other community health organizations in solving school-community health problems. Repeatable one time. Pre: consent.

KRS 310 Coaching of Football (2)
Theory and strategy of offensive and defensive football coaching. Emphasis on coaching philosophy, selecting and developing an offense and defense, organizing practices, special situations, scouting, and training and conditioning. Repeatable one time. Pre: consent.

KRS 311 Coaching of Basketball (2)
Theory and strategy of offensive and defensive basketball coaching. Emphasis on coaching philosophy, selecting and developing an offense and defense, organizing practices, special situations, scouting, and training and conditioning. Repeatable one time. Pre: consent.

KRS 312 Coaching of Baseball (2)
Theory and strategy of offensive and defensive baseball coaching. Emphasis on coaching philosophy, selecting and developing an offense and defense, organizing practices, special situations, scouting, and training and conditioning. Repeatable one time. Pre: consent.

KRS 313 Coaching of Volleyball (2)
Theory and strategy of offensive and defensive volleyball coaching. Emphasis on coaching philosophy, selecting and developing an offense and defense, organizing practices, special situations, scouting, and training and conditioning. Repeatable one time. Pre: consent.

KRS 323 Music and Rhythm in Physical Education (3)
Use of music in physical education programming (K-12). Experiences in creating rhythm, selection of appropriate music for specific activities as expressive or creative movement, movement exploration, rhythmic gymnastics, and dancing. A variety of strategies for teaching dance will be shared. A-F only. Pre: consent. Spring only.

KRS 329 Managing Recreation Services (3)
Administrative experience in the planning and operation of organized recreation program services in the public and private sectors. Repeatable one time. Pre: 208 or consent.

KRS 331 Water Safety Training (3)
Theory and methods of advanced lifesaving and water safety leading to American Red Cross Water Safety Instructor (WSI) certification. Repeatable one time. Pre: 104 or consent. (Student to provide own swim attire approved by the instructor.)

KRS 332 Emergency Care and First Aid Training (3)
Practicum in training of persons to become qualified in emergency care knowledge, basic life support, and first aid skills. First Aid and CPR certificates may be earned. DB


KRS 335 Coaching of Track and Field (2)
Techniques and rules of sprints, distance runs, relays, hurdles, long jump, high jump, pole vault, shot put, discus, and javelin throws; conduct of track and field meets; specific conditioning and training problems. Repeatable one time.

KRS 336 Coaching of Swimming (2)

KRS 337 Fieldwork in Recreation I (5)
Initial supervised leadership experience in recreational agencies. One hour per week in class discussion sessions. For recreation majors only. Repeatable one time. Pre: consent of recreation advisor.

KRS 339 Special Recreation (3)
Special recreation services as a professional field. Overview of special recreation services. Emphasis on recreation services for special populations. Repeatable one time. Pre: 208 or consent.

KRS 353 Structural Kinesiology (3)
Gross human anatomy, emphasizing identification and description of parts of the musculoskeletal system; selected applications to motor activity. Primarily for physical education majors, but open to others with consent. A-F only. Pre: PHYL 141/141L and PHYL 142 (or concurrent/142L (or concurrent)). DB

KRS 354 Exercise and Sport Physiology (3)
Emphasis on physiological responses to exercises and physical training as related to strength, muscular endurance, cardio-respiratory endurance. Primarily for KRS majors, but open to others with consent. A-F only. Pre: 353 (or concurrent). PHYL 141/141L and PHYL 142/142L; or consent. DB

KRS 354L Exercise and Sport Physiology Lab (2)
Laboratory section to accompany KRS 354. Emphasis will be hands-on data collection and analysis of the physiological responses to exercise and physical training as related to muscular strength, power and endurance. Primarily for KRS majors, but open to others with consent. A-F only. Pre: PHYL 141/141L and PHYL 142/142L, or consent. Fall only.

KRS 371 Teaching Techniques II: Invasion (3)
Teaching techniques and methods of selective invasion activities. These include core sports, basketball, soccer, volleyball, tennis, softball, and golf, that emphasize the tactical approach in field experiences. Repeatable up to 6 credits. Primarily for KRS majors. A-F only. Pre: 182 and consent.

KRS 372 Teaching Techniques II: Net, Field and Target (3)
Teaching techniques and methods of selective net, field and target activities. These core sports, volleyball, tennis, softball, and golf, that emphasize the tactical approach in net, field and court experiences. Repeatable up to 6 credits. Primarily for KRS majors. A-F only. Pre: 182 and consent.

KRS 384 Drugs and Society (3)
Introduction to psychoactive drugs and their effects; drug regulations; education and rehabilitation programs; psycho-social variables related to the decisions to use/reuse drugs. Pre: consent.

KRS 385 Physical Fitness for Physical Education Teachers (1)
Diagnosis and prescription for basic health and fitness problems, scientific principles of training, guidelines for exercise; essentials of scientifically based individualized physical fitness program. Repeatable one time.

KRS 388 Field Work in Strength and Conditioning I (1)
Supervised practicum in strength training and conditioning. Students will be exposed to the theory and practice of designing and implementing both strength/power, and general conditioning programs. Repeatable one time. Pre: 152, 353, 354 and 489 (or concurrent); or consent.

KRS 393 AT Practicum I (3)
Introductory-level supervised experiences within the profession of athletic training. This practicum is required for the KRS entry-level Graduate Athletic Training Education Program. A-F only.

KRS 394 AT Practicum II (3)
Introductory-level supervised experiences within the profession of athletic training. This practicum is required for the KRS entry-level Graduate Athletic Training Education Program. A-F only.

KRS 395 Personal Health and Wellness (3)
Scientifically based information will be presented to help the student make decisions and take responsibility for his/her own health and health-related behaviors. The student will develop a personal, daily physical activity/exercise program, in which he/she will participate and be monitored. Repeatable one time. DB

KRS 399 Directed Reading (V)
Individual problems. Limited to senior majors in health education, physical education, athletic training, or recreation with a minimum GPA of 2.75 in major field. Repeatable unlimited times.

KRS 401 Current Trends in Health (3)
Identification and analysis of the most important health issues for individuals, families, schools, and communities. Focus on cultural and local considerations in health promotion and education. Repeatable one time. A-F only. Pre: 201 or 202, or consent. Recommended: 302.

KRS 402 Teaching Practicum in Physical Education (2)
Field experience in teaching physical education activities program in private and public schools; techniques in leadership; selection of activities and program evaluation for K-12 licensure. Repeatable one time. Pre: 270 and 371-372, or consent. Co-requisite: 404.

KRS 403 Guidance and Classroom Management (3)
Guidance principles applied to classroom management for teachers. Pre: consent.

KRS 404 K-12 Teaching Methods in Physical Education (3)
Methods and materials in teaching physical education activities program; techniques in leadership; selection of activities and program evaluation for K-12 licensure. Repeatable one time. A-F only. Majors only. Co-requisite: 402.

KRS 405 Teaching Residency (9)
Full-time supervised experience in elementary and secondary school level. Repeatable one time. A-F only. Pre: 402 and 404; requirements for registration listed under "student teaching"; or consent. Co-requisite: 406.

KRS 406 Seminar in Teaching Residency (3)
Analysis and resolutions of issues in teaching residency; teaching strategies and techniques; curriculum planning; professional growth and development. Repeatable one time. A-F only. Pre: 402 and 404, or consent.

KRS 415 Prevent/Care of Athletic Injuries (3)
An examination of the most recent practices and procedures in the prevention and care of athletic and sports injuries. Observational field experiences in athletic training will be required. A-F only. Pre: PHYL 301/301L, PHYL 302/302L; or consent. DB

KRS 416 Fundamentals of Ergonomics (3)
Introduction to ergonomics principles and their application in understanding and prevention of Muscular Skeletal Disorders encountered in the working environment including introduction to legal aspects of ergonomics. Pre: 463 or consent.

KRS 419 Administration in Athletic Training, Exercise Science, Allied Health (3) An examination of organization and administration in Athletic Training, Allied Health and Exercise Science. Content includes leadership and motivation models, legal
liability, ethical considerations and management strategies for all aspects of Health Care Administration. A-F only. Pre: 415 or consent.

KRS 420 Lower Extremity Assessment (3) An examination of the pathology of injuries to the lower extremities and their care and treatment designed for Athletic Training, Exercise Science and Allied Health professionals. A-F only. Pre: 353, 415, PHYL 141, PHYL 142; or consent.

KRS 421 Upper Extremity Assessment (3) An examination of the pathology of injuries to the upper extremities and their care and treatment designed for Athletic Training, Exercise Science and Allied Health professionals. A-F only. Pre: 353, 415, 420, PHYL 141, PHYL 142; or consent.

KRS 423 Curriculum and Supervision (3) Effective program development, planning, and supervision, including issues in legal liability and administration of all aspects of physical education programming in grades K–12. Repeatable one time. A-F only. Pre: 270 or consent. Majors only.


KRS 429 Evaluating and Marketing Leisure Services (3) Basic methods in marketing, planning, evaluating programs and problem-solving methods, survey research, data analysis, and report generation for park, recreation, and tourism systems. A-F only. Pre: 208 and 329 (or concurrent), or consent.

KRS 432 Emergency Care for the Professional Rescuer (3) Combined lecture-lab on advanced emergency care for injuries and illnesses and includes certification in emergency care. A-F only. Pre: 300.

KRS 434 Coaching Athletics (3) Combined lecture-lab with emphasis on scientific principles, theory and practice, and professional qualities of the coach. A-F only. Pre: consent.

KRS 437 Camp Resources and Planning (2) (1 Lec., 1 Lab) Lecture-lab for camp counselors and camp leadership. Plan and evaluate camp experiences for children and youth, including those with disabilities. Includes field trips. Pre: 331 and 332, or consent.

KRS 438 Practicum in Camping (V) Supervised leadership at a camp setting with children and youth, including those with disabilities. Day or residential camps. One full week camping for each credit hour. Maximum of four credit hours. Pre: 437 (or concurrent) or consent.

KRS 443 Physical Education for Students with Disabilities (4) (3 Lec, 1 1-hr. Lab) Basics of various disabilities, assessment of physical and motor skill status, individualized activity programs for children and youth with disabilities, and the relationship between school/community/agencies providing special programs and services. Required field experience. Repeatable one time. A-F only. Pre: 270 or 353, or consent. (Cross-listed as SPED 443)

KRS 463 Sport Biomechanics (3) Concepts and scientific principles essential to efficient human movement; proper application of biomechanical principles to fundamental movements and selected complex motor skills. A-F only. Pre: 353, MATH 140 and PHYS 100; or consent. DB

KRS 470 Fitness for Life (3) Physical education teachers will gain knowledge, skills, and experience necessary to plan, implement, and evaluate Fitness for Life curriculum (grades 6-12). Information is guided by national and state standards. Includes lecture, lab, and teaching experiences. Repeatable one time. A-F only. Pre: admission into the College of Education or consent. (Once a year)

KRS 471 K-12 Teaching Methods in Health (3) Experiences in developing standards-based, interactive learning opportunities to teach personal and social skills for health in schools. Focus on National and Hawai'i Health Content Standards, priority risk/asset areas, the Coordinated School Health Program, and responsibilities and competencies. A-F only. Pre: 395, admission to the College of Education; or consent.

KRS 473 Ethnic Groups and Education in Hawai'i (3) Identity and learning within and among Hawai'i's ethnic groups; study of prejudice and inter-ethnic hostilities as these impact education and teaching. Pre: consent. DS

KRS 474 Introduction to Tests and Measurement in Physical Education (3) Basic measurement theories, statistical tools and tests used in the measurement and evaluation of physical education knowledge, motor performance, and physical fitness factors. Repeatable one time.

KRS 476 Motor Learning and Performance (3) Basic consideration is kinesthesia, motor ability, fatigue, developmental factors, practice, motivation in relation to motor learning and human performance. Repeatable one time. Pre: EDEP 311 or consent.

KRS 477 Motor Development and Learning (4) (3 Lec, 1 1-hr. Lab) Motor development through the life spans with emphasis on fundamental principles and patterns. Factors affecting motor learning, performance as a function of memory, practice, knowledge of performance, and motivation are incorporated. Required field experience. Repeatable one time. A-F only.

KRS 478 Adapted PE in Early Childhood (3) Concepts of developmentally appropriate practice, importance of movement in overall development, and design of physical education for young children with and without disabilities. Planning physical education for this age group is also included. Repeatable one time. Pre: 443, 477 (or concurrent); or consent.

KRS 480 Nutrition in Exercise and Sport (3) Effects of physiological and biochemical changes in the body in response to exercise on nutrition. Emphasis on physiologic and biochemical basis for nutrition recommendations to enhance exercise participation and optimize athletic performance. (Cross-listed as FSHN 480) DB

KRS 481 Introduction to Research in KRS (3) Research methods in the study of physical activity, types of research designs and techniques used, and reporting research results. Repeatable one time.

KRS 482 Commercial Recreation (3) Overview of leisure services and trends in commercial, private and employee recreation, and resort and recreational tourism. The social, economic, and environmental significance is examined. Pre: 208, 329, and 428; or consent.

KRS 483 Recreation Planning and Maintenance (3) Social, economic, and environmental factors of recreation and tourism development. Emphasis on methods, processes, citizen participation, design issues/ regulations, and land use. Repeatable one time. Pre: 208, 238, and 329; or consent.

KRS 484 Promoting a Drug-Free LifeStyle (3) Stan on drug free lifestyles and spread the message to promote a tobacco-, alcohol-, and drug-free lifestyle, K-12. Research-based curriculum and strategies to promote personal and social responsibility for health. Repeatable one time. A-F only. Pre: 202 and 395 (or concurrent).


KRS 487 Exercise Assessment and Conditioning Lab (4) Designed to provide knowledge of laboratory techniques and procedures for aerobic and anaerobic fitness assessment, interpretation of aerobic and anaerobic testing results, and individual exercise program/precription. A-F only. Pre: 480 and EDEP 429, or consent. Fall only.

KRS 488 Field Work in Strength and Conditioning II (4) Application of various testing procedures on human subjects with different physical capacities. Repeatable one time. Pre: 152, 353, 354, 388, 463 and 487; or consent.

KRS 489 Program Design in Strength Training and Conditioning (3) Designed to provide theoretical and practical experience in supervision of a strength training center. Content includes program design, exercise techniques, organization, testing, evaluation, methods of strength development, facility design and special populations. A-F only. Pre: 152, 153, 353 and 354; or consent. Fall only.

KRS 493 Athletic Training Practicum III (3) Advanced-level supervised experiences within the profession of athletic training. This practicum is a requirement for entry to the KRS Master’s Athletic Training Program. A-F only. Pre: 393, 394, 415, 420, 493; or consent.

KRS 494 Athletic Training Practicum IV (3) (5 2-hr Practicum) Advanced-level supervised experiences within the profession of athletic training. This practicum is a requirement for entry to the KRS Master’s Athletic Training Program. A-F only. Pre: 393, 394, 415, 419, 420, 493; or consent.

KRS 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C or department consent.

KRS 600 Counseling in the Schools (3) History, philosophy, and organization of school counseling programs. Counselor role and functions, legal and ethical issues, contemporary issues, current methodology and resources. (Meets EdD common core elective.) Pre: consent.

KRS 601 Physiology of Exercise (4) Physiologic bases of modern physical training methods and sports science. Lectures, laboratory, and field experience. Repeatable one time. Pre: PHYL 301 and PHYL 302, or PHYL 401. (Cross-listed as PHYL 601)

KRS 602 Metabolic Analysis (3) Theory and practice of metabolic analysis of human performance examining each of the power systems used in energy production during exercise and how to use this information to prescribe exercise programs. Pre: 480, 601, graduate standing; or consent.

KRS 603 Advanced Fitness Assessment and Exercise Prescription (3) Provides knowledge of field and laboratory techniques and procedures for aerobic and anaerobic fitness assessment, interpretation of testing results and individual exercise program/precription techniques. Repeatable one time. Pre: 203; or consent.

KRS 604 Body Composition and Weight Management (3) Analysis of the theory and practice used in the assessment of body composition and human physique. Includes strategies for implementing change in body composition. Pre: 480, 601, graduate standing; or consent.

KRS 605 Human Growth and Development—Life Span (3) Life span perspective on psychological, social, and physical development. Major theories and related research on human development; applications in policy planning and service delivery in counseling. Pre: consent.

KRS 607 Scientific Principles of Physical Conditioning (3) Application of physiological principles to physical conditioning. Pre: consent.

KRS 608 Athletic Training, Clinical Experience I (3) (1 Sem, 5-hr Practicum) Practicum in which the student will perform the duties and responsibilities of an athletic training student. This practicum must be completed during the first semester post admission into the program. A-F only. Pre: 393, 394, 415, 419, 420, 421, 493, 494, PHYL 301/301L, PHYL 302/302L; or consent.

KRS 609 Athletic Training, Clinical Experience II (3) (1 Sem, 5-hr Practicum) Practicum in which the student will perform the duties and responsibilities of an athletic training student. Pre: 393, 394, 415, 419, 420, 421, 493, 494, PHYL 301/301L, PHYL 302/302L; or consent.

KRS 610 Athletic Training, Clinical Experience III (3) (1 Sem, 5-hr Practicum) Cullminating practicum in which the student will perform the duties and responsibilities of a second year graduate athletic training student. A practical field experience in athletic training will be required. Pre: 393, 394, 415, 419, 420, 421, 493, 494, PHYL 301/301L, PHYL 302/302L; or consent.

KRS 611 Athletic Training, Clinical Experience IV (3) (1 Sem, 5-hr Practicum) Cullminating practicum in which the student will perform the duties and responsibilities of a second year graduate athletic training student. A practical field experience in athletic training will be required. Pre: 393, 394, 415, 419, 420, 421, 493, 494, PHYL 301/301L, PHYL 302/302L; or consent.

KRS 612 Athletic Training Research Practicum (V) (1 Sem, 5-hr Practicum) Advanced clinical practicum in which the BOC certified or certification-eligible graduate student experiences an enhancement of athletic training and refinement of athletic training skills. Repeatable up to 10 credits. A-F only. Pre: consent.

KRS 614 Athletic Training Research Practicum (V) (1 Sem, 5-hr Practicum) Advanced research practicum in which the BOC certified or certification-eligible graduate student deepens their understanding and enhances their critical thinking abilities in order to contribute to the advancement of the discipline and the athletic training profession. Repeatable up to 12 credits. A-F only. Pre: consent.

KRS 615 Head, Neck, and Spine Evaluation (3) (2 Lec, 1-3-hr Lab) Examination, care, and treatment of neurological/neuromuscular conditions and pathology of the head, neck, spine, and trunk. Pre: 393, 394, 415, 419, 420, 421, 493, 494, PHYL 301/301L, PHYL 302/302L; or consent.

KRS 616 Advanced Orthopedic Assessment (3) (2 Lec, 1-3-hr Lab) Advanced knowledge and skills of athletic training as they are specifically applied to the understanding, treatment, and rehabilitation of sport-related injury/illness, legal, ethical concerns, sports psychology, pharmacology, drug abuse, health issues) Pre: ANAT 604 or consent.

KRS 617 Therapeutic Modalities (4) (3 Lec, 1-3-hr Lab) The physiology principles and operational procedures and operational procedures of contemporary Therapeutic modalities as they relate to the care and treatment of athletic injuries. Pre: 393, 394, 415, 419, 420, 421, 493, 494, PHYL 301/301L, PHYL 302/302L; or consent.

KRS 618 Therapeutic Exercise (4) (3 Lec, 1-3-hr Lab) Concepts and principles of comprehensive rehabilitation programs (e.g. therapeutic goals and objectives, exercise selection, methods of evaluation and recording progress, progression and return to competition criteria, and the physiological effects of tissue trauma and inactivity). Pre: 393, 394, 415, 419, 420, 421, 493, 494, PHYL 301/301L, PHYL 302/302L; or consent.


KRS 620 Seminar in Athletic Training (1) Designed to provide the student with analytical skills and practical experience relative to research as it applies to sports related injuries. Repeatable unlimited times. Pre: 393, 394, 415, 419, 420, 421, 493, 494, PHYL 301/301L, PHYL 302/302L; or consent.

KRS 621 Advanced Therapeutic Exercise (3) Advanced concepts and evidence-based principles of rehabilitation programs. Enhancement of previously learned therapeutic exercise techniques and integration of therapeutic modalities and therapeutic exercise, including objective and functional goal setting and evaluation for appropriate progression and expedited return to activity. KRS majors only. Pre: 617 and 618 or basic therapeutic exercise and therapeutic modalities courses, or consent.

KRS 623 Administration in Kinesiology (3) Current problems, trends, and strategies in the administration of physical education, recreation, sport and fitness programs in school and non-school settings. Repeatable one time. Pre: 425 (or concurrent). (Cross-listed as EDEA 623)

KRS 625 Introduction to Community Counseling (3) Philosophy, organization, and function of community service programs and institutions as related to professional work in counseling. Pre: consent.

KRS 626 Introduction to Practicum (3) Pre-practicum training for supervised experiences in school, community, and human service organizations. Focus on the counseling relationship. Includes a specialty observation-participation field experience. Pre: consent.

KRS 627 Career Development and Vocational Counseling (3) Theory and practice in career development and vocational counseling with individuals and groups; utilization of educational, vocational, and social resources in career counseling. Pre: consent.

KRS 628 Planning and Design of Counseling Research (3) Interests of counseling research principles in field settings; construction and formulation of research proposals. Pre: 626 or 683, and consent.

KRS 629 Counseling Group Theory and Practice (3) Theories and techniques of group counseling and guidance as preparation for practicum and internship. Applications in school, college, rehabilitation, and community settings. Pre: 626 or 683, and 606, and consent.

KRS 630 Tests and Inventories in Guidance (3) Tests and inventories for the assessment of aptitudes, achievement, and interests. Applications to educational, instructional, and career guidance. Pre: consent.

KRS 631 Problems of School Adjustment (3) Principles of behavior affecting interpersonal relationships in school with emphasis on application to actual situations. Pre: consent.

KRS 632 Theory and Assessment of Intelligences (3) Theory and supervised experience in individual intelligence testing, psychological report writing; psychometric and social issues in intelligence testing. Pre: 630 and consent.

KRS 633 Crisis Intervention (3) Professional concerns about crisis intervention in athletic training.repeatable unlimited times. Pre: consent. (Cross-listed as SPED 634)

KRS 635 Elementary Physical Education (3) Content and pedagogy for teaching preschool/elementary physical education. Students will learn appropriate content and pedagogy for learners in elementary school. Bit teaching and field experiences are included. A-F only. Pre: consent. (Once a year)

KRS 636 Theory and Assessment of Personality (3) Personality testing; practice in administration and use of personality assessment; examination of psychometric and social issues. Pre: 630 and consent.

KRS 637 Cross-Cultural Counseling (3) Significance of cultural factors in counseling relationships, delivery of counseling services in multicultural settings with attention to Hawai‘i’s Emphasis on process of cultural learning and implications for counselor roles and functions. Pre: consent.

KRS 640 Seminar in Physical Education (3) Trends, research, and problems in instruction in physical education. Repeatable one time. Pre: 643 and teaching experience; or consent.

KRS 641 Seminar: Exercise/Sport Science and Leisure (3) Review of selected current literature in exercise/sport science and leisure studies. Practice of presentation in group setting. Pre: 673 (or concurrent) or EDCS 632 (or concurrent).

KRS 643 Public School Curriculum for Physical Education (3) Detailed examination of contents of appropriate curriculum for physical education at elementary and middle school levels. Pre: consent. Pre: consent.

KRS 646 American College Student (3) Study of psychosocial characteristics of American college students and college environment, from viewpoint of student personnel work. Pre: consent. (Cross-listed as EDEA 646)


KRS 654 Child Abuse: Counseling Practice and Theory (3) Historical aspects and contemporary sociocultural, and political attitudes and practices. Treatment and prevention theories and techniques in context of developmental psychology. Pre: consent.

KRS 660 Marriage, Family, and Child Counseling (3) Theory/practice of marriage, family, and child counseling, including major model in clinical practice; supervised counseling project by each student. Liability insurance required. Pre: 606, 626, 629; or consent.

KRS 663 Biomechanics of Human Motion (3) Principles of motion as applied to sport and physical rehabilitation. Introduction to the technology used in the analysis of motion. Repeatable unlimited times. Pre: consent.
KRS 670 Consultation: Theory and Practice (3) Consultation in educational, business, health, community, and human services agencies. Prereq: 606, and 626 or 683, and 629, and consent.

KRS 673 Research Methods in KRS (3) The use of experimental designs/models in physical education research with emphasis on understanding the concepts, applications, and interpretations of statistical analysis. Prereq: EDCS 632 or EDEP 601 (or concurrent).

KRS 674 Assessment in Physical Activity (3) Overview of assessment purposes, types, practices and procedures used in physical education for those with disabilities. Frequently used motor assessments and practices, in collection of data will be specifically addressed. Prereq: 634 (or concurrent) or consent. Spring only.

KRS 675 Transdisciplinary Approach to Teaching the Motor Domain (3) Highlights a transdisciplinary approach for effectively teaching students with disabilities in the motor domain. Important characteristics and components of this approach will be shared. Strategies for its implementation will also be addressed. Prereq: 405, 406, 640, SPED 444 (or equivalent); or consent.

KRS 680 Principles and Practice of Rehabilitation Counseling (3) Principles, practices of rehabilitation counseling; review of history and influence of legislation on vocational rehabilitation; current issues, developments, with emphasis on local situation. Prereq: consent.

KRS 681 Medical and Psychosocial Aspects of Disability (3) Functional implications of chronic illnesses and disabilities on psychological, social and vocational areas of an individuals life. Case studies and preparatory discussion and help students to apply theoretical information into practical everyday context. Prereq: 680 and consent.

KRS 683 Case Management in Rehabilitation (3) Knowledge and skills required in case and caseload management in public as well as private sector rehabilitation sites. Emphasis on professional/client relationship, interviewing process, decision-making, goal-setting, case management, time management, and other tasks. Prereq: 680 and consent.


KRS 685 Ethical Issues for the Helping Profession (3) Developing ethical reasoning capabilities for resolution of ethical dilemmas likely to be encountered in counseling, psychology, and specialty practices (e.g., community, rehabilitation, school, mental health, alcohol and substance abuse, marriage and family counseling, and the like). A-F only. Prereq: 606 and consent.

KRS 686 Vocational Evaluation and Assessment in Rehabilitation (3) Theory, process, and techniques of vocational evaluation and assessment. Assessment methods and processes as they relate to vocational choice and adjustment of special groups. Prereq: 681 and consent.

KRS 687 Assistive Technology in Rehabilitation Counseling (3) Study of application of assistive technologies to enhance the lives of people with disabilities. Case studies provide the vehicle in guiding students to evaluate the role of assistive technologies in reality of actual situations. Special emphasis on the importance of using a consumer-centered approach in providing assistive technology services. A-F only. Prereq: 681 and consent.


KRS 699 Directed Reading and/or Research (V) Individual reading and/or research. Repeatable unlimited times. Prereq: consent of instructor and department chair.

KRS 700 Thesis Research (V) Research for master's thesis. Repeatable unlimited times.

KRS 703 (Alpha) Practicum in Counseling (V) Supervised experience (150 clock hours per semester) in counseling and guidance activities, which includes a weekly class meeting: (E) elementary; (H) secondary; (C) community service; (R) rehabilitation; (U) college. Each alpha is repeatable three times. Prereq: 626 or 683, and consent.


KRS 733 (Alpha) Internship I (V) Supervised post-practicum experience (300 clock hours per semester) in counseling and guidance activities, which includes a weekly class meeting: (E) elementary; (H) secondary; (C) community service; (R) rehabilitation; (U) college. Each alpha is repeatable three times. Prereq: 703 and consent.

KRS 734 (Alpha) Internship II (V) Supervised post-internship experience (300 clock hours per semester) in counseling and guidance activities, which includes a weekly class meeting: (E) elementary; (H) secondary; (C) community service; (R) rehabilitation; (U) college. Each alpha is repeatable three times. A-F only. Prereq: 733 and consent.

KRS 741 Seminar in School Counseling (3) In-depth study of professional concerns in school counseling, A-F only. Prereq: 703 (E or H) and consent.

KRS 751 Seminar in Community Counseling (3) In-depth study of professional concerns in community counseling, A-F only. Prereq: 703 (C) and consent.

KRS 761 Seminar in College Counseling (3) In-depth study of professional concerns in college counseling, A-F only. Prereq: 703 (U) and consent.

KRS 775 Doctoral Seminar and Research I in Kinesiology (3) Will expose the PhD student to the basic nature of behavioral and somatic science research. Learning experiences will consist of journal review, laboratory/field techniques, and subject or data collection as directed by faculty mentors. CR/NC only. KRS majors only. Prereq: consent.

KRS 776 Doctoral Seminar and Research II in Kinesiology (3) Provide the PhD student the opportunity to be involved in research, under the direction of the faculty mentor, as the assistant project director and as the project director for pilot studies. Student will gain experience in these roles with close supervision by the faculty mentor. CR/NC only. KRS majors only. Prereq: consent.

KRS 777 Doctoral Seminar and Research III in Kinesiology (3) Provide the PhD student the opportunity to assume the role of director of a research project under the supervision of the faculty mentor. The research project will represent a piece of the research of the faculty mentor. Responsibilities will be comparable to a project director of research funded by a research grant. CR/NC only. KRS majors only. Prereq: consent.

KRS 778 Doctoral Seminar IV in Kinesiology (3) Designed to enable PhD students to gain a perspective of research activities in the course of both historically and philosophically, prepare them for the issues they may face in the real world, particularly higher education and help them initiate their dissertation. CR/NC only. KRS majors only. Prereq: consent.

KRS 781 Seminar in Rehabilitation Counseling (V) In-depth study of professional concerns in rehabilitation counseling. A-F only. Prereq: 703 (R) and consent.

Korean (KOR)

College of Languages, Literatures and Literature

All students taking language courses in this program for the first time must take a regularly scheduled placement test; those with no background must come to the Department of East Asian Languages and Literatures for a brief interview. A grade of C or better in the prerequisite course is required for continuation.

KOR 101 Elementary Korean (4) Listening, speaking, reading, writing, grammar. Meets one hour, four times a week, plus lab work. Prereq: consent. HSL

KOR 102 Elementary Korean (4) Continuation of 101. Prereq: 101 or consent. HSL

KOR 111 Elementary Conversational Korean I (3) Development of basic skills (listening, speaking and grammar) of spoken Korean, with application to some familiar everyday topics. Prereq: consent. HSL

KOR 112 Elementary Conversational Korean II (3) Continuation of 111. Prereq: 110 or consent. HSL

KOR 201 Intermediate Korean (4) Continuation of 101 and 102. Meets one hour, four times a week, plus lab work. Prereq: 102 or placement test; or consent. NJ HSL

KOR 202 Intermediate Korean (4) Continuation of 201. Prereq: 201 or placement test; or consent. NJ HSL

KOR 211 Intermediate Conversational Korean I (3) Further development of listening and speaking skills. The student is expected to be able to comprehend and produce speech at the paragraph level. Prereq: 102 or 112, or consent. NJ HSL

KOR 212 Intermediate Conversational Korean II (3) Continuation of 211. Prereq: 210 or 211, or consent. NJ HSL

KOR 301 Third-Level Korean (3) Continuation of 201 and 202. Major emphasis on comprehension of modern written Korean. Chinese characters. Prereq: 202 or consent. Fall only.

KOR 302 Third-Level Korean (3) Continuation of 301. Prereq: 301 or consent. Spring only.

KOR 307 Readings in Chinese Characters I (3) Training intermediate and advanced learners of Korean to master the reading, writing and usage of some 250 basic Chinese characters as they are used in a wide variety of Korean reading texts. Prereq: 202 or consent.

KOR 308 Readings in Chinese Characters II (3) Continuation of 307, covering an additional 250 basic Chinese characters. Prereq: 307 or consent.

KOR 380 Korean Proficiency Through TV Drama (3) Students who try to elevate proficiency level to Advanced by challenging themselves to understand culturally and situationally-rich text, i.e., Korean drama. Increasing Korean proficiency within context is the main objective of the course. Prereq: 302 or consent.

KOR 399 Directed Third-Level Reading (V) For those who need special assistance, e.g., in reading texts in area of specialization or at a pace more rapid than those of standard courses. Offered if staff available. CR/NC only. Repeatable three times. Prereq: consent.

KOR 401 Fourth-Level Korean (3) Continuation of 302. Prereq: 302 or consent. Fall only.

KOR 402 Fourth-Level Korean (3) Continuation of 401. Prereq: 401 or consent. Spring only.

KOR 403 High-Advanced Korean I (3) Continuation of 402. Emphasis on highest level of listening, reading, writing, and speaking. Prereq: 402 or consent.
Students also undergo a one-week training module in modern structural and stylistic techniques; writing on designated themes. Repeatable one time. Pre: 402 or consent.

KOR 421 Media Analysis in Korean I (3) Focus on analyzing, comparing, and evaluating current media materials in South Korea to develop professional language skills and to deepen knowledge and understanding of contemporary Korean society. A-F only. Pre: 402, or consent. (Once a year)

KOR 422 Media Analysis in Korean II (3) Focus on analyzing, comparing, and evaluating current media materials in South Korea and North Korea to develop professional language skills and to deepen knowledge and understanding of contemporary North Korea. A-F only. Pre: diagnostic assessment (equivalent to ILR 2), 421, or consent. (Once a year)

KOR 425 Selected Readings in Korean (3) Selected readings in various disciplines. Repeatable one time with consent. Pre: 402 or consent.

KOR 451 Structure of Korean (3) Introduction to phonology, morphology, and history. Pre: 302 or consent.

KOR 452 Structure of Korean (3) Introduction to syntax and semantics. Pre: 302 or consent.

KOR 470 Language and Culture of Korea (3) Relation of Korean language to literature, history, philosophy, social structure, values, and interpersonal relationships; social and regional varieties. Pre: 402 or consent. DH

KOR 480 Korean Oral Proficiency Through Film (3) Designed to increase proficiency level from advanced to superior and to deepen cultural awareness. Pre: 402 or consent.

KOR 485 (Alpha) Korean for Career Professionals (V) Combined diagnostic and functional command of various discourse-level features in Korean in domain of (B) economics; (C) political science; (D) computer science; (E) engineering; (F) travel industry management; (G) business; (H) law; (I) medicine; (J) nursing and public health, and (K) others. Repeatable one time. Pre: 402 or diagnostic assessment procedures or consent.

KOR 486 (Alpha) Korean for Academic Purposes (V) Content taught in Korean by professional school Korean faculty and flagship instructor in domain of (B) economics; (C) political science; (D) computer science; (E) engineering; (F) travel industry management; (G) business; (H) law; (I) medicine; (J) nursing and public health, and (K) others. Repeatable one time. Pre: 485 or diagnostic assessment procedures or consent.

KOR 493 Introduction to Traditional Korean Literature (3) Critical readings from earliest times and presentations that emphasize genre, style, and context. Pre: 402 or consent. DL

KOR 494 Introduction to Modern Korean Literature (3) Critical readings of 20th-century materials and presentations that emphasize context and the development of style. Pre: 402 or consent. DL

KOR 495 Internship Program (V) Supervised internship with Korean professional hosts on O‘ahu. Students will also attend an on-campus preparatory and follow-up language class. A-F only. Pre: 486, diagnostic assessment procedures; or consent.

KOR 496 Korean Abroad (V) Supervised internship with Korean professional hosts in Korea. Students also undergo a one-week training module designed to prepare them to maximize the benefits of the overseas internship. Repeatable up to 9 credits. CR/NC only. Pre: 495, diagnostic assessment procedures; or consent.

KOR 499 Directed Fourth-Level Reading (V) For those who need special assistance, e.g., in reading texts in area of specialization or at a pace more rapid than those of standard courses. Primarily for graduate students from other departments. CR/NC only. Repeatable three times. Pre: consent of department chair.

KOR 613 (Alpha) Korean Verse (3) Intensive and analytical reading of selected works of Korean lyric and didactic verse (e.g., hyangga, changgwa, hanjob, stjë, baeta, free form) (I) traditional. Pre: 494 or consent for (M), 493 or consent for (T).

KOR 614 (Alpha) Korean Narrative (3) Intensive and analytical reading of selected works of Korean narrative (e.g., myth, p‘an‘am, shaman song, essay, biography, fiction): (M) modern; (T) traditional. Pre: 494 or consent for (M), 493 or consent for (T).

KOR 615 (Alpha) Korean Drama (3) Intensive and analytical reading of selected materials in Korean performance arts (e.g., spectacle, farce, play, mas- dance, staged narratives, theatrical drama): (M) modern; (T) traditional. Pre: 494 or consent for (M), 493 or consent for (T).

KOR 621 Media Research in Korean (3) Focuses on analyzing, and evaluating media data for research in areas of student specializations. Students are required to write short analysis papers and a final research paper. Pre: diagnostic assessment (equivalent to ILR Level 2) or consent. (Once a year)

KOR 622 Comparative Studies of Contemporary South and North Korean Language (3) Comparing and analyzing language data to investigate language heterogeneity problems, its causes, and importance of comparative studies in NR/SK language differences; differences in language policy, grammar, and vocabulary, pronunciation, and discourse style. Pre: 621 or consent. (Once a year)

KOR 623 Interdisciplinary Research in Korean (3) Combined lecture-discussion on preparing students to be able to conduct interdisciplinary research in Korean. Require advanced-level proficiency. Pre: diagnostic assessment (equivalent to ILR Level 2) or consent. (Once a year)

KOR 624 (Alpha) Analysis of Korean Academic Discourse (3) Co-taught by Korean faculty of professional schools and Korean instructor in domain of (B) economics; (C) political science; (D) computer science; (E) travel industry management; (G) business; (H) law; (I) medicine; (J) nursing and public health, and (K) others. Exclusively in Korean. Repeatable one time. Pre: 485 or 623 or consent. (Once a year)

KOR 631 History and Dialects of Korean Language (3) Survey of various hypotheses on the genetic relationship and evolution of Korean from the 15th century to the present; Korean dialects. Pre: 451 and 452, or consent.


KOR 633 Korean Syntax and Semantics (3) Review of theoretical problems in Korean syntax and semantics; different approaches; and contributions of Korean linguistic study to syntactic and semantic theory. Pre: 452 or consent.

KOR 634 Korean Sociolinguistics (3) Variations in form and use depending on sociocultural factors. Role of language in politics, mass media, group identity, bilingualism, and intercultural communication. Pre: 470 or consent.

KOR 635 Pedagogy of Teaching Korean as a Second Language (3) Identification and analysis of major problems in Korean language teaching, testing, and materials development by examining theoretical issues and conducting classroom research; practical techniques of teaching and testing skills in listening, reading, speaking, writing, and culture. Pre: 451 and 452; or consent.

KOR 640 Literary Translation of Korean (3) The art and craft of translating traditional and modern Korean literary works into English. Repeatable four times. Pre: 493 and 494, or consent.

KOR 645 Research in Korean Language Acquisition (3) Integrating the conceptual aspects of statistical and scientific analysis of human language behavior into the study of Korean as a foreign language. Pre: 635 or consent.

KOR 652 Major Authors in Modern Korean Literature (3) Advanced study of major Korean fiction writers from the 1910s to the present with emphasis on critical reading of their lives and writings to arrive at informed appraisal of their contribution to modern Korean literature. Repeatable one time. Pre: 494 or consent.

KOR 655 Practicum: Teaching Korean as a Second Language (3) Designed for graduate students pursuing Korean language teaching, while developing practical teaching skills through class observation, action research and discussion under supervision. Pre: 635 or consent.

KOR 664 Topics and Issues in Modern Korean Literature (3) Intensive study of selected topics and issues in modern/contemporary Korean fiction, focusing on texts that problematize critical socio-cultural issues in the evolving contexts of modern Korean intellectual history. Repeatable one time. Pre: 494 or consent.

KOR 699 Directed Research (V) CR/NC only. Pre: consent.

KOR 720 Research Seminar in Korean Literature (3) Advanced study of an author, school, period, genre, or problem leading to a research paper. Repeatable one time. Pre: consent.

KOR 730 Research Seminar in Korean Language (3) Advanced study in history and dialects, phonology and morphology, exegesis, and semantics, sociolinguistics, or pedagogy, leading to a research paper. Repeatable one time. Pre: consent.

Languages and Literatures of Europe and the Americas (LEA)

College of Languages, Linguistics and Literature

Courses given in English do not require knowledge of a foreign language. None of the courses count toward requirements for any undergraduate major in the department. Many, like the literature courses, may count toward the University’s humanities requirement. A grade of C- or better in the prerequisite courses is required for continuation.

CLASSICS

LEA 122 Greek and Roman Mythology (3) Principal myths of Greek and Roman literature. DL

LEA 123 Greek and Latin Elements in English (3) Important roots, prefixes, and suffixes for building a literary vocabulary.

LEA 124 Greek and Latin Elements in Scientific Terminology (3) Important roots, prefixes, and suffixes for building a scientific vocabulary.

LEA 227 Introduction to Greek Literature (3) Major writers: emphasis on Homer, drama, and philosophy. DL

LEA 228 Introduction to Roman Literature (3) Major writers: emphasis on Vergil, satire, and novel. DL
FRENCH
LLEA 237 French Film (3) Study of French film history and technique. A-F only. Pre: freshman standing. DH

LLEA 264 French Culture for Americans (3) Study of the shared cultural and historical foundations of France and the U.S. both past and present. A-F only. Pre: ACE student. DH

LLEA 335 French Literature Since 1800 (3) Rapid reading in translation; lectures, discussions, reports. Pre: junior standing or one course in French language or literature. DL

LLEA 336 African Literature (3) Explorations of the distinct perception between literature and film as artistic genres as well as study of major works of literature in respect to the present, from the Middle Ages through the 20th century. Pre: sophomore standing or consent. DL

LLEA 339 French Literature as Film (3) Exploration of the distinction between literature and film as artistic genres as well as study of major works of literature in respect to the present, from the Middle Ages through the 20th century. Pre: sophomore standing or consent. DL

LLEA 340 German Literature (3) Readings in translation from dramatic works of Lessing, Goethe, Schiller. Philosopher and aesthetic views of leading writers of the Enlightenment, Storm and Stress, and classical periods. DL

ITALIAN
LLEA 236 Italian Film (3) Study of Italian film history and technique. A-F only. DH

LLEA 334 Italian Literature as Film (3) Exploration of the distinction between literature and film as artistic genres as well as study of major works of literature in respect to the present, from the Middle Ages through the 20th-century. A-F only. Pre: sophomore standing or consent. DL

RUSSIAN
LLEA 350 Russian Short Story (3) Origin and development (19th and 20th century); periods, themes, styles, and major authors. Pre: sophomore standing or consent. DL

LLEA 351 19th-Century Russian Literature (3) Survey in English of major writers from Pushkin through Chekhov; lectures, discussions, short papers. Pre: sophomore standing or consent. DL

LLEA 352 Russian Literature 1900–1950 (3) Survey in English of major Russian writers from 1900–1950. Pre: sophomore standing or consent. DL

LLEA 353 20th-Century Russian Arts and Culture (3) Aspects of culture (literature, film, theater, music, arts, etc.) in 20th-century Russian society. Pre: sophomore standing or consent. DH

LLEA 354 Russian Literature Today (3) Survey in English of contemporary authors and their works for perspective of reality and poetic representation. Pre: sophomore standing or consent. DL

LLEA 355 Russian Film (3) A study of Russian film from the 1920’s to the present. Pre: sophomore standing or consent. DH

SPANISH
LLEA 350 (Alpha) Studies in Culture (3) Politics of culture and representation. Will consider issues, traditions, movements, texts, and cultural icons for their significance for national and regional identity formation, intercultural relations and global flows of images, people, and capital. (B) Latin America; (C) Iberian Peninsula. Repeatable one time. Pre: sophomore or consent. DH

LLEA 351 Spanish Literature in Translation (3) Reading and discussion of classic works of Spanish literature. Pre: sophomore standing or consent. DH

LLEA 352 Latin American Literature (3) Reading and discussion of classic works of Latin American literature. Pre: sophomore standing or consent. DH

LLEA 363 U.S. Latino Culture and Literature (3) The culture and history of U.S. Latinos through an analysis of their literature and art and their sociopolitical relationship to the U.S. mainstream culture. Pre: sophomore standing or consent. DH

LLEA 365 Spanish Film (3) A chronological survey of films from Spain, from the silent era to the present. Conceptually, a cultural history of Spain in the 20th century, as seen through films. Pre: sophomore standing or consent. DH

LLEA 366 Latin American Film (3) A chronological survey of films from Latin America, from the silent era to the present. Conceptually, a cultural history of Latin America in the 20th century, as seen through films. Pre: sophomore standing or consent. DH

GENERAL AND GRADUATE COURSES
LLEA 270 Freaks and Monsters (3) Monsters, freaks and otherness in literature, film, history and medicine. Suitable for non-major literatures. Pre: sophomore standing or consent. DH

LLEA 345 Survey of World Cinema (3) Conceptually, a cultural and historical survey of films from Latin America, from the Silent Era to the present. Pre: sophomore standing or consent. DH

LLEA 360 (Alpha) History of World Cinema (3) Study of French film as a reflection of the 20th century’s social, cultural, civilization. Not applicable to language requirement. (Section 1 taught in Hawaiian. Pre: HAW 202 or consent. Sections 2 taught in English.) DL

LLEA 372 (Alpha) Indigenous Peoples of Latin America (3) Survey of the history and culture of the indigenous peoples of Latin America through a study of their literature, texts and practices. (B) Mesoamerica; (C) The Andes. Repeatable one time in different alphas. (Cross-listed as ANTH 372 (Alpha)) DH

LLEA 376 (Alpha) History of World Cinema (3) Film as a reflection of the 20th century’s social, cultural and political upheavals: (B) World Cinema (1890s to 1950s); (C) World Cinema (1960s to present). Pre: sophomore standing or consent. DH

LLEA 380 Studies in Culture: Portugal and Brazil (3) Surveys the cultures of the Portuguese-speaking world from pre-Lusitanian to modern times, including connections with Africa, Asia, the U.S., and Hawai‘i. Pre: sophomore standing or consent. DH

LLEA 390 Teaching Practicum in Large Lecture Courses (1) Supervised undergraduate teaching practicum in large-lecture LLEA courses. Repeatable two times. CR/NC only. Pre: completion of course in which practicum will be done and consent of instructor, no waiver.

LLEA 468 Colonial Latin American History (3) Pre-Columbian civilizations: Spanish and Portuguese colonization; political, economic, social and religious evolution to 1810; independence. Pre: 360 or consent. (Cross-listed as HIST 478) DH

LLEA 470 Freaks and Monsters 2: The Ethics of Otherness (3) An interdisciplinary examination of corporeal Otherness. Unusual real and fictional bod-

natural history and ethnology. Discussion of the moral, medical, philosophical and aesthetic dilemmas of spectacular difference. Pre: 270 or consent. DH

LLEA 471 (Alpha) Fantasy and the Fantastic (3) Cross-cultural study of fantasy and the fantastic in short stories, fairy tales, films and novels from Europe and the Americas in English translation. Discussion of illusion, identity, time, the future; the bizarre and major concepts in fantasy literature. (B) fairies, devils and fantasy; (C) the fantastic, the strange and science fiction. Repeatable one time in different alphas. Pre: 270 or consent. DL

LLEA 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

LLEA 630 Seminar in Research Methods (3) Study of basic research methods and tools, including technology. Print and electronic source materials. Information literacy. A-F only. Pre: graduate standing or consent.

LLEA 671 Western Literature and Cultures in the Pacific (3) Impact of and reaction to western writings and cultural influences in the Pacific as represented in texts from the 16th century to the present. Pre: graduate standing or consent.

LLEA 680 (Alpha) Topics in Literature (3) Study in English of a topic, period, or genre; aesthetic considerations common to European literatures: (B) the modern novel; (C) European literature as a path to self-knowledge; (D) Middle Ages; (E) introduction to literary theory. MA candidates in European languages read works in their major in the original. Pre: graduate standing or consent of department chair.

LLEA 681 (Alpha) Topics in Language (3) Study in English of topics, periods, etc., in the languages taught in the department: (B) comparison of Romance languages; (C) interpersonal communication; (D) social perspectives. Repeatable. A-F only. Pre: graduate standing or consent.

LLEA 682 Masterpieces of Medieval Welsh Literature (3) Key prose and poetry underlying the Arthurian tradition in Europe. Language instruction leading to reading knowledge of medieval Welsh. Pre: consent.

LLEA 683 Hispanic Cultural Studies (3) Critical overview of contemporary theories on Hispanic culture. Issues of identity such as mestizaje, hybridity, and pluralism will be discussed from a hermeneutic perspective. A-F only. Pre: consent.

LLEA 699 Directed Research (V) Pre: consent of department chair.

LLEA 700 Thesis Research (V) Pre: permission of department chair.

LLEA 700 Thesis Research (V) LANGUAGE COURSES

LLEA 199 Directed Language Study (V) Study in European languages not taught regularly, depending on demand and staff. Pre: consent of department chair.

LLEA 399 Directed Reading (V) Pre: limited to senior majors with a minimum cumulative GPA of 2.7 or a minimum GPA of 3.0 in major, and consent of department chair.

LLEA 499 Directed Reading and Research (V) Independent study of approved reading and research with faculty supervision. Repeatable two times. A-F only. Pre: consent and departmental approval.
Languages, Linguistics, and Literature (LLL)

LLL 150 Literature and Social Change (3) Study of works produced in Africa, the Americas, Asia, Europe, and Oceania from prehistory to the present, showing how the spoken and the written word reflect and effect social change. A-F only. FGC

LLL 451 Learning Communities Online and Practical Aspects of Teaching (1) Online course for pre- or in-service teachers of world languages. Topics include online learning environments, creating online communities, curriculum and lesson planning, and assessment. Maximum enrollment of 20. Not open to those who have taken 455. A-F only.

LLL 452 Social Aspects of Learning and Technology in the Classroom (1) Online course for pre- or in-service teachers of world languages. Topics include processes of language teaching and learning, learner characteristics and technology in the classroom. Maximum enrollment of 20. Not open to those who have taken LLL 455. Pre: 451 (or concurrent). A-F only.

LLL 453 Second Language Acquisition Theory and Methods (1) Online course for pre- or in-service teachers of world languages. Topics include terminology of language teaching and learning and overview of different approaches. Maximum enrollment of 20. Not open to those who have taken 455. Pre: 451 (or concurrent). A-F only.

LLL 455 Second Language Learning and Teaching Methodology (3) Online course for pre- or in-service teachers of world languages. Combines content from 451, 452 and 453. Maximum enrollment of 20. Not open to those who have taken 451, 452 or 453. A-F only.

Latin (LATN)

College of Languages, Linguistics and Literature

A grade of C- or better in the prerequisite courses is required for continuation.

LATN 101 Elementary Latin (3) Grammar and vocabulary, with reading of simple Latin. HSL

LATN 102 Elementary Latin (3) Continuation of 101. Pre: 101. HSL

LATN 201 Intermediate Latin (3) Development of reading and translation skills. Emphasis on prose. Pre: 102 or equivalent. H/ HSL

LATN 202 Intermediate Latin (3) Continuation of 201: emphasis on poetry. Pre: 201. H/ HSL

LATN 303 Roman Historians (3) Selections from Caesar, Sallust, and others. Pre: 201 and 202, or consent. DL

LATN 304 Roman Epic (3) Selections from Virgil, Ovid, and others. Pre: 201 and 202, or consent. DL

LATN 325 Roman Philosophy (3) Selections from Lucretius, Cicero, and Seneca. Pre: 201 and 202, or consent. DL

LATN 332 Roman Drama (3) Selections from Plautus, Terence, and Seneca. Pre: 201 and 202, or consent. DL

LATN 333 Roman Lyric (3) Selections from Catullus, Horace, and others. Pre: 201 and 202, or consent. DL

LATN 338 Roman Novel (3) Selections from Petronius and Apuleius. Pre: 201 and 202, or consent. DL

LATN 345 Roman Satire (3) Selections from Horace and Juvenal. Pre: 201 and 202, or consent. DL

LATN 490 Seminar in Roman Studies (3) Study of an author or phase in Roman studies. Repeatable unlimited times with consent. Pre: any two 300-level LATN courses, or consent.

Law (LAW)

School of Law

LAW 501 Organizing for Social Change (V) Examines conditions that lead people to become active, self-governing agents. Covered are strategies and tactics of organizers, history of social change movements, anti-subordination theories of justice and organizing case studies. Repeatable up to four credits. A-F only. (Once a year)

LAW 504 Legal Practice I (V) Legal practice is the first part of a comprehensive performance program that trains students to practice law, read and write legal analysis and scholarship, and reach their maximum potential as a legal thinker and writer.

LAW 505 Legal Practice II (V) Appellate brief writing and oral advocacy. Repeatable up to 3 credits. Pre: 504.


LAW 508 Negotiation and Alternative Dispute Resolution (V) Lawyers negotiate settlements in almost all their cases. This class presents a “hands-on,” skill-building approach to the newest ideas, as well as centuries-old techniques, about the skills lawyers will use most often in their private practice—negotiation. The class also examines the rapidly developing field of alternative dispute resolution (ADR), including mediation, facilitation, arbitration, and court-annexed ADR. (Cross-listed as EEE 614)

LAW 509 Contracts I (V) Law of private agreements. Explores the evolution and application of common law doctrines, and, where applicable, relevant provisions of the Uniform Commercial Code. Examines the bases of promissory liability, contract formation, mutual assent, defenses to enforcement, excuses, remedies and damages, and the rights and interests of third parties. Attention will be paid throughout the course to the role of contracts in a market society and the conflicting interests of certainty, freedom of contract and fairness.

LAW 510 Contracts II (V) Continuation of 509. Pre: 509.

LAW 511 Professional Responsibility (V) Introductory consideration of selected topics relating to functions, structural characteristics and current approaches. Maximum enrollment of 20. Not open to those who have taken 509. Pre: 501 (or concurrent). A-F only.

LAW 516 Civil Procedure I (V) The course presents a “hands-on,” practical approach to the analysis, development and resolution of substantive disputes. A-F only. Pre: consent.

LAW 518 Civil Procedure II (V) The class also examines the rapidly developing field of alternative dispute resolution (ADR), including mediation, facilitation, arbitration, and court-annexed ADR. (Cross-listed as EEE 614)

LAW 526 Group Directed Study (V) Designed for maximum flexibility, this course allows a professor to work with a small number of students on a reading/discussion project of mutual interest. Repeatable four times. A-F only. Pre: consent.

LAW 530 Second-Year Seminar (V) Seminar required for spring semester of all second-year law students. Substantial paper required. Topics announced in previous fall semester. Placement by lottery.

LAW 531 Business Associations (V) After a brief survey of agency, partnerships, and other forms of business organization, the course will cover the fundamentals of corporations, and securities regulation, including disregarding the corporate entity, management and control of closely held corporations, merger, liability under the federal securities laws, takeovers, public registration, exemptions, and derivative suits.

LAW 532 Health Law (V) Introduction to medical jurisprudence, medical malpractice, informed consent, health care decisions, medical ethics, the health care industry, managed care, financing health care, and the role of government in health care.

LAW 533 Constitutional Law I (V) Introduction to judicial function in constitutional cases, jurisdiction of the U.S. Supreme Court, and discretionary barriers to judicial review.

LAW 534 Constitutional Law II (V) Advanced course in constitutional law with special emphasis on rights secured by the First, Fifth, and Fourteenth Amendments to the Constitution of the U.S. Pre: 533.

LAW 535 Intellectual Property (V) A study of the law relating to property rights resulting from intellectual effort, including patents, copyright, trademarks, and trade secrets. While the course attempts to provide a unified background in theory and policy for all fields of intellectual property, it emphasizes areas of importance to the general practitioner. Accordingly, the doctrines and policies of the patent system are studied primarily for the light they shed upon the nature of intellectual property protection as a whole and upon the interaction between federal and state law.

Key to symbols & abbreviations: see the first page of this section.
LAW 538 Conflict of Laws (V) Problems respecting the law applicable in transactions or to relationships with elements in more than one state.

LAW 539 Remedies (V) Examines both practice aspects and theoretical underpinnings of equitable remedies. Frequently, compensatory damages cannot adequately protect clients or provide them with the relief they need. Topics include temporary retrain- ing orders, preliminary and permanent injunc- tions, restitution and unjust enrichment, specific performance, and equitable defenses such as unclean hands, laches, and estoppel. Practice issues concern- ing appeal, jury trials, and the relationship of equity to law are also explored.

LAW 541 Criminal Procedure (V) Issues of free press and fair trial, illegal search and seizure, arrest and confession, speedy trial, double jeopardy are covered through student interactions as defense or prosecution attorneys and as judges.

LAW 542 Advanced Civil Procedure (V) Addresses various aspects of complex litigation and recent critic- ism of the civil litigation system itself. Theoretical in emphasis. Developed from two directions: (1) a study jurisprudential material concerning adver- sal dispute resolution, the substance/procedure dichotomy and value-identification; and (2) in-depth analysis of procedural aspects of complex cases with special focus on new procedural rules aimed at reduct- ing waste and delay.

LAW 543 Evidence (V) “Objection, your Honor!” This course examines the rules of evidence that gov- ern trials in both federal and Hawai’i courts and will focus on such topics as hearsay, witness examination, impeachment, physical and demonstrative evidence, expert testimony, writings, relevance, judicial notice, and presumptions.

LAW 544 Race, Culture, and Law (V) U.S. cases and legal theory emphasizing law in the social con- struction of racial categories, shifts in race-based anti- discrimination law, and the interaction of culture and law in judicial decision-making.

LAW 545 Licensing Intellectual Property (V) Theory and practice of the law relating to the trans- fer of ownership. Issues relating to patents and other intangibles are examined together with end user license agreements and the structure and negotiation of upstream licens- ing mechanisms. Repeatable up to three credits. Pre: 553 or departmental approval. (Once a year)

LAW 547 Gender and Law (V) Will apply legal analytic skills to materials showing the ways in which Angl- o-American concepts and systems are related to women and women’s roles, examining how so- ciety views women and women’s roles, and how that view affects the ultimate de jure and de facto legal status of women, comparing with other legal cultures in Asia, the Pacific, and Hawai’i where appropriate. Pre: 553.

LAW 548 Immigration Law (V) An introduction to U.S. Immigration and Nationality Law: a brief overview of historical development of immigration law; analysis of exclusion and deportation grounds and remedies; the study of both immigrant and nonimmigrant visa applications and petitions. Cur- rent law on asylum and refugee applications and U.S. citizenship and naturalization requirements.

LAW 549 Admiralty Law (V) Introduction to U.S. maritime law and admiralty jurisdiction emphasizing development of rules of maritime law and rights of seamen and maritime workers.

LAW 550 Corporate and Partnership Taxation (V) Examines tax aspects of formation, operation, reorganization, and liquidation of partnerships and corporations. Pre: 531, 567.

LAW 551 Estate and Gift Taxation (V) Students learn the basic rules of estate, gift, and generation- skipping taxation, plus popular tax-oriented estate planning strategies. Pre: 552 or consent. (Alt. years)

LAW 552 Trusts and Estates (V) Deals primarily with the disposition of family wealth including: the making of wills; the creation, enforcement, admin- istration, and termination of trusts; and intestate succession, including probate.

LAW 554 Secured Transactions (V) Introduction to Uniform Commercial Code, particularly Article 9— reducing risk of nonpayment by obtaining an interest in borrowers’ property.

LAW 555 (Alpha) Externship (V) Legal work for judges and attorney supervisors in public agencies, private law firms, and the legislature. (H) Hawai’i; (P) Pacific. CR/NC only. Pre: consent.

LAW 557 Negotiable Instruments, Payment Systems and Credit Instruments (V) A study of the Uniform Commercial Code provisions that deal with commercial paper (Article 3), bank collections and deposits (Article 4), funds transfers (Article 4A) and letters of credit (Article 5), as well as material on alternative payment systems, including credit cards, electronic fund transfers and related federal law.

LAW 558 Corporate Finance (V) Provides an un- derstanding of the basic financial concepts and tools for lawyers with transactional practices, preferred stock, common stock and convertible securities. Pre: 531 (or concurrent) or consent.

LAW 559 Labor Law 1 (V) Regulation of union-man- ger and labor-management relations under state and federal laws.

LAW 560 High Growth Entrepreneurship (V) An interdisciplinary (JD-MBA) course (1-3 credits) examining legal, business, and technology issues related to building high growth companies. Student teams develop company feasibility reports and skills necessary to advise or build high growth businesses. Recommended: 531. Law students only. (Once a year)

LAW 561 Administrative Law (V) Procedure and remedies for resolving controversies between citizens and government officials exercising administrative power.

LAW 562 Debtors’ and Creditors’ Rights (V) Bankruptcy laws and rules, laws of liens, receiver- ships. Pre: 554 or consent.

LAW 563 Trial Practice (V) Examination of sequential stages of pre-trial and trial practice in a problem setting. Topics include investigation, pleadings, motions, discovery, voir dire examination, opening statements, direct and cross examination, closing argument, selected evidentiary problems, post-trial motions, and appellate practice. Students engage in simulated exercises, and their work is critiqued. CR/NC only. Pre: 545 or consent.

LAW 564 Pre-Trial Litigation (V) Theory and practice of civil pre-trial litigation with focus on pleading, discovery, and pre-trial motions. CR/NC only.

LAW 565 Securities Regulation (V) An introduc- tion to American securities regulation and focuses on the registration and reporting process required of public companies as well as securities litigation. Repeatable three times. Recommended: 531.

LAW 566 Non-Profit Organizations Workshop (V) Examines the meaning, scope, and role of non- profit organizations in contemporary society, and focuses on selected non-tax laws and primary tax issues relevant to non-profits. Law students only. Recommended: 531 and 567. (Once a year)

LAW 567 Federal Income Taxation (V) Surveys the entire federal income tax system, with emphasis on those areas of greatest importance to non-tax law- yers. Students are expected to develop proficiencies in the use of the Internal Revenue Code and Treasury Regulations.

LAW 568 Family Law (V) Legal forms of—and responses to—formation, maintenance, and dissolu- tion of the family. Marriage, annulment, divorce, alimony, separation agreements, child custody and adoption, parentage.

LAW 569 Sales (V) In-depth study of Uniform Commercial Code, Article 2—domestic sales of goods, including warranties, manner, time and place of performance, buyers’ and sellers’ remedies for breach of contract, limitations of freedom of contract.

LAW 571 Federal Courts (V) An examination of the jurisdiction and law-making powers of the federal courts, standing issues, appellate jurisdiction of the Supreme Court, federal-question and diversity-of- citizenship jurisdiction of the federal district courts, immunities from suit in federal courts; doctrines by governmental entities and officers, intervention by federal courts in state proceedings, and choice of law in the federal courts. Particular emphasis on relevant Federal Rules of Civil Procedure. Pre: 533 (or concurrent).

LAW 572 International Protection of Human Rights (V) The growing body of international hu- man rights laws, including procedural law and role of non-governmental organizations.

LAW 573 Jurisprudence (V) Relationships between the concepts of law and morality with views of legal and moral philosophers.

LAW 574 State and Local Government Law (V) City, town, county, district governments: adminis- trative organization; regulatory powers; police power; local governmental taxation; relationship between local, state, and federal government.

LAW 576 Directed Study and Research (V) Individual research and writing under the direction of faculty.

LAW 580 Land Use Management and Control (V) Survey course of public land use management.

LAW 583 Real Estate Development and Financ- ing (V) Federal and state laws in the practice of real estate development and financing law, Condomini- ums, securities, subdivision, consumer protection, and mortgage areas. Pre: 519.

LAW 584 Civil Rights (V) Focuses on the civil rights of Americans and introduces alternative rem- edies and procedures for securing these rights.

LAW 589 Labor and Employment Law (V) Em- ployment law, statutory rights affecting the employ- ment relation, and alternative contract provisions to secure the parties’ intentions. Focus on the practical application of labor and employment law and materials relating to the unionized employment relationship. Emphasis on the labor arbitration process and issues, to issues regarding internal union affairs.

LAW 590 (Alpha) Workshops and Clinics (V) (B) prosecution clinic; (C) defense clinic; (D) elder law clinic; (E) environmental law clinic; (G) estate planning workshop; (J) native Hawaiian rights clinic; (I) family law clinic; (M) meditation clinic; (N) lawyering skills workshop; (P) mediation workshop; (Q) immigration clinic; (R) child welfare clinic; (S) Hawai’i Innocence Project 1; (T) Hawai’i Innocence Project 2; (U) legislation and statutory interpreta- tion. LAW majors only for (B), (N), (T) and (U). CR/NC and letter grade option for (J); CR/NC only for (N), (P), and (Q). Pre: 543 for (B) and (C); 521 or consent for (D); 529 or 561 or 582 for (E); 552 and 567, or consent for (G); 568 or consent for (J); 548 for (Q). (Alt. years for (U))

LAW 591 Government Contracts Law (V) A primer on statutory, regulatory, and decisional laws that shape the government procurement process; covers contract relationships between private party contractors and federal, state, and local governments; examines the federal acquisition process, bids and proposals, and contract award controversies before judicial and administrative tribunals; reviews socio-
economic contracting provisions and programs and Qui Tam litigation.

LAW 595 Internet Law and Policy (V) A primer on the impact of the development and use of new technologies on global business and social culture. E-commerce, telecommunications, information technology, government regulation, and social policy have all been brought together by the use of the Internet. The revolutionary medium of the Internet has required legal practitioners to reassert the applicability of current laws and policies that protect and govern members of the global community. Explores the legal implications of the new global economy, copyright law in e-commerce, privacy, security, trademarks, domain names, tort liability, criminal activity, regulation in cyberspace, speech, and social and ethical issues.

LAW 599 (Alpha) Independent Study (V) Field work companions to 590 clinics. (B) prosecution clinic; (F) independent study. Repeatable up to six credits. CR/NC only for (F). Pre: consent for (F). Co-requisite: 590B for (B).

Environmental Law (LWEV) School of Law

LWEV 503 Wildlife and Natural Resources Law (V) Seminar covering federal and Hawai‘i laws that govern the protection and management of wildlife resources, with a particular focus on wildlife conflicts arising in Hawai‘i.

LWEV 512 Environmental Compliance and Regulated Industries (V) In depth study of the federal and state environmental laws that impact modern businesses and industries, and exploration of the compliance issues that arise under the statutes, regulations and case law.

LWEV 527 Topics in Environmental Law (V) Focuses on specific topic areas that will vary from year to year, depending upon current environmental issues in Hawai‘i, nationwide, and internationally. Topics have included advanced natural resources, military, and toxic waste issues. Repeatable six times.

LWEV 528 International Environmental Law (V) Study of the international regulation of activities and processes used to prevent environmental degradation and to preserve resources of environmental value. Pre: 585 (or concurrent).

LWEV 529 Environmental Litigation Seminar (V) Seminar on the techniques, law, and strategy involved in federal and state court environmental litigation.

LWEV 540 Hazardous Waste Law (V) Examination of major federal statutes, regulatory and case law, and Hawai‘i counterparts. Policies behind hazardous waste laws and their impact on individuals, community, and businesses.

LWEV 582 Environmental Law (V) Basic policy questions and problems concerning environment. Examination of federal and Hawaiian statutes. Focus on environmental problems of Hawai‘i.

LWEV 588 Legal Aspects of Water Resources and Control (V) Legal aspects of water and water rights with focus on Hawai‘i.

LWEV 592 Domestic Ocean and Coastal Law (V) Examination of the history of U.S., and Hawai‘i’s sea-use law; comprehensive coverage of modern issues concerning the use of the sea including special Hawaiian problems. Repeatable one time.

LWEV 593 International Ocean Law (V) Examination of the history of international sea-use law, including comprehensive coverage of modern problems and issues concerning the use of the sea among nations.

Journal and Team Credits (LWJT) School of Law

LWJT 536 (Alpha) Moot Court Team (V) An honors program for students who prepare for and compete in national advocacy. (C) client counseling team; (E) environmental law moot court team; (H) Native American moot court team; (J) Jessup international moot court team; (O) other. Repeatable six times. CR/NC only. Pre: selection by competition.

LWJT 545 Law Review (V) Students selected for the Law Review editorial board have responsibility for editorial research, writing, and production of the Law Review published by the School of Law. Repeatable four times. CR/NC only.

LWJT 546 Asian-Pacific Law Journal (V) Students selected for the Asian-Pacific Law and Policy Journal editorial board have writing, researching, editorial and production responsibility for publication of the journal. Repeatable four times. CR/NC only.

LLM Master of Law (LWLM) School of Law

LWLM 570 Introduction to American Law (V) General introduction to the fundamental principles and distinctive aspects of the American legal system and its institutions. Pre: LLM. students only, CR/NC only.

Law Writing (LWLW) School of Law

LWLW 537 Law Teaching Seminar I (V) Interdisciplinary seminar used L.P. I assignments and additional readings to discover and deliver the theoretical and practical underpinnings of substantive law assignment and the methodology used to teach them. Instructor approval required. Repeatable up to eight credits.

LWLW 538 Law Teaching Seminar II (V) Interdisciplinary seminar uses L.P. II assignments and additional readings to discover and deliver the theoretical and practical underpinnings of appellate advocacy and negotiation the methodologies used to teach them. Instructor approval required. Repeatable one time. Spring only.

LWLW 539 Legal Composition Seminar I (V) Study of principles and practices of teaching legal discourse one-to-one, transferring materials from composition theory and linguistics into practical papers and methods to assist students to research and write legal documents. Instructor approval required. Repeatable one time. Fall only.

LWLW 540 Legal Composition Seminar II (V) Study of principles and practices of teaching scholarly legal discourse and appellate advocacy one-to-one, transferring composition theory and linguistics into individualized methods make the legal writing process efficient and the product effective. Instructor approval required. Repeatable one time. Spring only.

Pacific and Asian Law (LWPA) School of Law

LWPA 506 International, Comparative and Foreign Language Legal Research (V) Global issues play a significant role in the 21st century practice of law. Introduces students to legal information resources and methods for engaging in international, comparative, and foreign law research.

LWPA 514 Law and Society in Japan (V) An extended historical review of the foundations of Japanese law in society: Japan’s adoption and adaptation of Chinese legal doctrines, continental European legal structures and ideas, and American influences. Consideration of the structure of contemporary law in Japan: a look at the various players in the legal system, some important legal doctrines, and the real-world operation of Japan’s laws today.

LWPA 553 Asian Pacific Insolvency Law (V) Comparison of corporate insolvency law of selected Asian and Pacific island countries, with a focus on recently enacted laws and pending proposals that have followed the 1997 Asian Financial Crisis. Law students only. Recommended: LAW 515, LAW 554, LAW 562. (Alt. years)


LWPA 575 (Alpha) Topics in International Legal Studies (V) Selected topics presented by faculty members or visiting scholars, focusing upon subjects in the Pacific and Asian area. (C) China; (J) Japan; (K) Korea; (P) Pacific; (S) Southeast Asia. Repeatable six times.

LWPA 577 Japanese Business Law (V) Focus on the legal environment facing foreign businesses operating in Japan. Includes consideration of the business environment and culture, issues relating to governmental oversight, contract consciousness, corporate law, and dispute resolution in an actual joint venture between an American and a Japanese company as a tool for studying the relevant issues from a practical perspective.

LWPA 578 Chinese Business Law (V) Introduction to business and commercial law in the People’s Republic of China. After a brief overview of China’s political and legal systems, the course will examine basic areas of domestic business legislation, including torts, property, and contract law, the regulation of private business, the reform of state enterprises, the development of company and securities laws, and the regulation of land-use and other property rights. More specialized topics, such as arbitration and dispute resolution, the Chinese approach to intellectual property issues, or the use of joint ventures and other foreign investment vehicles, may also be included.

LWPA 579 International Business Transactions (V) An examination of the law, rules, and practices relating to transborder commercial transactions. Roughly half of the semester focuses on international sales transactions, the remaining portion focuses on domestic and multinational governance of the international business arena.

LWPA 581 Native Hawaiian Rights (V) Status and evolution of rights of native Hawaiians to the land and its usufructs. Potential of utilizing native rights based on statute, custom, and use to fashion new and expanded rights.

LWPA 585 International Law (V) Evolving process of formulating rules to govern nations and peoples of the world in their attempts to solve problems recognized as requiring global solutions.

LWPA 586 Law and Society in China (V) Overview of the historical foundations of Chinese law and introduction to the present legal system in the People’s Republic of China. Repeatable one time.

LWPA 587 Comparative Law (V) Introduction to the civil law tradition, particularly as exemplified by the legal systems of East and Southeast Asia. After a brief review of comparative law study and the historical development of the civil law, the course will examine the structure and role of the courts, judicial process, the legal profession, and the regulation of the legal profession and administrative law in Western Europe and in the Asian civil law countries.

LWPA 594 Pacific Islands Legal Systems (V) Study of substantive rules of one or more Pacific

Key to symbols & abbreviations: see the first page of this section.
Islands jurisdictions, development of legal systems, relationship of legal systems to culture and tradition.

LWPA 596 International Intellectual Property (V)
Primer on the World Intellectual Property Organization and the treaties it administers. Will explore the various international legislative and judicial developments in intellectual property as well as analyze international methods to harmonize several regional and national laws to protect rights in trademarks, patents, and copyrights. Students will be exposed to issues of territoriality and jurisdiction, international antitrust issues, and international dispute resolution, and human rights implications of international intellectual property rights protections.

Ulu Lehua (LWUL)

School of Law

LWUL 501 Ulu Lehua I (V)
Special Lehua seminar for pre-admission program students designed to develop analytical, research and communications skills in the context of the substantive law courses in which they are concurrently enrolled. Credits in this seminar do not count toward requirements for the JD degree. CR/NC only.

LWUL 502 Ulu Lehua II (V)
Special seminar for pre-admission program students designed to develop analytical, research and communications skills in the context of the substantive law courses in which they are concurrently enrolled. Credits in this seminar do not count toward requirements for the JD degree. CR/NC only.

LWUL 509L Contracts Tutorial I (V) Pre-admission program course. CR/NC only.

LWUL 510L Contracts Tutorial II (V) Continuation of 509L. CR/NC only.

LWUL 510L Contracts Tutorial II (V) Continuation of 509L. CR/NC only.

LWUL 516L Civil Procedure Tutorial I (V) Pre-admission program course. CR/NC only.

LWUL 517L Civil Procedure Tutorial II (V) Continuation of 516L. CR/NC only.

Library and Information Science (LIS)

College of Natural Sciences

All LIS courses numbered 600 or higher (except LIS 680 Seminar for Beginning Librarians) may be taken only by graduate students admitted to the LIS Program or with approval from the LIS Program Chair.

LIS 100 Using Information Critically (3)
Concepts and practice for effective information seeking, evaluation, and use in context of information technology and libraries. Research framework structures activities involving fiction, film, scholarly studies, writing, oral presentation; original research is culminating project. A-F only. (Cross-listed as CAS 101)

LIS 100A Computer and Information in Arts and Humanities (3)
Introduction to computer application for students in arts and humanities. Includes coverage of computers in writing, information storage and retrieval, specific applications in arts and humanities disciplines.

LIS 500 Master’s Plan B/C Studies (1)

LIS 591 Library and Information Studies Workshop (1)
Designed for in-service librarians and other information specialists needing to update their professional skills, focus on a particular topic, or learn new approaches and concepts. Repeatable for credit. Credits earned in these courses cannot be applied for graduate degrees.

LIS 601 Introduction to Reference and Information Services (3)
Philosophy, principles, and practice of reference services in libraries, information centers and information literacy. Bibliographic control, reference research, reference interview, online searching, evaluation of bibliographic and Weblographic material. Field component. MLISc degree required course.

LIS 602 Introduction to Multimedia Technology and Resources (3)
Lecture/lab introduces latest specialized technologies for providing, managing, and designing information services for libraries. Provides basic experience in desktop productivity software and web publishing, bibliographic database software, and qualitative and quantitative data analysis. LIS program only. A-F only. (Once a year)

LIS 605 Basic Cataloging and Classification (3)
Introductory cataloging and classification covering AACR2, Library of Congress and Dewey decimal classification systems, LC subject headings, use of OCLC, MLISc degree required course.

LIS 606 Advanced Cataloging and Classification (3)
Continues 605 with study of authority work, and further study of non-book materials cataloging, including electronic and internet resources. Extensive use is made of OCLC Connexion cataloging client. Pre: 605.

LIS 610 The Information Environment (3)
Lecture/discussion on role of libraries, their social utility in information societies. History and future of libraries in changing technological world. Information professions, information ethics, intellectual freedom, intellectual property, information access, national/international library developments. MLISc degree required course.

LIS 611 Intellectual Freedom (3)
Seminar surveying the core philosophical principles and practices of intellectual freedom with special application to librarianship and information sciences. Majors only. Pre: departmental approval. (Alt. years)

LIS 612 History of Books and Libraries (3)
History of written communication; the recording, preservation and transmission of knowledge. Development of libraries through the mid-twentieth century as instruments of cultural transmission.

LIS 615 Collection Management (3)

LIS 618 Government Documents (3)
Survey of government documents at the federal, state/local and international levels. Covers methods of acquisition and organization, including depositary arrangements. Current issues of government information dissemination policies and practices discussed. Pre: 601 or consent.

LIS 619 Preservation Management (3)
Introduction to preservation management. Focus on management strategies for preservation of materials in libraries and archives. Covers preservation planning, condition surveys, disaster planning, grantsmanship, and basic issues relating to deterioration.

LIS 620 Conservation of Library and Archival Materials (3)
In-depth exploration of the nature of library and archival materials and factors that cause deterioration. Hands-on approach provides practical experience testing and applying basic conservation treatments, understanding the role of conservation in preservation planning. Pre: 619 or consent.

LIS 647 Systems Analysis for Information Management (3)
Overview of systems analysis; its techniques, benefits and limitations. Focus on libraries and information agencies, although concepts are applicable to other settings. Structured, top-down solutions stressed throughout. Object oriented techniques and data modeling tools are reviewed. Pre: 670.

LIS 650 Management of Libraries and Information Centers (3)
Basic theories and principles of administration for effective management of public, academic, and special libraries and information centers, with emphasis on planning, organizing, staffing, directing, and control. MLISc degree required course (except school track).

LIS 652 Introduction to Archives Management (3)
Study of archival principles and management theories applicable to all types of archives. Includes policy, appraisal, computer, and micrographic applications, ethical and legal issues.

LIS 653 Seminar in Archival Studies (3)
Theory of archival studies from historical and contemporary perspectives. Includes public administration, legislation, and relationship to other repositories. Pre: 652 or consent.

LIS 660 Information Sources and Systems in Science (3)
Bibliographical structure and sources in the basic and applied sciences, including physics, chemistry, biology, medicine, agriculture, engineering. Field component. Pre: 601 or consent.

LIS 661 Information Sources and Systems in Humanities (3)
Lecture on information structures of humanities disciplines, including fine arts, applied arts, theater arts, literature, music, religion, philosophy. Information cycle, print and digital reference services, information-seeking research in the humanities. Field research component. Pre: 601.

LIS 662 Information Sources and Systems in Social Science (3)
Lecture on information structures of social science disciplines, including anthropology, sociology, psychology, education, business, history, political science. Information cycle, print and digital reference services, information-seeking research in the social sciences. Field research component. Pre: 601.

LIS 663 Basic Database Searching (3)
Introduces use of commercial online databases for interactive retrieval of bibliographic, full-text and directory information, the development of search strategies using controlled subject vocabulary queries and free-text searching. Pre: 601.

LIS 665 Teaching Information Technology Literacy (3)
Lecture/discussion on history, theories, principles, practices and concepts of library and information literacy instruction, learning theory and user-based research methods. Examines program design, administration and evaluation. Field research component. Pre: 601.

LIS 667 Advanced Database Searching (3)
Lecture with demonstrations of advanced features of online information retrieval systems and search engines, including natural language searching, citation-based searching, term mapping, similarity searching, result ranking and clustering for power search Web databases. Pre: 663.

LIS 670 Introduction to Information Science and Technology (3)
Survey of topics in information science and technology. Lectures and discussions emphasize practice, problems and theory relating to information storage, retrieval and dissemination technology in libraries and information centers.

LIS 671 Digital Librarianship (3)
Lecture with demonstrations to introduce the essential types of digital resources and the software tools for finding high quality and relevant information efficiently from digital journal archives and reference databases. Pre: 601 or 670.

LIS 672 Technology for Libraries and Information Centers (3)
Survey of theories, concepts, methods and practices relating to the application of information technology to support the administration and use of information resources. Includes digital, printed and audiovisual materials. Pre: 605, 670; or consent.

LIS 674 Database Design and Creation (3)
Designing and creating textual and/or directory databases from the viewpoint of information specialists.
and content providers. Needs analysis, file design, record content and structuring, software choice.

Students implement prototype database. Pre: 670.

LIS 675 Database Content Evaluation (3) Lecture discussing and demonstrating the principles and methods of using criteria in evaluating databases used by librarians and information professionals, such as database coverage, source base, currency, accuracy and quality of information. Pre: 601 or 670, or consent.

LIS 677 Human Dimension in Information Systems (3) Lecture/discussion on human element in information systems, including physical, cognitive and affective behavior in interaction with information systems. Information retrieval, human-computer interaction and cognitive science research, quantitative and qualitative research methods. Research component. Pre: 670.

LIS 678 Personalized Information Delivery (3) Study of the components of personalized information systems: information filtering systems with emphasis on user training and representation of documents, queries, user information preferences, and user-system interaction. Topics include advanced Information Retrieval (IR) models, metadata and markup languages, query operations, thesaurus based IR, acquisition of user profiles, and user-system performance evaluation. Pre: 647, 663, 670, 674, 1CS 321, 1CS 421, or 1CS 624; or consent.

LIS 680 Seminar for Beginning School Librarians (1) Series of five seminar meetings on topics, issues for beginning school librarians. Emphasis on building skills and support networks to help entry level professionals create effective school library programs. CR/NC only.


LIS 683 Services in Libraries (3) Planning and implementing services and programming in public and school libraries. Trends, issues, networking, public relations, library instruction, program planning and evaluation. Required for Librarian HDOE licensure.

LIS 684 Administration of School Library Media Centers (3) Effective management of school library media centers. Philosophy and objectives, standards, personnel, facilities, resources, budget, services, library instruction, public relations, program planning and evaluation. Required for Librarian HDOE licensure.

LIS 685 Traditional Literature and Oral Narration (3) Analysis of traditional literature including Asian and Pacific Island resources. Selection and evaluation of traditional literature emphasizing cultural values. Introduction to oral tradition, history and techniques of storytelling.

LIS 686 Information Literacy and Learning Resources (3) Study of information literacy models. Integration of information literacy with K-12 curriculum units and lessons. Evaluation of print and multimedia resources to meet student and curricular needs. Required for Librarian HDOE licensure. Spring only. (Cross-listed as EDSC 686 and ETEC 868)

LIS 687 Hawaiian Studies Information Resources (3) Survey of reference and research materials in Hawaiian studies. Includes historical and contemporary works, arts, humanities, social and natural sciences, media. Covers approaches to reference service, collection building and management.

LIS 688 Pacific Islands Information Resources (3) Study of reference tools and bibliographic sources for Pacific Islands studies, including exam of online catalogs, databases and web sites. Focus on Melanesia, Micronesia and Polynesia (excluding Hawai'i). Pre: 601 or consent.


LIS 690 Internship (3) Field experience in library or information agency settings with supervision of professional librarians or information specialists. Available to classified students only. Selection based on academic advisor approval, application form, interview and possession of required competencies. Students must apply and be accepted before registration. Selection is by agency. CR/NC only. Pre: 601 and 663 (or concurrent).

LIS 693 Special Topics in Librarianship (V) Includes issues of topical interest in the profession. Concentrates on the major topic of current interest, such as library service to the aged, reprography, medical librarianship, knowledge management, art librarianship, cartography.

LIS 694 Special Topics in Information Technology (V) Includes issues of topical interest in information technology. Concentrates on one major topic of current interest, such as information transfer, networks, library information systems, artificial intelligence applications.

LIS 695 Seminar in Research in Librarianship (3) Various methodologies and application to problems of librarianship. Evaluation of research studies; developing, writing, analyzing. Experience with statistical packages for data analysis.

LIS 696 Practicum School Librarianship (V) Skill development and application of academic study through observation and practice in a fieldwork program with accompanying seminar. Required for school library certification in Hawai'i. Repeatable one time. CR/NC only. Pre: 12 credits in LIS degree program and consent of practicum coordinator.

LIS 699 Directed Reading and/or Research (V) Individualized program of directed reading and/or research outside the scope of regularly titled courses. Enrollment requires approval before end of previous semester, with specification of goals, work requirements, numbers of credits, rationale. Repeatable up to six credits.


LIS 701 Seminar in International Librarianship (3) International and comparative librarianship; professional organizations; comparative methodology; research; periodicals; international agencies; influence of literacy and social, cultural, political factors.

LIS 705 Asian Research Materials and Methods (3) Literature of Asia in Western and Asian language; bibliography, reference tools, research methods, sources, published and archival repositories. Repeatable one time. (Cross-listed as ASIAN 705)

Linguistics (LING) College of Languages, Linguistics and Literature

LING 100 Language in Hawai'i and the Pacific (3) Introduction to the study of language and language-related issues, with a focus on Hawai'i and the Pacific. A-F only. DS

LING 102 Introduction to the Study of Language (3) Non-formal introduction to language, emphasizing the everyday use of language, its relevance to contemporary issues in society, and local language issues. Topics covered include pidgins and creoles, language and the brain, animal communication, etc. DS

LING 103 Language and Symbolic Reasoning (3) Introduction to language as a formal symbolic system and to the techniques of analysis and reasoning that reveal its workings. A-F only.

LING 120 Language as a Window to the Mind (3) Introduction to language-related phenomena, which gives insight into the organization of the human mind. Combines lecture, discussion and group projects.

LING 320 General Linguistics (3) Introduction to the formal analysis of language, focusing on phonetics, phonology, morphology, syntax, semantics, historical linguistics, language acquisition, and related topics. DS

LING 331 Computer Applications (3) Background; uses for machine translation, dictionary programs, speech synthesis, grammar modeling, etc. Pre: 320 (or concurrent) or consent.

LING 344 Languages of the World (3) Survey of major language families; typological classification and language universals; writing systems, "contact" languages. Variety of grammatical structures illustrated by selected languages. Pre: 320 or consent.

LING 346 The Philippine Language Family (3) Introduction; phonological and grammatical systems; historical developments; emphasis on Filipino, Cebuano, and Ilokano. Pre: grade of B or better in 102 or 320 and experience with a Philippine language, or consent. DH

LING 347 Pidgin and Creole Languages (3) Nature, history, structure, and geographic distribution of pidgins and creoles. Pre: 102 or consent. (Alt. years) (Cross-listed as IS 347)

LING 410 Articulatory Phonetics (3) Intensive training in recognition, reproduction, and recording of human speech sounds; preparation for fieldwork with unrecorded languages and for clinical work in speech pathology. DH

LING 412 Psycholinguistics (3) The mental processes involved in producing, understanding, and acquiring language. Students will conduct a small psycholinguistic experiment. Open to nonmajors. Pre: one of 102, 320, PSY 100, or SPA 300; or consent. DS

LING 414 Introduction to Linguistic Anthropology (3) Introduction to the ethnographic study of speech and language. Pre: ANTH 152 or consent. (Once a year) (Cross-listed as ANTH 414 and IS 414) DS

LING 415 Language and Gender (3) The role of language in the construction of gender and in the maintenance of the gender order. Field projects explore hypotheses about the interaction of language and gender. No previous knowledge of linguistics required. A-F only. (Cross-listed as ANTH 415) DS

LING 416 Language as a Public Concern (3) How does language serve as a proxy for larger social questions? Focuses on four main themes: language revitalization, discrimination on the basis of accent, gender miscommunication and the English Only Movement. A-F only. Pre: 102 or 320 or consent. DS
LING 420 Morphology (3) Theory of word structure; analysis of a variety of morphological types. Pre: 320 (or concurrent) or consent. DH
LING 421 Introduction to Phonological Analysis (3) Phonological analysis and theory. Pre: 410. DH
LING 422 Introduction to Grammatical Analysis (3) Syntactic analysis and grammatical theory. Pre: 320 or consent. DH
LING 423 Cognitive Linguistics (3) Conceptual systems and language from a cognitive science perspective. Linguistic evidence on conceptual structure, reasoning, categorization, and understanding. Open to nonmajors. Pre: 102, 320, ICS 111, or PSY 100; or consent.
LING 430 Animal Communication (3) Investigates animal communication from the perspective of modern linguistics. Dispels common misconceptions about “talking animals” and shows how the cognitive, biological, and environmental needs and opportunities of animals determine what and how they communicate. A-F only. Pre: 102 or consent. DS
LING 431 Computational Modeling (3) Hands-on introduction to modeling language. Focuses on connectionism, relations between language perception, and more control. Requires no programming experience. Open to nonmajors. Pre: 102, 320, ICS 111, or PSY 100; or consent.
LING 441 Meaning (3) Theories of how literal and figurative language encode meaning and processes of meaning encoding and decoding. Open to nonmajors. Pre: 102, 320, ICS 111, or PSY 100; or consent.
LING 445 Polynesian Language Family (3) Introduction to the language family of Hawaiian, Samoan, Tahitian, Tongan, etc.; models of migration and settlement and linguistic evidence; subgrouping and reconstruction of Proto-Polynesian; linguistic characteristics of present-day languages; language endangerment and conservation in Polynesia. Pre: 320 with a grade of B or better, or consent. DS
LING 451 Induction of Linguistic Structure (3) Phonological and grammatical structures of a previously uncodified language are determined by linguistic analysis of data obtained from speakers of the language. Pre: 102 or 320, or consent. DH
LING 470 Children’s Speech (3) Individual strategies, baby talk, language socialization, language variation including multilingualism. Relation of cognitive to language development. Pre: 320. DS
LING 499 Directed Research (V) Repeatable up to 3 credit hours. CR/NC only. Pre: one 400-level linguistics course and consent.
LING 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.
LING 611 Acoustic and Auditory Phonetics (3) Principles of acoustics and audition as they relate to speech sounds, use of computer-based analysis tools to investigate acoustic properties of speech. Pre: 421 or consent.
LING 615 The Nature of Language (3) Language as a communication system, current theories of grammar, meaning, sociolinguistics, linguistic change and comparison.
LING 621 Phonology (3) Phonological theory and problems of analysis. Pre: 421 or consent. Fall only.
LING 622 Grammar (3) Grammatical theory and problems of analysis. Pre: 422 or consent.
LING 623 Semantics and Pragmatics (3) Ways in which the interpretation of sentences in natural language depends upon the literal meaning of propositions and their logical (semantic) and conversational (pragmatic) inferences. Pre: 422 or consent.
LING 630 Field Methods (3) Work with native speakers of lesser-known languages to develop techniques for data collection and analysis. Repeatable unlimited times. Pre: 421 and 422 and one of 621 or 622; or consent.
LING 631 Language Data Processing (3) Preparation of language data for computer processing; use ready-made programs; write simple language processing programs using SNOBOL4. Applications to student’s research. Pre: 421 and 422, or consent.
LING 632 Laboratory Research (3) Laboratory methods for research in linguistics. Introduction to hardware, software, research designs and basic analysis techniques commonly used in laboratory-based research. Combines lecture, laboratory work and discussion. Pre: graduate standing.
LING 640 (Alpha) Topics in Linguistics (3) History of the discipline, schools of linguistic thought, current issues, etc. Repeatable one time. (E) English linguistics; (F) phonology and phonetics; (G) general; (H) history of the discipline; (S) sociolinguistics; (X) syntax; (Y) psycholinguistics. Pre: consent.
LING 645 The Comparative Method (3) Introduction to historical-comparative linguistics; attention to both Indo-European and languages with few or no written records. Pre: 421 and 422, or consent.
LING 646 The Comparative Method (3) Continuation of 645. Pre: 645.
LING 670 Developmental Linguistics (3) Survey of the literature in language acquisition; emphasis on relation to linguistic theory. Pre: 421 and 422, or consent.
LING 699 Directed Research (V) CR/NC only. Repeatable unlimited times. Maximum six credit hours. Pre: graduate standing and consent.
LING 700 Thesis Research (V) Repeatable up to 12 credit hours.
LING 730 Advanced Laboratory Research (3) Advanced laboratory methods for research in linguistics. Specialized uses of hardware and software, research designs and analysis techniques. Specific topic varies: check with department. Combines lecture, laboratory work and discussion. Repeatable two times. Pre: 632 or consent.
LING 750 (Alpha) Seminar (3) Reporting and discussion of current research in linguistics. (E) ethnolinguistics; (F) phonology and phonetics; (G) general; (M) semantics; (Q) language acquisition; (R) written language; (S) sociolinguistics; (X) syntax; (Y) psycholinguistics. Repeatable unlimited times. Pre: consent.
LING 770 Areal Linguistics (3) Structures of languages of various areas of the world; diffusion. Repeatable unlimited times. Pre: consent.
LING 799 Apprenticeship in Teaching Linguistics (V) Experience-based introduction to college-level teaching; doctoral students serve as student teachers to professors; responsibilities include supervised teaching and participation in planning and evaluation. Repeatable one time. Pre: admission to doctoral program and consent.
LING 800 Dissertation Research (V)
MKT 351 Professional Selling (3)  
College of Languages, Linguistics and Literature  
MAO 101 Beginning Maori (4)  
Beginning Maori listening, speaking, reading, and writing skills. Structural points introduced inductively. History and culture. Meets four hours weekly; daily lab work. HSL  
MAO 102 Beginning Maori (4)  
Continuation of 101. Pre: 101. HSL  
MAO 201 Intermediate Maori (4)  
Continuation of 102. Meets four hours weekly, three of four hours devoted to drill and practice. Daily lab work. Pre: 102. /HSL  
MAO 202 Intermediate Maori (4)  
Continuation of 201. Pre: 201. /HSL  
MAO 261 Maori Literature and Culture (3)  
Survey of literature concerning myths, traditions, poetry and song as well as contemporary literature (in English) relating to the Treaty of Waitangi, Maori prophetic sayings. Students who have previously taken this course as PACS 492 may not take this course. Pre: consent. DL  
MAO 301 Advanced Maori Language and Culture (3)  
Advanced Maori language and culture. Pre: 202, no waiver. Fall only.  
MAO 302 Advanced Maori Language and Culture (3)  
Advanced Maori language and culture. Pre: 301. Spring only.  
MAO 361 Modern Maori Literature and Culture (3)  
Survey of modern Maori and Hawaiian literature and culture from the mid-twentieth and early twenty-first centuries. Pre: 261 or consent. Fall only. DL  
MAO 384 Maori Language and the Performing Arts (3)  
Analysis of Maori language song types, historical and genre background of Maori oral literature and performing arts. Pre: 101, 102; or consent.  

Marketing (MKT)  
Shidler College of Business  
MKT 311 Consumer Behavior (3)  
Analysis of consumer behavior and motivation; principles of learning, personality, perception, and group influence, with emphasis upon mass communication effects. Pre: BUS 312 or consent. (Cross-listed as PST 385) DS  
MKT 321 Marketing Research (3)  
Research aids to marketing management; nature of the research process; planning research including problems of sampling and measurement; experimental and non-experimental methods and techniques; analysis of data. Pre: BUS 310 and BUS 312, or consent. DS  
MKT 331 Marketing Communications (3)  
In-depth coverage of the major communication tools used in marketing such as advertising, sales promotion, public relations and the Internet. Emphasis on integrated marketing communications. Pre: BUS 312 or consent.  
MKT 332 Integrated Communication Campaigns (3)  
Management of integrated marketing communications campaigns. Includes: conducting target market and competitor research, developing creative content and media strategy, production of communication materials and completion of major real world project. Pre: 331 and BUS 312.  
MKT 341 Retailing Management (3)  
Principles, functions, and analysis of opportunities and problems in retailing; location and layout; merchandise planning; buying and selling; organizational forms and design; expense analysis and control; coordination of store activities. Pre: BUS 312 or consent.  
MKT 350 Professional Selling (3)  
Emphasis on selling technique, social-psychological principles of persuasion, and interpersonal communication. Lecture, discussion, and application of relevant principles and techniques; CR/NC only. Pre: BUS 312 or consent.  
MKT 352 Sales Management (3)  
Deals into the sales management process. Through a variety of sales activities, students gain experience in sales planning, recruiting and training sales people, methods of motivating and compensating, territory management and sales team communications. Pre: BUS 312 or consent.  
MKT 361 Seminar in Marketing (3)  
Study and discussion of significant topics and problems in the field of marketing. May be repeated four times with change in topic. Pre: consent and usually senior standing.  
MKT 362 Internet Marketing (3)  
Examines use of Internet in the marketing of goods and services; for example new product development, marketing research, direct sales and marketing communications on the World Wide Web. Real world projects provide opportunities for application. Pre: BUS 311 and BUS 312, or consent.  
MKT 363 Customer Relationship Management (3)  
Focuses on the evolving field of customer relationship management. Students learn how to manage marketing information and decision-making systems that maximize customer retention and build long-term relationships. A-F only. Pre: BUS 311, or consent.  
MKT 372 Marketing for New Ventures (3)  
Examines role of marketing in the formation and launch of entrepreneurial ventures within and outside of ongoing businesses. Emphasis on new product development and low cost, high impact marketing activities. Pre: BUS 312 or consent.  
MKT 381 Multinational Marketing (3)  
Principles and topics related to international marketing, with emphasis on strategic planning and applications. Pre: BUS 312 or consent.  
MKT 391 Marketing Strategies (3)  
Decision-making by the marketing executive; integration of all elements of the marketing program based on actual business situations. Pre: 311, 321, and one other marketing course above 331; or consent.  
MKT 399 Directed Reading and Research (V)  
Reading and research in a special area of major under direction of faculty member(s). Project must include statement of objectives, outline of activities planned, results expected, and how they are to be reported and evaluated. Must be approved in advance by the department chair and the faculty advisor. Repeatable unlimited times.  
MKT 410 Software Tools in Marketing (3)  
Focuses on computer software tools designed to help managers make more informed marketing decisions. Through hands-on experience, students learn software skills useful in marketing research, marketing research, sales promotion, and sales team communications. Pre: BUS 310 and BUS 312; or consent.  
MKT 411B Imagination, Entrepreneurship and Business Problem-Solving (3)  
Application of creative process to problems encountered in venture creation/growth. Student problem-solving styles are characterized and implications drawn for generation of breakthrough ideas. Tools for facilitating creative solutions to marketing problems are investigated. Pre: junior standing and BUS 312; or consent.  
MKT 651 Advanced Marketing Management (3)  
A case course in the application of advanced marketing methods. Pre: BUS 623 or consent.  
MKT 652 Japanese Marketing Systems (3)  
Specialized study of Japanese marketing systems, considers both global and domestic marketing activities in the context of the Japanese economy. Pre: BUS 623 or consent.  

Key to symbols & abbreviations: see the first page of this section.
### Mathematics (MATH)

**MATH 100 Survey of Mathematics (3)**
Selected topics designed to acquaint nonspecialists with examples of mathematical reasoning. May not be taken for credit after 215 or higher. FS

**MATH 111 Math for Elementary Teachers I (3)**
Understanding, communicating, and representing mathematical ideas, problem solving, and reasoning. Operations on sets, natural numbers, integers, fractions, real numbers, and functions. The properties of these operations; patterns and algebra. Prospective elementary education majors only.

**MATH 112 Math for Elementary Teachers II (3)**
Representations of and operations on the natural numbers and rational numbers; properties of those operations. Connections to other parts of mathematics and introduction to measurement. Pre: 111. FS

**MATH 135 Precalculus I (2)**
Algebra review, functions with special attention to polynomial, rational, exponential and logarithmic functions, composed and inverse functions, techniques of graphing. Credit allowed for either 135 or 140. Pre: two years of high school algebra, one year of plane geometry.

**MATH 140 Precalculus (3)**
Functions, with special attention to polynomial, rational, exponential, and trigonometric functions, plane trigonometry, polar coordinates, conic sections. Pre: two years of high school algebra, one year of plane geometry, and assessment exam. FS

**MATH 190 Introduction to Programming (1)**
An introduction to numerical algorithms and structured programming using Fortran, Basic, or other appropriate language. Pre: one semester of calculus (or concurrent), or consent.

**MATH 203 Calculus for Business and Social Sciences (3)**
Basic concepts; differentiation and integration; applications to management, finance, economics, and the social sciences. Pre: two years of high school algebra, one year plane geometry, and assessment exam. FS

**MATH 207 History of Mathematics (3)**
The historical development of mathematical thought. Pre: one year of calculus. Recommended: 311 or 521. NI

**MATH 215 Applied Calculus I (4)**
Basic concepts; differentiation, differential equations and integration with applications directed primarily to the life sciences. Pre: C (not C-) or better in 140 or assessment exam. NI/FS

**MATH 216 Applied Calculus II (3)**
Differential calculus for functions in several variables and curves, systems of ordinary differential equations, series approximation of functions, continuous probability, exposure to use of calculus in the literature. Pre: 215 or consent. NI

**MATH 241 Calculus I (4)**
Basic concepts; differentiation with applications; integration. Pre: a grade of C (not C-) or better in 140 or 215 or assessment exam. NI/FS

**MATH 242 Calculus II (4)**
Integration techniques and applications, series and approximations, differential equations. Pre: a grade of C (not C-) or better in 241 or 251A or a grade of B or better (not B-) in 215; or consent. NI

**MATH 243 Calculus III (3)**
Vector algebra, vector-valued functions, differentiation in several variables, and optimization. Pre: a grade of C (not C-) or better in 242 or 252A, or consent. NI

**MATH 244 Calculus IV (3)**
Multiple integrals; line integrals and Green’s Theorem; surface integrals, Stokes’s and Gauss’s Theorems. Pre: 243 or consent. NI

**MATH 251A Accelerated Calculus I (4)**
Basic concepts; differentiation with applications; integration. Compared to 241, topics are discussed in greater depth. Pre: a grade of A in 140 or assessment and consent. NI/FS

**MATH 252A Accelerated Calculus II (4)**
Integration techniques and applications, series and approximations, differential equations. Pre: a grade of B or better in 241 or 251A and consent. NI

**MATH 253A Accelerated Calculus III (4)**
Vector calculus; maxima and minima in several variables; multiple integrals; line integrals, surface integrals and their applications. Pre: 252A. NI

**MATH 301 Introduction to Discrete Mathematics (3)**
Symbolic logic, sets and relations, algorithms, trees and other graphs. Additional topics chosen from algebraic systems, networks, automata. Pre: one semester of calculus from mathematics department and one semester programming; or consent. Recommended: 190.

**MATH 302 Introduction to Differential Equations I (3)**
First order ordinary differential equations, constant coefficient linear equations, oscillations, Laplace transform, convolution, Green’s function. Pre: 216 or 243 (or concurrent) or 253A (or concurrent), or consent.

**MATH 303 Introduction to Differential Equations II (3)**
Constant coefficient linear systems, variable coefficient ordinary differential equations, series solutions and special functions, Fourier series, partial differential equations. Pre: 302, 311 (or concurrent); or consent.

**MATH 304 Mathematical Modeling: Deterministic Models (4)**
Deterministic mathematical modeling emphasizing models from mathematics used in the biological sciences. Topics include difference equations, qualitative behavior solutions of ODEs and reaction-diffusion equations. A computer lab is included. Pre: 216 or 242 or 252A, or consent. Fall only.

**MATH 305 Mathematical Modeling: Probabilistic Models (4)**
Probabilistic mathematical modeling emphasizing models and tools used in the biological sciences. Topics include stochastic and Poisson processes, Markov models, estimation, Monte Carlo simulation and Ising models. A computer lab is included. Pre: 216 or 242 or 252A, or consent. Recommended: 304. Spring only.

**MATH 307 Linear Algebra and Differential Equations (3)**
Introduction to linear algebra, application of eigen value techniques to the solution of differential equations. Students may receive credit for only one of 307 and 311. Pre: 243 or 253A (or concurrent), or consent.

**MATH 311 Introduction to Linear Algebra (3)**
Algebra of matrices, linear equations, real vector spaces and transformations. Emphasis on concepts and abstraction and instruction of careful writing. Students may receive credit for only one of 307 or 311. Pre: 243 or 253A (or concurrent), or consent.

**MATH 321 Introduction to Advanced Mathematics (3)**
Formal introduction to the concepts of logic, finite and infinite sets, functions, methods of proof and axiomatic systems. Learning mathematical expressions in writing is an integral part of the course. Pre: 243 or 253A (or concurrent), or consent.

**MATH 331 Introduction to Real Analysis (3)**
A rigorous axiomatic development of one variable calculus. Completeness, topology of the plane, limits, continuity, differentiation, integration. Pre: 242 or 252A, or 321; or consent.

**MATH 351 Foundation of Euclidean Geometry (3)**
Axiomatic Euclidean geometry and introduction to the axiomatic method. Emphasis on writing instruction. Pre: 243 or 253A, and 321 (or concurrent); or consent.

**MATH 352 Non-Euclidean Geometries (3)**
Hyperbolic, other non-Euclidean geometries. Pre: 351 or consent.

**MATH 371 Elementary Probability Theory (3)**
Sets, discrete sample spaces, problems in combinatorial probability, random variables, mathematical expectations, classical distributions, applications. Pre: 216, 242 or 252A; or consent.

**MATH 373 Elementary Statistics (3)**
Estimation, tests of significance, the concept of power. Pre: 371 or consent.

**MATH 402 Partial Differential Equations I (3)**
Integral surfaces and characteristics, introduction to partial differential equations. Applications to the equations of mathematical physics. Pre: 243 or 253A, or consent. Recommended: 244 and 302.

**MATH 403 Partial Differential Equations II (3)**
Laplace’s equation, Fourier transform methods for PDEs, higher dimensional PDEs, spherical harmon-

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Key to symbols & abbreviations: see the first page of this section.
ics, Laplace series, special functions and applications. Pre: 402 or consent.

MATH 405 Ordinary Differential Equations (3) Systems of linear ordinary differential equations, autonomous systems, and stability theory applications. Optional topics include series solutions, Sturm theory, numerical methods. Pre: 302 and 311, or consent.

MATH 407 Numerical Analysis (3) Numerical solution of equations, interpolation, least-squares approximation, quadrature, eigenvalue problems, numerical solution of ordinary and partial differential equations. (These topics are covered in the year sequence 407–408.) Pre: 307 or 311, and one semester programming experience.

MATH 408 Numerical Analysis (3) Continuation of 407. This is the second course of a year sequence and should be taken in the same academic year as 407. Pre: 407 or consent.

MATH 411 Linear Algebra (3) Vector spaces over arbitrary fields, minimal polynomials, invariant subspaces, canonical forms of matrices; unitary and Hermitian matrices, quadratic forms. Pre: a grade of B or better in 311 or consent.

MATH 412 Introduction to Abstract Algebra (3) Introduction to basic algebraic structures. Groups, finite groups, abelian groups, rings, integral domains, fields, factorization, polynomial rings, field extensions, quotient fields. Emphasis on writing instruction. (These topics are covered in the year sequence 412–413.) Pre: 311 or consent.

MATH 413 Introduction to Abstract Algebra (3) Continuation of 412. This is the second course of a year sequence and should be taken in the same academic year as 412. Emphasis on writing instruction. Pre: 412 or consent.

MATH 414 Operations Research: Discrete Models (3) Techniques of mathematical programming. Topics may include linear programming, integer programming, network analysis, dynamic programming, and game theory. Pre: 307 or 311, or consent.


MATH 420 Introduction to the Theory of Numbers (3) Congruences, quadratic residues, arithmetic functions, distribution of primes. Emphasis is on teaching theory and writing, not on computation. Pre: 311 or consent.

MATH 421 Topology (3) Geometric and combinatorial topology. Surfaces, homology, Euler characteristics, winding numbers. Jordan curve theorem. Pre: two courses from 311, 321, 351, 411, 412, or 420; or consent.

MATH 431 Advanced Calculus (3) Topology of R^n, continuous functions, Riemann integration, sequences and series, uniform convergence, implicit function theorems, differentials and Jacobians. Emphasis is on teaching mathematical writing. (These topics are covered in the year sequence 431–432.) Pre: 311 and 331, or consent.

MATH 432 Advanced Calculus (3) Continuation of 431. This is the second course of a year sequence and should be taken in the same academic year as 431. Emphasis on writing instruction continues. Pre: 431 or consent.

MATH 442 Vector Analysis (3) Vector operations, wedge product, differential forms, and smooth mappings. Theorems of Green, Stokes, and Gauss, both classically and in terms of forms. Applications to electromagnetism and mechanics. Pre: 244 or 253A, and 307 or 311, or consent.

MATH 443 Differential Geometry (3) Properties and fundamental geometric invariants of curves and surfaces in space; applications to the physical sciences. Pre: 244 or 253A, and 311 or consent.

MATH 444 Complex Variable (3) Analytic functions, complex integration, introduction to conformal mapping. Pre: 244 or 253A; recommended 307, 311, 321 or 331 or consent.

MATH 449 (Alpha) Topics in Undergraduate Mathematics (3) Advanced topics from various areas of algebra, number theory, analysis, and geometry. Repeatable unlimited times. Pre: consent.

MATH 454 Axiomatic Set Theory (3) Sets, relations, ordinal arithmetic, cardinal arithmetic, axiomatic set theory, axiom of choice and the continuum hypothesis. Pre: 321 or graduate standing in a related field or consent. Not open to mathematics graduate students.


MATH 471 Probability (3) Probability spaces, random variables, distributions, expectations, moment-generating and characteristic functions, limit theorems. Pre: 244 or 253A (or concurrent), and 371 or consent.

MATH 472 Statistical Inference (3) Sampling and parameter estimation, tests of hypotheses, correlation, regression, analysis of variance, sequential analysis, rank order statistics. Pre: 471 or consent.

MATH 475 Combinatorial Mathematics (3) Finite configurations. Topics may include counting methods, generating functions, graph theory, map coloring, block design, network flows, analysis of discrete algorithms. Pre: 311 or consent.

MATH 480 Senior Seminar (V) A seminar for senior mathematics majors, including an introduction to methods of research. CR/NC only. Pre: one 400-level mathematics course or consent.

MATH 499 Directed Reading (V) Limited to advanced students who must arrange with an instructor before enrolling. Repeatable one time for a maximum of 3 credits each.

MATH 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

MATH 602 Ordinary and Partial Differential Equations (3) Classical existence and uniqueness theory for ODEs and PDEs, qualitative properties, classification, boundary value and initial value problems, fundamental solutions, other topics. Pre: 402, 431, 432, 442; or consent.

MATH 603 Ordinary and Partial Differential Equations (3) Continuation of 602. This is the second course of a year sequence and should be taken in the same academic year as 602. Pre: 602.

MATH 611 Modern Algebra (3) Modules, Sylow theorems, Jordan-Holder theorem, unique factorization domains, Galois theory, algebraic closures, transcendence bases. (These topics are covered in the year sequence 611–612.) Pre: consent.

MATH 612 Modern Algebra (3) Continuation of 611. This is the second course of a year sequence and should be taken in the same academic year as 611. Pre: 611.

MATH 613 Group Theory (3) Sylow theorems, solvable groups, nilpotent groups, extension theory, representation theory, additional topics. Pre: consent.

MATH 615 Ring Theory (3) Ideal theory in Noetherian rings, localization, Dedekind domains, the Jacobson radical, the Wedderburn-Artin theorem, additional topics. Pre: consent.

MATH 618 Lattice Theory (3) Introduction with applications to general algebra. Partially ordered sets, decomposition theory, representations of lattices, varieties and free lattices, coordinatization of modular lattices. Pre: 612 or consent.

MATH 619 Universal Algebra (3) Introduction to basic techniques, including subalgebras, congruences, automorphisms and endomorphisms, varieties of algebras, Mal’cev conditions. Pre: 612 or consent.

MATH 621 Topology (3) Properties of topological spaces; separation axioms; compactness, connectedness; metrizability; convergence and continuity. Additional topics from general and algebraic topology. (These topics are covered in the year sequence 621–622.) Pre: consent.

MATH 622 Topology (3) Continuation of 621. This is the second course of a year sequence and should be taken in the same academic year as 621. Pre: 621.

MATH 631 Theory of Functions of a Real Variable (3) Lebesgue measure and integral, convergence of integrals, functions of bounded variation, Lebesgue-Stieltjes integral and more general theory of measure and integration. (These topics are covered in the year sequence 631–632.) Pre: consent.

MATH 632 Theory of Functions of a Real Variable (3) Continuation of 631. This is the second course of a year sequence and should be taken in the same academic year as 631. Pre: 631.

MATH 637 Calculus of Variations (3) Simple variational problems, first and second variation formulas. Euler-Lagrange equation, direct methods, optimal control. Pre: 452 or consent.

MATH 644 Analytic Function Theory (3) Conformal mapping, residue theory, series and product developments, analytic continuation, special functions. (These topics are covered in the year sequence 644–645.) Pre: consent.

MATH 645 Analytic Function Theory (3) Continuation of 644. This is the second course of a year sequence and should be taken in the same academic year as 644. Pre: 644.

MATH 649 (Alpha) Topics in Mathematics (3) Commutative rings, function theory, geometric topology, transformation groups, etc. Repeatable unlimited times. Pre: consent.


MATH 699 Directed Reading and Research (V) Maximum of 3 credit hours. Repeatable three times. Pre: graduate standing and consent.


MATH 799 Apprenticeship in Teaching (V) An experience-based introduction to college-level teaching; students serve as student teachers to professors; responsibilities include supervised teaching and participation in planning and evaluation. Open to graduate students in mathematics only. Repeatable one time. CR/NC only. Pre: graduate standing in mathematics and consent.

MATH 800 Dissertation Research (V) Research for doctoral dissertation.
ME 213 Introduction to Engineering Design (3) (1 Lec, 1-2 hr Lab) Introductory experience in communication, presentation, professional ethics, social responsibility, engineering economics, quality control, and computer-aided drafting. Teamwork and project required. Prereq: PHYS 170. NJ

ME 271 Applied Mechanics II (3) Dynamics of particles and rigid bodies; force, acceleration, impulse-momentum, work-energy. CEE and ME majors only. A-F only. Prereq: C or better in CEE 270; MATH 244 or MATH 253A (or concurrent); or consent. (Cross-listed as CEE 271) NJ DF

ME 311 Thermodynamics (4) Basic laws, closed and open systems. Work, heat, concept of entropy. Properties of pure fluids and substances. Ideal gases. Introduction to power and refrigeration cycles. Prereq: grade of C or better in PHYS 170 and MATH 244. DP

ME 312 Applied Thermodynamics (3) Gas mixtures, generalized thermodynamic relationships, combustion and thermochemistry, chemical equilibrium, power and refrigeration cycles. Prereq: grade of C or better in PHYS 170 and MATH 244. DP

ME 322 Mechanics of Fluids (3) Incompressible and compressible ideal fluids, effects of viscosity, similitude, boundary layer flow, elementary gas dynamics. Prereq: grade of C or better in 311 and CEE 271 or MATH 271. Spring only. DP

ME 331 Materials Science and Engineering (3) Electronic, atomic, and crystalline structure of materials; the mechanical, electrical, optical, and magnetic properties of engineering metals, ceramics, polymers, and composites. Prereq: CHEM 162, MATH 242 and PHYS 170. DP

ME 341 Manufacturing Processes (3) Manufacturing components. Energy requirements for various manufacturing methods. Selection and design of manufacturing equipment. Obtain components with desired size/shape/properties. Prereq: CEE 331 or consent. DP

ME 342 Manufacturing Processes Lab (2) (1 Lec, 1-2 hr Lab) Manufacturing laboratory: tension/compression tests, cold rolling, welding, casting, statistical process control, programming and milling using a CNC machine. Prereq: 341 (or concurrent) or consent. DP


ME 371 Mechanics of Solids (3) Stress, strain and constitutive relations for elastic solids. Design of shafts, beams, columns and cylinders. Failure theories, statically indeterminate systems. Prereq: CEE 270 (grade of C or better), MATH 244 (or MATH 253A) and MATH 302 (or MATH 307). DP

ME 372 Component Design (3) Design, analysis, and selection of machine components: shafts, screws, fasteners, welds, rolling contact bearings, journal bearings, gears, clutches, brakes, belts, and roller chains. Prereq: 371 or consent. DP

ME 374 Kinematics/Dynamics Machinery (3) Velocity and acceleration analysis of planar mechanisms; kinematic synthesis of linkages, cams, and gears; static and dynamic force analysis of mechanisms; balancing of machinery. Prereq: CEE 271 or MATH 271 (C or better), MATH 244 and either MATH 302 or MATH 307. DP

ME 375 Dynamics of Machines and Systems (3) Lumped-parameter modeling of dynamic physical systems. Methods of analysis, including transform techniques. Time response and frequency response. Modal analysis. Prereq: CEE 271 or MATH 271 (C or better), and either MATH 302 or MATH 307. DP

ME 402 Dynamics Systems Laboratory (2) (1 Lec, 1-2 hr Lab) Analysis, design, fabrication, testing and characterization of engineering instrumentation. Computer-based data acquisition methods. Techniques and procedures associated with carrying out dynamic measurements within the constraints of cost, time and accuracy. A-F only. Prereq: 375 (or concurrent). DY

ME 403 Advanced Mathematics for Engineers (3) Applications of ordinary differential equations. Laplace transform, vector field theory, matrices, line integrals. Prereq: MATH 244 and MATH 302 (or MATH 307). DP

ME 404 Computational Fluid Dynamics (3) Basic computational fluid dynamics; four important partial differential equations; introduction to finite element method; Interpolation and Galerkin method; finite element method for transport phenomena; some algorithms for parallel computing. A-F only. Prereq: 422 (or concurrent), and either 360, MATH 407 or PHYS 305; or consent. (Once a year) DP


ME 418 Power and Propulsion (3) Principles, performance, and design of gas turbine power plants and propulsion systems. Prereq: 312 and 422 (or concurrent). DP

ME 419 Astronautics (3) The space environment (vacuum, neutral, radiation, and plasma); motion in gravitational fields; orbit transfers; Earth-satellite operations; rocketry; propulsion analysis and performance; reentry dynamics, interplanetary trajectories; attitude dynamics and stabilization. A-F only. Prereq: 422 or consent. Spring only. DP

ME 422 Heat Transfer (3) Steady and unsteady conduction; steady convection and radiation; heat exchangers. Prereq: 322, and one of 360, MATH 407, or PHYS 305. Fall only. DP

ME 423 Mass Transfer (3) Elementary mass diffusion; diffusion in a stationary medium; diffusion in a moving medium; mass transfer theory; simultaneous heat and mass transfer; condensation, evaporation, and boiling; transpiration cooling; species boundary layers; engineering and design of heat and mass exchangers; current refrigerants and environmental regulations. A-F only. Prereq: 422 or consent. DP

ME 424 Introduction to Gas Dynamics (3) One-dimensional compressible flow involving change of area, friction, heat transfer. Normal and oblique shocks. Prandtl-Meyer flow. Application to nozzle, diffusers, airfoils. Prereq: 312 and 322. DP

ME 425 Thermal Management of Electronic Systems (3) To introduce concepts in the thermal management of electronic equipment as well as design of gas turbine power plants and propulsion systems. Prereq: 312 and 422. A-F only. DP

ME 451 Feedback-Control Systems (3) Analy- sis/design of feedback systems. Compensator design via root locus and Bode analysis. Routh/Nyquist stability. State space representation and introduction to MIMO formulation. Controllability/observability. Application to physical dynamic systems such as industrial robots. Prereq: 375 or EE 315 or consent. DP

ME 452 Robotics (3) Principles and design methods for autonomous systems. Prereq: senior standing. DP

ME 453 Energy Conversion Systems (3) Energy conversion and its impact on the environment. Conventional, hydroelectric, nuclear fission and fusion, solar, wind, ocean, geothermal, and biomass power; energy storage, transmission and conservation. Prereq: 312, 322, and 422; or concurrent. DP

ME 455 Nuclear Power Engineering (3) Nuclear reactor principles. Reactor heat transfer, heat generation and removal. Design and analysis of reactor power systems and plants. Prereq: 312 and 422. DP

ME 471 Experimental Stress Analysis (3) (1-3 hr Lab) Techniques of experimental stress analysis: strain and deflection measurement of beams and shafts; strain to stress conversion and maximum shear stress, stress concentrations, residual stresses, buckling, creep, electrical resistance strain gages, brittle coatings, photoelastic methods, transducers. A-F only. Prereq: 371 and departmental approval. Spring only. DP

ME 473 Mechanical Vibrations (3) Response of machines and systems to transient and periodic excitation. Vibration isolation and transmissibility. Modal analysis of multi-degree-of-freedom systems. Applications to design. Prereq: 371, 375; or consent. DP


Key to symbols & abbreviations: see the first page of this section.

ME 481 Design Project I (3) (1 1-hr Lec, 2 2-hr Lab) Engineering ethics, engineering design methodology, design process, project planning, decision making, materials selection, economic analysis, quality control, finite element analysis, initiation of an open-ended design project. A-F only. Pr: 372 or consent.

ME 482 Design Project II (3) (1 Lee, 2 2-hr Lab) Continuation of design project initiated in ME 481. Extension of conceptual design to final design and a prototype. Analysis, materials and part selection, synthesis of working systems. Computer-aided design and finite element modeling. Manufacturing specifications, shop drawings, and a final report are required. A-F only. Pr: 375 and 481, or consent.

ME 491 Special Topics in Mechanical Engineering (3) Specialized topics in thermosciences, mechanics, materials, systems, or design. Pr: consent.

ME 492 Special Topics in Mechanical Engineering (3) Specialized topics in thermosciences, mechanics, materials, systems, or design. Pr: consent.

ME 499 Project (V) Investigation of advanced problems in mechanical engineering design or development. Student must find faculty sponsor before registering. Pr: senior standing.

ME 500 Master's Plan B/C Studies (1)

ME 615 Advanced Aerodynamics (3) Advanced topics in aerodynamics, two- and three-dimensional wing theory, slender-body theory, lifting surface methods, vortex and wave drag, analytical and numerical methods, for computing unsteady aerodynamic behavior and introduction to flight dynamics. A-F only. Pr: 322 and 620, or consent. (Once a year)

ME 618 Boiling and Two-Phase Flow (3) Two-phase flow pattern and flow pattern maps; two-phase flow models (homogeneous, separate, drift flux, annular); laminar and turbulent film condensations; boiling in heated wall; boiling heat transfer; flow boiling heat transfer; critical heat flux (CHF). A-F only. Pr: 422 (or equivalent) or consent. Spring only.


ME 622 Convection Heat Transfer (3) Heat transfer in laminar and turbulent boundary layers. Analogy between heat, momentum, mass transfer. Pr: 422 and 626.


ME 626 Viscous Flows (3) Formulation and properties of the Navier-Stokes equations; exact solutions; creeping flows; lubrication theory; laminar boundary layers; laminar stability; and transition to turbulence; turbulent boundary layers. Pr: 322. Fall only.


ME 636 Fundamentals of Electrochemistry (3) Thermodynamics of electrodes, kinetic, mass transfer by migration and diffusion, microelectrode techniques, forced convection, impedance, double-layer structure, and absorbed intermediates in electrode processes. Pr: consent.

ME 646 Mechanics and Design Composites (3) Introduction to composites; anisotropic elasticity and laminate theory; hygrothermal effects; composite beams, columns, rods, plates, and shells; energy method; failure theories; joining of composites, computer-aided design in composites. Pr: 371 or consent.

ME 647 Nanoscience and Nanotechnology (3) Science and applications of nanotechnology. Synthesis of nanostructures; nanoscale structure characterization by electron microscopy and Raman spectroscopy; electrical, thermal, and mechanical properties of nanostructures; fabrication of nanodevices; energy, environmental, and biological applications of nano-materials. A-F only.

ME 651 Automatic Control (3) Linear optimal feedback control, discrete time optimal control, fundamentals of adaptive control, application to motion and force control of robot arms and manipulators. Pr: 451, EE 351; or consent.

ME 660 Introduction to Fuel Cell Technology (3) Working principles of all major fuel cell types; fundamentals of proton exchange membrane (PEM) fuel cells; state-of-the-art theoretical models and diagnostic technologies for PEM fuel cells. A-F only. Pr: 422 (or equivalent) or consent. Spring only.

ME 671 Continuum Mechanics (3) Cartesian tensors in mechanics, coordinate transformations, analysis of stress and strain, principal values, invariants, equilibrium and compatibility equations, constitutive relations, field equations. Problems in elasticity. Recommended: 371 or CEE 370, or consent. (Cross-listed as CEE 671)

ME 672 Finite Element Analysis (3) Introduction to finite element analysis and design in mechanical engineering. Applications to machine design, vibrations, elasticity, heat transfer. Pr: 360, 371; or consent.

ME 678 Advanced Dynamics (3) Lecture on rigid-body dynamics. Topics include: dynamical systems; motion representation and constraints; Newtonian mechanics; Lagrangian mechanics; Hamilton’s principle; stability analysis; introduction to multibody dynamics. Pr: 375 or equivalent, or consent.

ME 691 Seminar (1) Current problems in all branches of mechanical engineering. All graduate students are required to attend; registrants are expected to present talks. Pr: graduate standing.

ME 696 Advanced Topics in Mechanical Engineering (V) Highly specialized topics in thermosciences, mechanics, materials, system, or design. Pr: consent.

ME 699 Directed Reading or Research (V) Directed study on subject of mutual interest to student and a faculty member. Student must find faculty sponsor before registering. Pr: graduate standing.


ME 799 Directed Instruction (V) Student assists in undergraduate classroom and/or project instruction under the direction and close supervision of faculty member. CR/NC only. Pr: admission to PhD candidacy or consent.

ME 800 Dissertation Research (V) Research for doctoral dissertation. Pr: candidacy for PhD in mechanical engineering.

Medical Education (MDED)

MDED 513 Health and Wellness for Medical Students (1) Provides strategies for healthy living for medical students and physicians. MD majors only. CR/NC only. Pr: 551 or consent.

MDED 517 Evidence-Based Medicine (1) Critical appraisal tool designed to improve the student’s ability to seek and evaluate new medical knowledge. MD majors only. CR/NC only. Spring only.

MDED 528 Unit 8 Block Electives (V) Through lectures, self-assessments and independent study, second-year medical students will consolidate their knowledge of the application of the biological sciences to patient care. CR/NC only. Pr: 557.

MDED 551 Unit 1 Health and Illness (8) Introductory series of problem-based learning tutorials for first-year medical students stressing concepts of health and disease, supplemented by lectures, laboratories, and colloquia intended to broaden the learning from the Unit 1 health care problems. Repeatable two times. MED and MD majors only. CR/NC only. Pr: consent. Co-requisite: 571 and 581. Fall only.

MDED 552 Unit 2 CV/Pulmonary (10) Advanced series of problem-based learning tutorials for first-year medical students focusing on cardiovascular and pulmonary systems, supplemented by lectures, laboratories, and colloquia intended to broaden learning from Unit 2 health care problems. Repeatable two times. MD majors only. CR/NC only. Pr: 551 or consent. Fall only.

MDED 553 Unit 3 Renal/Hematology (10) Advanced series of problem-based learning tutorials for first-year medical students focusing on renal and hematologic systems, supplemented by lectures, laboratories, and colloquia intended to broaden learning from Unit 3 health care problems. MD majors only. CR/NC only. Spring only.

MDED 554 Unit 4 GI/Endocrine (10) Advanced series of problem-based learning tutorials for first-year medical students focusing on gastrointestinal and endocrine systems, supplemented by lectures, laboratories, and colloquia intended to broaden learning from Unit 4 health care problems. MD majors only. CR/NC only. Pr: 553 or consent. Spring only.

MDED 556 Unit 6 Locomotor System, Nervous System and Behavioral Problems (14) Advanced series of problem-based learning tutorials for second-year medical students focusing on neurological/locomotor systems and behavior, supplemented by lectures, laboratories, and colloquia intended to broaden learning from Unit 6 health care problems. MD majors only. CR/NC only. Pr: 554 or consent. Fall only.

MDED 557 Unit 7 The Life Cycle (12) Advanced series of problem-based learning tutorials for second-year medical students focusing on topics within the life cycle, supplemented by lectures, laboratories, and colloquia intended to broaden learning from Unit 7 health care problems. MD majors only. CR/NC only. Pr: 556 or consent. Spring only.

MDED 563 Third Year Colloquia (2) A series of lecture-discussions intended to broaden the perspectives of the Unit VI experiences and health-care problems. Repeatable one time. CR/NC only. Pr: 551 and 557.
MDED 571 Introduction to Clinical Skills (2) Introductory lectures and laboratories on history taking and physical exam skills. Repeatable one time. MD majors only. CR/NC only. Pre: consent. Co-requisite: 551. Fall only.

MDED 572 Unit 2 Clinical Skills (2) History and physical exam skills pertinent to the health care problems in Unit 2. MD majors only. CR/NC only. Pre: 571 or consent. Fall only.

MDED 573 Unit 3 Clinical Skills (2) History and physical exam skills pertinent to the health care problems in Unit 3. MD majors only. CR/NC only. Pre: 572 or consent. Spring only.

MDED 574 Unit 4 Clinical Skills (2) History and physical exam skills pertinent to the health care problems in Unit 4. MD majors only. CR/NC only. Pre: 573 or consent. Spring only.

MDED 576 Unit 6 Clinical Skills (3) History and physical exam skills pertinent to the health care problems in Unit 6. MD majors only. CR/NC only. Pre: 574 or consent. Fall only.

MDED 577 Unit 7 Clinical Skills (2) History and physical exam skills pertinent to the health care problems in Unit 7. MD majors only. CR/NC only. Pre: 576 or consent. Spring only.

MDED 581 Unit 1 Community Health (2) Field experience placing students in community settings to work with health care professionals as they provide services to patients. Repeatable two times. MD majors only. CR/NC only. Pre: consent. Co-requisites: 551 and 571. Fall only.

MDED 582 Unit 2 Community Health (2) Field experience placing students in community settings to work with health care professionals as they provide services to patients. Repeatable two times. MD majors only. CR/NC only. Pre: 581 or consent. Fall only.

MDED 583 Unit 3 Community Health (2) Field experience placing student in community settings to work with health care professionals as they provide services to patients. MD majors only. CR/NC only. Pre: 582 or consent. Spring only.

MDED 584 Unit 4 Community Health (2) Field experience placing student in community settings to work with health care professionals as they provide services to patients. MD majors only. CR/NC only. Pre: 583 or consent. Spring only.

MDED 595 (Alpha) Topics in Medical Education (V) Summer selectives in medical education for second-year medical students. (B) Quentin Burdick rural health training program; (C) health issues of the Pacific Basin; (D) projects in medical education; (E) manikin simulations; (F) learning resources; (G) cardiovascular case maps; (H) pulmonary case maps; (I) clinical skills preceptors. Repeatable up to four credits. MD majors only. CR/NC only. Pre: 554. Fall only.

MDED 599 Research in Medical Education (V) An elective for medical students to work on research projects related to improving medical education, student wellness, and community health under the direction of a faculty member in the Office of Medical Education. Repeatable nine times.

Medical History (MDHX) School of Medicine

MDHX 699 Directed Research (V) Repeatable unlimited times.

Medical Technology (MEDT) School of Medicine

MEDT 151 Introduction to Medical Technology I (2) Designed to acquaint students to the field of medical technology (clinical laboratory science). Repeatable one time.

MEDT 251 Introduction to Medical Technology II (2) (1 Lec, 1 3-hr Lab) Designed to acquaint students with basic principles of medical technology. Repeatable one time. Pre: 151, CHEM 161/161L, and BIOL 171/171L (or concurrent). N/DB

MEDT 301 The Clinical Laboratory I (3) (2 Lec, 1 3-hr Lab) Theory and practical application of clinical laboratory methods for 366. MT-patient and MT-health team relationships. Repeatable one time. Pre: 251 or consent.

MEDT 302 The Clinical Laboratory II (3) (2 Lec, 1 3-hr Lab) Continuation of 301. Repeatable one time. Pre: 301 or consent.

MEDT 331 Clinical Lab Management (3) Student will become familiar with fundamental administration of a clinical laboratory to include technical, personnel, and financial management areas. Repeatable one time. CR/NC only. Pre: consent.

MEDT 366 Clerkship (2) Clerkship in an affiliated lab. Repeatable one time. CR/NC only. Pre: 301 and 302.

MEDT 431 Clinical Microbiology I (3) (2 Lec, 1 2-hr Lab) Modern practices in bacteriology, parasitology, mycology and virology in human health and disease states. Repeatable one time. Pre: MICR 351 or consent.

MEDT 451 Hematology (1) (1 3-hr Lab) Fundamental study of blood in normal and pathological states: formation, development, and classification of blood cells. Pre: 366 or consent.

MEDT 451L Hematology Lab (2) (1 Lec, 1 3-hr Lab) Laboratory to accompany MEDT 451. Medical technology majors only. Pre: 366 or consent. Co-requisite: 451.

MEDT 457 Clinical Lab Methods and Analyses I (3) Principles and methods of assessing disease states using laboratory tests. Emphasis on clinical biochemistry and instrumentation. Repeatable one time. Pre: 471 or consent.

MEDT 457L Clinical Lab Methods and Analyses Lab I (2) (1 6-hr Lab) Lab experiments illustrating fundamental principles and methods of clinical laboratory analyses. Repeatable one time. Co-requisites: 457.

MEDT 458 Clinical Lab Methods and Analyses II (3) Continuation of 457. Repeatable one time.

MEDT 458L Clinical Lab Methods and Analyses Lab II (2) (1 6-hr Lab) Continuation of 457L. Repeatable one time. Co-requisite: 458.

MEDT 463 Clinical Microbiology II (3) (1 Lec, 2 3-hr Lab) Modern practices in diagnostic microbiology. Repeatable one time. MEDT majors only. A-F only. Pre: 431 or consent.

MEDT 464 Immunohematology (3) (2 Lec, 1 3-hr Lab) Antigen-antibody relationships in human blood, study of blood groups, clinical problems in transfusion. Repeatable one time. MEDT majors only. Pre: MICR 461 or consent. Co-requisite: 463. Spring only.

MEDT 471 Clinical Biochemistry (4) Biochemical processes in human health and disease states. Repeatable one time. Pre: BIOL 441 or MBBE 402 or consent. Spring only. DB

MEDT 495 Special Topics in Medical Technology (V) Acquaints student with role of the medical technologist and overlap of major sciences in clinical situations to help student develop qualities unique to medical technology. Repeatable one time. CR/NC only. Pre: consent.

MEDT 499 Directed Reading and Research (V) Repeatable one time.

MEDT 531 Advanced Lab Management Concepts and Contemporary Issues (1) Concepts in clinical laboratory management and discussion of contemporary issues for graduates and practicing clinical laboratory scientists. Repeatable one time. Pre: 331 or consent. (Summer session only)

MEDT 551 Advanced Clinical Laboratory Hematology and Hemostasis (1) Advanced-level study of hematology and hemostasis through clinical laboratory cases. Repeatable one time. Pre: 451 or consent. (Summer only)

MEDT 591 Clinical Training in Medical Technology (28) Application of theory and simulated laboratory experiences in immuno-hematology, clinical chemistry, microbiology, parasitology, hematology, coagulation, urinalysis, immunology, to meet stated career entry-level competencies. Repeatable one time. Pre: BS in MEDT.

MEDT 690 Seminar in Medical Technology (1) Analysis of research and recent literature pertaining to various aspects of medical technology. Repeatable one time.
Meteorology (MET)

School of Ocean and Earth Science and Technology

MET 101 Introduction to Meteorology (3) For nonscience majors and prospective science teachers. Basic atmospheric physics, sun-Earth-atmosphere interrelationships, pollution, major weather systems, weather forecasting, weather of Hawai‘i. DP

MET 101L Introduction to Meteorology Lab (1) (3-hr Lab) Exercises with meteorological data and measurement systems. Characteristics of Hawaiian winds, temperatures, and rainfall. Prep: 101 (or concurrent) or 200 (or concurrent). DY

MET 200 Atmospheric Processes and Phenomena (3) Atmospheric variables, gas laws, radiation processes, thermodynamics, conservation laws, dynamic approximations, clouds and precipitation, convection, atmospheric circulations, mid-latitude and tropical weather systems, forecasting, climate. Prep: PHYS 170 and MATH 241. NT DP

MET 302 Atmospheric Physics (3) Energy and thermodynamics, statics and stability, physical processes of cloud formation and Earth-atmosphere heat balance, kinematic theory, optical effects. Prep: MATH 242, PHYS 272, and MET 200; or consent. DP

MET 303 Introduction to Atmospheric Dynamics (3) Scalar and vector development of basic laws of hydrodynamics, equations of motion, kinematics, divergence and vorticity, viscosity and turbulence, introduction to numerical weather prediction, general circulation. Prep: 302 and MATH 244. DP

MET 305 Meteorological Instruments and Observations (3) (2 Lec, 1 3-hr Lab) First- and second-order measurement systems. Response of wind, temperature, and recording instruments. Discussion of advance systems for meteorological field programs. Prep: PHYS 272/272L and MET 302. DP

MET 310 Global Environmental Change (3) Global environmental change problems such as carbon dioxide and the greenhouse effect, acid rain, chlorofluorocarbons and the ozone layer, global deforestation and the effect on climate, etc. Prep: one environmentally oriented science course or consent. (Cross-listed as OEST 310 and OCN 310) DP

MET 310L Global Environmental Change Laboratory (2) (3-hr Lab) Laboratory to supplement MET 310. Quantitative aspects of global environmental change will be addressed through problem solving and computer modeling. A-F only. Prep: PHYS 272/272L and OCN/MET/OEST 310; or consent. Co-requisite: 310 or consent. Fall only. (Cross-listed as OEST 310L and OCN 310L) DY

MET 320 Programming for Meteorologists (3) Scientific programming in Fortran 77, graphics software and meteorological applications. A-F or Audit. Prep: 302 (or concurrent) and MATH 241; or departmental approval.


MET 405 Satellite Meteorology (3) (2 Lec, 1 3-hr Lab) Orbital elements, ephemerides, viewing geometry; radiation, satellite sensors; interpreting satellite data; applications to synoptic meteorology and forecasting. Prep: 302. DP

MET 406 Tropical Meteorology (3) History; tropical clouds and hydrometeors; typhoons; monsoons; local and diurnal effects. Prep: 303. DP

MET 412 Meteorological Analysis Lab (3) (2 3-hr Lab) Techniques of portraying and analyzing atmospheric structure and weather systems in middle and high latitudes; modern methods of forecasting extratropical systems. Prep: 303 or concurrent. (Alt. years)

MET 416 Tropical Analysis Lab (3) (2 3-hr Lab) Techniques of portraying and analyzing atmospheric structure and weather systems in tropical and equatorial regions; forecasting tropical systems. Prep: 303 or concurrent.

MET 470 Air Pollution (3) (2 Lec, 1 3-hr Lab) A survey of the physical and chemical aspects of air pollution and climate at the global and local scales; responses to threats to our atmospheric environment. Lecture, lab and field trips. GE5 majors. A-F only. Prep: 200, CHEM 162, PHYS 272, OCN 310; or consent. Spring only. DP

MET 495 Undergraduate Thesis (3) Capstone for senior Meteorology majors. Undergraduate thesis project includes literature research or research design, data collection and analysis, technical writing of a final thesis paper and oral presentation of the paper. Senior standing only. A-F only. Prep: 302, 303 (or concurrent).

MET 600 Atmospheric Dynamics I (3) Governing equations for moist atmospheric motions, approximations, basic theoretical models, boundary layer dynamics, atmospheric waves, quasi-geostrophic theory for mid-latitudes. Prep: 402, and either MATH 402 or MATH 405; or consent.

MET 601 Atmospheric Dynamics II (3) Overview of dynamic meteorology, numerical weather prediction, geophysical fluid instabilities, approximate dynamical systems, atmospheric general circulation, stratospheric dynamics. Prep: 600 or consent. (Alt. years)

MET 606 Cumulus Dynamics (3) Dynamics of convective systems: tornadoes, waterspouts, squall lines. Interactions with synoptic scale. Prep: 620 or consent. (Alt. years)

MET 607 Mesooscale Meteorology (3) Scale analysis, Observational and theoretical aspects of mesoscale circulation systems. Prep: 600 or consent. (Alt. years)

MET 610 Tropical Climate and Weather (3) Climate and general circulation of the tropics; El Niño and Southern Oscillation; intraseasonal oscillation; trade winds; tropical weather systems; energy balance; typhoons. Prep: 303 or consent.

MET 614 Tropical Cyclones (3) Lecture covering fundamentals of tropical structure, motion, and impacts on society. Observations from satellites, aircraft, ships and buoys, and numerical simulations focusing on storm structure and track. Some forecasting exercises. Repeatable one time. Prep: 610 and 610, or consent. (Alt. years)

MET 616 Monsoon Meteorology (3) Synoptic components of monsoons, regional and temporal variability, numerical models, research exercises. Prep: 610 or consent. (Alt. years)

MET 620 Physical Meteorology (3) Molecular kinetics, atmospheric thermodynamics, cloud physics, precipitation processes, atmospheric electricity, scattering and absorption of solar radiation, absorption and emission of infrared radiation, radiative transfer. Prep: 302 or consent.

MET 631 Statistical Meteorology (3) Probability; frequency distributions of atmospheric variables; linear models; time series analysis (frequency and time domain); principal component analysis; statistical weather forecasting and verification. Prep: MATH 371. (Alt. years)

MET 652 Advanced Statistical Methods in the Geosciences (3) Methods for numerous multivariate analyses which include singular spectrum, extended empirical orthogonal function, singular-value decomposition, canonical correlation, discriminant and cluster analysis. Other advanced topics include wavelet analysis, statistical downscaling and Bayesian analysis. A-F only and audit. Prep: 631 or consent. (Every 3rd year)

MET 665 Small-Scale Air-Sea Interaction (3) Observations and theory of small-scale processes which couple the atmosphere and ocean boundary layers, including introduction to turbulence theory and parameterization of turbulent fluxes. Prep: MATH 402 and 403 (or their equivalents) and either 600 or OCN 620; or consent. (Alt. years) (Cross-listed as OCN 665)

MET 666 Large-Scale Ocean-Atmosphere Interactions (3) Lecture/seminar introduces physical oceanography and meteorology students to the state-of-the-art theories and observations of large-scale ocean-atmosphere interaction, as well as conveying the fundamental understanding that has been developed during the past 30 years. Emphasis will be on phenomena such as El Niño/Southern Oscillation, the North Atlantic Oscillation, the Pacific Decadal Oscillation, and global climate change. Repeatable one time. Prep: 600 or OCN 620, or consent. (Alt. years) (Cross-listed as OCN 666)

MET 699 Directed Research (V) Prep: consent.

MET 700 Thesis Research (V) Prep: consent.

MET 702 Numerical Weather Prediction (3) (2 Lec, 1 3-hr Lab) Fundamental methods and techniques in numerical weather prediction: time differencing, spatial finite differencing, spectral methods, numerical stability, explicit and implicit methods. Modern operational and research forecast models. Hands-on laboratory includes simple to complex dynamic models, with a term project. Repeatable one time. Prep: 600 or OCN 620; MATH 407 or 408; or consent. (Alt. years)

MET 704 Climate and Climate Variability (3) Physical basis of climate, numerical climate models, paleoclimatic indicators, modern instrumental climate records, assessment of human impact on climate, predictions of future climate. Repeatable one time. Prep: 600 or OCN 620, or consent. (Alt. years)

MET 706 Tropical Climate Dynamics and Modelling (3) Overview of current progress in tropical climate dynamics with a particular focus on large-scale atmosphere-ocean interactions; introduction of basic numerical techniques for students to construct and run immediate tropical atmosphere and ocean models. Prep: 600.

MET 708 General Circulation of the Atmosphere (3) Theory, observations, large-scale analyses, and global model simulations that describe characteristic large-scale circulation of the Earth’s atmosphere. Includes zonally averaged climatology, asymmetric features of the general circulation, and El Niño-Southern Oscillation phenomenon. Repeatable one time. Prep: 600 or consent. (Alt. years)

MET 752 Special Topics in Meteorology (3) Concentrated studies on selected atmospheric problems. Repeatable two times. Prep: 600 or consent.

MET 765 Seminar in Meteorology (1) Participation in departmental seminars and presentation of a seminar on research results. Includes written critiques of departmental seminars. Repeatable three times. Prep: consent.

MET 800 Dissertation Research (V)

Microbiology (MICR)

College of Natural Sciences

MICR 130 General Microbiology (3) Role of microorganisms; how they affect people, property, and the environment. A basic survey course covering broad aspects of biochemistry, genetics, molecular biology, and physiology; host-parasite relationships, public health, bacterial, mycotic and viral diseases; epidemiology; ecology of soils and water; environmental pollution; food microbiology; industrial applications at an introductory level. Not open to those with credit in 351 or equivalent. DB
MICR 140L Microbiology Laboratory (2) (2-3 hr Lab) Primarily for students in nursing and dental hygiene. Pre: 130 (or concurrent). DY

MICR 314 Research Ethics (1) Introduction to the ethical issues faced by individuals and institutions involved in scientific research. Based on case studies, students will discuss and write about ethical issues in research. Issues include human and animal: research, mentoring, authorship, ownership of data, genetic technologies and record keeping. This course is designed for students with majors in the natural sciences. A-F only. Pre: BIOL 172 (or concurrent), or MATH 321 (or concurrent), or PHYS 170 (or concurrent), or CHEM 272 (or concurrent); or consent. DS

MICR 351 Biology of Microorganisms (3) Anatomy, chemistry, physiology, genetics, development, and environmental interactions of microorganisms. Pre: BIOL 171 or equivalent, CHEM 272/272L; or consent. Co-requirese: 351L. Recommended: BIOL 275/275L, DB

MICR 351L Biology of Microorganisms Lab (2) (2-3 hr Lab) Laboratory exercises to accompany 351L. Pre: CHEM 272/272L, and BIOL 171, or equivalent. Co-requirese: 351. DY

MICR 361 Introductory Bioinformatics (4) (3 Lec, 1-3 hr Lab) Introductory bioinformatics will provide a basic foundation of biological information (DNA, proteins, and genomes) and use of information technology (IT). A-F only. Pre: BIOL 275 and BIOL 275L, or consent. Fall only.

MICR 401 Marine Microbiology (3) Evolution, ecology, biochemistry, genetics and physiology of marine bacteria by examining defined systems and organisms. Pre: BIOL 265/265L and BIOL 275/275L and BIOL 301/301L, and OCN 201; or 351/351L; or consent. DB

MICR 401L Marine Microbiology Laboratory (1) (1-3 hr Lab) Laboratory to accompany 401L. Pre: BIOL 265/265L and BIOL 275/275L and BIOL 301/301L and OCN 201; or 351/351L; or 401 or concurrent; or consent. DY

MICR 410 Advanced Topics in Microbiology (2) Capstone for (but not limited to) senior microbiology majors and seminar research in microbiology, critical analysis of the methods and logic of experimental design. Lecture and discussion of primary literature. A-F only. Pre: 351 and three other 400-level courses (or concurrent), or consent. (Once a year)

MICR 431 Microbial Physiology (3) Fundamental physiological and metabolic processes of bacteria: emphasis on growth, functions of cell structures, varieties of energy metabolism, metabolic regulation, and differentiation at the prokaryote level. Pre: 351. DB

MICR 431L Microbial Physiology Lab (2) (2-3 hr Lab) Components and metabolism of the bacterial cell; emphasis on techniques of analysis of metabolism and molecular structure. Co-requirese: 431. DY

MICR 461 Immunology (3) Structure and biological actions of antigens and antibodies; fundamentals of antibody synthesis; the relation of immunology to biology and medical sciences. Pre: 351 or BIOL 172; or consent. Recommended: BIOL 275/275L. DB

MICR 461L Immunology Lab (2) (2-3 hr Lab) Basic exercises and experiments in immunology, immunohistochemistry, immune-biology to illustrate principles of 461. Co-requirese: 461 or consent. DY

MICR 463 Microbiology of Pathogens (3) Host-parasite relationships in microbial diseases of humans and animals with emphasis on bacterial pathogens. Pre: 351, 461, and 461L; or consent. Co-requirese: 463L or consent. DB

MICR 463L Microbiology of Pathogens Lab (2) (2-3 hr Lab) Characterization of bacterial pathogens. Isolation, identification, and diagnosis. Co-requirese: 463 or consent. DY

MICR 470 Microbial Pathogenesis (3) Fundamental mechanisms of infectious diseases at the molecular level. Emphasis on the role of genetics in host-pathogen interactions. Pre: 351/351L or consent. DB

MICR 475 Bacterial Genetics (3) Genetic analysis and molecular basis of transmission replication, mutation, and expression of heritable characteristics in prokaryotes. Pre: 351 or BIOL 275, or consent. DB

MICR 475L Bacterial Genetics Lab (2) (2-3 hr Lab) Techniques for study of transfer and expression of prokaryotic genes: transformation, conjugation, transposon mutagenesis, preparation and analysis of plasmid and chromosomal DNA. Pre: 475 (or concurrent). DY

MICR 485 Microbes and Their Environment (3) Distribution, diversity, and roles of microorganisms in terrestrial, freshwater, and marine ecosystems. Importance of bacteria in pesticide degradation, bioremediation of oil spills, sewage treatment, biocatalysis, food fermentation. Pre: BIOL 172 and CHEM 272, or consent. DB

MICR 485L Microbes and Their Environment Lab (2) (2-3 hr Lab) General laboratory techniques and related theories in virology; including isolation, cell culture, assay, purification, and identification of viruses. Pre: 351/351L or BIOL 275/275L, and 490 (or concurrent); or consent. DY

MICR 490 Virology (3) Basic principles of virus biology. Topics include methods for virus study, virus structure, replication, gene expression, pathogenesis and host response. Pre: 351 or BIOL 275, or consent. DB

MICR 490L Virology Lab (2) (2-3 hr Lab) General laboratory techniques and related theories in virology; including isolation, cell culture, assay, purification, and identification of viruses. Pre: 351/351L or BIOL 275/275L, or 490 (or concurrent); or consent. DY

MICR 499 Microbiological Problems (4) Directed reading and research. Limited to senior majors with a minimum cumulative GPA of 2.7 or a minimum GPA of 3.0 in microbiology, or consent.

MICR 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent. Fall only. (Cross-listed as MBBE 601)

MICR 614 Research Ethics (1) Introduction to ethical issues faced by individuals and institutions involved in scientific research. Moral reasoning, humans and animals in research, mentoring, authorship, ownership of data and genetic technologies. MICR graduates only. A-F only. Pre: graduate standing in MICR or related field, or consent. (Once a year)

MICR 625 Advanced Immunology (3) Detailed reports and discussions on selected advanced topics and current research literature. Pre: 461 or consent. (Alt. years: spring)

MICR 630 Microbial Genome (3) Advanced studies of Microbial genome: relation to functional genomics, structural genomics, and proteomics. A-F only. Pre: 351 and one 400-level MICR course, or consent. (Alt. years)

MICR 632 Advanced Microbial Physiology (3) Selected topics. Pre: 431 or consent. (Alt. years: spring)

MICR 646 Plant-Bacterial Interactions (3) Diagnosis, molecular biology, genetics, and infection mechanisms of bacterial plant pathogens and symbionts. Pre: one of 351, 475, or BIOL 481; or consent. (Cross-listed as PEPS 646)

MICR 652 Advanced Marine Microbiology (3) Advanced studies of marine microorganisms in diverse habitats with consideration of applications of marine microbes, interactions with higher organisms, phylogeny and diversity, and past and current methods. A-F only. Pre: 351 and 401, or consent. (Alt. years)

MICR 671 Bacterial Genetics (3) Directed study and discussion of research literature on bacterial and bacterial virus mutation, genetic recombination, evolution and control mechanisms. Pre: graduate standing; undergraduates that have taken 475 may register with consent. (Alt. years: spring)

MICR 680 Advances in Microbial Ecology (3) Highlights in microbial ecology; interaction of microorganisms with abiotic and biotic components of their environments. Modern techniques for study of autecology and synecology of microorganisms. Pre: 485 or consent. (Alt. years: spring)

MICR 681 Host-Parasite Relationships (3) Mechanisms of pathogenicity of microorganisms and defense mechanisms of human and animal hosts. Review of contemporary literature. Pre: 463 or consent. (Alt. years: fall)

MICR 685 Molecular and Cellular Bacterial Pathogenesis (3) Detailed examination of the molecular and cellular mechanisms of bacterial pathogenesis. Overview of key literature, synthesis of scientific problems into research proposals. Pre: 431, 463, or 470; or consent. (Alt. years: spring)

MICR 690 Seminar (1) Required of graduate students. Repeatable unlimited times; only one credit will count toward the degree. A-F only. Pre: graduate status or consent.

MICR 699 Directed Research (V) Selected problems in microbiology. Pre: consent.

MICR 700 Thesis Research (V) Selected topics in any aspect of microbiology. Repeatable unlimited times.

MICR 800 Dissertation Research (V)

Military Science and Leadership (MSL)

MSL 100 Introduction to Physical Fitness (1) Hands-on participatory course following the Army’s physical fitness program. Classes conducted three days per week with Army ROTC cadets. Focus is on aerobic conditioning, muscular strength and endurance. Repeatable three times.

MSL 101 Introduction to Military Science I (2) Introduces cadets to personal challenges and competencies critical for effective leadership: personal development of life skills such as goal setting, time management, physical fitness, and stress management related to leadership, officership, and the Army profession. Focus on developing basic knowledge and comprehension of the Army Leadership Dimensions while understanding the ROTC program, its purpose in the Army, and its advantages for the student.

Key to symbols & abbreviations: see the first page of this section.
MSL 101L Introduction to Military Science I Lab (1) Practical application in adventure training, one-rope bridges, rifle marksmanship, land navigation, drill and ceremonies, physical training. Pre: 101 (or concurrent).

MSL 102 Introduction to Military Science II (2) Overviews leadership fundamentals such as setting direction, planning, presenting briefs, providing feedback and using effective writing skills. Explores leadership values, attributes, skills, and actions in the context of practical, hands-on, and interactive exercises. Cadre role models and building stronger relationships among cadets through common experience. Pre: 101, 102, 201, 202, 301, and 302; or consent.

MSL 102L Introduction to Military Science II Lab (1) Practical application in adventure training, one-rope bridges, rifle marksmanship, land navigation, drill and ceremonies, physical training. Pre: 102 (or concurrent).

MSL 201 Intermediate Military Science I (3) Explores creative and innovative tactical leadership strategies and styles through historical case studies and engaging in interactive student exercises. Cadets practice aspects of personal motivation and team building by planning, executing, and assessing team exercises. Focus is on continued development of leadership values and attributes through understanding of rank, unity of command and courtesies.

MSL 202 Intermediate Military Science II (3) Challenges of leading complex, contemporary operational environments. Dimensions of cross-cultural challenges of leadership in a constantly changing world are highlighted and applied to practical Army leadership tasks and situations. Cadets develop greater self awareness as they practice communication and team building skills, and tactics in real world scenarios. Provides a smooth transition to MSL 301.

MSL 203 ROTC Basic Camp (6) Four-week summer course conducted at Ft. Knox, Kentucky. Substitutes for ROTC basic course (101, 102, 201, and 202) and fulfills course requirement for admission to ROTC advanced courses. Credit will be given for 203 or basic courses, but not both. Pre: consent.

MSL 301 Leading Small Organizations I (4) (2.5 Lec, 1.5-hr Lab) Challenges cadets to study, practice, and evaluate adaptive leadership skills with demands of the ROTC Leader Development Assessment Course (LDAC). Challenging scenarios related to small unit tactical operations will develop self-awareness and critical thinking skills. Cadets will receive systematic, specific feedback on their leadership abilities, and analyze/evaluate their leadership values, attributes, skills and actions. Pre: 101, 102, 201, 202; or consent.

MSL 302 Leading Small Organizations II (4) (2.5 Lec, 1.5-hr Lab) Intense situational leadership challenges to build cadre awareness and skills in leading small units. Decision-making, persuading, and motivating team members under fire are explored, evaluated, and developed. Military operations are reviewed to prepare for the ROTC LDAC. Cadets apply principles of Law of Land Warfare, Army training, and motivation to troop leading procedures; and are evaluated on what they know and do as leaders. Pre: 101, 102, 201, 202; or consent.

MSL 303 ROTC Advanced Camp (6) Six-week summer field training exercise conducted at Fort Lewis, Washington. Arduous and intensified leadership training is conducted throughout the six-week period. Required for U.S. Army commissioning. Pre: 301, 302, and consent.

MSL 391 History of Military Warfare (3) Lecture discussion on the art and science of warfare with concentration on U.S. military history from the Colonial Period onward. Generally restricted to Army ROTC students, with few exceptions to non-ROTC students. Writing intensive. A-F only. Pre: consent.

MSL 399 Directed Reading and Research (V) Limited to military science students who have had at least one previous military science course for which a grade of B or higher was earned and a cumulative GPA of 2.0 or better, writing intensive. Pre: consent.

MSL 401 Leadership Challenges and Goal Setting (4) (2.5 Lec, 1.5-hr Lab) Develops proficiency to plan, execute, and assess complex operating situations. As a cadet, function as a staff member, provide leadership performance feedback to subordinates. Situational opportunities to assess risk, make ethical decisions, and provide coaching to fellow ROTC cadets; challenged to analyze, evaluate, and instruct younger cadets. Written critiques, discussion, and presentations. Pre: 101, 102, 201, 202, 301, and 302; or consent.

MSL 402 Transition to Lieutenant (4) (2.5 Lec, 1.5-hr Lab) Explores dynamics of leading in complex situations of current military operations. Examines differences in customs and courtesies, military law, principles of war, and rules of engagement in the face of international terrorism. Interaction with non-governmental organizations, civilians on the battlefield, and host nation support are examined and evaluated. Case studies, scenarios, and What Now, Lieutenant? exercises prepare cadets to lead as commissioned officers in the U.S. Army. Pre: 101, 102, 201, 202, 301, 302, and 401; or consent.

MSL 499 Advanced Military Research (V) Directs the student to conduct detailed research on a military topic and present to the department leadership plus assist MSL 400 series students on a battle analysis. Repeatable up to eight credits. Must be in Military Science and Leadership Program or Military Service member in junior or greater standing. Pre: departmental approval.

Key to symbols & abbreviations: see the first page of this section.
MBBE 607 Advanced Food Science I (3) Advanced topics in chemical and physical characteristics of foods as well as their role in human nutrition. Repeatably one time. A-F only. Pre: graduate student status with undergraduate courses in organic chemistry, microbiology, additional biological science, physics, and biochemistry. Basic knowledge of food science is expected; or consent. Fall only. (Cross-listed as FSHN 607)

MBBE 610 Molecular Biosciences Seminar (1) Study and discussion of significant topics and problems in plant physiology, biochemistry, and molecular biology. A-F only.

MBBE 620 Plant Biochemistry (3) Comprehensive study of chemical cosubstrates and biochemical processes unique to the plant kingdom with emphasis on selected aspects of current interest. A-F only. Pre: 402 or consent.


MBBE 625 Biosensor Principles and Applications (3) Elaboration of common biochemical interactions used to quantify biological molecules, and the electrical technologies used to detect them. Discussion of the desirable properties of biosensors, miniaturization and applications related to medicine, agriculture, bioproduction and environment. Pre: consent. (Cross-listed as BE 625)

MBBE 650 DNA and Genetic Analysis (2) Combined lecture/lab for students interested in genetic analysis of humans, animals, and other species. Molecular techniques, such as PCR, DNA marker identifications, transgenics, expression analysis and functional genomics, are included. Open to nonmajors. Pre: graduate standing or consent. (Cross-listed as ANSC 650 and FSHN 650)

MBBE 651 Signal Transduction and Regulation of Gene Transcription (3) Lecture/discussion on molecular mechanisms involved in the transmission of regulatory signals from the cell surface to the nucleus. A-F only. Pre: CMB 621, and CMB 654 or equivalent; or consent. Fall only.

MBBE 680 Methods in Plant Molecular Biology (3) (1 Lec, 2-hr Lab) Advanced methodology and research techniques for students interested in laboratory training in basic and current molecular procedures for plant research. Pre: one of BIOG 481 or BIOL 407.

MBBE 683 Advanced Bioinformatics Topics for Biologists (4) Teaches problem-solving with bioinformatic tools. Real-world problems will be provided and worked out, students encouraged to provide their own research problem where they require assistance. Graduate student must work on genomics research project requiring bioinformatic analysis, working knowledge of UNIX OS, Perl, Java or C. A-F only. Pre: ICS 471 and ICS 491 and ICS 691 (or equivalent), or consent. (Alt. years)

MBBE 687 Advanced Lab Techniques (5) (1 Lec, 2-3-hr Lab) Advanced laboratory techniques used in life science research. Pre: graduate standing or consent. (Cross-listed as ANSC 687 and FSHN 687)

MBBE 691 Advanced Special Topics in MBBE (V) Study and discussion of advanced special topics and problems in molecular biosciences and bioengineering. Pre: graduate standing or consent.

MBBE 699 Directed Research (V)

MBBE 700 Thesis Research (V) CR/NC only.

MBBE 800 Dissertation Research (V) CR/NC only.

Music (MUS)

College of Arts and Humanities

Applied music courses appear at the end of this section.

MUS 106 Introduction to Music Literature (3) Elements, styles, and forms of music, from listener's standpoint. DH

MUS 107 Music in World Cultures (3) Folk, popular, and art music from major regions of the world, with emphasis upon Asia and the Pacific; representative styles and regional characteristics. FGC

MUS 108 Fundamentals of Western Music (3) Fundamental concepts in organization of music as expressive medium in Western culture. Roles of composer, performer, and listener. Notation as mode of communication. Discovery and verification of ideas through laboratory experience. DA

MUS 114 University Chorus (1) Performance of choral literature from Renaissance to present. Previous choral experience not required. Repeatably unlimited times. DA

MUS 121 (Alpha) Class Instruction I (1) Basic principles of performance; relevant problems in literature. (B) voice; (C) piano; (D) guitar. Cannot be audited. DA

MUS 122 (Alpha) Class Instruction II (1) Basic principles of performance; relevant problems in literature. (B) voice; (C) piano; (D) guitar. Repeatable in different sections. Cannot be audited. Pre: 121 or consent. DA

MUS 123 (Alpha) Pacific Music Performance Class (1) Basic principles of performance of Pacific music. Relevant problems at elementary level. (B) slack key guitar; (C) ukulele. Repeatable one time per alpha. Pre: 121D or consent for (B); 108 or consent for (C). DA

MUS 125 First-Level Secondary Piano (1) Piano as secondary performance field; application of theory to problems in improvising, harmonizing, creating accompaniments, transposing, and sight-reading at keyboard. For music majors. Pre: consent. Co-requisite: 281 or consent.

MUS 126 First-Level Secondary Piano (1) Piano as secondary performance field; application of theory to problems in improvising, harmonizing, creating accompaniments, transposing, and sight-reading at keyboard. Continuation of 125. For music majors. Pre: 125 or consent.

MUS 127 (Alpha) Asian Music Performance Class (1) Basic principles of performance of Asian music. Relevant problems in literature at elementary level. (B) koto; (C) shamisen; (D) South Indian singing; (E) shakuhachi. Cannot be audited. Pre: consent. DA

MUS 128 (Alpha) Asian Music Performance Class (1) Basic principles of performance of Asian music. Relevant problems in literature at elementary level. (B) koto; (C) shamisen; (D) South Indian singing; (E) shakuhachi. Cannot be audited. Pre: consent. DA

MUS 151 String Techniques and Methods (2) For students preparing to teach instrumental music. Performance techniques, materials, and pedagogy for string instruments. A-F only.

MUS 152 Instructional Techniques and Methods: Lower Strings (2) Continuation of 151. Pre: consent.

MUS 153 Woodwind Techniques and Methods (2) Similar to 151 and 152 using upper woodwind instruments. A-F only.

MUS 154 Woodwind Techniques and Methods II (2) Continuation of 153. A-F only.

MUS 155 Percussion Techniques and Methods (2) Similar to 151 using percussion instruments. A-F only.

MUS 156 Brass Techniques and Methods (2) Similar to 151 using brass instruments. A-F only.

MUS 199 Recital Attendance (0) Attendance at approved departmental concerts. Required of all music majors (BMus, six semesters; BA and BEd, four semesters). Repeatably unlimited times. CR/NC only.

MUS 225 Second-Level Secondary Piano (1) Continuation of 125–126 increased emphasis on piano literature up to intermediate level. Pre: 126 or consent. NI

MUS 226 Second-Level Secondary Piano (1) Continuation of 225. Pre: 225 or consent. NI

MUS 240 Creative Applications of Music Technology (3) Introductory laboratory experience. Teaches musicians fundamental technology concepts through creative projects. Exposes students to a variety of music and audio software. A-F only. Pre: music majors or minors or consent.

MUS 250 Introduction to Music Education (1) Survey of American education, with an emphasis on music learning, teaching and philosophy, school structure and governance, diversity and multi-cultural education, and professional ethics. Supervised clinical and field experiences required. MUS majors only. A-F only. (Alt. years)

MUS 251 Diction for Singers (2) Diction and phonetics of English, Italian, and liturgical Latin for singers and choral conductors. Pre: 232B or consent. NI

MUS 252 Diction for Singers (2) Diction and phonetics of French and German for singers and choral conductors. Pre: 232B or consent. NI

MUS 253 Elementary Music in Action (3) (3 Lec, 1-1-hr Lab) Musical concepts, philosophy and pedagogy; use of media; singing, movement, and instruments; as well as resources for an active elementary music classroom. DA

MUS 265 History of Western Music to 1750 (3) Development of Western music from its origins to 1750. Styles, schools, composers. Pre: 282 or consent. NI DH

MUS 266 History of Western Music After 1750 (3) Development of Western music from 1750 to the present. Styles, schools, composers. Pre: 282 or consent. NI DH

MUS 270 World of Music: Asia/Pacific (3) Study of music as social process, sound system, aesthetics, and world view. Emphasis on Hawai‘i, Asia, and the Pacific and the ways music creates links across the region and among people. Pre: ability to read music and one introductory music course (108, 114, 121-126, 151-156) or consent. Fall only. NI DH

MUS 280 Basic Theory and Aural Skills (3) Fundamentals of music theory, notation, sight-singing, and dictation. Pre: 108 or consent. NI

MUS 281 Theory I (2) Materials and organization of music; analysis, writing, and keyboard application. Pre: 280 or consent. Co-requisite: 283 or consent. NI

MUS 282 Theory II (2) Continuation of 281. Pre: 281 or consent. Co-requisite: 284 or consent. NI

MUS 283 Aural Training I (1) Perception, identification, and notation of musical sounds through dictation and sight singing. Pre: 280 and ability to sing diatonic melodies at sight, or consent. Co-requisite: 281 or consent. NI

MUS 284 Aural Training II (1) Continuation of 283. Pre: 283 or consent. Co-requisite: 282 or consent. NI


Key to symbols & abbreviations: see the first page of this section.
MUS 287 Aural Training III (1) Advanced level of perception, identification, and notation of musical sounds through dictation and sight-singing. Pre: 284. Co-requisite: 285 or consent. NI

MUS 288 Aural Training IV (1) Continuation of 287. Pre: 287. Co-requisite: 286 or consent. NI

MUS 289 Introductory Practicum in Music Composition (V) Original composition; specific approaches to writing. Repeatable. Pre: 282 and 284 or consent. NI

MUS 311 (Alpha) Elementary Music Ensembles I (1) Performance of literature for groups of various sizes and kinds at introductory level (B) Hawaiian; (C) Japanese; (D) Chinese; (E) Korean; (F) Okinawan; (G) Philippine; (H) gamelan; (I) gagaku; (J) Tahitian; (K) Oceanic; (M) other. Repeatable unlimited times. Pre: upper division standing or consent. DA

MUS 312 Hula/Chant Ensemble I (2) Ancient style. Pre: upper division standing or consent. DA

MUS 325 Conducting (1) Problems in directing instrumental and choral ensembles. Score reading, rehearsal techniques, and basic interpretive problems. Pre: 286 and 288.

MUS 326 Advanced Conducting (2) Continuation of 325. Pre: 325 or consent.

MUS 340 Electronic Music (3) Basic techniques of electronic sound synthesis. Pre: 240 or consent.

MUS 341 Audio Recording/Mixing/Sound Design (3) Preproduction, mixing, setup and recording suitable for film. Mixing techniques in software for small systems. Sound design using original synthesis techniques to enhance film and support stories. Pre: 240 or consent. (Alt. years)

MUS 342 Digital Audio Synthesis and Multimedia Applications (3) Sound control through graphical interfaces. Advanced digital audio synthesis techniques. Audio control of graphics and video. Introduction of alternate controllers. Pre: 240 or consent. (Once a year)

MUS 353 Integrating Music in the Elementary School (3) Application of musical concepts through an integrated approach. This includes strategies, world music, literature, materials and resources for the elementary classroom curriculum. Pre: 253 or consent.


MUS 354L Music Education: Elementary School Lab (1) Observation, analysis, participation and teaching in the elementary school. Supervised 20 hours of field experiences required. MUS majors only. CR/NC only. Pre: 286 and 288, or departmental approval. Co-requisite: 354. (Every 3rd semester)

MUS 355 Music: Secondary Instrumental (3) Objectives, materials, procedures of instrumental music in secondary schools. A-F only. Pre: 286 and 326 (or concurrent); or consent.

MUS 355L Music: Secondary Instrumental Lab (1) Observation, analysis, participation and teaching in the elementary school. Supervised 20 hours of field experiences required. MUS majors only. CR/NC only. Pre: 354, or departmental approval. Co-requisite: 355. (Every 3rd semester)


MUS 356L Music: Secondary Vocal Lab (1) Observation, analysis, participation and teaching in the elementary school. Supervised 20 hours of field experiences required. MUS majors only. CR/NC only. Pre: 354, or departmental approval. Co-requisite: 356. (Every 3rd semester)


MUS 359 Piano Pedagogy (2) Continuation of 358. Pre: 358 or consent.

MUS 360 Music in Film (3) Lecture investigating the role of music in narrative film, and developing critical skills through close study of films and their music. Understanding styles and techniques of film music within larger aesthetic trends and historical contexts. Pre: 106 or consent. (Once a year) DH

MUS 370 Music in Modern America (3) Varieties of music, including jazz and other popular forms; relevant antecedents. Pre: sophomore standing; freshmen with consent only. DH

MUS 381 Counterpoint (3) Form, texture, and style in music literature from Renaissance to present. Formal analysis and writing. Contrapuntal textures and forms. Pre: 286.

MUS 382 Form and Analysis (3) Form, texture, and style in music literature from Renaissance to present. Formal analysis and writing. Larger forms with various textures; recent contemporary approaches to continuity. Pre: 265, 266, and 286.

MUS 383 Orchestra tion (3) Basic principles of scoring for orchestra and band; instrumental ranges, timbres, transpositions; transcribing or composing for band, orchestra, and chorus. Pre: 286 or consent.

MUS 386 Theory and Practice of Jazz Improvisation (2) Development of an improvising technique through analysis and performance practice. For instrumentalists only. Pre: 285 and 287.

MUS 387 Contemporary Techniques (2) Theoretical techniques in music of the 20th and 21st centuries; emphasis on writing as the synthesis of concepts. Investigation of important stylistic movements. Pre: 286 or consent.

MUS 399 Directed Study (V) Limited to majors with a minimum cumulative GPA of 2.7 or a minimum GPA of 3.0 in music. Pre: consent.

MUS 400 Topics in Music (V) Topics in history, literature, theory, applied music, music education, and ethnomusicology; for music majors. Consult department for topics and specific dates. Pre: 281 and appropriate lower division music courses; or consent.

MUS 407 Music Cultures of the World (3) Folk, popular, and art music from major regions of the world, with emphasis upon Asia and the Pacific, representative styles and regional characteristics. Pre: junior standing or consent. DH

MUS 410 (Alpha) Ensembles I (1) Performance of literature for ensembles and performing groups of various sizes and kinds; (B) Hawaiian chorus; (C) University Chamber Singers; (D) piano-vocal collaboration; (F) chamber music; (G) guitar; (K) jazz; (M) contemporary music; (N) theater music; (O) percussion; (P) digital and electronic musical arts. Repeatable unlimited times. Pre: audition or consent. DA

MUS 411 (Alpha) Ethnic Music Ensembles II (1) Performance of literature for ensembles and performing groups of various sizes and kinds, (B) Hawaiian; (C) Japanese; (D) Chinese; (E) Korean; (F) Okinawan; (G) Philippine; (I) Asian; (J) Tahitian. Repeatable unlimited times. Pre: 311 in same section or consent. DA

MUS 412 Hula/Chant Ensemble II (2) Ancient style. Pre: 312 or consent.

MUS 413 Hula/Chant Ensemble III (2) Ancient style; hālau protocol. Repeatable nine times. Pre: 412.

MUS 414 University Concert Choir I (1) Performance of a cappella literature and major choral works. Repeatable unlimited times. Pre: choral experience and consent. DA

MUS 415 Opera Workshop (V) Opera in performance. Styles and characterizations. Performance of scenes and one complete work. Repeatable unlimited times. Pre: upper division standing or consent. DA

MUS 416 (Alpha) University Symphony Orchestra (1) Performance of orchestra literature, including major works for chorus and orchestra, opera and dance; (B) symphony; (C) chamber orchestra. Repeatable unlimited times. Pre: audition or consent. DA

MUS 417 University Javanese Gamelan (1) Performance of jogja and solo gamelan traditions; Ujon-Ujon, Wajang Kulit, Wajang Wong. Repeatable unlimited times. Pre: 311H or consent. DA

MUS 419 (Alpha) University Band I (1) Performance of literature, including works by contemporary composers. (B) symphonic wind ensemble; (G) symphonic band; (D) concert band; (E) marching band; (F) marching band percussion. Repeatable unlimited times. Pre: audition or consent. DA

MUS 420 (Alpha) Music Literature Lab (2) Problems of style and interpretation and their implications in performance. Inquiry with laboratory performance. (B) solo voice. Repeatable one time for (B), Pre: consent.

MUS 421 Acting V: Musical Comedy (3) Essential training in skills required to perform in musicals. Students present scenes from musical comedies for criticism and review. Repeatable unlimited times. Pre: THEA 321 and THEA 322, audition; or consent. (Cross-listed as THEA 421) DA

MUS 422 Piano Repertoire (1) Focused study on a specific area of piano literature. Extensive score study, analysis, performance practices, technique and listening lists will be studied. A-F only. Pre: 2 semesters of 232C or consent. Repeatable six times for different topics. (Alt. years)

MUS 423 Keyboard Skills II (2) Practical keyboard applications including transposition, keyboard harmonization, figured bass, improvisation, score reading and sight-reading. A-F only. Pre: 282 and 2 semesters of 232C, or consent. (Alt. years)

MUS 424 Keyboard Skills II (2) Continuation of 423. A-F only. Pre: 423 or consent.

MUS 440 Music, Industry, and Society (3) History of U.S. music and recording industry. How industry relates to economy as a whole, and how it reflects broad patterns and trends in American culture and society. (Cross-listed as HIST 471) DH

MUS 441 Scoring Techniques for Films (3) Aspects of scoring original music for films. Use of small systems, and software production tools. Music production techniques (including Foley and sound effects) and music for television also covered. Repeatable one time. Pre: 341 or consent. (Alt. years)

MUS 450 Music Technology for Teachers (3) Studio course designed for music education majors or musicians interested in discovering and utilizing technology resources to enhance the music teaching or learning process. A-F only. Pre: 286 or consent.

MUS 454 Music in Special Education (3) Designed for music educators, elementary and special education majors or musicians interested in understanding and preparing to use music with special education students. A-F only. Pre: 253 or EDEP 311, or consent.


MUS 459 Vocal Pedagogy (3) Scientific studies of vocal mechanism; application to techniques of singing. Pedagogical methods for individual voice
instruction; participation in applied music teaching. Pre: 286 and 288.

MUS 461 (Alpha) Eras of Western Music History (3) Changing styles and forms in periods of European art music from 500 A.D. to the present. (B) medieval; (C) Renaissance; (D) Baroque; (E) Classic; (F) Romantic; (G) 20th century. Repeatable one time for different alphas. Pre: 265 and 266, or consent.

MUS 462 (Alpha) Studies in Western Music History (3) (B) music of the United States. Pre: 265 and 266, or consent.

MUS 463 (Alpha) Topics in Music Literature (3) (B) symphonic music; (C) concerto; (D) chamber music; (E) choral music; (F) solo song; (G) wind band literature; (H) guitar literature. Repeatable one time for different alphas. Pre: 265 and 266, or consent.

MUS 464 Opera (3) Historical study from Monteverdi to present. Pre: 265 and 266, or consent.

MUS 465 Piano Literature I (2) Study of the evolution of piano literature from its precursors in the Renaissance to the beginning of the 19th century; development of historical styles, intensive listening and analysis. Pre: 265 and 266, or consent. MUS 466 Piano Literature II (2) Continuation of 465. Study of the evolution of piano literature from the beginning of the 19th century to the present day; development of historical styles, intensive listening and analysis. A-F only. Pre: 465 or consent. (Alt. years)

MUS 467 Music and Ethics (3) Studies music's roles in religious traditions and politics, as identity formation, and music's relationship with myths in a variety of forms. Readings approach these issues from the question of ethics. A-F only. Pre: 265 and 266, or consent. (Every three years)

MUS 472 Sound Systems of World Musics (3) Music-theoretical study of sound organization as defined by various cultures and development of aural analysis in world musics. Pre: junior standing or consent.

MUS 477 History of Rock and Roll (3) An examination of rock and roll from various perspectives including economics, regionalism, freedom of expression. Pre: upper division standing or consent. DH

MUS 478 (Alpha) Musical Cultures (3) The study of a musical culture area. (B) Hawai'i; (C) China; (D) Japan; (E) Korea; (F) Indonesia; (G) Philippines; (H) India; (I) Polynesia; (P) Africa; (Q) other. Repeatable one time for different alphas. Pre: junior standing or consent.

MUS 479 Topics in Ethnomusicology (3) Problem-oriented cross-cultural investigation of music and music organization. Pre: junior standing or consent. DH

MUS 485 Intermediate Practicum in Music Composition (V) Creative writing beginning with smaller forms. Repeatable six times. Pre: 286 and 288, or consent.

MUS 487 Advanced Practicum in Music Composition (3) Creative writing in larger forms. Composition majors only. Repeatable one time. Pre: 485 or consent.

MUS 495 Senior Project (V) Capstone project designed by student, who must find and work with faculty advisor before enrolling. Also subject to advance approval by departmental committee. Repeatable up to four credits. A-F only. Pre: senior standing and consent.

MUS 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

MUS 600 (Alpha) Seminar (3) Selected problems in (B) composition; (C) ethnomusicology; (D) music literature; (E) performance repertory; (F) music education; (H) theory. Repeatable nine times. Pre: graduate standing or consent; also 661 for (D) and (E).

MUS 601 Advanced Topics in Music (V) Advanced topics in history, literature, theory, applied music, music education, and ethnomusicology; some in intensive modular format. Repeatable nine times. Pre: appropriate lower division music courses or consent and graduate standing.

MUS 651 Foundations of Music Education (3) Music and music education in their philosophic, aesthetic, social, historical, and psychological dimensions. Pre: graduate standing and consent.

MUS 655 Music in Childhood Education (3) Principles and programs in teaching music to children in early childhood settings and elementary school. Curriculum development, analysis of research, and current approaches. Pre: 353 or 354, teaching experience, and graduate standing.

MUS 657 World Musics in Undergraduate Education (2) Concepts and materials at junior college and undergraduate levels. Preparation for structuring and teaching musics in non-Western musics. Pre: graduate status in music and 107 or 407 (or concurrent)

MUS 659 Seminar in College Music Teaching (3) Examines components of good teaching, adult learning theories, course organization, methodological evaluations, evaluation, and other music issues. For students planning a college teaching career in music. Pre: consent.

MUS 660 (Alpha) Studies in Music Literature (3) Detailed study by chronological period. (B) medieval; (C) Renaissance; (D) Baroque; (E) Classic; (F) Romantic; (G) 20th century. Repeatable in different alphas. Pre: 661 or consent.

MUS 661 Bibliography and Library Resources in Music (3) Basic materials and techniques; includes retrieval techniques from online computer catalog. Pre: graduate standing or consent.

MUS 670 (Alpha) Regional Music (3) Musical content and historico-social context of principal musical traditions. (B) Asia; (C) Oceania. Repeatable nine times. Pre: consent.

MUS 678 (Alpha) Advanced Problems in Ethnomusicology (3) (B) transcription of music performance; (C) composition; (D) research; (E) performance; (F) theory. Pre: consent.

MUS 680 (Alpha) Studies in Music Theory (3) (B) stylistic counterpoint to 1700; (C) stylistic counterpoint from 1700; (D) advanced analysis; (E) comparative theory; (F) history of theory; (G) contemporary techniques and resources; (H) aural analysis and set theory; (I) Schenkerian analysis. Pre: 286 and graduate standing.

MUS 687 Masters Composition Practicum (3) Original composition in all forms. Masters-level composition students only. Repeatable five times. A-F only. Pre: consent.

MUS 695 Plan B Master’s Project in Music Education (V) Independent study for students working on a Plan B master’s project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. A maximum of 3 credits may be earned in MUS 695. A-F only. Pre: graduate standing in music education or consent.

MUS 699 Directed Work (V) Reading and research in ethnomusicology, musicology, music education; reading and practice in theory, composition, or performance. Pre: consent of chair and department chair.

MUS 700 Thesis Research (V)

MUS 701 (Alpha) Topics in Music (3) Advanced topics in musicology; theory, ethnomusicology, and music education. (B) psychology of music; (C) research in music education; (D) research methods in musicology; (E) advanced dictation for singers. Repeatable in different alphas. Pre: appropriate to topic or consent.

MUS 702 Seminar for Doctoral Students (V) Selected topics centering on areas pertinent to the student’s degree needs and research interests. Pre: admission to PhD program in music or consent.

MUS 750 (Alpha) Seminar in Music Education (3) Selected problems in music education. (B) childhood; (C) adolescence/adults; (D) major issues. Pre: graduate standing and consent.

MUS 787 Doctoral Composition Practicum (3) Original composition in all forms. Doctoral-level composition students only. Repeatable five times. A-F only. Pre: consent.

MUS 800 Dissertation Research (V) Pre: candidacy for PhD degree and consent of dissertation chair.

APPLIED MUSIC

For information on sections, requirements, and costs, consult the music department.

Registration for lessons and choice of teachers must be approved by the department chair.

Assignment and admission to these courses are based on tests and auditions given by the department during the advising and registration period. Applied music courses cannot be auditor’d or taken CR/NC.

MUS 230 (Alpha) Elementary Applied Music, Ethnic (V) Instruction in instrumental performance at elementary level. Study of works representative of literature, (B) koto; (C) shamisen; (E) Hawaiian chant; (F) shakuhachi; (I) other. Repeatable for four semesters. Pre: audition or consent.

MUS 231 (Alpha) Applied Music, Western (1) For nonmajors or music majors in secondary performance fields. Individual instruction in solo vocal or instrumental performance at elementary level. Representative works. (B) voice; (C) piano; (D) organ; (F) recorder; (G) classical guitar; (H) violin; (I) viola; (J) cello; (K) double bass; (M) flute; (N) oboe; (O) clarinet; (P) bassoon; (Q) French horn; (R) trumpet; (S) French horn; (T) trombone; (U) tuba; (X) euphonium; (Y) percussion; (Z) other. Repeatable for four semesters. Pre: audition or consent.

MUS 232 (Alpha) Applied Music, Western (V) For music majors or intended majors. Individual instruction in solo vocal or instrumental performance at first performance level. Representative works. Weekly repertoire laboratory required. (B) voice; (C) piano; (D) organ; (G) classical guitar; (H) violin; (I) viola; (J) cello; (K) double bass; (M) flute; (N) oboe; (O) clarinet; (P) bassoon; (Q) saxophone; (R) trumpet; (S) French horn; (T) trombone; (U) tuba; (X) euphonium; (Y) percussion; (Z) other. Repeatable for six semesters. Pre: audition or consent.


MUS 331 (Alpha) Applied Music, Western (V) For nonmajors or for music majors in secondary performance fields. Individual instruction in solo vocal or instrumental performance at an advanced level. See 231 for list of sections. Repeatable for six semesters. Pre: advancement from 231 or consent.

MUS 332 (Alpha) Applied Music, Western (V) For music majors. Individual instruction in solo...
vocal or instrumental performance at the junior level. Representative works. Weekly repertoire laboratory required. Half recital required to complete junior level. See 232 for list of sections. Repeatable for three semesters. Pre: four semesters of 232 and promotion by board examination.

MUS 432 (Alpha) Applied Music, Western (3) For music majors. Individual instruction in solo vocal or instrumental performance at the senior level. Representative works. Weekly repertoire laboratory required. Full recital required for completion of this performance level. See 232 for list of sections. Repeatable for three semesters. Pre: two semesters of 532 and advancement by board examination.

MUS 635 (Alpha) Graduate-Level Applied Music (3) For students accepted for MMus in performance. Individual instruction in solo vocal or instrumental performance at graduate performance level. Representative works. (B) voice; (C) piano; (D) violin; (E) viola; (F) violin; (G) double bass; (H) flute; (I) oboe; (J) clarinet; (K) bassoon; (L) saxophone; (M) trumpet; (N) French horn; (O) trombone; (P) tuba; (Q) euphonium; (R)percussion; (Z) other. Repeatable two times.

MUS 636 Graduate Recital (V) For students accepted for MMus in performance. Individual instruction in solo vocal or instrumental performance at graduate level. Individual recital. Pre: consent. Repeatable for two times. Pre: admission to MMus program. (Cross-listed as MUS 635 and MUS 535)

NREM 311 Current Topics in Plant Science (1) An undergraduate seminar that provides the presentation and discussion of topics of current relevance to students preparing for careers in applied plant sciences. Oral focus designation. A-F only. Pre: 210 or TPSS 200, or consent. (Cross-listed as TPSS 311)

NREM 341 Accounting and Financial Analysis (3) Principles and methods of agricultural accounting. Preparing and interpreting financial statements. Sources and costs of credit, capital budgeting, tax management, estate planning. Repeatable one time. A-F only. Pre: 220 or ECON 130 or consent. (Cross-listed as TPSS 341)

NREM 351 Enterprise Management (3) Overview of financial tools essential for creating new enterprises, analyzing business performance, obtaining bank financing, improving profitability, and reducing risk. Other topics: personnel management, taxation, and business plans. Students will become proficient with Excel. Pre: 220 or ECON 130 or consent. (Cross-listed as TPSS 351)

NREM 380 Tropical Forestry/Agroforestry (3) (2 Lec, 1 3-hr Lab) Biophysical and socioeconomic description and analysis of major tropical forestry and agroforestry management systems, including Hawai‘i and the Pacific Basin. The role of traditional land use, pressures from regional and global development, and efforts to create sustainable diverse systems for rural communities will be discussed. Pre: CHEM 151 or higher and BIOL 171 or higher. (Alt. years: spring) DB

NREM 399 Directed Study (V) Limited to exceptional undergraduate students qualified to carry on advanced study. Pre: consent.

NREM 420 Community and Natural Resource Management (3) Theory and practice of extension programming, participatory learning and communication, evaluation, and conflict management. Pre: two social science courses or consent. Fall only. DB

NREM 450 Wildlife Ecology and Management (3) Lecture-based overview of the history, ecology, and management of wildlife species (i.e., terrestrial vertebrates) from around the world and Hawai‘i. One or two field trips may be required. Class size limited to 25 students. Pre: BIOL 172 or consent. (Alt. years)

NREM 458 Project Evaluation and Resource Management (3) Fundamentals of benefit-cost analysis with extensions to environmental impacts and projects; case studies. Pre: ECON 301 or consent. (Cross-listed as ECON 458) DS

NREM 461 Soil and Water Conservation (3) Past and present issues in soil and water conservation will be examined. Principles of erosion, conservation tillage, irrigation, and drainage will be discussed. Land-based threats to coastal zones and watershed management will also be covered. Pre: 304 and consent. DP

NREM 463 Irrigation and Water Management (3) Basic soil-water-plant relationships, irrigation water requirements, irrigation methods, different methods of irrigation, planning, design and management of an irrigation system, fertilization and impact of irrigation on soil and water quality. Pre: 203 (or equivalent) and NREM/TPSS 304 (or equivalent), consent. (Alt. years) (Cross-listed as TPSS 453)

NREM 467 Natural Resources Conservation Planning (3) Combined course on field course on theory and practice of natural resource conservation planning. Includes individual and group projects. Pre: undergraduate junior or senior or graduate standing. Recommended: at least one upper division course in soils, natural resources,
planning, physical geography, or related area; or consent. (Alt. years) DP

NREM 477 Geographic Information Systems for Resource Managers (4) Combined lecture-lab on the basic concepts and principles of geographic information systems, remote sensing, and global positioning system. Practical skills to be developed by solving real natural resources and environmental problems. Offered by visiting faculty and/or for extension programs. Repeatable five times up to four credits. A-F only. Pre: consent.

NREM 491 Topics in Natural Resources and Environmental Management (V) Study and discussion of significant resources and problems. Offered by visiting faculty and/or for extension programs. Repeatable five times up to four credits. A-F only. Pre: consent.

NREM 492 Internship (4) Integration and application of academic knowledge and critical skills emphasizing professional development. Placement with an approved cooperating supervisor/employer. Pre: 301 (or concurrent).

NREM 494 Environmental Problem Solving (3) (2 Lec, 1-3 hr Lab) Senior-level capstone for NREM and related majors. Ecosystem management within problem-solving context. Applications of research and analytical methods, management tools to case studies. Focus on student centered framework and oral communications. NREM majors only. A-F only. Pre: 203 or 310. (Once a year)

NREM 499 Directed Study (V) Repeatable up to four credits. Pre: senior standing and consent.

NREM 500 Master's Plan B/C Studies (1) Enrollment for degree completion. Pre: master's Plan B or C candidate and consent.

NREM 600 Evaluation of Natural Resource Management (3) Critical evaluation of natural resource management approaches. Emphasis on physical, chemical, and biological aspects within an environmental context. Pre: graduate standing or advanced undergraduate standing, and consent.

NREM 601 Economic Analysis of Natural Resource Management (3) Lecture/discussion providing an economic framework for assessing natural resource management projects and environmental policies. Use of case studies to demonstrate applications of the framework in selected subject areas. Spring only. Pre: one ECON course.

NREM 605 Research Skills (2) Assists the student in developing skills necessary to write a research grant and design a research proposal. NREM majors only. A-F only. Fall only.

NREM 611 Resource and Environmental Policy (3) Exploration of institutional and policy dimensions of natural resource development, management, allocation, markets and pricing, focusing on their environmental impacts. Emphasis on policy analysis using case studies and empirical findings. Original paper required. A-F only. Pre: ECON 300 or ECON 301, or consent. Fall only.

NREM 612 Predicting and Controlling Degradation in Human-Dominated Terrestrial Ecosystems (3) Historic, present, and projected trends in understanding and managing human-dominated terrestrial ecosystems; predicting, measuring and mitigating degradation especially in terrestrial ecosystems with a focus on small volcanic islands in tropical settings. A-F only. Pre: 301 and 304 (or equivalent) and 600. Recommended 461, or consent. Fall only.

NREM 627 Applied Microeconomic Analysis (3) Economic applications to the agricultural and non-agricultural industries are emphasized. Econometric techniques are used to estimate demand, supply, production and cost functions which are analyzed in terms of economic theory and market information. A-F only. Pre: AREC 626 and ECON 627, or consent.

NREM 631 Sustainable Agriculture Seminar (2) Critical evaluation of existing and alternative cropping systems from a long-term perspective. Value conflicts and resolution. Pre: graduate standing or advanced undergraduate standing, and consent.

NREM 637 Resource Economics (3) Analysis of problems of development and management of natural resources with emphasis on resources in agriculture and role in economic development. Pre: ECON 608 and ECON 629. (Cross-listed as ECON 637)

NREM 652 Information Research Skills (1) Examines the use of libraries and information technology for scholarly investigation in support of scientific research; providing an opportunity to evaluate a variety of print and electronic resources in basic and applied sciences. Pre: consent. (Cross-listed as ANSC 652, FSHN 652, and TPSS 652)

NREM 660 Hydrologic Processes in Soils (3) (2 Lec, 1-3 hr Lab) Hydrologic properties in soils and the processes involved in water infiltration drainage and solute transport. Emphasis on key concepts required for modeling. Recommend: CEE 424 or consent. Fall only. (Cross-listed as BE 664 and CEE 625)

NREM 662 Watershed Hydrology (3) Application of basic hydrologic processes and management practices occurring on small islands watersheds. Pre: 203 or equivalent and 304 or equivalent; or consent. (Once a year)

NREM 664 Small Watershed Modeling (3) Introduction to process-based modeling of watershed with emphasis on model applications. Deals with the characterization and simulation of small watershed hydrologic and pollutant transport processes. Pre: CEE 424 (or concurrent) or GG 425 (or concurrent) or BS degree from School of Environmental Science; Spring only.

NREM 665 Coastal and Wet and Ecology and Management (3) Study of bogs, marshes, mangroves, sea grass beds, and coral reefs. Emphasis on the hydrology, biogeochemistry, physiology, productivity, and community dynamics of these systems. Response to perturbations and management strategies will also be discussed. Pre: advanced undergraduate coursework in hydrology, soils, and ecosystem ecology recommended. (Alt. years)

NREM 671 International Agricultural Systems (2) Analysis of trends and strategies in international agricultural research and development. International agricultural research centers (IARC), Food and Agriculture Organization, university networks and consortia, and private voluntary organizations (PVOs). Pre: graduate standing or advanced undergraduate standing, and consent.

NREM 680 Ecosystem Ecology (4) (2 Lec, 1-3 hr Lab) Principles of ecosystem ecology with emphasis on tropical forests, human impacts, and global environmental change. Factors controlling ecosystem structure, productivity, nutrient cycling, plant-soil-atmosphere interactions, and energy balance. Field and laboratory methods in ecosystem science. Pre: advanced undergraduate coursework in ecology and soil science; graduate standing; and consent. (Alt. years: spring)

NREM 682 Restoration Ecology (2) Graduate seminar on foundations of restoration ecology, application of ecological theory to restoration practice. Emphasis on restoration of structure and function in degraded terrestrial ecosystems using case studies from Hawai‘i and around the world. Pre: advanced undergraduate ecology course and graduate standing, or consent. Completion of 680 recommended, but not required. (Alt. years)

NREM 691 Advanced Topics in Natural Resources and Environmental Management (V) Study and discussion of significant topics and problems at an advanced level. Offered by visiting or existing faculty as a special course. Repeatable one time. Pre: graduate standing or consent.

NREM 699 Directed Research (V) Repeatable. Pre: graduate standing.

NREM 700 Thesis Research (V) Pre: senior standing or consent. Fall only.


NREM 800 Dissertation Research (V) Natural Sciences (NSCI)

NSCI 501 Seminar for Science Teachers (V) Seminar and discussions of current and significant topics and problems in science where teachers can exchange new and innovative teaching ideas and strategies. Repeatable. Pre: in-service teachers or consent.

NSCI 503 Computers in Classroom (V) Combined lecture, laboratory, discussions, and practical hands-on applications of computers as a teaching tool in the classroom. To be taught in a hands-on manner appropriate for the science teachers. Restricted to in-service teachers or consent. Repeatable one time.

NSCI 504 Mathematics Workshop for Teachers (V) Major concepts of mathematics taught by means of hands-on conceptual activities for elementary and secondary teachers. Restricted to in-service teachers, or consent. Repeatable one time. (Cross-listed as PHYS 505)

NSCI 619 Seminar on Science Teaching (2) Effective teaching methods; organization of courses, lectures, laboratory exercises; development and evaluation of examinations; computers and audio-visual aids. Open to graduate students in various science disciplines. Repeatable one time. (Cross-listed as ZOOL 619)

See also the biology professional development course, BIOE 501, under the Biology (BIOE) course listing in this section of the Catalog.

Nursing (NURS)

School of Nursing and Dental Hygiene

NURS 300 Introduction to the Nursing Profession (1) Historical perspective of nursing and overview of the knowledge/skill sets necessary for successful completion of a BS degree in nursing, and a successful career path in the nursing professional. NURS majors only. CR/NC only. Pre: admission to the School of Nursing and Dental Hygiene, or consent.

NURS 305 Women and Health (3) Explores current issues in the conceptualization and delivery of health care for women. Pre: one of POLS 110, SOC 100, WS 151, or 202. (Cross-listed as WS 305) DS NURS 310 Psychosocial Concepts in Health Care (3) Extensive training and application of communication and therapeutic interviewing skills. Focus on self reflection, laboratory and discussion on the use of self, interpersonal relationships, cultural appropriate ness, and psychosocial considerations in health care. Pre: admission to the School of Nursing and Dental Hygiene or consent. Co-requisite: 330

NURS 311 Pathophysiologic Nursing Concepts (3) Pathophysiologic basis of altered health as a foundation for planning and nursing care. Application of concepts from microbiology, chemistry, anatomy, physiology, and psychology. Restricted to majors. Pre: 330 or consent.

Key to symbols & abbreviations: see the first page of this section.
NURS 330 Professional Nursing I (2): Concepts/theories of health assessment; data collection and analysis used to distinguish between health and deviations in health. Attention to principles of communication and interviewing. Introduction to professional nursing. Pre: admission to the School of Nursing and Dental Hygiene or consent. Co-requisite: 310, 330L.

NURS 330L Professional Nursing I Lab (2): Application of assessment skills in dry lab and clinical settings; communication skills, interviewing techniques, and physical examination skills. A-F only. Pre: admission to the School of Nursing and Dental Hygiene or consent: 310, 330.

NURS 331 Professional Nursing II (2): Introduction to nursing as a practice profession and the use of the nursing process and nursing interventions to meet basic human needs. Pre: 310, 330, 330L. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Co-requisite: 311, 331L.

NURS 331L Professional Nursing II Lab (3): Application of the nursing process and the use of nursing interventions to meet basic human needs. Introduction to nursing as a practice profession. Pre: 310, 330, 330L. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Co-requisite: 311, 331L.

NURS 340 Contemporary Ethical Issues in Health Care (3): Explore contemporary ethical issues and their legal implications in health care. Focus on decision-making in professional practice and social policy formation. Pre: open to non-nursing majors with consent.

NURS 341 Alternative Nursing Interventions (3): Alternative nursing interventions in providing care for individuals, families, and groups. Pre: open to non-nursing majors with consent.

NURS 343 Gerontology: Its Nursing Implications (3): Explores attitudes toward the aged, biological and psychological aspects, ethnicity, sexuality, nutritional problems, community resources, other related topics. Pre: open to non-nursing majors with consent.

NURS 344 Nursing in the Multicultural Milieu (3): Relates values, beliefs, attitudes, family organization, lifestyles, and health practices in different ethnic groups to health-care and nursing practice. Pre: open to non-nursing majors with consent.

NURS 361 Health Education and Promotion (2): Provides an overview of the concepts and application of health education and health promotion theories and principles as applies to individuals, groups, and the larger public; emphasis on non-nursing majors with consent. Fall only. (Cross-listed as DH 361)

NURS 370 Adult Health Nursing I (2): Examination of human responses to commonly occurring adult health problems across acute and community settings. Pre: 311, 331, and 331L; or consent. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Co-requisite: 370L.

NURS 370L Adult Health Nursing I Lab (3): Application of the nursing process in the care of clients with commonly occurring adult health problems across acute settings. Pre: 311 and 331L. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Co-requisite: 370.

NURS 371 Psychiatric-Mental Health Nursing (3): Examination of human responses to psychiatric and mental illness in relation to physiologic, psychologic, social, cultural, and environmental concepts. Emphasis on self-awareness, therapeutic communication and health-related outcomes. Pre: 331/331L or consent. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Co-requisite: 371L.

NURS 371L Psychiatric-Mental Health Nursing Lab (2): Application of the nursing process involving human responses to psychiatric and mental illness. Emphasizes self-awareness, therapeutic communication and health-related outcomes. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 331/331L or consent. Co-requisite: 371L.

NURS 372 Maternal Newborn Nursing (2): Examination of human responses to childbearing and the nursing practice for that experience. Focuses on health promotion and the maintenance of the childbearing family. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 370/370L, and 371/371L.

NURS 372L Maternal Newborn Nursing Lab (3): Application of clinical knowledge to the care of the childbearing client and family across acute and community settings. Emphasis on health promotion and maintenance of the childbearing family. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 370/370L, and 371/371L.

NURS 373 Child Health Nursing (2): Emphasis on concepts related to the delivery of holistic, therapeutic nursing care to culturally diverse children and families across community and acute settings. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 370/370L, and 371/371L.

NURS 373L Child Health Nursing Lab (3): Application of concepts related to the delivery of holistic, therapeutic nursing care to culturally diverse children and families across community and acute settings. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 370/370L, and 371/371L.

NURS 399 Directed Reading/Research I, II (V): Limited to juniors and seniors in nursing.


NURS 420 Cooperative Education in Nursing (V): A two-semester course with seminar in professional role development in addition to paid work experience in nursing at a local agency. Repeatable one time. CR/NC only. Pre: 370.

NURS 437 Rural Health Teams (3): Introduction to concepts and skills of interdisciplinary practice and capacity building for the improvement of health in a rural community. A-F only. Pre: consent.

NURS 439 Management for Health Professionals (3): Explores basic management concepts. Emphasizes problem solving methods as a means of determining situationally appropriate actions in institutional and community settings. Co-requisite: 475 or consent.

NURS 441 Introduction to Nursing Research (3): Introduction to the research process and an understanding of the applicability of the scientific approach to nursing. Pre: college-level statistics course.

NURS 470 Adult Health Nursing II (2): Ongoing examination of human responses to complex adult health problems in acute care and the community. Concepts of ethics and continuity of care are included. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 372/372L and 373/373L.

NURS 470L Adult Health Nursing II Lab (3): Application of the nursing process, concepts of ethics, and continuity of care in the care of multiple clients and families with complex adult health problems in acute care and the community. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 372/372L and 373/373L.

NURS 471 Community Health Nursing (2): Introduction to community health nursing concepts necessary for managing and/or delivering care in homes and various community sites to populations at risk of or in compromised health. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 372/372L and 373/373L and 441 (or concurrent), or consent. Co-requisite: 471L.

NURS 471L Community Health Nursing Lab (3): Application of community health nursing concepts in managing and/or delivering care in homes and various community sites to populations at risk of or in compromised health. A-F only. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 372/372L, 373/373L and 441 (or concurrent) or consent. Co-requisites: 439 and 475.

NURS 475 Complex Nursing Practice (2): Examination of continuity of care for clients with complex needs within the health care system. Emphasis on quality and case management. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 441 and 471/471L, or consent. Co-requisites: 439 and 475.

NURS 475L Complex Nursing Practice Lab (5): Delivery of comprehensive nursing care to clients with complex needs in community and/or acute care settings. Emphasis on quality management, continuity of care, culture, and ethics. A-F only. Pre: 441 and 471/471L; or consent. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 441 and 471/471L, or consent. Co-requisites: 439 and 475.

NURS 486 Professional Issues and Trends (2): Opportunity to study issues in nursing within the context of health-care system and changing society. Aspects of nursing history; professionalism; credentialing; legal and ethical issues. Pre: 441.

NURS 500 Master’s Plan B/C Studies (1): Pre: admission into...
NURS 506 Introduction to Health Policy (1) Provides an understanding of the basic healthcare ethics and will examine the role of the nurse in settings that pose moral or ethical dilemmas. NURS majors only. A-F only. Pre: 501, 502, 503, 504, 504L, 505L; or consent. Co-requisite: 506, 507, 507L, 508, 508L, 509L, 510, 511, 512. (Once a year)

NURS 511 End of Life Nursing Care (1) Provides students with an overview of the issues that surround the death and dying process in the U.S., and how it differs in other countries. NURS majors only. A-F only. Pre: 501, 502, 503, 504, 504L, 505L; or consent. Co-requisite: 506, 507, 507L, 508, 508L, 509L, 510, 511, 512. (Once a year)

NURS 512 Nursing Care of an Aging Popula- tion (1) To aid the readers in the factors in healthy aging. Emphasis is on the physiological, functional, cultural, psychological, and socioeconomic phenomena that affect aging patients. NURS majors only. A-F only. Pre: 501, 502, 503, 504, 504L, 505L; or consent. Co-requisite: 506, 507, 507L, 508, 508L, 509L, 509L, 510, 511, 512. (Once a year)

NURS 513 Nursing Care Across the Lifespan (4) Addresses the bio/psycho/social human health response to a wide range of conditions. Health promotion, risk reduction and disease detection and nursing care treatment in the acute and community setting will be covered. NURS majors only. A-F only. Pre: 506, 507, 507L, 508, 508L, 509, 509L, 510, 511, and 512; or consent. Co-requisite: 513L, 514, 515, 516. (Once a year)


NURS 514 Introduction to Epidemiology and Its Use in Community/Public Health Nursing Practice (V) Introduces epidemiologic principles and methods, with an emphasis on application to nursing practice in the community/public health settings. Students taking for one credit will focus on application of epidemiology to advanced nursing practice. NURS majors only. A-F only. Pre: 506, 507, 507L, 508, 508L, 509, 509L, 510, 511, 512; or consent. Co-requisite: 513, 513L, 515, 516. (Once a year)

NURS 515 Nursing Leadership and Management Concepts (2) Concepts of management and leadership in the healthcare environment. Topics include: styles of management and leadership; delegation; collaboration; change process and self evaluation of one’s own management, leadership and followerhip styles. NURS majors only. A-F only. Pre: 506, 507, 507L, 508, 508L, 509, 509L, 510, 511, 512; or consent. Co-requisite: 513, 513L, 514, 516. (Once a year)

NURS 516 Integrated Nursing Practice Seminar (3) Using the determinates of health model and the web of causation, students collect and synthesize data and develop a plan of care based upon the best available evidence from peer reviewed literature. NURS majors only. Pre: 506, 507, 507L, 508, 508L, 509, 510, 511, 512; or consent. Co-requisite: 513, 513L, 514, 515. (Once a year)

NURS 605 Health Promotion and Disease Pre- vention (3) Teaching and learning concepts and the role of advanced practice nurses; promotion of health promotion and prevention of common health and illness conditions with culturally diverse individuals, groups, families, and communities. Repeatable one time.

NURS 606 Principles of Fiscal Management for Health Services (3) Budget-making and the budgetary process in public and non-profit services; capital development and planning; procedures of fiscal management as administrative controls. Pre: 602 or consent.

NURS 608 Genetics and Health Care (3) Addresses the scientific, psycho-social, ethical, cultural, and spiritual issues surrounding genetic disease, genetic testing, and living with an inherited condition. Repeatable one time. Pre: graduate standing or consent.

NURS 609 Health Policy (3) Review of contemporary national health policies, issues and concerns; and international comparison of health policy evolution; includes didactic and 45 hours of fieldwork experiences.

NURS 611 Psychiatric-Mental Health Assessment and Diagnosis (3) Identification and synthesis of pertinent biopsychosocial and cultural data to complete advanced psychiatric-mental health assessments and diagnoses.

NURS 612 Advanced Assessment and Clinical Reasoning (2) Provides a framework for the development of advanced skills for systematic and comprehensive data collection, organization, precise recording, accurate assessment and communication of data reflecting the biopsychosocial status of individuals across the life span. Pre: 620. Co-requi- site: 612L.


NURS 613 Pathophysiology for Advanced Prac- tice (3) Provides the advanced practice nurse with an increased knowledge of selected complex topics in physiology. Application of advanced concepts to the determination of clinical needs. Preparation for selection of assessment and management protocols.

NURS 616 Psychobiology of Human Behav- ior and Psychopharmacology (3) Survey of the biopsychological basis of selected human behaviors and mental disorders across the lifespan and psycho-
NURS 617 Human Responses to Acute and Chronic Illness-A
(3) The first of two courses that focuses on the delivery of advanced practice nursing in the assessment, diagnosis, and management of common acute and chronic adult health problems in the acute care setting. NURS majors only. A-F only. Pre: 612, 612L, and 613; no waiver. (Once a year)

NURS 620 Methods and Measurement in Nursing Research (3) Examination of the research process for critical analysis of nursing research relevant to practice. Focus on measurement concepts and methods relevant to patient care outcomes. Pre: 639 (or concurrent) or consent.

NURS 621 Acute and Episodic Care Management (3) Diagnosis and management of health and illness with emphasis on clients with common acute/episodic conditions seen in context of family and community. Advanced practice nurse-client relationship, practice roles, and culturally relevant care are included. A-F only. Pre: 612/612L, 613, and 629. Co-requisite: 675.

NURS 623 Psychopharmacology (3) Survey of biopsychological bases of and biotherapies for major mental disorders, including the schizophrenias, affective and personality disorders, pediatric and geriatric problems, and neurological dysfunctions with appropriate applications to health care. Pre: graduate standing or consent.

NURS 624 Adolescent and Family Psychiatric-Mental Health Care (3) Seminar on theory/research in advanced psychiatric-mental health nursing of adolescents and families representing diverse populations. Emphasis on developmental and nursing theories, evidence-based therapeutic modalities and disease management of psychiatric illness. Pre: 611 (or concurrent) or consent. (Once a year)

NURS 625 Advanced Nursing Roles (3) Provides students with an understanding of different roles of the advanced professional nurse; an ability to proactively manage the environment of their specialty practice; includes 45 hours of field work experience. A-F only.

NURS 628 Child Health: Special Health Needs (3) Provides a theoretical basis required for specialized clinical competence in adapting recent findings on child/parent assessments, social and health risk indicators, the role of environment, and multidisciplinary settings in the care of pediatrics. NURS majors only. A-F only. Pre: 612/612L and 633 and 634, and 3 credits of 675; or consent. Co-requisite: 675. (Once a year)

NURS 629 Pharmacology for Nurses in Advanced Practice (V) Prepares nurses in advanced practice to monitor, review, renew, and prescribe medications by applying principles of pharmacokinetics, pharmacodynamics, and pharmacotherapeutics of specific drugs used in the care of common disorders. Repeatable unlimited times. Pre: consent.

NURS 630 Information Systems in Healthcare (3) Introduction to information systems in health care as pertaining to nursing and health care. Demonstrate competence in the use of nursing and health information systems in clinical practice.

NURS 632 Therapeutic Modalities (3) Therapeutic modalities used in advanced practice psychiatric-mental health nursing with individuals, families, and groups representing culturally diverse populations. Pre: 611.

NURS 633 Child Health: Promotion and Maintenance (3) Presents normal developmental, physiological and social needs of children within the context of family; then focuses on the management of common acute and chronic illnesses of children. Pre: 612/612L and 613. Co-requisite: 675.

NURS 634 Child Health: Advanced Pediatric Acute/Chronic Care (3) Focuses on the evaluation of pediatric clients with higher acuity and more complex management issues. Emphasizes critical analysis of evidence based research in pediatric health care. Pre: Admission into the PNP and PNP program, 612/612L, 633, and completed 3 credits of 675 and/or consent.

NURS 635 Women’s Health: Promotion and Maintenance (3) Provides a foundation of concepts necessary to maintain and promote women’s health, including developmental, physiological and social needs of women of all ages and the management of common health problems specific to women. Pre: 612/612L, 613, and 629. Co-requisite: 675.


NURS 639 Disciplinary Knowledge I (3) Exploration of a variety of philosophies of science and examination of factors influencing the development of nursing theory and the emergence of nursing as a discipline.


NURS 646 Advanced Psychiatric-Mental Health Practicum (V) Supervised application of theories, research, and skills for advanced practice psychiatric-mental health nursing with individuals, families, and groups representing culturally diverse populations. Includes the program’s capstone experience. Repeatable five times. Pre: 611 (or concurrent). Co-requisite: 611 or 632.

NURS 647 Family Systems in Health and Illness (3) Family systems approach to include selected family theories, family research and family centered culturally sensitive clinical assessment and intervention in health and illness situations. Pre: graduate standing or consent.

NURS 650 Complementary and Traditional Care (3) A review of theoretical systems and approaches to traditional care and their use in culturally diverse populations with a focus on wellness. Appropriate for all health-care professionals.

NURS 655 Tests and Measurement in Nursing Education (3) Testing and evaluation applied to nursing education. NURS majors only. A-F only. Pre: consent. (Once a year)

NURS 660 (Alpha) Selected Topics in Nursing (3) Advanced study of special topics in clinical nursing. (I) Current issues in professional nursing.


NURS 662 Management and Leadership in Healthcare Organizations (3) Study of theoretical, conceptual and practical knowledge of leadership and management as applied to changing healthcare environments.

NURS 663 Analysis of Healthcare Delivery Models (3) Analysis of various clinical management concepts and health-care delivery systems influencing outcomes, process, and costs in the delivery of care.

NURS 666 Seminar and Practicum in Nursing Administration (3) Supervised experience in clinical systems management for the nursing administrator. Pre: 663 (or concurrent) or consent.


NURS 670 Advanced Practice Nursing During Public Health Disasters (3) prepares the advanced professional nurse in public health preparedness, planning and response. Includes 45 hours of field work where the student will practice emergency response functional roles. NURS majors only. A-F only. Pre: consent. Summer only.


NURS 680 Cultural Competency in Nursing Education (3) Evaluates the impact of history on the culture of nursing and nursing education. Explore strategies to provide education in a culturally sensitive manner to culturally diverse students. NURS majors only. A-F only. Pre: graduate standing, or consent.

NURS 682 Health and Healing Practices of Native Hawaiian and Other Pacific Islanders (3) Teaching and learning concepts applied to health promotion and the prevention of common conditions of disease among Native Hawaiians and other Pacific Islanders; includes didactic and 45 hours of field experience. NURS majors only. A-F only. Pre: graduate standing in NURS or consent. Spring only.

NURS 690 Curriculum Evaluation in Nursing Education (3) Current trends of planning for evaluation and critical analysis and application of curricular evaluation frameworks to nursing education. NURS majors only. A-F only. Pre: 747 or consent.

NURS 695 Successful Aging: Physiologic (3) Advanced study of the functional, cultural, psychological, and socio-economic phenomena that impact the physiology of normal and abnormal aging. Emphasis is on promoting successful aging among older residents of the Pacific Basin and applications to primary health care. Pre: consent.

NURS 696 Nursing Education Capstone (3) A culminating experience in nursing education program designed for students to integrate, critique, extend, and apply knowledge gained in the program. NURS majors only. A-F only. Pre: consent. Spring only.

NURS 699 Directed Study or Research (V) Directed study of problems related to nursing theory and practice. Pre: consent.


NURS 721 Instrument Development and Evaluation in Research (3) Theory of testing and evaluation applied to nursing research in culturally diverse populations. NURS majors only. A-F only. Pre: consent. (Once a year)

NURS 733 Care of Populations (3) Focuses on population based primary healthcare. Examples of selected populations in community settings are examined with an emphasis on building community competence to address unmet needs; 45 hours of field work experience included.

NURS 739 Advanced Nursing Science (3) Provides opportunities to know and practice the process of theory development in nursing and to test concepts, relationships, and models about health behavior in culturally diverse populations.

NURS 741 Quantitative Methods and Measures (3) Critical analysis of quantitative research methods used to analyze problems of interest to nursing in
NURS 742 Qualitative Methods I (3) Introduction to qualitative research methods in the development of nursing disciplinary knowledge related to culturally diverse populations. Pre: 620 or consent.

NURS 743 Qualitative Methods II (3) Advanced in-depth exploration of the data collection, data analysis and methodological issues in the qualitative research traditions (ethnography, grounded theory, phenomenology and critical theory) used in nursing research. NURS majors only. A-F only. Pre: 742 (or equivalent) or consent. (Once a year)

NURS 744 Seminar on Women and Health (3) Women's health and the role of women health professionals. Current literature and research regarding attitudes, roles, rights, and health care. Pre: consent. (Cross-listed as SW 776)

NURS 755 Creative Learning Strategies for Adults (3) Analysis of forces that affect adult learners. Concept of lifelong learning vis-à-vis development of creative strategies that assist maturing, self-directed persons to develop their potentialities. (Cross-listed as EDEA 745 and EDEP 745)

NURS 747 Curriculum Development (3) Current theories, issues, and trends of curriculum development in nursing. Application and critiques of related research.

NURS 784 Supervised Practicum in Teaching (V) Supervised experience in instructional planning and teaching. Repeatable up to 10 credits. Pre: 747 (or concurrent) or consent.

NURS 751 Concept Development and Analysis (3) First course offering in-depth analysis of specific concepts and theoretical formulations of nursing and other disciplines pertinent to the student's area of research interest. Addresses human responses to health in culturally diverse populations. Pre: 739.

NURS 752 Advanced Statistics I (3) Advanced application of general linear model theory to analyze complex problems of interest to nursing in culturally diverse populations. NURS majors only. A-F only. Pre: 741 (or equivalent) or consent. Once a year.

NURS 753 Advanced Statistics II (3) Advanced application of multivariate statistics to analyze complex problems of interest to nursing in culturally diverse populations. A-F only. Pre: 741 and 752 or equivalent courses, or consent. Once a year.

NURS 767 Culturally Competent Research Methods (3) Analysis of concepts, issues, and methods in conducting culturally competent research in the health field. Pre: graduate methods course or consent.

NURS 774 Best Practices in Healthcare Management (3) Examination of quality of health care, the process of managing health-care outcomes and costs in the delivery of care through the interdisciplinary process. Pre: 664 (or concurrent) and 665 (or concurrent).

NURS 775 Capstone Field Study (3) Supervised experience in advanced clinical management for the nursing administrator in the community setting. Pre: 664 and 774 (or concurrent), or consent.

NURS 777 Nursing Research Practicum (3) Directed research experience providing opportunity to gain mastery of research skills and techniques through participation in faculty research. Repeatable one time. Pre: 751, qualitative and quantitative methods course.

NURS 797 (Alpha) Exploration in Public Health (V) Investigation of emergent fields of inquiry in public health. Repeatable to three credits. Pre-consent. (Cross-listed as PH 797)


Obstetrics and Gynecology (OBGN) School of Medicine

OBGN 531 7-Week OB/GYN Clerkship (10) Unit VI—7-week basic obstetric/gynecology clerkship. Repeatable one time. CR/NC only. Pre: BIOM 555.

OBGN 532 Obstetrics and Gynecology Longitudinal Clerkship (5) Year-long clerkship in outpatient setting, covering assessment, diagnosis, treatment, and/or management of common gynecologic problems and normal and complicated pregnancies. Emphasis on prevention and health maintenance. Repeatable two times. CR/NC only. Pre: third-year standing, and concurrent registration in 532 courses.

OBGN 545 (Alpha) Unit VII Electives in OB/GYN (V) Opportunities for advanced study of selected topics. (B) Labor and delivery; (C) Outpatient clinic at Queen's; (D) Sub-internship in family planning; (E) High-risk OB; (F) Endocrinology; (G) Oncology; (H) Topics with individual preceptor; (I) Extramural electives; (J) Urogynecology and pelvic reconstructive surgery. Repeatable twice for each alpha. CR/NC only. Pre: 531 or 532.

OBGN 599 Directed Reading/Research (3) Pre: consent.

Ocean and Earth Science and Technology (OEST) School of Ocean and Earth Science and Technology

The following courses are not part of a specified department's curriculum. These courses are highly interdisciplinary in nature, drawing on faculty expertise from throughout OEST and the Manoa campus. They are not based in any of the departments but are administered and coordinated by the associate dean's office.

OEST 735 is a key element of the graduate ocean policy certificate program.

OEST 099 International Exchange Study/Research (V) Study overseas in an approved international exchange or similar program. Repeatable three times. CR/NC only. Pre: consent of academic advisor.

OEST 101 Natural Hazards (3) Science of natural hazards: impact on human civilization of events in the lithosphere, atmosphere, biosphere, and hydrosphere (e.g., earthquakes, hurricanes, red tides, and floods), and impact of humans on their exposure to and mitigation of the hazards. DP

OEST 310 Global Environmental Change (3) Global environmental change problems, such as carbon dioxide and the greenhouse effect, acid rain, chlorofluorocarbons and the ozone layer, global deforestation and effect on climate, etc. Pre: one environmentally oriented science course, or consent. (Cross-listed as MET 310 and OCN 310) DP

OEST 310L Global Environmental Change Laboratory (2) (3-hr Lab) Laboratory to supplement OEST 310. Quantitative aspects of global environmental change will be addressed through problem solving and computer modeling. A-F only. Pre: MATH 242, PHYS 170, PHYS 170L, CHEM 161/161L, and OCN/MET/OEST 310 or consent. Co-requisite: 310 or consent. Fall only. (Cross-listed as MET 310L and OCN 310L) DP

OEST 350 Ethics in Scientific Research (1) Introduction to issues of ethics in scientific research and scientific misconduct. GG, GE, or MET majors only. Spring only.

OEST 395 Undergraduate Internship (V) Experiential approach to earth science; students serve as interns to field professionals; responsibilities include supervised field work. Open to undergraduate OEST majors. Repeatable one time. CR/NC only. Pre: junior/senior standing or consent.

OEST 510 Earth Sciences Professional Development Education (V) Specialized Earth Science topics workshops designed for in-service teachers who wish to learn new approaches and content areas in geology and geophysics, meteorology and oceanography. Repeatable up to 12 credits. Credits earned cannot be applied for graduate degrees.

OEST 699 Communicating Ocean Sciences (3) Application of current learning theory and pedagogical practices in formal and informal learning environments to improve communication and instructional skills. Graduate students from multiple science disciplines welcome. Requires knowledge of biology, earth sciences, and/or chemistry. Pre: at least one course in introductory biology, geology, earth science, chemistry or marine science, an interest in ocean science, and enthusiasm for teaching science; or consent. Spring only.

OEST 699 Directed Reading/Research (V) Selected interdisciplinary ocean/earth-related topics involving science, technology, engineering, and/or policy. Pre: consent.

OEST 735 Ocean Policy and Management (3) Interdisciplinary approach to problems relating to humans and their interactions with the world’s oceans and coasts. Focus includes institutions for governing the world’s oceans and coasts at all scales and on the role of scientific knowledge in managing marine and coastal resources. Repeatable one time. Pre: OCN 331, GEOG 435, or consent. (Cross-listed as SOCS 735)

OEST 740 Marine Biofilms: Ecology and Impact (3) Intensive description of biofilms, their growth and their impact upon engineered processes in the marine environment. Basic principles of bioadshesion, corrosion, attachment and metamorphosis of larvae (i.e. biofouling), antifouling techniques and modeling of biofilms reactors will be presented. Focus on how biofilms impact research thesis topics will also be emphasized. A-F only. Pre: science or engineering background Fall only.

Ocean and Resources Engineering (ORE) School of Ocean and Earth Science and Technology

The grade of B- or better is required in all prerequisite courses, except 330, which requires a grade of C- or better.

ORE 202 Ocean Technology—Man in the Sea (3) Survey of human activities in the ocean, from the most traditional to the most innovative technical and engineering accomplishments. DP

ORE 330 Mineral and Energy Resources (3) Hard material and petroleum origins, exploration and exploitation. Renewable and non-renewable resources distribution. Political and scientific constraints. A-F only. Pre: 202 or OCN 201, or consent. (Cross-listed as OCN 330) DP

ORE 411 Buoyancy and Stability (3) Ship nomenclature and geometry, hydrostatic principles of design, construction, and evaluation, partially waterborne, and damaged conditions. Subdivision of ships. Launching. Pre: CEE 270 or equivalent. DP

ORE 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B candidate and consent.

ORE 601 Ocean and Resources Engineering Laboratory (3) Design, construction, and evaluation of an engineering system. Laboratory and field experience and data analysis supplemented with appropriate theory. Pre: 603 and 607, or consent.
ORE 603 Oceanography for Ocean Engineers (3)  
Physical, chemical, biological, and geological ocean environments for ocean engineers. Introduction to ocean dynamical processes and general circulation. Ocean measurement techniques, theory of underwater acoustics, Sonar, swath bathymetry, and tomography applications. Pre: consent.

ORE 607 Water Wave Mechanics (3)  
Governing equations in free surface flow, deterministic and probabilistic wave theories, wave transformation, wave-induced coastal currents, tides, ocean engineering operational sea state, and design wave criteria. Pre: consent.

ORE 608 Probability and Statistics for Ocean Engineers (3)  
Probability and statistical analysis including distributions, multiple regression and correlation, autocovariance, cross-spectra, and practical applications in ocean engineering. Pre: 607 or consent.

ORE 609 Hydrodynamics of Fluid-Body Interaction (3)  

ORE 612 Dynamics of Ocean Structures (3)  
Response of floating platforms and vessels to wave action, spectral analysis, frequency and time domain analyses of rigid body motions in six degrees of freedom. Pre: 411 or consent. Co-requisite: 609 or consent.

ORE 630 Structural Analysis in Ocean Engineering (3)  
Structural and finite element analyses and design of ocean structures to withstand hydrostatic and hydrodynamic loads of the sea. Considerations include material type, safety factor, stress concentrations, and fatigue. Pre: consent. Co-requisite: 411.

ORE 641 Environmental Fluid Dynamics (3)  
Fluid dynamics for coastal and estuarine environments. Turbulent mixing processes in homogeneous and stratified fluids. Buoyancy driven flows, internal hydraulic, topographic effects and estuarine circulation. Spill and pollutant dispersion. Pre: 603 or consent.

ORE 642 Marine Environmental Remediation (3)  
Thermodynamics, chemistry and measurements of marine pollutants, biodegradation and biotransformation of pollutants, symbiosis and mass transfer in biofilms, bioremediation of oil spills, hazardous sediments, algae control, regulations on marine environment. Pre: consent.

ORE 661 Coastal and Harbor Engineering (3)  
Planning and design of seawalls, groins, jetties, breakwaters, and layout of ports. Design requirements for harbor entrances and channels. Littoral drift and sedimentation processes. Navigation and mooring requirements. Pre: 607 or consent.

ORE 664 Nearshore Processes and Sediment Transport (3)  
Sediment transport by waves and currents in coastal areas and its effect on morphological processes. Effect of man-made structures on littoral drift and shoreline. Pre: 607 or consent.

ORE 677 OTEC Systems (3)  
Ocean thermal energy conversion (OTEC) systems, thermodynamics, alternative dynamic loading of the ocean. Pre: 411 and 607 completed with B- grades.

ORE 678 Marine Mineral Resources Engineering (3)  
Activities in marine minerals development are examined in a multidisciplinary systems approach involving engineering, Earth and environmental sciences and economics. Pre: graduate standing consent.

ORE 695 Plan B Master’s Project (3)  
Independent study for students working on a Plan B master’s project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. Pre: master’s candidacy in ORE.

ORE 699 Directed Reading or Research (V)  
Pre: graduate standing and consent.

ORE 700 Thesis Research (V)  
Pre: candidacy for MS in ocean and resources engineering.

ORE 766 Numerical Ocean Engineering (3)  
Formulation and application of numerical methods for simulating and solving ocean engineering problems. Mathematical and computational fundamentals; accuracy and stability; numerical interpolation, differentiation, and integration; boundary element, finite difference, and finite element methods. Pre: consent.

ORE 783 (Alpha) Capstone Design Project (3)  
Major design experience based on knowledge and skills acquired in earlier coursework and incorporating realistic constraints that include economic, environmental, ethical, social, and liability considerations. Emphasis is placed on teamwork and consultant-client relationship. (B) coastal engineering; (C) offshore engineering; (D) ocean resources engineering. Pre: 411, 601, 603, and 607; or consent.

ORE 791 Special Topics in Ocean and Resources Engineering (V)  
Content will reflect special interests of visiting and permanent faculty. Pre: consent.

ORE 792 Seminar in Ocean and Resources Engineering (1)  
Attendance at 15 approved seminars is required along with submission of notes.

ORE 800 Dissertation Research (V)  
Pre: candidacy for PhD in ocean and resources engineering.

Oceanography (OCN)  
School of Ocean and Earth Science and Technology

The minimum required grade for undergraduate prerequisites is a C (2.0) or better, and graduate prerequisites is a B (3.0) or better.

OCN 100 Global Environmental Science Seminar (1)  
Seminar to introduce new GES majors to the research interests of GES faculty and the research facilities available within SOEST. Restricted to GES majors. CR/NC only. Fall only.

OCN 201 Science of the Sea (3)  
Structure, formation, and features of ocean basins; seawater properties and distributions; tides and currents. Descriptive and theoretical/techniques of marine organisms; marine ecological principles; man and the sea. Field trip required. DP

OCN 201L Science of the Sea Laboratory (1)  
Experiments, computer exercises and field trips demonstrating the geological, physical, chemical and biological principles of earth and ocean sciences. A-F only. Co-requisite: 201. DY

OCN 310 Global Environmental Change (3)  
Global environmental change problems such as carbon dioxide and the greenhouse effect, acid rain, chlorofluorocarbons and the ozone layer, global deforestation and the effect on climate, etc. Pre: one environmentally oriented science course, or consent. (Cross-listed as MET 310) DP

OCN 310L Global Environmental Change Laboratory (2)  
(3-hr Lab) Laboratory to supplement OCN 310. Quantitative aspects of global environmental change will be addressed through problem-solving and computer modeling. A-F only. Pre: MATH 242, PHYS 170, PHYS 170L, CHEM 161/161L, and OCN/MET/OST 310; or consent. Co-requisite: 310 or consent. Fall only. (Cross-listed as MET 310L and OEST 310L) DY

OCN 312 Geomathematics (3)  
Mathematical methods of geologic and geophysical science. Emphasis on application to earth-science problems using linear algebra, vector calculus, ordinary differential equations, and numerical methods. Pre: MATH 242 or consent. (Cross-listed as GG 312)

OCN 315 The Role of Models in Global Environmental Science (3)  
Introduction to philosophy of science for those with some background in the natural sciences. Special emphasis on issues arising from the construction and use of models. Pre: any course 200 or above in PHIL or any course 200 or above with either DB or DP designation, or consent. (Alt. years: spring) (Cross-listed as PHIL 315)

OCN 320 Aquatic Pollution (3)  
Polution of freshwater and marine systems by human activities. Causes, consequences, and correctives. Pre: 201 or consent. DP

OCN 330 Mineral and Energy Resources of the Sea (3)  
Hard mineral and petroleum origins, exploration, and exploitation. Renewable and non-renewable resources distribution. Political and scientific constraints. Pre: 201, ORE 202; or consent. (Cross-listed as ORE 330) DP

OCN 331 Living Resources of the Sea (3)  
Marine fisheries, aquaculture, and law of the sea. Principles of management of renewable resources. Political and scientific constraints and limitations. Pre: 201 or consent. DB

OCN 363 Earth System Science Databases (3)  
Combined lecture, discussion, and laboratory on global Earth system databases and satellite instrumentation, including computer laboratory. A-F only. Pre: 310/310L, and MATH 244; or consent. DP

OCN 399 Directed Reading (V)  
Directed reading in earth system science, oceanography, or environmental science. Repeatable up to 6 credits. Pre: consent.

OCN 401 Biogeochemical Systems (3)  
Relationships of biogeochemical cycles in the atmosphere, lithosphere, and biosphere to global chemical cycles and planetary climatic conditions. GES degree foundation and capstone course. A-F only. Pre: 201, 310/310L or MET 310/310L or OEST 310/310L, BIOL 172/172L, CHEM 162/162L, GG 101/101L, MATH 244, MATH 243 & 252A, MATH 373 or ECON 321, MET 200, PHYS 170/170L, and PHYS 272/272L; or consent. Fall only. DP

OCN 403 Marine Functional Ecology and Biotechnology (3)  
Marine functional genomics, biodiversity of marine natural habitats, marine microbial communities and their ecological functions, interactions of marine microbes with the marine environment and marine biodiversity, marine biotechnology. A-F only. Pre: 201 or MICR 130, or consent. Spring only. (Cross-listed as MBBE 405)

OCN 423 Marine Geology (3)  
Sediments, structure, geophysics, geochemistry, history of ocean basins and margins. Pre: GG 302 or consent. (Cross-listed as GG 423) DP

OCN 430 Introduction to Deep-Sea Biology (3)  
(1.5 Lec, 1.5 Discussion) Biology and ecology of deep-sea communities and ecosystems. Topics including benthio-pelagic coupling, depth zonation, energetics, diversity, adaptations, hydrothermal vents, seamounts, abyssal plains, deep-sea resource extraction and global climate and their host, E only. Pre: 201 and BIO 265; or consent. (Alt. years)

OCN 435 Climate Change and Urbanization (3)  
The following topics will be addressed: How are cities impacted by, and impacting climate change? How do urbanization, alteration of atmospheric processes, and extreme weather events affect urban systems and populations? A-F only. Pre: 363 or consent. Fall only.

OCN 444 Plate Tectonics (3)  
(2 Lec, 1.3-hr Lab) Quantitative geometrical analysis techniques of plate tectonics theory; instantaneous and finite rotation poles; triple-junction analysis; plate boundary stresses. Pre: GG 200 or consent. (Alt. years) (Cross-listed as GGE 444)

OCN 450 Aquaculture/Production (3)  
Theory and practice of aquaculture: reproduction, yield trials, management, economics, and business case studies of fish, crustaceans, and molluscs. Field classes held at
commercial farm and hatchery. Pre: ANSC 321 and ANSC 445; or BIOL 172/L and CHEM 162/L or higher. (Cross-listed as ANSC 450) DB

**OCN 480 Dynamics of Marine Ecosystems: Biological-Physical Interactions in the Oceans** (3) Combined lecture and discussion examining biological and physical interactions in the oceans and their impacts on the functioning of marine ecosystems. GE majors only. A-F only. Pre: 201, 201L, 310/310L, and PHYS 272/272L; or consent. (Alt. years)

**OCN 490 Communication of Research Results** (2) Lecture/discussion to provide instruction and experience in oral and written presentation of scientific research. Introduction to techniques and methods, heat budget, general ocean circulation, regional oceanography, waves, tides, sea level. Formation of water masses, dynamics of circulation. Repeatable one time. Pre: MATH 242 (or concurrent), or consent.

**OCN 621 Biological Oceanography** (3) Factors governing productivity, population dynamics, distribution of organisms in major ecosystems of the ocean, emphasis on ecology of pelagic zone. Pre: 620 or consent.


**OCN 623 Chemical Oceanography** (3) Chemical processes occurring in marine water; the impacts and how they affect oceanic environments. Pre: CHEM 171.

**OCN 625 Aquatic Photosynthesis** (3) Biochemical and biophysical concepts of photosynthesis. Application and interpretation of ecological processes of photosynthesis in aquatic systems. Open to nonmajors. A-F only. Pre: consent. Spring only.

**OCN 626 Marine Microplankton Ecology** (4) (3 Lec, 1 3-hr Lab) Distribution, abundance, and ecology of marine microplankton, including bacteria, algae, and protozoans, with an emphasis on metabolic rates and processes. Pre: consent. Fall only.

**OCN 627 Ecology of Pelagic Marine Animals** (4) (3 Lec, 1 3-hr Lab) Ecology of pelagic animals including feeding, energetics, predation, and anti-predation tactics. Life-history strategies, vertical flux of materials, population dynamics, fisheries. Pre: consent. Spring only.

**OCN 628 Benthic Biological Oceanography** (4) (3 Lec, 1 3-hr Lab) Processes controlling the structure and function of benthic communities, including organism-sediment-flow interactions, sediment geochemistry, feeding strategies, recruitment, succession, and population interactions. Pre: consent.

**OCN 629 Applied Biological Oceanography** (2) Molecular methods for studying marine functional ecology; emphasis on hand-on tools for ecological and biogeochemical processes of microbes; developing practical skills for research project in marine microecology and biological oceanography. A-F only. Pre: 403, 403L, 602, or 628; or consent. (Alt. years, Fall only)

**OCN 630 Deep-Sea Biology** (3) (1.5 Lec, 1.5 Dis- cussion) Biology and ecology of deep-sea organisms and communities. Topics including benthic-pelagic coupling, depth zonation, energetics, diversity, adaptations, hydrothermal vents, seamounts, abyssal plains, deep-sea resource extraction, and global climate change. A-F only. Pre: consent. (Alt. years)


**OCN 633 Biogeochemical Methods in Oceanography** (5) (1 Lec, 2 3-hr Lab) Current methods of analysis used in the ocean sciences, both in the field and in the laboratory. An ocean-going field trip provides students with hands-on training in sample collection and processing. The latter is followed by laboratory analyses of the collected samples throughout the remainder of the semester. Pre: BIOL 171 and CHEM 151 and GG 101; or equivalent.

**OCN 635 Isotopic Marine Geochemistry** (3) Application of stable and unstable isotope tracers in studying geochemical processes and their rates in the sea. Pre: CHEM 162, and MATH 241 or MATH 251A.

**OCN 638 Earth System Science and Global Change** (3) Global view of the planet and how it functions as an integrated system. Geocological processes, dynamics, and cycles, and analysis of natural and human-induced environmental change. Historical chemical history of ocean-atmosphere-sediment system and co-evolution of the biota. Repeatable one time. Pre: BS in environmental related science or one year of chemistry, physics, and calculus. (Cross-listed as GG 638)

**OCN 640 Observational Physical Oceanography** (3) Application of the scientific method; physical regimes in the ocean; ocean processes and observational strategies; resolution, sampling, array design and observing systems; models and data assimilation; major field programs: operational oceanography and climate prediction. Pre: 620 and consent.

**OCN 641 Origin of Sedimentary Rocks** (3) (2 Lec, 1 3-hr Lab) Environment of deposition and subsequent diagenesis of modern and ancient sediments. Petrogenesis of siliciclastic, carbonate and orthochemical rocks. Sedimentology, sedimentary petrography and geochemistry. Repeatable one time. Pre: consent. (Cross-listed as GG 641)

**OCN 642 Elemental Composition Changes** (3) Changes in the chemical composition of meteorites, bulk Earth, Earth’s mantle and crust, sedimentary rocks, hydrosphere and biosphere, and underlying principles. Pre: 623 or GG 325; or consent. (Cross-listed as GG 642)

**OCN 643 Topics in Marine Geochemistry** (3) Seminar on a broad topic: discussion and critique of research papers. Repeatable one time. Pre: 623 or consent.

**OCN 644 Sedimentary Geochemistry** (3) Geochemical thermodynamics and kinetics and their use in interpreting the origin of sediments, sedimentary rocks, and natural waters over a range of pressures and temperature conditions. Pre: CHEM 171; MATH 242, PHYS 152; or consent. (Cross-listed as GG 644)

**OCN 650 Math Techniques for Oceanographers** (5) (3 Lec, 2 3-hr Lab) Introduction to numerical methods, data analysis, error propagation, box models, linear and nonlinear least squares, perturbation theory, numerical integration, MATH 244 or MATH 253A.

**OCN 660 Ocean Waves I** (3) Governing hydrodynamic equations, perturbation techniques, gravity and capillary waves, wave energy, group velocity, refraction, wave spectra, wave generation. Pre: MATH 432 or consent.

**OCN 661 Ocean Waves II** (3) Baroclinic gravity waves, inertial waves, mid-latitude Rossby waves, topographic waves, equatorial waves. Pre: 660 or consent.

**OCN 662 Marine Hydrodynamics** (3) Introduction to classical hydrodynamics and continuum mechanics. Techniques for solution of Navier Stokes equations on various scales of oceanic motion; potential theory, dynamic modeling, and viscous and rotational processes. Pre: MATH 402 and MATH 403 (or their equivalents) and either 620 or MET 600; or consent. (Alt. years) (Cross-listed as MET 665)

**OCN 666 Large-Scale Ocean-Air Interaction** (3) Observations and theory of small-scale processes which couple the atmosphere and ocean boundary layers, including introduction to turbulence theory and parameterization of turbulent fluxes. Pre: MATH 402 and MATH 403 (or their equivalents) and either 620 or MET 600; or consent. (Alt. years) (Cross-listed as MET 665)

**OCN 674 Paleoceanography** (3) Study of the paleoceanographic and paleoclimatic evolution of the Earth’s oceans, atmosphere, and biosphere. Repeatable one time. Pre: consent. (Alt. years) (Cross-listed as GG 674)

**OCN 681 Advanced Geophysical Fluid Dynamics II** (3) Thermodynamics of stratified fluids; convection; mixing; models of the thermohaline circulation; the role of eddies in the large-scale ocean circulation. Pre: 667 or consent.

**OCN 684 Advanced Physical Oceanography** (3) Study of the paleoceanographic and paleoclimatic evolution of the Earth’s oceans, atmosphere, and biosphere. Repeatable one time. Pre: consent. (Alt. years) (Cross-listed as GG 684)

**OCN 699 Directed Research** (V) Pre: consent. CR/NC only.

**OCN 700 Thesis Research** (V) Research for master’s thesis. Repeatable unlimited times.

**OCN 750 Topics in Biological Oceanography** (V) Seminar. Literature and concepts in one of several active fields considered in detail. Repeatable up to 12 credits. Pre: consent.

**OCN 760 Topics in Physical Oceanography** (V) Near-shore processes, advanced mathematical techniques, recent developments, etc. Typically given by visiting professors in their specialties, or in response to student interest.

**OCN 770 Seminar in Chemical Oceanography** (1)

**OCN 780 Seminar** (1) Oceanographic topics of current interest. Repeatable unlimited times.

**OCN 791 Proposal Development** (2) Introduction to the organization and functioning of oceanography funding agencies, the peer-review process, and the design and development of a research proposal. Repeatable one time. CR/NC only. Pre: two of the following: 621, 626, 627 (or concurrent), or 628 (or concurrent); or consent.

**OCN 800 Dissertation Research** (V) Research for doctoral dissertation. Repeatable unlimited times.
PAC 602 Researching Oceania: Creative and Conventional Methods of Inquiry (3) Graduate seminar. Literacy, theory and method in the creation of a Master’s research project. Pre: 601 and 602.

PACS 640 Women in Oceania (3) Will look at femininity, ethnography, culture, activism and globalization in the context of writing, research and film on or by Women in Oceania. Pre: consent.

PACS 690 Graduate Seminar: Change in the Pacific (3) Interrelationship of change in selected Pacific Islands regions, institutions, and processes. Repeatable. Pre: consent.

PACS 695 Master’s Portfolio Project (V) Independent study for students working on MA portfolio projects. A grade of satisfactory (S) is assigned when the project is satisfactorily completed. Repeatable one time. Pre: graduate standing in PACS.

PACS 700 Thesis Research (V)

Pathology (PATH)

School of Medicine

PATH 470 Immunopathology Seminar (1) Autoimmune diseases and transplantation immunity. Pre: consent.

PATH 499 Directed Research (V) Pathology of aging, nutrition, alcoholism, and immunology. Open to selected undergraduate students. Repeatable unlimited times. Pre: consent.

PATH 512 Unit II Concurrent Elective (1) Elective course for first-year medical students. CR/NC only. Pre: BIOM 551 and consent.

PATH 515 Unit V Concurrent Elective (1) Elective course for second-year medical students. CR/NC only. Pre: BIOM 551 and consent.

PATH 525 Unit V Block Elective (V) Required elective for second-year medical students, objectives to be determined by contract. One option is a review of USMLE Part I. CR/NC only. Pre: BIOM 551.

PATH 541 Pathology Practicum (V) Required autopsy experience involving dissection and microscopic examination of tissues and detailed evaluation of disease process. CR/NC only. Pre: third- or fourth-year standing.

PATH 545 (Alpha) Unit VII Electives in Pathology (V) Individualized instruction in laboratory medicine for the practicing physician, clinical and anatomic pathology; (B) advanced topics in clinical immunology; (C) anatomic pathology; (D) clinical pathology; (E) pathologic aspects of aging, nutrition, and/or alcoholism; (F) extramural elective in pathology. Repeatable four times. CR/NC only. Pre: BIOM 551.

PATH 595 Introduction to Pathology and Laboratory Medicine (1) Provides an introduction to the practice of pathology and laboratory medicine and the role pathologists and the laboratory play in the diagnosis and management of disease. MD students only. CR/NC only. Pre: MDED 554 or consent. Fall only.

PATH 599 Electives in Pathology (V) Individualized instruction in clinical and/or anatomic pathology. Third-year elective. Repeatable unlimited times. Pre: consent.

PATH 699 Directed Research (V) In-depth study of pathology of aging, nutrition, alcoholism, and immunology. Open to medical students and selected graduate students. Pre: consent.

Key to symbols & abbreviations: see the first page of this section.

Peace Studies (PACE)

College of Social Sciences

PACE 247 Survey of Conflict Management (3) Survey of contemporary conflict management and resolution: negotiation, mediation, conciliation, ombuds, fact-finding, facilitation techniques, arbitration, and litigation. Pre: any social science 100- or 200-level course or consent. N/DPACE 310 Survey Peace and Conflict Studies (3) Survey of basic concepts, relationships, methods, and debates in modern peace research and conflict resolution studies. Pre: any social science 100- or 200-level course or consent. DS

PACE 315 Personal Peace: Stories of Hope (3) Interviewing, writing, and publishing stories of those who have overcome great difficulties to find personal peace. Pre: grade of B or better in ENG 100 or consent.

PACE 340 Negotiation (3) Negotiation theory, negotiation skills and application of negotiation in conflict prevention, conflict management and conflict resolution. Pre: any Social Science 100 or 200-level course, or consent. DH

PACE 345 Aggression, War, and Peace (3) Biocultural, evolutionary, and cross-cultural perspectives on the conditions, patterns, and processes of violence, war, nonviolence, and peace. Pre: ANTH 152. (Cross-listed as ANTH 345) DS

PACE 373 Nonviolent Political Alternatives (3) Exploration of scientific and cultural resources for nonviolent alternatives in politics. Pre: Any 100- or 200-level POLS course; or consent. (Cross-listed as POLS 396) DS

PACE 399 Directed Reading (V) Directed reading in peace and conflict resolution. Repeatable three times. Pre: consent.

PACE 410 History of Peace Movements (3) Examination of two centuries of U.S., European, Australian, and Hawaiian peace, thought, and action. Also surveys early Christian and secular attitudes to war. Open to nonmajors. Pre: any DS course, or consent. DH

PACE 412 Gandhi, King, and Nonviolence (3) Life and thought of Mahatma Gandhi and Martin Luther King, Jr. Pre: any Social Science 100 or 200-level course, or consent. DH

PACE 413 Terrorism (3) Multidisciplinary approach to the origins, dynamics, and consequences of international terrorism, including the psychological, legal, ethical and operational concerns of counterterrorism. Pre: any 200-level DS course, or consent.

PACE 447 Mediation Skills: UH Basic (3) Basic mediation skills training course. Completion of course requirements qualifies student to be listed as a mediator for university disputes, as co-mediator or on mediation panel. Pre: any Social Science 100 or 200 level course, or consent.

PACE 477 Culture and Conflict Resolution (3) Conflict resolution techniques for major world culture. Emphasis on cultures of the Pacific Basin, Pacific Islands, and Asia. Pre: any DS course, or consent. DS

PACE 487 International Law and Disputes (3) Management, prevention, resolution of international disputes and the role of international law. Pre: any Social Science 100 or 200 level course, or consent. DS

PACE 488 Topics in Peace and Conflict Resolution (3) Recent issues, practices in peace and conflict resolution. Repeatable one time. Pre: any DS course, or consent.

PACE 495 Practicum and Internship (3) The practicum and internship in Peace and Conflict Resolution provides an opportunity for students to apply
the skills and concepts learned in earlier courses. Pre: any two other PACE courses or consent.

PACE 647 Mediation: Theory and Practice (3) Combined lecture, discussion, and mediation simulations. Theory of ADR field. Theory of major different models of mediation, both in the U.S. and internationally. Application of mediation process to categories of disputes, family, workplace, and international. A-F only. Pre: graduate standing, or departmental approval. (Once a year)

PACE 650 Dispute Resolution System Design (3) Conflict prevention, management and resolution in the workplace. Design and implementation of effective systems integrating ADR and recent advances in dispute resolution methodology to government, health, nonprofit, educational, private sector and other institutions. Pre: 447 or 652 or MGT 660 or PLAN 627, or consent.

PACE 652 Conflict Management for Educators (3) Conflict resolution theory and practice for administrators, faculty and staff in educational organizations. K-12, community colleges and universities. Application and theory of negotiation, mediation, facilitation and hybrid ADR processes. Pre: EDEA 601 or EDEA 650, or consent.

PACE 668 Facilitation: Facilitating Community and Organizational Change (3) Advanced conflict resolution course. Covers key issues in the prevention, management and resolution of multiparty conflicts. Combined lecture, discussion, and simulations. A-F only. Pre: graduate standing, or departmental approval. (Once a year)

PACE 690 Topics: Conflict Theory (V) Recent issues of policy and practice in peace and conflict management theory. Repeatable up to 12 credits. A-F only. Pre: graduate standing or consent.


PACE 699 Directed Reading and Research (V) Repeatable up to 9 credits. A-F only. Pre: departmental approval or consent.

Pediatrics (PED) School of Medicine

PED 531 7-Week Pediatric Clerkship (10) Unit VI—7-week basic pediatric clerkship. Repeatable one time. CR/NC only. Pre: BIOM 555.

PED 532 Pediatrics Longitudinal Clerkship (5) Year-long clerkship in ambulatory setting, covering evaluation, diagnosis, and treatment of childhood diseases. Emphasis on primary prevention, normal growth and development of the neonate to adolescent, and arrangement of pediatric care, including outpatient, inpatient, and emergency room experiences. Repeatable two times. Pre: third-year standing and concurrent registration in 532 courses.

PED 545 (Alpha) Unit VII Electives in Pediatrics (V) Fourth-year elective in pediatric sub-specialty areas in which medical students may receive clinical experiences and an in-depth study of selected sub-specialty areas within the field of pediatrics. (B) adolescent medicine; (C) ambulatory pediatric care; (E) clinical genetics; (F) neonatology; (G) pediatric cardiology; (H) pediatric emergency medicine; (I) pediatric hematology/oncology; (J) pediatric infectious diseases; (K) sub-internship in pediatrics—general ward in pediatrics; (M) extramural electives in pediatrics; (N) pediatric rheumatology; (P) developmental behavioral pediatrics; (Q) pediatric international preceptorship. CR/NC only. Repeatable two times per alpha, not repeatable for (Q). Pre: 531 or 532.

PED 599 Directed Reading/Research (V) Repeatable unlimited times. CR/NC only. Pre: consent.

Pharmacology (PHRM) School of Medicine

PHRM 201 Introduction to General Pharmacology (2) Drugs discussed with emphasis on sites and mechanism of action, toxicity, fate, and uses of major therapeutic agents. Pre: mammalian physiology and dental hygiene major. AV DB

PHRM 203 General Pharmacology (3) Similar to 201 but wider in scope of drugs discussed. Intended for undergraduates in the health sciences and related fields. Pre: mammalian physiology. AV DB

PHRM 499 Directed Reading and Research (V) Directed reading and research in experimental pharmacology. Repeatable unlimited times. Pre: consent.

PHRM 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Repeatable unlimited times. Pre: master’s Plan B or C candidate and consent.

PHRM 512 (Alpha) Unit II Concurrent Elective (1) Elective for first-year medical students. CR/NC only. (B) cardiovascular pharmacology; (C) topics in pharmacology. Pre: BIOM 551 and consent. Spring only.

PHRM 513 Unit III Topics in Pharmacology (1) Elective for first-year medical students. CR/NC only. Pre: BIOM 551 and consent. Spring only.

PHRM 514 Unit IV Topics in Pharmacology (1) Elective for second-year medical students. CR/NC only. Pre: BIOM 551 and consent. Fall only.

PHRM 515 Unit V Topics in Pharmacology (1) Elective for second-year medical students. Repeatable six times. CR/NC only. Pre: BIOM 551 and consent. Spring only.

PHRM 525 Review of Pharmacology (1) Elective for second-year medical students, objective to be determined by contract. One option is a review for USMLE Step 1. CR/NC only. Pre: BIOM 551. Spring only.

PHRM 595 Principles of Pharmacology (1) Pharmacology elective course for medical students. MD students only. CR/NC only. Pre: MDED 554 or consent. Fall only.

PHRM 599 Research in Pharmacology (V) Pharmacology research elective for medical students. MD majors only. CR/NC only. Pre: MDED 554 or consent. Fall only.

PHRM 601 General Pharmacology (3) Pharmacodynamics, receptor theory, modeling, clinical trials and the FDA will be covered. Concepts in ADME/T and clinical research are also considered. Pre: consent.

PHRM 602 Systemic Pharmacology (9) Provides instruction at an organ systems/functional level covering major organ and functional systems of the human body. Concepts in pharmacological research at the animal, organ system and whole human level will also be considered. Repeatable one time. Pre: consent.

PHRM 699 Directed Research (V) Repeatable unlimited times.

PHRM 700 Thesis Research (V) Repeatable unlimited times.

PHRM 800 Dissertation Research (V) Repeatable unlimited times.

Philosophy (PHIL) College of Arts and Humanities

PHIL 100 Introduction to Philosophy: Survey of Problems (3) Introduction to the kinds of problems that concern philosophers and to some of the solutions that have been attempted. DH

PHIL 101 Introduction to Philosophy: Morals and Society (3) Philosophical attempts to evaluate conduct, character, and social practices. DH

PHIL 102 Asian Traditions (3) Universal themes and problems from Asian perspective. DH

PHIL 103 Introduction to Philosophy: Environmental Philosophy (3) A critical examination of environmental issues; analyzing the nature of the human being, the nature of nature, and the relationship of the human being to nature. DH

PHIL 110 Introduction to Deductive Logic (3) Principles of modern deductive logic. FS

PHIL 111 Introduction to Inductive Logic (3) Introduction to the theory of arguments based on probabilities and to the theory of decision-making in the context of uncertainty. A-F only. FS

PHIL 211 Ancient Philosophy (3) An introduction to the history of philosophy based on translations of texts originally written in classical Greek or Latin. DH

PHIL 212 Between Ancient and Modern Philosophy (3) Introduction to the history of philosophy based on translations of texts originally written in post-classical Latin or Arabic. DH

PHIL 213 Modern Philosophy (3) Introduction to the history of philosophy based on texts or translations of “modern” works, that is works originally written in a modern European language. DH

PHIL 300 Business Ethics (3) Case studies and critical analyses of ethical issues in business. Readings from business, philosophy, law, etc. Pre: any course 100 or above in PHIL or BUS or BLAW, or consent. DH

PHIL 301 Ethical Theory (3) Problems and methods in theory of moral conduct and decision. Pre: any course 101 or above in PHIL or above 100 in POLS or SOC; or consent. DH

PHIL 302 Political Philosophy (3) Problems and methods in philosophical theories of political legitimacy. Pre: any course 101 or above in PHIL or above 100 in POLS or SOC, or consent. DH

PHIL 303 Social Philosophy (3) Problems and methods in examination of contemporary life, values, and institutions in light of traditional philosophical problems of freedom, justice, authority, equality. Pre: any course 101 or above in PHIL or above 100 in POLS or SOC, or consent. DH

PHIL 304 Metaphysics (3) Problems arising from attempts to categorize rationally what is, and what appears to be. Among others, topics may include universals and particulars, personal identity, freedom and determinism, and time. Pre: any course 100 or above in PHIL, or consent. DH

PHIL 305 Philosophy of Religion (3) Problems and methods. Nature of religious experience, alternatives to theism, existence of God, relation between faith and reason, nature of religious language. Pre: any course 100 or above in PHIL or REL, or consent. DH

PHIL 306 Philosophy of Art (3) Problems and methods in aesthetic valuation and in appreciation, creation, and criticism of artworks. Pre: any course 100 or above in PHIL or ARCH or ART or MUS or any DL course 100 or above; or consent. DH


Key to symbols & abbreviations: see the first page of this section.
course 100 or above in PHIL, or 200 or above with either DB or DP designation; or consent. DH
PHIL 308 Philosophy of Science (3) Problems and methods. Domains of inquiry, methods of validation, and attendant moral concerns. Pre: any course 100 or above in PHIL, or 200 or above with either DB or DP designation; or consent. DH
PHIL 310 Ethics in Health Care (3) Ethical issues in application and organization of biomedical resources; professional responsibility, confidentiality, euthanasia, experimentation on human subjects, etc. Pre: any course 100 or above in PHIL or MED or NURS or with a DB designation; or consent. DH
PHIL 311 Philosophy and Aesthetics of Film (3) Aesthetics and ontology of film and video, based on readings in the philosophy of film and the viewing of a number of films per semester. Pre: one course in PHIL or THEA, drama or film; or consent. See department for list of approved courses.
PHIL 312 Ethics in Practice (3) Team-taught exploration of five contemporary ethical issues using a variety of philosophical approaches and methods. Pre: any 101 course or above in PHIL or 100 in POLS or SOC; or consent. (Once a year)
PHIL 313 Philosophy and Evolution (3) Explores the ethical and epistemological implications of the theory of evolution. Pre: one course in PHIL or BIOL, or consent. (Alt. years)
PHIL 314 Critical Thinking: Pre-Medicine (3) Scientific and social perspectives on the nature of disease and their impact on medical practice. Exploration of the role of critical thinking in research, writing, and critical inquiry. Pre: one course in PHIL 100 or above; or any two BIOL, CHEM or PHYS courses; or consent.
PHIL 315 The Role of Models in Global Environmental Science (3) Introduction to philosophy of science for those with some background in the natural sciences. Special emphasis on issues arising from the construction and use of models. Pre: any course 200 or above in PHIL or any course 200 or above with either DB or DP designation; or consent. (Alt. years: spring) (Cross-listed as OCN 315)
PHIL 316 Science, Technology, and Society (3) Investigation of some of the complex interconnections between science, technology, and society. Pre: any course 100 or above in PHIL or in a course with either DB or DP or DS designation; or consent. DH
PHIL 317 Critical Thinking: Pre-Law (3) Introduction to concepts and techniques for evaluating arguments with special emphasis on their application both to questions of law and to issues in jurisprudence. Pre: any course 100 or above in PHIL or POLS or SOC; or consent. DH
PHIL 318 Philosophy of Law (3) Historical and contemporary issues in law and legal theory. Law and morality: legal responsibility, justice, rights, punishment, judicial reasoning. Pre: any course 101 or above in PHIL or above 100 in BLAW or POLS or SOC; or consent. DH
PHIL 319 Ethical Issues in the Law (3) Exploration of ethical issues that have come before (mainly U.S.) courts, including but not confined to, medical and criminal justice ethics. Repeatable one time. A-F only. Pre: 101 or a course numbered 200 or above in PHIL or HIST or ENG or with a DS designation; or consent.
PHIL 320 American Philosophy (3) Survey of major Islamic philosophers and schools in development of American thought up to modern times. Pre: any course 100 or above in PHIL, or consent. DH
PHIL 330 Islamic Philosophy (3) Survey of major Islamic philosophers and schools. Pre: any course 100 or above in PHIL or ARAB, or consent. DH
PHIL 350 Indian Philosophy (3) Survey of major orthodox and heterodox systems: Vedas, Upanishads, Blaugavagdita, Vedanta, Jainism, Buddhism. Pre: any course 100 or above in PHIL or PALI or SNSS; or consent. DH
PHIL 360 Buddhist Philosophy (3) Survey of central thinkers and schools. Pre: any course 100 or above in PHIL, CHN, JPN, PALI, SNSS, or TIB; or consent. DH
PHIL 370 Chinese Philosophy (3) Survey of important schools and thinkers in classical Chinese traditions: Confucianism, Daoism, Mohism, Legalism. Pre: any course 100 or above in PHIL or CHN; or consent. DH
PHIL 380 Japanese Philosophy (3) Survey of central thinkers and schools from ancient to modern. Pre: any course 100 or above in PHIL or JPN; or consent. DH
PHIL 399 Directed Research (V) Repeatable up to a maximum of 6 credits. Pre: consent.
PHIL 402 Introduction to Phenomenology (3) Methods of analyzing the structures of experience, as developed by Husserl, Heidegger, Merleau-Ponty, Sartre, etc. Pre: any course 200 or above in PHIL, or consent. DH
PHIL 406 Introduction to Zen (Ch’an) Buddhist Philosophy (3) Development and philosophical significance of basic precepts, explored through translations of Chinese and Japanese sources. Pre: any course 200 or above in PHIL or CHN or JPN, or consent. DH
PHIL 414 (Alpha) Western Movements and Periods (3) (B) Greek; (C) late antiquity; (D) medieval; (E) continental rationalism; (F) British empiricism; (G) German idealism; (H) 19th century; (I) 20th century; (J) Rennaisance. Repeatable two times in different alphabas, not in same alphabet. A-F only for (J). Pre: any course 200 or above in PHIL, or consent; for (J): 211 or 212, or consent. (Alt. years for (J))
PHIL 417 Philosophy in Literature (3) Philosophical themes in the literary mode in world literature. Pre: any course 200 or above in PHIL or any DL course 200 or above, or consent. DL
PHIL 418 Feminist Issues in Philosophy (3) Examination of basic feminist issues in philosophy, and of responses to them. Pre: any course 200 or above in PHIL or WSS; or consent. (Cross-listed as WSS 419) DH
PHIL 422 Philosophical Psychology (3) Classical and modern theories of mind, cognition, and action. Pre: any course 200 or above in PHIL or PSY; or consent. DH
PHIL 436 Philosophy of Language (3) Contempory theories in semantics and syntax; problems of meaning, reference, speech acts, etc. Pre: any course 200 or above in PHIL or PSY; or consent. DH
PHIL 438 Gender and Environmental Philosophy (3) Interdisciplinary approach to women’s perspectives and roles on ecological and environmental issues; critical analysis of eco-feminism as a social and political movement; cross-cultural comparison of women’s roles in human ecology. Pre: any course 200 or above in PHIL or WSS or any course 200 or above with a DB or DP designation, or consent. (Cross-listed as WSS 438) DH
PHIL 445 Symbolic Logic (3) Intermediate-level course covering proof techniques for classical, first-order predicate calculus, and an introduction to meta-theory. Pre: 110 or any course 200 or above in ICS or MATH; or consent. DH
PHIL 449 Philosophical Topics (3) Concentration on a topic of current philosophic concern. Repeatable one time with consent. Pre: declared major in PHIL with at least six courses 200 or above in PHIL, or consent. DH
PHIL 492 Philosophy with Children (3) Examines the theory and practice of doing philosophy in elementary, middle, and high school classrooms. Pre: any course 200 or above in PHIL or EDUC, or consent.
PHIL 493 Teaching Philosophy (3) Supervised work in elementary, middle, and high school classrooms, facilitating philosophical inquiry with students. Repeatable one time. Pre: 492 or consent.
PHIL 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.
PHIL 611 Studies in Ethics (3) Key issues in contemporary philosophical debates about ethics. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 301.
PHIL 614 Studies in Metaphysics (3) Key issues in ontological and cosmological theory. Problems of materialism, idealism, phenomenalism, etc. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 304.
PHIL 615 Studies in Philosophy of Religion (3) Key issues in theory of religious experience, language, reasoning. Pre: graduate standing or consent. Recommended: 305.
PHIL 616 Studies in Aesthetics (3) Key issues in contemporary aesthetics, against background of traditional Western and Eastern theories. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 306.
PHIL 617 Studies in Epistemology (3) Key issues in contemporary philosophical debates about knowledge. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 307.
PHIL 622 Studies in Hermeneutics (3) Important debates concerning the methodology of textual interpretation. Pre: graduate standing or consent.
PHIL 630 History and Theory of Science (3) Exploration of problems at the intersection of historical studies of science as a process and philosophical analysis of basic concepts of the sciences. Pre: graduate standing or consent. Recommended: 308 or 316.
PHIL 670 Confucianism (3) Ethical, social, institutional problems in classical theory. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 370.
PHIL 671 Neo-Confucianism (3) Logic, epistemology, metaphysics, and ethics of major Chinese Neo-Confucian philosophers, 11th–16th century. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 370.
PHIL 672 Daoism (3) Critical examination and evaluation of major philosophical ideas in Lao Zi, Zhuang Zi, and the Neo-Daoists. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 370.
PHIL 699 Directed Research (V) Repeatable up to nine credits. Pre: graduate standing and consent.
PHIL 700 Thesis Research (V) Repeatable up to 6 credits. Pre: master’s Plan A candidate and consent.
PHIL 720 Seminar on Individual Philosophers (3) The most significant texts of an important philosopher, selected each semester. Consult department for further information. Repeatable three times with consent. Pre: graduate standing or consent.
PHIL 725 Seminar in Philosophical Topics (3) Close study of a topic of important philosophical controversy. Repeatable two times with consent. Pre: graduate standing or consent.
PHIL 730 Seminar in Islamic Philosophy (3) Major philosophical problems in Islamic thought. Focus either on a specific topic or one author. Repeatable one time. Pre: graduate standing or consent. (Once a year)
PHYS 170L General Physics I Lab (1) (1 3-hr Lab) Similar to 151L but at 170L level. Pre: 151L or 170L, and MATH 242 or MATH 252A; MATH 216 may be substituted with consent. Recommended: 360.

PHYS 770 Seminar in Chinese Philosophy (3) Fundamental issues, problems, movements, and schools of Chinese philosophy, such as classical Confucianism, Daoism, Legalism, Chinese logic, and Neo-Confucianism. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 370.

PHIL 771 Seminar in Yi Jing (3) Metaphysical, epistemological, ethical, and axiological views of Yi Jing and its claim as foundational work for classical Confucianism, Daoism, and Neo-Confucianism. Pre: graduate standing or consent.


PHIL 790 Seminar in Comparative Philosophy (3) Comparison of widely differing philosophical traditions. Specific topic changes each semester. Consult department for more information. Repeatable two times with consent. Pre: graduate standing or consent.

PHIL 800 Dissertation Research (V)

Key to symbols & abbreviations: see the first page of this section.
PHYS 660 Advanced Optics (3) Contemporary advanced applications in optics including nonlinear optics and optical parametric oscillators, atomic lasers and laser systems, and free-electron lasers. Pre: 460. (Alt. even years)

PHYS 670 Quantum Mechanics (3) Physical basis and formulation of quantum theory. Exact solutions of Schroedinger equation and their applications. Approximation methods. Applications to atomic, nuclear, and molecular physics. Pre: 400 or 481 or 600 and MATH 402.


PHYS 690 Seminar (V) Discussions and reports on physical theory and recent developments. CR/NC only. Pre: graduate standing or consent.

PHYS 694 Condensed Matter Seminar (1) Results and discussions of current topics in condensed matter physics. Repeatable six times with consent.

PHYS 695 Seminar on Atomic and Solid-State Physics (1) Reports and discussion on recent developments in atomic, condensed matter, and solid-state physics. Repeatable with consent.

PHYS 696 Seminar on Elementary Particle Physics (1) Reports and discussion on recent developments in elementary particle physics. Repeatable four times. Pre: consent.

PHYS 699 Directed Research (V) Pre: consent.


PHYS 711 Topics in Particles and Fields (3) Topics in current theoretical research; e.g., unified field theories, general relativity, gravitation, and cosmology. Repeatable four times. Pre: consent.

PHYS 712 Special Topics Experimental Physics (3) Topics in current experimental research in low-energy physics, high-energy physics, cross-disciplinary physics. Repeatable in different topics. Pre: consent.

PHYS 730 Statistical Physics I (3) Equilibrium thermodynamics; Gibbs ensembles; quantum statistics; ideal and non-ideal Fermi; Bose and Boltzmann gases; phase transitions; and critical phenomena. Pre: 670. (Alt. years)

PHYS 731 Statistical Physics II (3) Nonequilibrium thermodynamics, transport theory, fluctuation dissipation theorem, many-body Green’s function methods, normal Fermi and Bose liquids, superfluidity, superconductivity. Pre: 670 and 730. (Alt. years)

PHYS 772 Quantum Field Theory I (3) Relativistic wave equations and their solutions. Dirac’s theory of the electron, propagator techniques. Applications to quantum electrodynamics. Pre: 671. (Alt. years)

PHYS 773 Quantum Field Theory II (3) Local gauge invariance, Yang-Mills theory: quantum chromodynamics, spontaneous symmetry breaking and Goldstone bosons; the standard electroweak theory; grand unified theories. Pre: 772. (Alt. years)

PHYS 777 Nuclear and Particle Physics (3) Nuclear physics; nuclear astrophysics; hadron structure and partons. Techniques of particle physics. Pre: 481 and 671. (Alt. years)

PHYS 778 Nuclear and Particle Physics II (3) Quantum chromodynamics; electroweak interactions; the standard model. Techniques of particle physics. Pre: 777 or consent. (Alt. years)

PHYS 785 Solid-State Theory (3) Crystal symmetry, electronic excitations in solids, transport theory, optical properties, cohesive energy, lattice vibrations, electron-phonon interaction, electron-electron interaction, magnetism, superconductivity. Pre: 670. (Alt. years)

PHYS 786 Solid-State Theory (3) Crystal symmetry, electronic excitations in solids, transport theory, optical properties, cohesive energy, lattice vibrations, electron-phonon interaction, magnetism, superconductivity. Pre: 785. (Alt. years)

PHYS 800 Dissertation Research (V) Research for doctoral dissertation.

Physiology (PHYL)

PHYL 103 Human Physiology and Anatomy (5) Introduction to human physiology and anatomy designed to serve the needs of dental hygiene students and others interested in pursuing health-related careers. DB

PHYL 103L Physiology and Anatomy Lab (1) Laboratory to complement 103. Co-requisite: 103.

PHYL 141 Human Anatomy and Physiology (3) Anatomy, histology, physiology, biochemistry, genetics of human organ systems in integrated anatomy-physiology format. Priority to students in nursing. Pre: high school chemistry. DB

PHYL 141L Human Anatomy and Physiology Lab (1) Anatomy, histology, physiology, biochemistry, genetics of human organ systems in integrated anatomy-physiology format. Priority to students in nursing. Pre: 141 or consent. DY

PHYL 142 Human Anatomy and Physiology (3) Continuation of 141. Pre: 141. DB

PHYL 142L Human Anatomy and Physiology Lab (1) Anatomy, histology, physiology, biochemistry, genetics of human organ systems in integrated anatomy-physiology format. Priority to students in nursing. Pre: 142 or consent. DY

PHYL 301 Human Anatomy and Physiology (4) Integrated presentation of human anatomy and physiology. An optional laboratory (PHYL 301L) is available separately. Pre: CHEM 151 and one of 105, BIOL 171, or ZOOL 101. DB

PHYL 301L Human Anatomy and Physiology Lab (1) Laboratory study of human anatomy and physiology by means of models, histology slides, experiments, and demonstrations. Co-requisite: 301. DY

PHYL 302 Human Anatomy and Physiology (4) Continuation of 301. Pre: 301 or consent. DB

PHYL 302L Human Anatomy and Physiology Lab (1) Continuation of 301L. Pre: 301L or consent. Co-requisite: 302. DY

PHYL 401 Human Physiology: Organ Systems (4) Basic function of the major organ systems in man. Covers cardiovascular, respiratory, renal, acid-base, and gastrointestinal physiology. Pre: 302 or equivalent with consent. DB

PHYL 402 Human Physiology: Integrative Systems (4) Senior-level course in integrative systems (central nervous system and endocrinology). Complements 401. Pre: 401 and either BIOG 341 or CHEM 152, or consent. DB

PHYL 403 Environmental Physiology (3) Animal (including human) responses to environmental challenges such as heat, cold, altitude, diving, physical work, etc. Human adaptation in a comparative context. Pre: 302, or 401, or ZOOL 430; or consent. DB

PHYL 403L Environmental Physiology Lab (1) Laboratory experiences in measuring human physiological responses to environmental stress. Complements 403. DY

PHYL 405 Applied Muscle Physiology (3) Science and technology of strength training. Anatomy, kinesiology, physics, and physiology applied to development of muscular strength and mass. Repeatable one time. Pre: 302; or consent. DB

PHYL 450 Physiological Anthropology (3) Study of ecological factors in human variation. Human population and its biological and cultural responses to the environment. Pre: ANTH 215 or consent. DB

PHYL 451 Human Biology (4) Introduces upper division students in the social or non-biological sciences to the basic concepts of physiology, anatomy, and biochemistry. Repeatable two times. Pre: upper division standing. DB

PHYL 499 Directed Research (V) Repeatable unlimited times. Pre: junior or senior undergraduate status.

PHYL 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Repeatable unlimited times. Pre: master’s Plan B or C candidate and consent.

PHYL 512 (Alpha) Unit II Electives in Physiology (1) (2 Lec, 1 1-hr Discussion) Concurrent electives in physiology. (B) case specific patho-physiology; (C) cardiovascular physiology. CR/NC only. Repeatable one time per alpha. Pre: BIOM 551. Co-requisite: BIOM 552. Spring only.

PHYL 514 Physiology of the Nervous System (1) (2 Lec, 1 1-hr Discussion) Restricted to majors. Repeatable one time. Co-requisite: BIOM 554. Fall only.

PHYL 545 Topics in Medical and Applied Physiology (V) Fourth-year elective for medical students; in-depth study of selected topics in physiological basis of medical practice.

PHYL 601 Physiology of Exercise (4) Physiological bases of modern physical training methods and sports science. Lectures, laboratory, and field experience. Pre: 301 and 302, or 401. (Cross-listed as KRS 601)

PHYL 606 Human Neurophysiology (2) Physiology of human nervous system with emphasis on special senses and control and coordination of movement. Repeatable one time. Pre: 302 or 604, or consent.

PHYL 609 Cardiovascular Diseases (3) Selected topics in cardiovascular physiology. Emphasis on dynamic aspects of the heart and circulation. Pre: 604 or consent.

PHYL 617 Medical Physiology I (4) Basic physiology for premedical and graduate students. Lectures will cover (with PHYL 618) membrane, nerve, muscle, cardiovascular, respiratory, renal, gastrointestinal, endocrine, sensory, and central nervous system physiology. A-F only. Pre: 301 and 302, or consent. Fall only.

PHYL 618 Medical Physiology II (4) Continuation of 617. A-F only. Pre: 617 or consent. Spring only.

PHYL 710 Special Topics: Water and Electrolytes (1)

Plant and Environmental Protection Sciences (PEPS)

College of Tropical Agriculture and Human Resources

A grade of C- or better is required in a prerequisite course.

PEPS 201 Introduction to Environmental Science (3) Analysis of our environment with emphasis on understanding relationships and interactions of physical, biological, technological, and political components using scientific methods of inquiry. Food supply and safety, water quality, pollution control, biodiversity, environmental policy. Open to nonmajors. (Cross-listed as NREM 210) DB

PEPS 250 The World of Insects (3) Biology/ecology of insects with emphasis on relationships to...
PEPS 301 Environment and Agriculture (3) Overview of environmental issues and impacts associated with agriculture, specifically pest management issues, and options for environmentally responsible management and amelioration of these impacts. Pre: 210 or consent. Fall only.

PEPS 350 Invasive Pest Species (3) Ecological, economic and sociological impacts of invasive pest species on tropical ecosystems; characteristics of invasive species and nature of vulnerable habitats; management of invasive species or eradication options; factors on evolution, biological diversity and ecological stability. Open to nonmajors. (Alt. years: spring) DB

PEPS 363 General Entomology (3) Biology, ecology, habits, structure of Hawai‘i’s insects/arthropods. Classification to family level. A-F only. Pre: BOT 101 or ZOOL 101 or BIOL 171; or consent. DB

PEPS 363L General Entomology Laboratory (1) Laboratory in the biology and classification to family level of Hawai‘i’s insects and arthropods. A-F only. Pre: 363 (or concurrent) or consent. DY

PEPS 371 Genetics Theory to Application (3) Fundamentals of genetic theory using biotechnological procedures in insect and plant pathogen control and plant and animal breeding as practical applications. Repeatable one time. A-F only. Pre: BIOL 172 and CHEM 162, or consent. (Cross-listed as TPSS 371)

PEPS 402 Principles of Biochemistry (4) Molecular basis of living processes in bacteria, plants, and animals; emphasis on metabolism of carbohydrates, lipids, proteins, and nucleic acids. Pre: BIOL 275/275L, and CHEM 273; or consent. (Cross-listed as BIOL 402 and MBBE 402) DB

PEPS 409 Plant Pathogens and Diseases (4) (3 Lec, 1 3-hr Lab) Classification, morphology, ecology, and biology of bacteria, fungi, nematodes, and viruses that attack economic crops. Etiology and control of plant diseases. Pre: 210 or BOT 101 or MIRC 130, or consent. Fall only. DB

PEPS 412 Environmental Biochemistry (3) Biochemical and chemical principles of occurrence, distribution, biochemical and abiotic conversion, fate, and impact of synthetic and natural molecules in the environment. Important pollutants will be used as case studies to illustrate the principles. A-F only. Pre: CHEM 152 or CHEM 272 and CHEM 162 or 171, or consent. Spring only. (Cross-listed as MBBE 412) DB

PEPS 421 Foundations of Pest Management (4) (3 Lec, 1 3-hr Lab) Principles and concepts of insect pest management using biological, ecological, cultural, behavioral, legislative, microbial and chemical methods. A-F only. Pre: 363 and CHEM 152, or consent. Spring only. DB

PEPS 422 Biocontrol of Invasive Species (3) Biological control of arthropods, weeds, plant pathogens, and vertebrates. Pre: 363 or consent. DB

PEPS 451 Environmental Law (3) Exploration of federal laws, regulations, and precedents that govern our interaction with the environment. Analysis of laws regulating air, water, toxins, pests, endangered species, and environmental justice. Pre: junior or senior standing.

PEPS 463 Urban Pest Management (3) (2 Lec, 1 3-hr Lab) Lecture-lab on biology, ecology, and management of pest organisms associated with people, structures and the urban environment. Emphasis on household/structural insect pests. Pre: 363 or consent. (Alt. years: spring) DB

PEPS 481 Weed Science (3) (2 Lec, 1 3-hr Lab) Weed classification, identification, adaptations for weeddiness; principles of weed control; properties, uses, and action of herbicides. Lab: pesticide application equipment and techniques, no-till farming, greenhouse and field experiments. Pre: CHEM 152 and TPSS 200, or consent. Fall only. (Cross-listed as TPSS 481) DB

PEPS 486 Insect-Microbe Interactions (3) Multi-disciplinary treatment of medical entomology, plant vector entomology, insect pathology and symbiosis. Topics are addressed on evolutionary, ecological and molecular levels. Pre: BIOL 172 or MIRC 130; or consent.

PEPS 491 Topics in Plant & Environmental Protection (V) Study and discussion of significant topics and problems. May be offered by visiting faculty, extension faculty or research faculty. Repeatable two times.

PEPS 495 PEPS Capstone (4) Integration and application of academic knowledge and critical skills emphasizing professional development, Directed Research, field studies, employment with cooperating businesses, government or schools are all options. A-F only. Pre: consent.

PEPS 499 Directed Research (V) Conduct original research in environmental protection sciences. Limited to qualified undergraduate students. Repeatable two times. CR/NC only.

PEPS 616 Plant Nematology (3) (2 Lec, 1 3-hr Lab) Study of nematode biology (taxonomy, genetics, behavior), interactions with plants and animals, and sustainable management practices in an integrated lecture-laboratory setting. Pre: graduate standing or consent.

PEPS 630 Plant Virology (4) (2 Lec, 2 3-hr Lab) Isolation, identification, and molecular biology of plant viruses; biological and physical properties. Pre: 402, 405; or consent.

PEPS 641 Insect Physiology (2) (2 Lec) Study of the principal physiological and biochemical functions in insects, with emphasis on hormonal interactions. Pre: 402 and 402L, or consent.

PEPS 646 Plant-Bacterial Interactions (3) Diagnosis, molecular biology, genetics, and infection mechanisms of bacterial plant pathogens and symbionts. Pre: one of BIOL 481, MIRC 351, MICR 475; or consent. (Cross-listed as MICR 646)

PEPS 660 Seminar in Plant Pathology (1) Seminar on research and topics in plant pathology. Repeatable unlimited times. Pre graduate standing or consent.

PEPS 661 Medical and Veterinary Entomology (3) (2 Lec, 1 3-hr Lab) Vector control; insects and other arthropods in relation to human and animal diseases. Pre: 363 or consent.

PEPS 662 Systematics and Phylogenetics (3) (2 Lec, 1 3-hr Lab) Classification and study of diversity among insects and other life forms. Use of morphological and molecular characters to reconstruct evolutionary histories. A-F only. Pre: graduate standing or consent.

PEPS 671 Insect Ecology (3) (2 Lec, 1 3-hr Lab) Insects as living units in an environment of physical and biotic factors. Pre: consent of instructor.

PEPS 675 Biological Control of Pests (3) (2 Lec, 1 3-hr Lab) Fundamental concepts, Critical study of major biological control projects. Pre: 421 or consent. Recommended: 660; and ZOOL 631 or 632.

PEPS 681 Pesticide Toxicology (3) Principles of toxicology; chemical and biochemical mechanisms of pesticide toxicity. A-F only. Pre: 402 or BIOL 441; CHEM 272; or consent. Fall only.

PEPS 686 Insect Transmission of Plant Pathogens (3) (2 Lec, 1 3-hr Lab) A multidisciplinary treatment of insect transmission of plant pathogens. Insect-plant and cellular insect-pathogen interactions and management strategies are emphasized.

Key to symbols & abbreviations: see the first page of this section.

PEPS 690 Seminar in Entomology (1) Seminars on research and topics in entomology. Repeatable unlimited times. Pre: graduate standing or consent.

PEPS 691 Special Topics (V) Study and discussion of significant topics and problems in plant and environmental protection sciences at an advanced level. Offered by visiting or existing faculty as a special course. Repeatable unlimited times. Pre: graduate standing or consent.

PEPS 695 Plan B Master’s Project (3) Independent study for students working on a Plan B master’s project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. A-F only. Pre: graduate standing in entomology or tropical plant pathology. CR/NC only.

PEPS 699 Directed Research (V) Directed research, critical reviews in environmental protection sciences, entomology, or plant pathology. CR/NC only.


PEPS 800 Dissertation Research (V) Research for doctoral dissertation.

Political Science (POLs) College of Social Sciences

Either a 100 level or 200 level course is a prerequisite to all 300 level courses except with the consent of the instructor.

POLS 110 Introduction to Political Science (3) Discussion of politics as an activity and of political problems, systems, ideologies, processes. DS

POLS 120 Introduction to World Politics (3) Power and contemporary world politics since 1945 with emphasis on the U.S. role. DS

POLS 130 Introduction to American Politics (3) American political processes and institutions, as seen through alternative interpretations. Emphasis on opportunities and limitations for practical political participation. DS

POLS 170 Politics and Public Policy (3) Perspectives on the role of government in guiding economies and civil societies with particular emphasis on the recent U.S. DS

POLS 171 Introduction to Political Futures (3) Introduction to political future studies. Using science fact and fiction, shows how past and present images of the future influence people’s actions. DS

POLS 190 Media and Politics (3) Influences and effects of media on politics. Setting public agendas, interpreting events, manipulating the political process, political learning through popular culture. DS

POLS 201 Problems of War and Peace (3) Introduction to the problems individuals and political communities currently face with respect to war, peace, and international conflict. Includes questions of human nature, economy, morality, nuclear deterrence, arms control and disarmament, and alternatives to war. DS

POLS 241 Political Design and Futuristics (3) Possible social and political alternatives for the future. Conditions likely if present trends continue, formulation of visions of better futures, means for their achievement. DS

POLS 271 Race and Politics (3) Racial inequality in the U.S.; mechanisms of institutional racism in employment, education, criminal justice, electoral politics. DS

POLS 301 Hawai‘i Politics I (3) Introduction to study of institutions, processes, and issues. Pre: sophomore standing or higher, or consent. DS

Courses 479
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Prerequisites</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLS 302</td>
<td>Hawai‘i Politics II (3) Application of theoretical modes and techniques to institutions, processes, and issues that characterize politics in Hawai‘i. Pre: sophomore standing or higher, or consent.</td>
<td>DS</td>
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<tr>
<td>POLS 303</td>
<td>(Alpha) Topics in Hawai‘i Politics (5) Intensive examination of particular institutions, processes, and issues. (B) the military in Hawai‘i; (C) political thought in Hawaiian. Taught in Hawaiian; (D) alternative politics in Hawai‘i. Pre: HAW 302 (or concurrent) for (C) only, sophomore standing or higher or consent. ((C) Cross-listed as HAW 428)</td>
<td>DS for (B) and (D), DH for (C)</td>
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<tr>
<td>POLS 304</td>
<td>Indigenous Politics (3) Conceptualizing politics from the perspective of indigenous epistemologies, philosophies, language, and social and political movement. Pre: sophomore standing or higher, or consent.</td>
<td>DS</td>
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<tr>
<td>POLS 305</td>
<td>Global Politics/Comparative (3) Introduction to global politics with emphasis on concepts and theories developed from a comparative politics perspective. Pre: sophomore standing or higher, or consent.</td>
<td>DS</td>
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<tr>
<td>POLS 306</td>
<td>Comparative Politics of Developing Countries (3) Political, economic, and social development in the Third World. Repeatable one time. Pre: sophomore standing or higher, or consent.</td>
<td>DS</td>
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<tr>
<td>POLS 307</td>
<td>(Alpha) Topics in Comparative Politics: Country/Regional (3) Political, social, and economic processes in specific countries/regions. (B) Southeast Asia; (C) Pacific Islands; (F) Middle East; (G) Philippines; (H) Japan; (I) Europe; (J) India. Repeatable one time. Pre: sophomore standing or higher, or consent.</td>
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<tr>
<td>POLS 308</td>
<td>Contemporary Chinese Politics (3) Interdisciplinary review and analysis of the social and political issues in contemporary China, the interplay between traditional and modern political policies, the relationship between cultural tradition and technological modernization in the social transformation process. A-F only. Pre: sophomore standing or higher, or consent. (Cross-listed as ASAN 308).</td>
<td>DS</td>
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<tr>
<td>POLS 315</td>
<td>Global Politics/International Relations (3) Introduction to global politics with emphasis on concepts and theories developed from an international relations perspective. Pre: sophomore standing or higher, or consent.</td>
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<tr>
<td>POLS 316</td>
<td>International Relations (3) Decision-making behavior of international actors; strategies of peacemaking. Pre: sophomore standing or higher, or consent.</td>
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<tr>
<td>POLS 317</td>
<td>International Law (3) Nature and function of international law in international politics. Pre: sophomore standing or higher, or consent.</td>
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<tr>
<td>POLS 318</td>
<td>Current Issues in International Law, Organization, and Culture (3) Principles, norms, cases, and their interaction with culture and organization in international politics. Pre: any 100 level POLS course or course.</td>
<td>DS</td>
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<tr>
<td>POLS 319</td>
<td>International Organization (3) International relations of governmental and nongovernmental organizations. Pre: sophomore standing or higher, or consent.</td>
<td>DS</td>
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<tr>
<td>POLS 321</td>
<td>International Migration (3) Political-cultural economy of international migration: post-colonial populations, refugees, and immigrants. Pre: sophomore standing or higher, or consent.</td>
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<tr>
<td>POLS 322</td>
<td>American Foreign Policy (3) Purposes, methods, strengths, obstacles, prospects; factors affecting American foreign policy: impact abroad and at home. Pre: sophomore standing or higher, or consent.</td>
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<tr>
<td>POLS 323</td>
<td>International Relations Lab (1) Pre: any 100 level POLS course or course. Co-requisites: 315 or 319.</td>
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<tr>
<td>POLS 333</td>
<td>Advanced Topics in Global Politics (3) Studies of political development in the context of increasingly integrated and globalized political economies. Repeatable one time. Pre: any 100 level POLS course or course.</td>
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<tr>
<td>POLS 335</td>
<td>Political Philosophy and Theory (3) Theories, approaches, concepts, and issues developed or raised in historical, or the role of women in political philosophy and thought. Pre: any 100- or 200-level POLS course or course, or consent.</td>
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<td>POLS 336</td>
<td>Non-Western Political Theory (3) Survey of major historical schools and/or contemporary directions in non-western political thought. A-F only. Pre: any 100- or 200-level POLS course or course, or consent.</td>
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<tr>
<td>POLS 337</td>
<td>American Political Theory (3) Origins and development of American political thought. Pre: any 100 level POLS course or course.</td>
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<tr>
<td>POLS 338</td>
<td>(Alpha) Topics in Political Theory (3) Significant works, historical continuities, themes, and issues in political theory. Pre: classical political philosophy; (B) revolution and utopia; (C) contemporary political theory; (J) Marxian philosophy. Pre: any 100- or 200-level POLS course, or consent.</td>
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<td>POLS 339</td>
<td>Feminist Theory (3) Contemporary debates in feminist theory concerning gender, race, and class; subjectivity and representation; gender and colonialism; bodies, sexualities and &quot;nature.&quot; Pre: any 300 level POLS or WS course; or consent. (Cross-listed as WS 439)</td>
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<tr>
<td>POLS 341</td>
<td>The Politics of Media (3) Study of the political manipulation of aural and verbal images. Exercises to increase media literacy. Pre: any 100 level POLS course, or course.</td>
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<tr>
<td>POLS 342</td>
<td>Political Design and Futuristics (3) Alternative future social and political possibilities; design of means of realization of desirable futures. Pre: any 100 level POLS course, or course.</td>
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<td>POLS 343</td>
<td>The Politics of Film (3) Political, philosophical, and artistic dimensions of film; cross-cultural film genres; representation in films. Pre: any 100 level POLS course, or course.</td>
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<tr>
<td>POLS 344</td>
<td>Nā Polītika ma kā Nīhūh Hawai‘i - Politics in Hawaiian Language Media (3) Study of Hawaiian news media with emphasis on political content. Taught in Hawaiian. Pre: HAW 302 (or concurrent) and one of 110, 120, 130, 170, or 171; or consent. (Cross-listed as HAW 445)</td>
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<tr>
<td>POLS 346</td>
<td>(Alpha) Topics in Comparative Political Process (3) (B) Leadership and methods that analyze their interrelations in a globalized world. Pre: sophomore standing or higher, or consent.</td>
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<td>POLS 347</td>
<td>Disability Politics (3) Introduction to the history and politics of U.S. disability law and activism. An analysis of disability politics as the result of the interaction between disability movement activism and the development of policy and law. A-F only. Pre: sophomore standing or higher, or consent.</td>
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<td>POLS 348</td>
<td>Administration and Society (3) Examination of voters and voting processes (participation, apathy, socialization, symbolic process, media, etc.); ideologies and belief systems. Pre: sophomore standing or higher, or consent.</td>
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<tr>
<td>POLS 349</td>
<td>Law, Politics and Society (3) Relationships between law, politics, and society will be explored. Emphasis is placed on several dimensions of legality: legal &quot;indeterminacy&quot; and some of the many things that law does for us and to us; law’s response to violence; the connections between law and social change; access to the law and its sociological dimensions; how law fails and what it achieves when it does. A-F only. Pre: sophomore standing or higher, or consent. (Cross-listed as SOC 374)</td>
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<tr>
<td>POLS 357</td>
<td>Public Law and Judicial Behavior (3) Analysis of law, legalism, legal ideology, and legality; constitutions and constitutionalism; the political context of legal stability and change; institutional structure and function of dispute-resolution agencies. Pre: sophomore standing or higher, or consent.</td>
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<tr>
<td>POLS 358</td>
<td>Public Law and Judicial Behavior II (3) Attributes, attitudes, selection, and decision-making behavior of judges and court personnel. Trends in appellate court policy-making, especially by the U.S. Supreme Court in Constitutional issues. Pre: sophomore standing or higher, or consent.</td>
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<td>POLS 377</td>
<td>Current Controversies in Public Law and Judicial Behavior (3) Current issues; recent research findings; practical research undertaken by student. Pre: sophomore standing or higher, or consent.</td>
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<tr>
<td>POLS 387</td>
<td>(Alpha) Topics in American Politics (3) Specific institutions and processes of the American governmental system. (G) American environmental politics. Pre: sophomore standing or higher, or consent.</td>
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<td>POLS 397</td>
<td>Power in America (3) Analysis of sources of political, economic, and social power in the U.S. and the institutions through which it is exercised. Pre: sophomore standing or higher, or consent.</td>
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<td>POLS 381</td>
<td>Administration and Society (3) Historical emergence of modern bureaucracy; mutual impact of administrative law and society; the relation of bureaucracy to capitalism and patriarchy; constitution of the administered individual. Pre: sophomore standing or higher, or consent.</td>
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<tr>
<td>POLS 382</td>
<td>Political Leadership (3) Exploration of concepts and theories of political leadership, partly through biography, as preparation for public service or advanced scholarly inquiry. Pre: sophomore standing or higher, or consent.</td>
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<tr>
<td>POLS 383</td>
<td>Politics and Public Policy II (3) Overview of the policy-making process in various political arenas (families, cities, nations, etc.); emphasis on conceptual and empirical analysis. Pre: any 100 level POLS course or course.</td>
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<td>POLS 384</td>
<td>Women and Politics (3) Women’s role in political institutions and processes in the U.S. and other countries. Female and male approaches to power; feminist political goals and actions. Pre: any 100 level POLS course (or concurrent), WS 151 (or concurrent), or WS 362 (or concurrent); or consent. (Cross-listed as WS 384)</td>
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<td>POLS 385</td>
<td>American Politics (3) Institutions (parties, interest groups, legislatures, executives, local government); policies (national defense, poverty, energy, etc.), politics (symbolism, inequality, race, and gender). Pre: sophomore standing or higher, or consent.</td>
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<tr>
<td>POLS 386</td>
<td>Research and Public Policy (3) A disciplined inquiry on issues of ethical principle or public policy. Students will learn the research process by engaging in it: finding resources, using these</td>
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</table>
resources critically, exploring implications suggested by the issues and resources and communicating their results in a precise and effective manner. Repeatable one time. A-F only. (Cross-listed as HON 301)

POLS 389 (Alpha) Topics in Politics and Public Policy (3) Topics in public policy and administration. (D) ocean politics; (F) politics of health; (I) political economy. Pre: any 100 level POLS course or consent. DS

POLS 390 Political Inquiry and Analysis (3) Introductory survey and analysis of methods used in empirical research, policy analysis, and social criticism. DS

POLS 393 Advanced Topics in Law, Policy, and Society (3) Studies integrating concerns of public law, public policy, public administration, and social movements. Pre: any 100- or 200-level POLS course, or consent.

POLS 394 Democracy in Organizations (3) Theory and practice of democratic organizations: women’s and feminist organizations; co-ops, communes, and collectives; indigenous people’s organizations; workplace democracy and social change. Pre: any 100- or 200-level POLS course or 390 (or concurrent) or WS 151, or consent. DS

POLS 396 Nonviolent Political Alternatives (3) Exploration of scientific and cultural resources for nonviolent alternatives in politics. Pre: any 100- or 200-level POLS course, or consent. (Cross-listed as PACE 373) DS

POLS 399 Directed Reading and Research (V) Pre: consent.

POLS 401 Teaching Political Science (6) Practicum for majors who lead, under supervision, a freshman seminar section of 110 or serve as undergraduate teaching assistants. Repeatable one time. Pre: 390 (or concurrent), senior standing and consent.

POLS 402 Legislative Internship (V) Field placement at the Hawai`i Legislature integrated with academic study of public institutions and practices. A-F only. Pre: consent. Recommended: 390. Spring only. DS

POLS 403 Community Internship (V) Field placement integrated with academic study of political institutions and community organizations. Repeatable one time. Pre: consent. Recommended: 390. DS

POLS 404 Senior Thesis (6) Independent research and thesis writing with supervision of senior advisor. Pre: 390 (or concurrent) and consent.

POLS 406 Senior Seminar in Political Science (3) Discussion of issues and questions of concern to graduating seniors in political science, including substantial research project. Pre: 390 (or concurrent) or senior standing or consent. DS

POLS 436 Gender, Justice and Law (3) Exploration of landmark U.S. Supreme Court cases related to sex and gender. Topics may include sex discrimination, sexual orientation discrimination, privacy, and reproductive freedom. A-F only. Pre: one of WS 151, WS 175, WS 176, WS 202, WS 360, WS 381, or consent. (Cross-listed as AMST 436 and WS 436) DS

POLS 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

POLS 600 Scope and Methods of Political Science (3) Main concepts delineating boundaries of discipline; approaches to knowledge employed by political scientists; empirical and normative theory; problems in theory-building; validity and reliability in research design; philosophy of science applied to political science.

POLS 601 Political Analysis and Theory Building (5) Survey of theory-building, approaches and validation techniques.

POLS 602 Research Techniques and Analytic Methods (3) Quantitative models and statistical inference techniques.

POLS 605 (Alpha) Topics in Methodology (3) Specific methodological techniques and practices introduced in 601 and 602. (C) simulation practicum. Pre: graduate standing or consent.

POLS 610 Political Theory and Analysis (3) Major contemporary approaches and styles in political theory, philosophy, and analysis.

POLS 611 Tradition of Political Philosophy (3) Discussion of texts and themes in the Western political tradition from Plato to Nietzsche. Repeatable one time.

POLS 612 Hawaiian Political Thought: Theory and Method/Na Mana’s Politiika Hawai’i (3) Study of Hawaiian political thought in writing from ca. 1825 to the present, with emphasis on theory and research methods. Pre: 303, HAW 402 and HAW 428; or consent. (Cross-listed as HAW 612)

POLS 615 (Alpha) Topics in Political Thought (3) Specific traditions and individuals, or particular issues and problems. (C) feminist theory. Pre: graduate standing or consent. (C) Cross-listed as WS 615)

POLS 620 Introduction to Indigenous Politics (3) Historical treatment of the contact between state and indigenous peoples, including national narratives, indigenous political initiatives: social movements, media, indigenous studies programs, and events. A-F only.

POLS 621 Politics of Indigenous Representation (3) Politics of indigenous representations in media, literature, and academic scholarship.

POLS 630 International Relations (3) Analysis of theories: actors, decisions, systems, conflict, integration, alternative approaches to validation. Pre: graduate standing or consent.


POLS 635 (Alpha) Topics in International Relations (3) (B) international relations and war; (E) international organization; (F) modeling international systems. Pre: graduate standing or consent.

POLS 640 Comparative Politics (3) Emphasis on Asia, theories of development, and comparative methods. At least one section a semester.

POLS 642 Indigenous Peoples and Western Imperialism (3) Historical examination of U.S. and European imperialisms, including national narratives, politics, and impacts upon indigenous peoples in the Americas, Pacific, and Asia. Repeatable one time.

POLS 645 (Alpha) Politics and Development: Regional (3) Politics of particular regions; particular development processes. (C) China. (C) cross-listed as ASIAN 608)

POLS 646 (Alpha) Politics and Development: Topical (3) (F) political ecology and development.

POLS 647 American Political Institutions in Comparative Perspective (3) Consideration of American institutional development and development relative to American philosophical foundations and non-American political forms. Federalism as an expansive device will be emphasized, as will American influence and penetration abroad. A-F only. Pre: graduate standing or consent. (Once a year)

POLS 650 Public Administrative Theory (3) Focus varies among theoretical, comparative and developmental approaches to study of administration. One section each semester.

POLS 651 Political Leadership (3) Exploration of political leadership as a focus for research, teaching, and applied political science.

POLS 660 Public Law and Judicial Systems (3) Law, courts, and rights as a political resource; analyses of public law (including court decisions), other forms of dispute management, and judicial behavior and policy-making. Pre: 110.

POLS 665 (Alpha) Topics in Public Law and Judicial System (3) Recent issues and practices in public law: particular judicial systems. Pre: graduate standing or consent.

POLS 670 Introduction to Public Policy (3) Perspectives on policy analysis; basic approaches to the study of public policy, political economy, and policy evaluation.

POLS 672 Politics of the Future (3) Introduction to post-apocalyptic futures, images of future, theories of social change, methods of social forecasting and designing preferred futures. Pre: graduate standing.

POLS 673 The Future of Political Systems (3) Normative and descriptive forecasts of political institutions, systems, subsystems, and behaviors. Design of preferred systems.

POLS 675 (Alpha) Topics in Public Policy (3) Particular political processes, specific political institutions, or particular policy area. (F) politics of health. Pre: graduate standing or consent.

POLS 680 Asian and/or Pacific Politics (3) Political development, international relations, decision-making processes, and systems of political thought in all or part of Asia and/or the Pacific. Repeatable three times.

POLS 684 Contemporary Native Hawaiian Politics (3) Study of political and social movements, political status, nationalistic cultural identities, and issues of representation of Native Hawaiians.

POLS 685 (Alpha) Topics in Asian and/or Pacific Politics (3) (C) Korean politics. Pre: graduate standing or consent.

POLS 686 Politics of Hawai’i (3) Examinations from several perspectives of the political, economic, and cultural forces that historically formed Hawai’i and contemporary political themes, issues, and processes. Pre: graduate standing.

POLS 695 Colloquium (3) Specialized subjects in political science.

POLS 696 Graduate Intern Seminar (3) Seminar for interns in the alternative futures or the indigenous politics options. Repeatable one time. A-F only. Pre: 672 and 673 or consent for the alternative futures option; 682 or consent for the indigenous politics option.

POLS 699 Directed Reading and Research (V) Pre: consent.

POLS 700 Thesis Research (V)

POLS 702 Seminar: Research Methods (3) Conceptual strategies, data collection approaches, and data analysis techniques appropriate to political inquiries. Repeatable.

POLS 703 Writing Politics (3) Seminar on the politics of writing, grammar, translation, argument, genre, and style with significant content on indigenous issues of oral traditions, alternative modes of writing and argument, and cultural continuance.

POLS 710 Seminar: Political Thought (3) Pre-announced topics. Repeatable. At least one section a year.

POLS 720 Seminar: Indigenous Theory (3) Pre-announced topics may include gender and sexuality studies, postcolonial theory, colonial discourse analysis, globalization, historiography; emphasis on indigenous epistemologies and the work of native scholars. Repeatable one time.
POLS 730 Seminar: International Relations (3) Pre-announced problems of both international organization and politics. Repeatable. At least one section a semester.

POLS 740 Seminar: Comparative Government and Politics (3) Pre-announced topics. Repeatable. At least one section a year.

POLS 777 Decolonial Futures (3) Topics engage probable and preferable futures of indigenous struggles and resistances. Emphasis placed on the ethics and responsibilities used to move towards those futures.

POLS 800 Dissertation Research (V)

Population Studies (PPST)

College of Social Sciences


PPST 301 Populations of Hawai’i (3) Demographic characteristics of Hawai’i’s populations: origins, distribution, growth, and behavior. Open to nonmajors. A-F only. Pre: an introductory social science course (ECON 120, 130, 131; GEOG 151; POLS 110; or SOC 100) or consent. DS

PPST 302 Population in the Pacific Islands (3) Survey of the characteristics of human populations of the Pacific Islands region. Working of population forces from early settlement to the demographic transitions of the present day. Pre: consent. DS

PPST 401 Forced Migration (3) Global view of refugee and other forced migration; emphasis on humanitarian assistance. Pre: junior standing and consent. DS

PPST 412 Analysis in Population and Society (3) Global and U.S. patterns of population growth; composition and distribution, elementary demographic techniques; development issues and population policy. Pre: SOC 300 or consent. (Cross-listed as SOC 412) DS

PPST 432 Economics of Population (3) Determinants and consequences of growth and structure of human populations. Relationships between economic factors and fertility, population growth and economic growth. Pre: ECON 301 (or concurrent). (Cross-listed as ECON 432) DS

PPST 649 Interdisciplinary Seminar (1) Topics include principle components of transdisciplinary research in global health and population studies, key components of successful international health programs, human right and humanitarian assistance, disaster preparedness, bioterrorism, global warming, and sustainability. Pre: consent. DS

PPST 650 Introduction to Human Population (3) Comparative analysis of quantitative and qualitative aspects of population; factors affecting size, distribution, and composition; impact of population size and composition on society.

PPST 690 Introduction to Global Health (3) Current global health issues such as: global health workforce distribution/shortages, maternal and child health, emerging infectious diseases, population aging, chronic diseases, nutrition, global environmental change, health and human rights of special population groups. A-F only. (Once a year) (Cross-listed as PH 690)

PPST 691 Methods of Demographic Analysis (3) Statistical evaluation and analysis of population data; data sources; population growth; composition; standardization of rates; mortality and the life table; nuptiality and fertility; distribution, migration, urbanization; projections and stable population theory. Pre: graduate standing or consent. (Cross-listed as PH 659 and SOC 691)

PPST 699 Directed Reading and Research (V) Pre: consent of program director or instructor.

PPST 719 Sociology of Family (3) Discusses major perspectives in the field and examines related empirical research. Topics may include formation and dissolution of unions, intergenerational relations over family life cycle, families in the new economy. A-F only. (Cross-listed as SOC 719) (Alt. years)

Portuguese (PORT)

College of Languages, Linguistics and Literature

Students choosing Portuguese for the language requirement should realize it may not be offered if demand is limited. A grade of C or better in the prerequisite courses is required for continuation.

PORT 101 Elementary Portuguese (3) Conversation, grammar and reading. HSL

PORT 102 Elementary Portuguese (3) Conversation, grammar and reading. Continuation of 101. Pre: 101. HSL

PORT 201 Intermediate Portuguese (3) Reading, conversation, writing, laboratory drill. Pre: 102. /HSL

PORT 202 Intermediate Portuguese (3) Continuation of 201. Pre: 201. /HSL

Psychiatry (PSTY)

School of Medicine

PSTY 499 Directed Reading/Research (V) Individualized directed readings and/or research in mental health and psychiatry under the supervision of an instructor. Open to non-majors. Repeatable up to four times. A-F only. Pre: consent.

PSTY 531 7-Week Psychiatry Clerkship (10) Unit VI—7-week basic psychiatry clerkship. CR/NC only. Pre: BIOM 555.

PSTY 532 Psychiatry Longitudinal Clerkship (5) Year-long clerkship in ambulatory setting, including knowledge, skills, attitudes for assessment, diagnosis, and management of psychiatric problems in medical practice, inpatient, and emergency room settings. Emphasis on development and application of psychosocial cultural formulations in all areas of psychiatric and medical practice. Repeatable two times. CR/NC only. Pre: third-year standing and concurrent registration in 532 courses.

PSTY 545 (Alpha) Unit VII Electives in Psychiatry (V) Senior medical student elective providing advanced instruction on the theory and methods of mental health research as well as supervised participation in an assigned research project in the Department of Psychiatry. (B) adult inpatient PSTY; (C) child PSTY; (D) forensic PSTY; (E) journal editing; (F) community mental health; (G) PSTY aspects of OB/GYN, PED, MED, SURG; (H) sub-internship in adult PSTY; (I) substance abuse; (J) PSTY aspects of rehab medicine; (K) PSTY aspects of SURG; (M) PSTY consult liaison; (N) post-traumatic stress disorder; (O) extramural elective in PSTY; (Q) geriatric PSTY; (R) rural child PSTY; (S) public and rural health PSTY; (T) mental health research. CR/NC only. Pre: 531 or 532, and fourth-year standing.

PSTY 599 Directed Reading/Research (V) Pre: consent.

Psychology (PSY)

College of Social Sciences

PSY 100 is a prerequisite for all undergraduate courses except 170. Unless otherwise noted, 700-level seminars are explorations of current issues in their respective areas.

General Psychology (XX)

PSY 100 Survey of Psychology (3) An overview of the field: psychophysiology, perception, learning, cognition, stress, personality, social psychology. DS

PSY 201 Unit Mastery Instruction (3) Principles, techniques, issues, and philosophy. Laboratory provides working experience with this instruction technique. Pre: 100 and written consent. NI

PSY 202 Psychology of Gender (3) Survey of topics in psychology relevant to gender and its impact on the lives of women and men: socialization of gender, mental health, racial identity, majority-minority status, sexual orientation, life-span issues and violence. A-F only. Pre: 100 or WS 151. (Cross-listed as WS 202) NI DS

PSY 402 History of Psychology (3) Origin and development: analysis of contemporary points of view. Pre: 100. Recommended: 9 credit hours in psychology. DS

PSY 403 Seminar on the Psychology of Knowledge (3) Selected topics in the psychology of knowledge and mind from Western and/or non-Western perspectives. Repeatable in different topics up to 9 credit hours. Pre: 100 and written consent. DS

PSY 407 Practicum in Psychology (V) Supervised psychological experience in school, clinic, hospital, industry, social welfare, government, etc. Pre: 100 and consent.

PSY 408 Teaching General Psychology (V) Supervised experience. Pre: 100, at least 12 additional credit hours in psychology, and written consent. Repeatable one time.

PSY 409 General Psychology: Advanced Topics (3) In-depth coverage of some area of theory and research. Repeatable to 6 credit hours. Pre: 100. DS

PSY 600 Methodological Foundations of Psychology (3) Methods used in psychological research: observational, correlational, and experimental types of design.

PSY 700 Thesis Research (V) Research for master’s thesis. Maximum of 6 credit hours. Not repeatable for credit toward master’s degree.

PSY 701 Seminar in General Psychology (3)

PSY 702 Seminar in History and Theory of Psychology (3)


Psychometrics (XIX)

PSY 212 Survey of Research Methods (3) Survey of standard methods and related conceptual issues employed in psychological research. Both experimental and non-experimental methods will be reviewed. Pre: 100. NI DS

PSY 419 Psychometrics: Advanced Topics (3) In-depth coverage of some area of theory, research, or methodology relevant to individual differences, measurement, or aspects of psychometrics. Repeatable to six credit hours. Pre: 100. DS

PSY 610 Introduction to Quantitative Methods (3) Introduction to quantitative methods in behavioral sciences. Introduction to general linear model as principle of data analysis. Course requires basic statistics. (Meets PhD common inquiry methods requirement or elective.)

PSY 611 Design and Analysis of Psychological Experiments (3) Analysis of variance and other models of assessing results of experiments. Relation of analysis to design. (Cross-listed as EDEP 603)
PSY 612 Multiple Regression in Behavior Research (3) Advanced application of general linear model to complex problems of data analysis. Relation of analysis of variance and covariance to regression analysis. Non-linearity and treatment of missing data. GLS and least absorbing statistics. (Cross-listed as EDEP 604 and SW 654)

PSY 613 Factor Analysis (3) Theory and method; related methods of multivariate analysis. (Cross-listed as EDEP 605 and SW 655)

PSY 614 Multivariate Methods (3) Multivariate forms of multiple linear regression, analysis of variance, and analysis of co-variance. Multiple discriminant analysis, canonical correlation, and principal components analysis are discussed. (Cross-listed as EDEP 606 and SW 656)

PSY 616 Measurement and Evaluation (3) Theory of measurement and evaluation; analysis of experimental and standardized tests and scales. Course requires basic statistics. (Cross-listed as EDEP 616 and SW 658)

PSY 617 Scaling Measurement of Attitude and Perception (3) Theory and methods of major unidimensional and multidimensional scaling techniques. Examples from education, sociology, and psychology. Prerequisite: graduate standing. (Cross-listed as EDEP 626)

PSY 719 Research in Psychometrics (3) Supervised reading, discussion, research projects in areas of special interest. Repeatable unlimited times. Prerequisite: consent.

EXPERIMENTAL PSYCHOLOGY (X2X)

PSY 220 Introduction to Behavioral Psychology (3) Outline of basic learning principles. A general, unified approach to study of human personality and behavior. Based upon a learning conception; various areas of psychology and the other social sciences are treated. Prerequisite: 100. (F, DS)

PSY 255 Statistical Techniques (3) Frequency distributions; graphing methods; central tendency; variability; correlation; reliability; tests of significance. Prerequisite: 100. (F, DS)

PSY 322 Learning and Motivation (3) Theoretical interpretations; survey of major theorists and contemporary controversial issues; major influences in classical and instrumental conditioning. Prerequisite: 100. Recommended: 220. (F, DS)

PSY 324 Psychology of Emotion (3) Survey of traditional views and leading theories, and research in related topics. Prerequisite: 100. Recommended: 220 or 322. (F, DS)

PSY 325 Cognitive Psychology (3) Mental processes of humans and other organisms. Survey of major theories and findings in cognitive psychology. Prerequisite: 100 or consent. (F, DS)

PSY 429 Experimental Psychology: Advanced Topics (3) Coverage in-depth of some area of theory and research. Repeatable to six credit hours. Prerequisite: 100. (F, DS)

PSY 622 Animal Learning (3) Principal findings and major theories in animal learning. Detailed consideration of the contemporary literature. Prerequisite: 100 or consent. (F, DS)

PSY 625 Knowledge and Wisdom (3) Topics in the psychology of mind from Western and/or Asian perspectives. Repeatable in different topics. Prerequisite: consent.

PSY 626 Cognitive Psychology (3) In-depth survey of the computational and representational structures and processes of cognition. Special attention devoted to consideration of the relationship between brain, mind, and computation. Prerequisite: 325 or consent.

PSY 721 Seminar in Experimental Psychology (3)

PSY 722 Seminar in Learning (3)

PSY 729 Research in Experimental Psychology (3) Supervised reading, discussion, research projects in areas of special interest. Repeatable unlimited times.

SOCIAL PSYCHOLOGY (X3X)

PSY 250 Social Psychology (3) Cognitive, behavioral, and emotional effects of people: interpersonal relations, attribution, attitudes, group behavior, stereotypes, social roles, aggression, helping, self-concept; applications. Prerequisite: 100. (F, DS)

PSY 351 Cross-Cultural Psychology (3) Psychosocial aspects of human relations. Social psychology of emotional and physiological arousal, interpersonal attraction, and societal regulation of intimate relationships. Prerequisite: 100. (F, DS)

PSY 459 Social Psychology: Advanced Topics (3) Coverage in-depth of some area of theory and research. Repeatable to six credit hours. Prerequisite: 250 or consent. (F, DS)

PSY 650 Social Psychology (3) Theories and research in social cognition and behavior. Prerequisite: 100. (F, DS)

PSY 653 Cross-Cultural Psychology (3) Application of psychological theories to cross-cultural phenomena; assessment of cross-cultural processes and social motivations; culture and personality; research evaluation and design. Prerequisite: 100. (F, DS)

PSY 754 Psychology and Social Issues (3) Conflict, dissent, community issues, problems; social change and its relation to mental disorder. Prerequisite: 100. (F, DS)

PSY 755 Applied Social Psychology (3) Problems in use of social psychology principles in human affairs; multidisciplinary considerations. (F, DS)

PSY 759 Research in Social Psychology (3) Supervised reading, discussion, research projects in areas of special interest. Repeatable unlimited times. (F, DS)

PSY 840 Cross-Cultural Psychology (3) Survey of socialization processes and acquisition of social behavior. Prerequisite: 240 or FAMR 230. (F, DS)

PSY 842 Adult Development and Aging (3) Overview from a multidisciplinary, life-span perspective. Includes research techniques, personality development, family relationships, occupational attainment, death. Prerequisite: 100. Recommended: 240. (F, DS)

PSY 844 The Exceptional Child (3) Evaluation of physical, emotional, and intellectual deviations; effects on growth and development of children. Prerequisite: 100. Recommended: 240. (F, DS)

PSY 649 Developmental Psychology: Advanced Topics (3) Coverage in-depth of some area of theory and research. Repeatable to six credit hours. Prerequisite: 240, 341, or consent. (F, DS)

PSY 650 Developmental Foundations (3) Historical, theoretical, and methodological foundations of developmental psychology. (F, DS)

PSY 642 Cognitive Development (3) Familiarizes students with current research and theory in cognitive development through readings of original journal articles and monographs. Prerequisite: 640 (or concurrent) or consent.

PSY 741 Seminar in Developmental Psychology (3)

PSY 749 Research in Developmental Psychology (3) Supervised reading, discussion, research projects in areas of special interest. Repeatable unlimited times.
PSY 270 Introduction to Clinical Psychology (3) History, theories, types of psychological problems, methods of assessment, forms of intervention, current developments. Pre: 100. N/DS

PSY 371 Abnormal Psychology (3) Nature and causes of psychoses; abnormalities of intelligence; psychotherapy, Pre: 100. Recommended: 270. DS

PSY 476 Health Psychology (3) Psychological principles for understanding and dealing with wellness and illness. Theories and research on stress-related disorders; prevention of stress through lifestyle and healthy behaviors. Pre: 100 or consent. Recommended: 220 or 322. DS

PSY 477 The Helping Relationship (3) Theory and application of personal and interpersonal elements affecting communication of human-service professions. Supervised practice, video lab. Pre: one of 100 and SP 151, SP 251 or SP 301. (Cross-listed as SP 490) DS

PSY 478 Teaching Personal Development (6) Supervised experience in leading a seminar in personal development. Pre: 170 and 12 additional credits in PSY and written consent.

PSY 479 Advanced Topics in Adjustment/Treatment/Prevention (3) Coverage in-depth of some area of theory and research. Repeatable to six credit hours. Pre: 270, 371 or consent. DS

PSY 670 Introduction to Clinical Psychology (3) Preparation for becoming a clinical psychologist with emphasis on scientist-practitioner model, professional ethics, diversity and professional development. Pre: graduate student in psychology or consent of instructor.

PSY 671 Introduction to Assessment I (3) Psychometric theory; ethics; diversity issues; principles and methods of cognitive-intellectual, neuropsychological, and personality assessment. Co-requisite: 670 or consent.

PSY 672 Introduction to Assessment II (3) Administration and interpretation of cognitive-intellectual and personality assessment devices. Pre: 670 and 671 or consent and enrollment in Clinical Studies Program.

PSY 673 Introduction to Assessment III: Behavior Assessment (3) Conceptual and methodological foundations of clinical applications of behavioral assessment. PSY majors only. A-F only. Pre: 671 and 672 and enrollment in Clinical Studies Program, or consent. (Once a year)


PSY 675 Treatment Research (3) Idiographic and nomothetic approaches to clinical treatment research methods and findings. Pre: 670 (or concurrent) and 671, or consent.

PSY 676 Adult Psychopathology (3) Comprehensive study of the mental disorders of adults. A-F only. (Once a year)


PSY 679 Practicum in Clinical Psychology (V) Repeatable ten times. Pre: consent.

PSY 771 Child Treatment (3) Psychological interventions for youth, as well as parent training. Repeatable two times. Pre: 670 or consent.


PSY 773 Seminar in Psychopathology (3) Repeatable 10 times.

PSY 774 Seminar in Clinical Psychology (V) Repeatable 10 times.

PSY 775 Seminar in Psychological Therapies (3) Repeatable 10 times.

PSY 776 Health Psychology: Behavioral and Biological Bases (3) Psychological and biological bases of health psychology and behavioral medicine. Overview of cognitive, behavioral, and psychophysiological mechanisms; theories and methods of prevention in physical disease. Pre: 670 or consent.

PSY 777 Internship in Clinical Psychology (1) Pre: consent of instructor and department chair.

PSY 779 Research in Clinical Psychology (3) Supervised reading, discussion, research projects in areas of special interest. Repeatable 30 times. Pre: consent.

COMMUNITY AND CULTURAL PSYCHOLOGY (XX)

PSY 280 Introduction to Community Psychology (3) Examination of human functioning in social and ecological context. Topics include stress, health, intergroup relations, culture, ethnicity, social competence, and community empowerment. Pre: 100. N/DS

PSY 385 Consumer Behavior (3) Analysis of consumer behavior and motivation; principles of learning, personality, perception, and group influence, with emphasis upon mass communication effects. Pre: BUS 312 or consent. (Cross-listed as MKT 311) DS

PSY 489 Applied Psychology: Advanced Topics (3) Coverage in-depth of some areas of theory and research. Repeatable to six credit hours. Pre: 100, DS

PSY 680 Cultural Community Psychology (3) Graduate seminar on cultural considerations and issues in the history, methods, theories, interventions, and professional roles in community psychology. Small class size (up to 10). Open to graduate students.

PSY 682 Practicum: Behavioral Change and Community (3) Supervised experience in educational, mental health, correctional, consulting, or community action agencies. Pre: consent.

PSY 781 Community Psychology Seminar (3) Pre: consent.

PSY 789 Community Psychology Research (3) Supervised reading, discussion, research projects in areas of special interest. Repeatable unlimited times. RESEARCH (XX)

PSY 499 Directed Reading or Research (V) Repeatable. Pre: 100 and consent of instructor and department chair.

PSY 699 Directed Reading or Research (V) Pre: consent.

Public Administration (PUBA)

College of Social Sciences

PUBA 399 Directed Reading and Research in Public Administration (V) Independent research and reading on topics in public administration, public service, and community development. Repeatable one time. Pre: consent.

PUBA 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

PUBA 600 Political and Economic System Processes (7) Organized in a series of integrated, cross-disciplinary modules, the course addresses issues people in public service are likely to face. Modules include effective written and oral communication, group processes, political and economic perspectives on public institutions, the use of information resources relevant to public work, critical thinking, legislative process, and the issues of Hawaiian people. A-F only. Fall only.

PUBA 601 Policy and Organizational Processes (7) Organized in a series of integrated modules, the course addresses issues people in public service are likely to face. Modules include frameworks for understanding and improving organizations, administrative law and issues of discretion, budget processes, research and analysis relevant to public work, public service ethics, and concern for future generations. A-F only. Pre: 600. Spring only.

PUBA 612 Applied Certificate Seminar (1) Develop and coordinate learning experience for public administrators using skills and tools acquired in 600 and 601. Graduate certificate students only. Pre: 600 and 601.

PUBA 620 Reforming Public Organizations (3) Looks at the challenges and opportunities for changing public organizations so that they may be more successful in meeting their public responsibilities and better places for people to work. Focus is on the creation of positive images of organization and effective change strategies. A-F only. Fall only. (Cross-listed as CEE 620)

PUBA 621 Public Organizations in a Political World (3) Seminar on the role of public managers in shaping public opinion and public policy. Using evidence from theory and practice presents students with tools for understanding management research within a political context. Pre: graduate standing or consent. (Once a year)

PUBA 622 Strategies of Change: Leaders and Leadership (3) Explores the key elements of leadership in public settings by examining what leaders actually do, looking at popular media portrayals of leadership, and talking together with guests about the challenges of leadership, effective followership, and positive change. A-F only. Spring only.

PUBA 623 Organizational Communication (3) Communication theory/research applied to formal organizations; assessments of strengths and weaknesses of organizational communications systems. Pre: consent.

PUBA 624 Intercultural Challenges in the Public Sector (3) Seminar on the dimensions of cultural variability and how they affect government operations from macro to micro levels, from international policy transfer to major intercultural task interaction processes such as negotiation, planning, and relationship management. Graduate standing only. A-F only. (Once a year)

PUBA 630 Nonprofit Management (3) Fundamental aspects of managing a nonprofit organization: overview of the nonprofit sector; mission and scope of nonprofit organizations; organizational structures and functions; resource and volunteer development; major management issues. A-F only Pre: graduate standing or consent.

PUBA 635 Managing Major Aspects of the Nonprofit Sector (4) (3 Lec, 1 Seminar) Core for nonprofit management track of the graduate certificate. Covers major aspects of managing nonprofit organizations; intended for those currently working in the nonprofit sector as well as those wishing to enter it. A-F only. Fall only.

PUBA 636 Nonprofit Management Certificate Completion Seminar (2) Seminar for the nonprofit management track of the graduate certificate that is tailored to participant interests/needs; student participation in selecting topics, readings, and guest speakers or site visits. Nonprofit management track students only. A-F only. Pre: 635 or departmental approval.

PUBA 640 International Perspectives on Public Administration (3) Key dimensions of public administration systems on a global scale; historic and contemporary forces shaping national systems; the
Public Health Sciences (PH)

School of Medicine

The courses listed below are offered subject to student interest and faculty availability. Please consult the Schedule of Classes/Student Registration for confirmed offerings each semester. Individuals who are not public health students require instructor consent to enroll in course; all course 600 level and above require graduate standing. For additional information, contact the School of Medicine’s Office of Graduate Student Academic Services.

PH 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

PH 600 Introduction to Public Health (2) Focus will provide a broad introduction to the field of public health and orientation to overarching issues in the field. PH majors only. A-F only. Pre: consent. Fall only.

PH 602 Introduction to Health Services (3) Overview of the historical, conceptual, ethical and political context for health care delivery. It explores current trends, practices and issues in the delivery of health care services. Repeatable one time.

PH 623 Social Science and Public Health (3) Individual and community health; implications for public health practice, individual and social change processes.

PH 626 Health Economics (3) Integrated concepts in health economics and its applications towards health policy issues; market failures in health care; factors affecting U.S. health care spending potential impact on equity/efficiency stemming from changes in health care delivery. Prep: majors only. A-F only. Pre: consent. (Once a year)

PH 628 Stress and Stress Management in Public Health (3) Lecture/discussion on theoretical concepts of stress and stress management, management issues, selected application areas, and prevention and treatment skills relevant to public health. Format includes readings, guest speakers, student paper, and practical exercises. Prep: majors only. A-F only. Pre: consent. (Once a year)

PH 630 Cultural Competency in Health Care (3) Presents both analytical and practical approaches to cultural competency domains, concepts, models, frameworks, patterns and communication that occur in cross-cultural health situations. A-F only. Pre: graduate standing or consent.

PH 631 Nutritional Epidemiology (3) Dietary, biochemical, anthropometric and clinical methods used for evaluating nutrition and diet in the etiology and epidemiology of disease. Prep: 663 and FSHN 487 or equivalent. (Cross-listed as FSHN 631)

PH 641 Introduction to Health Policy (3) Lecture/discussion on historical and current public health policies; the role of stakeholders in health policy making and advocacy; using health policy frameworks for conducting policy analysis. Group activities apply the concepts presented in class. Prep: majors only. A-F only. Pre: consent. (Once a year)

PH 647 Analytic Approaches to MCH (3) Application of analytic methods to the identification of health problems in children and women of reproductive age. Evidence-based approach in MCH. Repeatable one time.

PH 648 Program Planning and Grant Writing (3) Lecture/discussion on planning health programs, grant proposal writing, and setting up evaluation indicators to assess program impact. Assignments include readings, reflection papers, in-class activities, and writing a grant proposal for a community agency. Prep: majors only. A-F only. Pre: consent.

PH 649 Needs Assessment and Program Planning (3) Knowledge and skills acquisition in conducting needs assessment and program planning in public health practice. Pre: consent.

PH 655 Biostatistics I (3) Introduction to statistical methods for public health sciences, Probability, experimental design, t tests and analysis of variance, 2X2 contingency tables, linear regression, introduction to life tables. Prep: MATH 283 or equivalent course in calculus; or consent.

PH 656 Biostatistics II (3) Poisson distribution, Fisher’s exact test, contrasts in ANOVA, two way ANOVA, multiple linear regression and analysis of covariance, path analysis, logistic regression, method of maximum likelihood, likelihood ratio tests. Prep: 655, completion of one semester of calculus; or consent.

PH 658 Computer Applications in Public Health (3) Applications of computers to problems common to public health, Emphasis on data analysis and processing using existing computer programs.

PH 659 Methods of Demographic Analysis (3) Statistical evaluation and analysis of population data; data sources: population growth; composition, standardization of rates; mortality and the life table; natality and fertility; distribution, migration, and urbanization; projections and stable population theory. Prep: graduate standing or consent. (Cross-listed as PSPT 691 and SOC 691)

PH 660 Current Topics in Social and Behavioral Health Sciences (2) Critique of published articles in the social and behavioral sciences as they relate to public health. Emphasis on exchange of ideas, alternative approaches; stresses the use of the scientific method to understand human behavior. A-F only.

PH 661 Epidemiological Study Design Critique (2) Critique of study design using published public health literature. Emphasis on exchange of ideas, alternative approaches; stresses epidemiology as science of public health. Repeatable. A-F only.

PH 663 Principles of Epidemiology I (3) Research methods and evaluation of research in epidemiology. Prep: 655 (or concurrent) or consent.

PH 664 Principles of Epidemiology II (3) Study design, epidemiologic methods, and grant proposal writing. Prep: 655.

PH 665 Infectious Disease Micro I (3) Pathogenesis, epidemiology, immunobiology of infectious diseases caused by bacterial and fungal pathogens; principles of host-pathogen interactions; public health aspects of infectious diseases. Repeatable one time. A-F only. Prep: MICR 351 or consent. (Cross-listed as TRMD 604)

PH 666 Seminar in Infectious Disease Control (3) Strategies for controlling important infectious diseases in the Pacific area. Emphasis on epidemiology, ecology, and public health principles. Prep: 663 (or concurrent), MICR 130, and consent.

PH 667 Infectious Disease Micro II (3) Pathogenesis, epidemiology, immunobiology of infectious diseases caused by viruses and parasites; principles of host-pathogen interactions; public health aspects of infectious diseases. Repeatable one time. A-F only. Prep: MICR 351 and TRMD 604; or consent. (Cross-listed as TRMD 605)

PH 668 Tropical Medicine Laboratory Rotations (V) Practical experience in use of equipment and procedures in infectious disease and immunology research; introduction to research in tropical medicine. Repeatable unlimited times. Prep: TRMD 604 (or concurrent), or consent. (Cross-listed as TRMD 606)

PH 671 Community and Public Health Practice (2) Community organization and development applicable to the delivery of health services. Understanding community dynamics, mobilizing community groups for effective health care practice and
delivery. Pre: 647 or 737. or consent. (Cross-listed as SW 674)

PH 673 Health Ethics, Law and Politics (3) Review theories and case studies concerning health care ethics, law and politics. Topics include health care quality, key health care policymakers, and the intersecting issues of policy and law with medicine, public health and ethics. PH majors only. A-F only. Pre: consent. (Once a year)

PH 681 Environmental Determinants of Health (3) Environmental factors in personal and community health; implications for public health practice. Consideration of major issues from local, U.S., and international perspectives.

PH 690 Introduction to Global Health (3) Current global health issues such as global health workforce distribution/shortages, maternal and child health, emerging infectious diseases, population aging, chronic diseases, nutrition, global environmental change, health and human rights of special population groups. A-F only. (Once a year) (Cross-listed as PPIST 690)

PH 691 Fundamentals of Environmental Epidemiology (2) Examines the complex relationship between environmental contaminants and human health. Emphasis on environmental epidemiology study design, environmental exposure monitoring and risk assessment, disease and environmental exposure mapping, and spatial data analysis and modeling with GIS. PH majors only. A-F only. Pre: consent. (Once a year)

PH 692 Clinical Epidemiology (3) Combined lecture-discussion on health measurement and use of epidemiologic principles to questions applicable to both individual and population levels on diagnosis, screening, prognosis, and the safety and efficacy of therapeutic and preventive interventions. PH majors only. Pre: 664 or consent. Fall only.

PH 696 Continuing Education in Public Health (1) Seminar designed to provide practical, community-focused, continuing education for the practicing public health professional. The application of public health principles to address practical public health problems is stressed. Weekly discussions and reports will cover a variety of relevant public health topics. Repeatable unlimited times. A-F only.

PH 699 Directed Reading/Research (V) Pre: consent.

PH 700 Thesis Research (V) Pre: consent.

PH 701 Health Communication (3) Skills-oriented course introduces the basic structure of health communication strategies in different settings, selected elements of communication theory, the development of health communication material, and a practical training in motivational counseling skills. Pre: 623 or consent.

PH 702 Health Promotion Research (3) Focus on research methods commonly used in health promotion. Topics will include randomized trials, quasi-experimental design, sampling, measurement, and correlation and causation studies. Labwork will focus on the use of SPSS to analyze data for applied research problems. A-F only. Pre: 623 and 655, or consent.

PH 704 Community-Based Participatory Research (3) Explores ways academic and lay communities collaborate on research, key theoretical perspectives in the development of CBPR, and the challenges in implementing CBPR approaches. Format includes lectures, discussions, readings, writing assignments, and a fieldwork project. DrPH majors only. A-F only. Pre: consent.

PH 737 Policies/Programs in MCH Services (3) Development and organization of health services for mothers and children—review and analysis of policies and events, legislation and programs; current issues. Pre: 647 or consent.

PH 742 Qualitative Methods (3) Application of qualitative research methods in the development of health sciences disciplinary knowledge related to culturally diverse populations. A-F only. Pre: 655 (or equivalent) or consent.

PH 745 Maternal and Child Health and Disabilities I (V) Designed to teach leadership development for health professionals in an interdisciplinary seminar format. Inquiry-based learning approaches are applied with a series of families and children with neurodevelopmental and related disabilities to explore clinical, cultural, policy, and program implications for services and supports for individuals with disabilities and family members. Program evaluation and research analysis are also conducted with relevance to best practice with the MCH or CSHN population. Pre: consent.

PH 746 Maternal and Child Health and Disabilities II (V) Designed to apply leadership development for health professionals in an interdisciplinary seminar format. Inquiry-based learning approaches are applied with a series of families and children with neurodevelopmental and related disabilities to explore clinical, cultural, policy, and program implications for services and supports for individuals with disabilities and family members. Program evaluation and research analysis are also conducted with relevance to best practice with the MCH/CSHN population. Pre: consent.

PH 747 Statistical Methods in Epidemiological Research (3) Multiple variable statistical methods currently used in chronic disease epidemiology. Logistic regression, conditional logistic regression, proportional hazards regression modeling, generalized estimating equation-based methods, delta method approximations, exact tests. Pre: 656, 663, completion of one semester of calculus; or consent.

PH 748 Chronic Disease Epidemiology (3) Will cover selected topics in chronic diseases with critical analysis of the current epidemiologic literature. Methodologic issues, contemporary findings and recommendations for future research will be discussed. PH majors only. A-F only. Pre: 663 or consent.

PH 750 Health Behavior Change (3) Provide an understanding of the relationship between health behaviors and outcomes including psychological, physiological, and quality of life aspects. It will also focus on the major theories of behavior and behavior change. Emphasis will be placed on understanding concepts, principles, explanations, and how these are translated into practical interventions for adoption and maintaining behavior change. A-F only. Pre: 623 or consent.

PH 751 Social Epidemiology (3) Examine the epidemiologic study of the social distribution and social determinants of states of health, including the identification of social-environmental exposures and their relation to physical and mental health outcomes. Repeatable one time. A-F only. Pre: consent.

PH 753 Survival Analysis (3) Construction and interpretation of various types of life tables, treatment of censored data, proportional hazards, related risk regression models, and parametric survival analysis. Pre: 655 or consent.

PH 755 Seminar in Tropical Medicine and Public Health (1) Weekly discussion and reports on current advances in tropical medicine and public health. Repeatable unlimited times. (Cross-listed as TRMD 690)

PH 756 Special Topics in Tropical Medicine (1) Advanced instruction in frontiers of tropical medicine and public health. Repeatable unlimited times. (Cross-listed as TRMD 705)

PH 765 Program Evaluation (3) Presented are principles of and frameworks for program evaluation. Students develop logic models and evaluation plans for a community program, and collect and analyze evaluation data. A-F only. Pre: graduate standing or consent. Spring only.

PH 770 (Alpha) Doctoral Seminar in Translation- al Research (2) Required for students in the DrPH program. (A) domestic and global health disparities; (C) research methods in health disparities; (D) evidence-based programs in global health and health disparities; (E) topics in health disparities and policy. Repeatable one time for different alphabas. PH majors only. A-F only. Pre: 600 (or concurrent) and 623 (or concurrent) and 649 (or concurrent) and 655 (or concurrent) and 663 (or concurrent) and 765 (or concurrent), or departmental approval. (702 or concurrent) may be substituted for 649.

PH 771 Teaching Practicum (3) Provide doctoral students with theoretical and practical teaching and course development experiences under the guidance of a faculty mentor. Students will have a portfolio documenting their accomplishments. Graduate standing in PH only. A-F only. Pre: 600 and 623 and 649 and 655 and 663 and 765 and 770; or departmental approval.

PH 772 Research Practicum (3) Hands-on research experience with a faculty mentor. Meet in small groups to discuss issues related to research in public health. Final project will be submission of a publishable quality paper. Graduate standing in PH only. A-F only. Pre: 600 and 623 and 649 and 655 and 663 and 765 and 770, or departmental approval.

PH 781 Environmental Health Lab Methods (1) Hands-on training for laboratory methods used in monitoring and detecting environmental health risk factors; learning and application of immunological-, animal cell culture- and molecular techniques for studying environmental pathogens and toxic pollutants. Repeatable one time. PH majors only. A-F only. Pre: consent. (Once a year)

PH 788 Seminar in Public Health Sciences (V) Topics related to recent developments in major areas; student and faculty research activities. Sections: (1) biostatistics; (2) environmental health; (3) epidemiology; (4) public health nutrition. Repeatable unlimited times. Pre: consent.

PH 789 Integrative Seminar (V) Integrative seminar in (M) maternal and child health; and (U) public health. A-F only. Required as part of the student capstone experience to bring together the key aspects of their courses, competencies, and practicum. Pre: consent.

PH 791 Advanced Public Health Practice (3) Observation, study, and supervised practical work in student’s area of specialization. Pre: public health degree candidate and consent.

PH 792 (Alpha) Current Issues and Topics in Public Health (V) Current and emerging issues and topics related to public health. (B) biostatistics; (E) epidemiology; (J) maternal and child health; (S) community health development; (T) public health science; (U) public health. Repeatable unlimited times. Pre: consent.

PH 793 Special Practicum/Project (V) Supervised practical training beyond the required practicum in an area of particular interest. Provides additional opportunity to synthesize, integrate, and apply practical skills and knowledge in a public health work environment. Repeatable one time. PH majors only. Pre: 791 and a minimum of 6 credit hours of PH core courses, or consent.

PH 797 (Alpha) Exploration in Public Health (V) Investigation of emergent fields of inquiry in public health. (B) biostatistics; (E) epidemiology; (G) gerontology; (S) community health development; (T) public health science; (U) public health. Repeatable up to three credits. Pre: consent. (Cross-listed as NURS 797)

PH 800 Dissertation Research (V) Pre: consent.
RE 300 Principles of Real Estate (3) Principles affecting the allocation and utilization of real estate resources, including legal, physical, economic elements; valuation; market analysis; finance; investment, and public and private externalities affecting the allocation and utilization of real estate resources.

RE 310 Real Estate and Environmental Law (3) Property rights, land tenure, agency, contracts and negotiation theory, title conveyancing and escrow, mortgage instruments, fair housing, state and federal environmental policy.

RE 320 Real Estate Finance and Investment (3) Financial and investment techniques used to evaluate real property and real estate security investments.

RE 330 Real Estate Appraisal/Analysis (3) Analysis of real property, including feasibility analysis, market analysis, income property capitalization, and general real estate valuation techniques.

RE 351 Tourism Destination Development (3) Examination of the interrelationships of social, economic, and physical aspects of total resort development, with emphasis on physical development of tourist centers and resort areas. Pre: TIM 101.

RE 390 Current Topics in Real Estate Analysis (3) Consideration of various special concepts and problems in real estate. Repeatable unlimited times.

RE 399 Directed Reading and Research (V) Reading and research in a specialized area within the major field under direction of faculty member(s). Project must include statement of objectives, outline of activities planned, results expected, and how they are to be reported and evaluated. Must be approved in advance by the department chair and faculty advisor. Repeatable unlimited times.

RE 674 Real Estate Investment Analysis (3) Development of strategic business plans for the optimization of a firm's real property assets. Includes facilities utilization audits, contingency planning, and the impact of new techniques.

RELigion (REL) College of Arts and Humanities

REL 150 Introduction to the World’s Major Religions (3) Buddhism, Christianity, Confucianism, Hinduism, Islam, Judaism, Shinto, Taoism and indigenous traditions of Hawaii and/or Oceania. FGC

REL 151 Religion and the Meaning of Existence (3) Basic ideas and issues in contemporary religious thought about the meaning of existence. DH

REL 200 Understanding the Old Testament (3) Developing beliefs and practices of Hebrew religion as set forth in the Old Testament. Meaning of its faith for the modern world. DH

REL 201 Understanding the New Testament (3) Origin and development of early Christian message as set forth in the New Testament; special attention to Jesus and Paul. DH

REL 202 Understanding Indian Religions (3) Historical survey of the teachings and practices of major religious traditions of India. DH

REL 203 Understanding Chinese Religions (3) Taoist, Confucian, Buddhist and folk beliefs and practices in their social and historical context. Repeatable one time. DH

REL 204 Understanding Japanese Religions (3) Broad survey, with primary focus on Shinto, Buddhism, and modern sectarian movements, analyzed in relation to social and cultural themes of major historical periods. DH

REL 205 Understanding Hawaiian Religion (3) Major teachings and practices from ancient times to present, their cultural influence; analysis of religious texts; relation to other traditions of Oceania and to Christianity. DH

REL 207 Understanding Buddhism (3) Survey of major forms and practices. DH

REL 208 Understanding Judaism (3) Survey from origin to modern times; emphasis on Jewish thought in Talmudic and medieval periods. DH

REL 209 Understanding Islam (3) Historical survey of the beliefs and practices of Islam as a world religion, including the prophet Muhammad, scriptures, philosophy and science, theology, law, major sectarian movements, relations with other religious traditions, and fundamentalism. (Alt. years) DH

REL 210 Understanding Christianity (3) History of ideas concerning on events, persons, and issues with the greatest impact on the evolution of Christianity. DH

REL 300 The Study of Religion (3) Definitions and functions of religion; methodologies by which it is studied; relationship to other areas of human culture. Pre: 150 or consent. DH

REL 303 Creation and Evolution (3) An exploration of interactions between science and religion with a focus on cosmogenies. Pre: 150 or consent. DH

REL 308 Zen (Ch’an) Buddhist Masters (3) Study of lives, teachings, practices of Zen masters in China, Japan, Korea, and the West. Pre: one of 150, 203, 204, 207; or consent. DH

REL 310 Global Christianity (3) Christianity as a transcultural religion, through the study of Christian art, literature, ritual, and theology in diverse cultures; including the Near East, Africa, Latin America, and the Pacific. Pre: 150, 201, or 210; or consent. (Once a year) DH

REL 333 Cults and New Religions (3) Study of cults and new religious movements in America, the Pacific, and East Asia; examining types, causes, and functions of these movements. Pre: 150 or consent. DH

REL 348 Religion, Politics, and Society (3) Exploration of the diverse approaches and perspectives that American religious groups embrace with respect to some of the more controversial and diverse elements of contemporary American life. Pre: 150 or consent. DH

REL 351 Christian Ethics in Modern Life (3) The meaning of Christian faith for the moral life with reference to contemporary moral issues. Pre: 150 or consent. DH

REL 352 Sufism: Mystical Traditions of Islam (3) Introduction to the history, literature, and worldview of Sufism. Students will encounter the following topics in relation to Islamic mysticism: asceticism, monotheism, philosophy, love, union, sainthood, ecstatic experience, and spiritual uses of art. Pre: 209 or 300 or 383 or PHIL 350 or HIST 354, or consent. (Once a year) DH

REL 353 Witches and Witchcraft (3) Persecution of witches with an emphasis on witch trials in Europe, 1500–1700, examined as crisis of church and theology; origins, effects on church and society. Pre: one of 201, HIST 151, HIST 152, PSY 100, or consent. DH

REL 356 Women and Religion (3) Examining roles of, and attitudes toward, women in major religious traditions through autobiographies, films, and primary texts. Pre: one of ANTH 152 or W 151. (Cross-listed as ANTH 356 and WS 356) DH

REL 361 Love, Sex, and Religion (3) Love and sex as themes in religions of Asia and the West. Pre: 150 or consent. DH

REL 363 Religion and Art (3) The uses of art in religion are studied with historical examples. Pre: 150 or consent. DH

REL 383 Mysticism East and West (3) Mystical traditions of the West from desert monasticism to Renaissance mystics compared with those of South and East Asia. Pre: one of 150, 202, 203, 204; or consent. DH

REL 390 Hawaiian Gods Pele, Kamapua’a (3) The traditions and practices related to two major indigenous gods will be studied by the interpretation and analysis of primary texts. Pre: 205 or consent. DH

REL 394 On Death and Dying (3) Aspects of death and dying; relation to our culture and society, to understanding of each other and of ourselves. Pre: 150 or consent. DH

REL 399 Directed Reading (3) Pre: one 200-level REL course and consent.

REL 409 Life and Teachings of Jesus (3) Critical study of synoptic gospels and of extra-Biblical sources. Pre: 201 or 210. or consent. DH

REL 422 Anthropology of Religion (3) Cults, legends, millenarian movements, myths, possession, rituals, sacred healing, shamanism, sorcery, spirits, symbolism, witchcraft, and other forms of religious and symbolic expression and experience, from small scale to highly urban societies. Pre: ANTH 152. (Cross-listed as ANTH 422) DH

REL 431 Health/Medicine in Religion (3) Issues of health and disease in the light of religious beliefs and practices. Pre: 150 or consent. DH

REL 443 Anthropology of Buddhism (3) Selected aspects of national, regional and local manifestations of Buddhism are explored through the perspective of anthropology with an emphasis on the daily lives of monks, nuns and lay persons in their socio-cultural contexts. Pre: 207, 422, 475, or consent. (Alt. years) (Cross-listed as ANTH 443)

REL 444 Spiritual Ecology (3) Lectures and seminars provide a cross-cultural survey of the relationships between religions, environment and environmentalism. Pre: junior standing or consent. (Alt. years) (Cross-listed as ANTH 444) DS

REL 445 Sacred Places (3) Lectures and seminars provide a cross-cultural survey of sites which societies recognize as sacred and their cultural, ecological and conservation aspects. Pre: junior standing or consent. (Alt. years) (Cross-listed as ANTH 445) DS

REL 452 Sociology of Religion (3) Seminar on research in sociological aspects of religious sectarianism, historical and current; special reference to Hawai‘i. Pre: SOC 300 or consent. (Cross-listed as SOC 455) DS

REL 475 Seminar on Buddhism (3) Selected historical, thematic, and textual research topics in Buddhism; topics and geographical focus to be announced each semester. Pre: one of 150, 204, 207; or consent. DH

REL 476 Taoism in China (3) Seminar on religious Taoism, its historical development and its role in the present-day context. Pre: 203 or consent. DH

REL 480 Field Methods in Religion (3) Introduction to theoretical and methodological approaches to doing fieldwork in the study of religion. Application of these in studying Hawai‘i’s diverse religious environment. Pre: 300 or consent. DH

REL 490 Buddhism in Japan (3) Major features and trends in thought, institutions, and practices in the context of Japanese history and culture 6th–20th century. Pre: 204 or 207, or consent. DH

REL 492 Polynesian Religions (3) Introduction to field, comparison of several traditions; beliefs and practices from analysis of texts. Historical interactions with Christianity. Pre: 150, 205; or consent. DH

Key to symbols & abbreviations: see the first page of this section.
REL 495 Seminar in Religion (3) Topics pre-announced each semester. Pre: upper division standing or consent. Repeatable one time. DH

REL 499 Directed Reading or Research (V) Repeatable up to six credits. Pre: consent of instructor and department chair.

In addition to those specified for individual courses, prerequisites for all courses 500 and above are graduate standing and consent.

REL 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B candidate with consent.

REL 600 History and Theory of the Study of Religion (3) Survey of development of history of religions; application of methodologies from anthropology, history, philosophy, political science, psychology, and sociology.

REL 625 Applied Methods in the Study of Religion (V) Practicum in methods of research, argument, and discourse in scholarly writing about selected topics in religious studies. Repeatable up to four credits. A-F only. Pre: 600 and restricted to graduate students in Religion only; or consent.

REL 630 Practicum in Field Research in Religion (3) Independent field study of an Asian or Polynesian religion at an appropriate academic or religious institution abroad or in Hawaii. Repeatable one time. Pre: 600, 6 credits of area studies, and consent of graduate chair and instructor.

REL 650 Seminar on Western Religions (3) Historical, theoretical and methodological issues in the study of Western religious traditions. Repeatable two times. A-F only. Pre: 600 or consent.

REL 661 (Alpha) Seminar on East Asian Religions (3) Selected historical, thematic, and textual research topics in East Asian religions and traditions: (B) Chinese religions; (C) Japanese religions; (D) East Asian Buddhism. Repeatable up to six credits for (D), up to nine credits for (B) and (C). Pre: 661B or 661C for (D).

REL 662 (Alpha) Seminar on South Asian Religions (3) Selected historical, thematic, and textual research topics in Indian religious traditions: (B) Indian religions; (D) Indian Buddhism. Repeatable up to three credits for (B).

REL 663 (Alpha) Seminar in Polynesian Religions (3) Selected historical, thematic, and textual research topics in Polynesian and Hawaiian religious traditions: (B) Polynesian religions; (C) Hawaiian religion. Repeatable up to nine credits for (B) and (C).

REL 680 (Alpha) Pedagogy in Religion (3) Theory, preparation, and practice in the teaching of religious studies at the community college level: (B) teaching religion; (C) teaching religion practicum. Pre: 650 for (B); 600, 650 and (B) for (C).

REL 695 Topics in Religious Studies (3) Topics in the study of religion with special emphasis on theoretical approaches and concerns. Specific topics to be preannounced. Repeatable one time. Pre: 600 or consent. (Alt. years)

REL 699 Directed Reading and Research (V)

REL 700 Thesis Research (V) Pre: consent of thesis chair.

Reproductive Biology (REPR)

School of Medicine

REPR 499 Directed Reading/Research (V) Repeatable unlimited times.

REPR 611 Seminar in Biomedical Sciences (1) Presentation and discussion of current research topics in biomedical sciences. Repeatable nine times. Pre: consent. (Cross-listed as CMB 611)

REPR 633 Issues in Sex and Reproduction (V) Explores issues in sex and reproduction. Topics include defining male and female, nature/nurture influences on different sexual characteristics, controversies in reproduction and ethics associated with matters like pornography and age of consent. Repeatable unlimited times. CR/NC only. Pre: PHYL 604 or consent.

REPR 699 Directed Research (V) Repeatable unlimited times.

REPR 700 Thesis Research (V) Repeatable unlimited times. Pre: admission to candidacy (master’s program).

REPR 705 Special Topics in Reproductive Biology (V) In-depth discussion of selected areas of reproductive biology, with special emphasis on recent research results and methodologies. May be retaken for credit. Pre: consent.

REPR 800 Dissertation Research (V) Repeatable unlimited times. Pre: admission to candidacy (Ph.D. program).

Russian (RUS)

College of Languages, Linguistics and Literature

All courses are conducted in Russian. A grade of C- or better in the prerequisite course is required for continuation.

RUS 101 Elementary Russian (3) Conversation, reading, writing, grammar. HSL

RUS 102 Elementary Russian (3) Continuation of 101. Pre: 101 or consent. HSL

RUS 201 Intermediate Russian (3) Reading, conversation, grammar, composition. Pre: 102 or consent. H/NI HSL

RUS 202 Intermediate Russian (4) Continuation of 201. Pre: 201 or consent. H/NI HSL

RUS 209 Russian Phonetics (3) Basic theory of Russian sound system; practice in pronunciation, intonation, and fluency. Pre: 102 or 201 (or concurrent). NI

RUS 260 Intensive Intermediate Russian Abroad (V) Intensive course of formal instruction on the second-year level in Russian language and culture in Russia. Pre: 102. H/NI HSL


RUS 304 Advanced Russian (3) Continuation of 303.

RUS 306 Russian Structure (3) Advanced grammar; complexities of standard contemporary Russian; word formation and verb system. Pre: 202 or consent.

RUS 311 Readings in Russian Civilization and Literature (3) Mid-level readings in Russian civilization and literature of edited and adapted texts. Pre: 202. DL

RUS 312 Readings in Russian Civilization and Literature (3) Continuation of 311. Pre: 311. DL

RUS 360 Intensive Third-Level Russian Abroad (V) Intensive course of formal instruction on the third-year level in Russian language and culture in Russia. Pre: 202 or 260.

RUS 399 Directed Reading (V) Independent study of approved reading with faculty supervision. Repeatable two times. A-F only. Pre: 202 and consent and departmental approval.

RUS 403 Advanced Conversation and Composition (3) Systematic practice on selected topics; vocabulary building and development of fluency; writing short reports, narratives. Pre: 304 or consent.

RUS 404 Advanced Conversation and Composition (3) Continuation of 403. Pre: 403.

RUS 418 Advanced Reading and Translation: Modern Prose (3) Readings in various fields, emphasizing idiomatic usage. Pre: 312 or consent.

RUS 419 Advanced Reading of Russian Press (3) Materials from Soviet/Russian newspapers and magazines. Pre: 311 or consent.

RUS 451 Russian Folklore (3) Selected Russian folk narratives, bylines, songs, and proverbs. Influence of folklore on major Russian authors. Pre: 312 or consent. DL

RUS 441 Russian Short Story (3) Origin and development (19th and 20th century); the major writers. Pre: three years of Russian or consent. DL

RUS 442 Russian Novel (3) Origin and development from 18th century to present; Pre: three years of Russian language or consent. DL

RUS 451 Topics in 19th- and 20th-Century Russian Literature (3) Focus upon the selected writings of one major Russian writer of the 19th century (e.g., Pushkin, Gogol, Lermontov, Dostoevsky, or Tolstoy) or 20th century (e.g., Bely, Blok, Bulgakov, Chekhov, Pasternak, Sholokhov, or Solzhenitsyn). Repeatable unlimited times with consent. Pre: 312, LLEA 351; or consent. DL

RUS 452 Topics in 19th- and 20th-Century Russian Literature (3) Continuation of 451. Pre: 312, LLEA 352, or consent. DL

RUS 460 Intensive Fourth-Level Russian Abroad (V) Intensive advanced courses of formal instruction on the fourth-year level in Russian language and culture in Russia. Pre: 360 or equivalent.

RUS 495 Seminar (3) Literary or linguistic topics, movements, genres, or their representatives. Repeatable unlimited times with consent. Pre: consent of chair.

RUS 499 Directed Reading/Research (V) Independent study of approved reading with faculty supervision. Repeatable up to six credits. A-F only. Pre: 303 (or equivalent), consent or departmental approval.

Samoan (SAM)

College of Languages, Linguistics and Literature

SAM 101 Elementary Samoan (4) Listening, speaking, reading, writing skills. Structural points introduced inductively. History and culture. Meets four hours weekly; daily lab work. HSL

SAM 102 Elementary Samoan (4) Continuation of 101. HSL

SAM 201 Intermediate Samoan (4) Continuation of 202. Meets four hours weekly, three of four hours devoted to drill and practice. Daily lab work. Pre: 102. NI HSL

SAM 202 Intermediate Samoan (4) Continuation of 201. H/NI HSL

SAM 227 Overview of Samoan Literature in English (3) Survey of major writers of Samoan literature in English; lectures, discussions, short paper. DL


SAM 302 Third-Level Samoan (3) Continuation of 301.

SAM 321 Samoan Conversation: Traditional Contexts (3) Systematic practice on various topics for control of spoken Samoan in traditional contexts. Pre: 202 or equivalent; or consent.

SAM 322 Samoan Conversation: Contemporary Contexts (3) Systematic practice on various topics for control of spoken Samoan in modern contexts. Pre: 202 or equivalent; or consent.
SANSKRIT (SNSK)

SNSK 181 Introduction to SANSKRIT (3) Introduction to basic Sanskrit grammar; reading and analysis of progressively difficult classical texts. HSL

SNSK 182 Introduction to SANSKRIT (3) Continuation of 181. HSL

SNSK 281 Intermediate Sanskrit (3) Continuation of 182. Reading and analysis of classical texts with review of grammar. Prerequisite: 182. NF HSL

SNSK 282 Intermediate Sanskrit (3) Continuation of 281. NF HSL

SNSK 381 Third-Level Sanskrit (3) Continuation of 282. Reading and analysis of various classical texts. Prerequisite: 282.

SNSK 382 Third-Level Sanskrit (3) Continuation of 381. Introduction to Veda.

SNSK 481 Fourth-Level Sanskrit (3) Continuation of 382. Reading, analysis, and interpretation of various Vedic or Sanskrit texts selected according to students' interests. Prerequisite: 382.

SNSK 482 Fourth-Level Sanskrit (3) Continuation of 481.

SECOND LANGUAGE STUDIES (SLS)

College of Languages, Linguistics and Literature

Courses below 380 are not applicable toward the MA in English as a second language.

SLS 302 Second Language Learning (3) Theoretical foundations for the learning and teaching of second languages. Prerequisite: Upper division standing.

SLS 303 Second Language Teaching (3) Survey of methodology: basic concepts and practices. Prerequisite: 302.

SLS 312 Techniques in Second Language Teaching: Reading and Writing (3) Methods and materials. Issues in teaching; survey of available materials and practice in their adaptation. Prerequisite: 302.


SLS 380 Bilingual Education (3) Survey and analysis of current thinking and practices in bilingual/bicultural education; special emphasis on ESL/EFL. Prerequisite: 302, graduate standing; or consent. DS

SLS 418 Instructional Media (3) Theoretical foundation and practical applications of using electronic and audiovisual media in second language teaching. Prerequisite: 303 or graduate standing; or consent.

SLS 430 Pidgin and Creole English in Hawai'i (3) Major historical descriptive, pedagogical aspects; pidgin and creole languages, linguistic change, language variation. Work with actual language data. Laboratory work required. Prerequisite: 302 and LING 102, or graduate standing; or consent. DS

SLS 441 Language Concepts for Second Language Learning and Teaching (3) Language analysis: phonology, syntax, semantics, discourse for teaching second languages. Prerequisite: One of 302, LING 102, LING 320, or graduate standing; or consent.

SLS 460 English Phonology (3) Basic course in English phonetics and phonology; emphasis on areas of interest to language teachers. Prerequisite: 302. DH

SLS 480 (Alpha) Topics in Second Language Studies (3) Variable topics in special areas of second language studies: (E) second language learning; (N) second language analysis; (P) second language pedagogy; (R) second language research; (U) second language use. Repeatable one time if different alpha. Prerequisite: 302 or consent for (E), (N), (R), (U); 303 or consent for (P). Not applicable toward graduate degrees offered within SLS except by departmental consent.

SLS 490 Second Language Testing (3) Measurement and evaluation of achievement and proficiency in second language learning. Prerequisite: 302, 441, LING 102, or graduate standing.

SLS 499 Directed Reading/Research (V) For interdisciplinary studies majors. Prerequisite: A minimum cumulative GPA of 2.7 or a minimum cumulative GPA of 3.0 in major, or consent of department chair.

SLS 500 Master's Plan B/C Studies (1) Enrollment for degree completion. Prerequisite: Master's Plan B or C candidate and consent.

SLS 600 Introduction to Second Language Studies (3) Introduction to basic professional and research issues in second language studies; integration of theory, research, and practice for prospective second or foreign language teachers and researchers. Prerequisite: Graduate standing or consent.

SLS 610 Introduction to Teaching Second Language Studies (3) Survey and analysis of second language teaching traditions and perspectives. Prerequisite: Graduate standing or consent.

SLS 612 Alternative Approaches to Second Language Teaching (3) Examination, comparison with conventional approaches; interpersonal relationships in language teaching. Prerequisite: 600 or consent.

SLS 613 Second Language Listening and Speaking (3) Key issues: overview and critique of published materials; practice in developing syllabi and other materials. Prerequisite: 600 or consent.

SLS 614 Second Language Writing (3) Problems in teaching second language composition. Survey materials; use, modification, and development. Error analysis. Prerequisite: 600 or consent.

SLS 620 Second Language Reading (3) Survey of research in reading process; teaching methodology; psycholinguistic investigations; comparison of reading in first and second languages. Prerequisite: 600 or consent.

SLS 630 Second Language Program Development (3) Designing, implementing, and evaluating language programs: systems-based approach to program and curriculum development. Prerequisite: 600 or consent.

SLS 631 Second Language Program Evaluation (3) Combined lecture and discussion on theory, practice, and ethics of language program evaluation. Fulfills requirement for SLS MA specialization in language assessment, measurement, and program evaluation. Prerequisite: 490 and 600, or consent. (Once a year)

SLS 640 English Syntax (3) English clause structure in relation to second language learning and teaching. Prerequisite: 441 and 600 (or concurrent), or consent.

SLS 642 Comparative Grammar and Second Language Acquisition (3) Comparative study of structures of two or more languages; native speaking informants used. Consideration of language transfer in second language learning, role of typological features. Prerequisite: 441, 460, or ENG 403.

SLS 650 Second Language Acquisition (3) Survey of theories and research on second language learning by children and adults, learning naturallyistically and in formal settings. Relationships are explored between SLA and language teaching. Prerequisite: 441 and 600, or consent.

SLS 660 Sociolinguistics and Second Languages (3) Theoretical and applied aspects of language, culture, and society, and research methods in sociolinguistics, as they relate to second and foreign language issues. Prerequisite: 600 or consent.

SLS 670 Second Language Quantitative Research (3) Quantitative research methods; design of research studies; techniques in collecting data; statistical inference and analysis; interpretation and presentation of data. Prerequisite: 490, 600, and graduate standing; or consent.

SLS 673 Directed Reading in Language Testing (3) Advanced issues in language testing research including recent developments in the following areas: language testing hypotheses, item analysis, reliability, dependability, and validity. Prerequisite: 490 or consent.

SLS 672 Second Language Classroom Research (3) Survey of research on second language classrooms and analysis of methodological issues. Prerequisite: 600.

SLS 673 Applied Psycholinguistics and Second Language Acquisition (3) Theory and research in psycholinguistics as related to second language perception, production, acquisition, and instruction. Prerequisite: 441 or LING 422, or consent.

SLS 674 Survey Research Methods in Second Language Studies (3) Hands-on experience in language survey research including planning and creating survey instruments (both interviews and questionnaires), administering, compiling and analyzing survey data (quantitatively and qualitatively), and reporting the results. Prerequisite: 600 or consent. (Once a year)

SLS 675 Second Language Qualitative Research (3) Philosophical and theoretical approaches, methodology, and ethics in second language qualitative research. Prerequisite: 600 and 660 (or concurrent); or consent.

SLS 678 Discourse Analysis in Second Language Research (3) Survey of approaches to discourse; microanalytic qualitative research; theory and methodology. Prerequisite: 600 and 660, or consent.

SLS 680 (Alpha) Topics in Second Language Acquisition (3) Variable topics in special areas of second language studies: (E) second language learning; (N) second language analysis; (P) second language pedagogy; (R) second language research; (U) second language use. Repeatable one time for different alpha. Prerequisite: 650 for (E); 640 for (N); 600 or consent for (P); 670 or 675 or 678, or consent for (R); 660 for (U).

SLS 690 ESL Teaching Practicum (3) Student teaching in ESL classroom. Prerequisite: 600, advancement to candidacy, and consent.

SLS 699 Directed Reading/Research (V) Individual reading in various fields of ESL, CR/NC only. Prerequisite: Graduate chair and instructor.

SLS 700 Thesis Research (V) Individual reading in various fields of ESL, CR/NC only. Prerequisite: Graduate chair and instructor.

SLS 730 Seminar in Second Language Education (3) Current issues and problems. Repeatable unlim-
and their relationship to practices; use of published research. A-F only. Pre: graduate standing. Fall only.

**SW 650 Research Designs and Data Analyses for the Evaluation of Practice Effectiveness** (3) Extending the study of scientific methods introduced in 640. Covers the range of empirical research methods and data analytic procedures suitable for knowledge building and practice evaluation at all levels of intervention from case to program. A-F only. Pre: 640. Spring only.

**SW 651 Introduction to Quantitative Methods** (3) Introduction to quantitative methods in behavioral sciences. Introduction to general linear model as principle of data analysis. Course requires basic statistics. Meetings may be required (elective). Pre: graduate standing. Pre: PH 647 or PH 737 or consent. (Cross-listed as EDEP 601)

**SW 652 Computer Analysis of Data** (3) Introduction to the use of computers and computer-related equipment in the management and analysis of data in the behavioral sciences. Includes introduction to control language, use of SAS or SPSS routines, and interpretation of output. Emphasis on application through use of the University’s computing facilities. (Cross-listed as EDEP 602)

**SW 654 Multiple Regression in Behavioral Research** (3) Advanced application of the general linear model to complex problems of data analysis. Relation of analysis of variance and covariance to regression analysis. Non-linearity and treatment of missing data. Class requires basic statistics. (Cross-listed as EDEP 604 and PSY 612)

**SW 655 Factor Analysis** (3) Theory and method of factor analysis and related methods of multivariate analysis. Pre: 654 or consent. (Cross-listed as EDEP 605 and PSY 613)

**SW 656 Multivariate Methods** (3) Multivariate forms of multiple linear regression, analysis of variance, and analysis of covariance. Multiple discriminant analysis, canonical correlation, and principal components analysis are discussed. (Cross-listed as EDEP 606 and PSY 614)

**SW 658 Measurements and Evaluation** (3) Theory of measurement and evaluation; analysis of experimental and standardized tests and scales. Course requires basic statistics. (Cross-listed as EDEP 616 and PSY 616)

**SW 659 Human Behavior in the Social Environment I** (3) An overview of social work’s person-in-environment focus as it applies to human behavior in the context of families, groups, communities, and organizations. Using an ecological perspective, theoretical and research needs about human behavior are introduced and examined. A-F only. Pre: graduate standing. Fall only.

**SW 660 Human Behavior in the Social Environment II** (3) Uses social work’s person-in-environment focus to organize knowledge development about biological, psychological, social, and cultural systems as they are affected by human behavior. It is designed to meet with an overview of human behavior and healthy and unhealthy development over the life span. A-F only. Pre: 659. Spring only.

**SW 663 Treatment of Chemical Dependency** (3) Introduction to treatment of alcoholism and other chemical dependencies. Application of social work strategies in work with individuals and families in the disease and recovery process. Repeatable one time. Pre: graduate standing.

**SW 672 Child Welfare as a Field of Social Work** (3) Emphasis on the developments in child welfare; issues, concerns with regard to needs and rights, and the application of social work services to problems associated with needs for protection. Review of historical, theoretical, empirical, and legal findings for skill development in intervening in dysfunctional parent-child interaction. Pre: graduate standing.

**SW 674 Community and Public Health Practice** (2) Community organization and development applicable to the delivery of health services. Understanding community dynamics, mobilizing community groups for effective health care practice and delivery. Pre: PH 647 or PH 737 or consent. (Cross-listed as PH 671)

**SW 680 Topics in Social Welfare** (V) Current trends in field of social welfare. Recent courses have focused on child abuse and neglect, juvenile justice, sexual assault and family violence, and gerontology. Meets seminar requirement. Pre: graduate standing.

**SW 690 Practicum** (3) Field units are maintained by the school in public and voluntary welfare agencies, as well as in governmental programs. Students receive instruction related to their school experience with social problem situations and an opportunity to see the applicability and to experience the use of concepts and principles in actual practice. Pre: admission to MSW program.

**SW 691 Practicum** (Field units are maintained by the school in public and voluntary welfare agencies, as well as in governmental programs. Students receive instruction related to their school experience with social problem situations and an opportunity to see the applicability and to experience the use of concepts and principles in actual practice. Pre: admission to MSW program.

**SW 696 Health and Aging** (3) Biological and physiological changes associated with aging. Social and psychological factors associated with health maintenance. Major threats to health, changing patterns of morbidity and mortality of the aged. Pre: graduate standing.

**SW 697 Thesis Research** (V) Independent research under supervision of a thesis committee. Includes formal proposal and defense of finished research.

**SW 707 Methods of Group Psychotherapy** (3) Designed specifically to train students in the theory and practice of group psychotherapy. Includes historical developments, research, theories, and application of group psychotherapy, group techniques and exercises. Pre: 607 or consent.

**SW 715 Therapeutic Strategies with the Older Adult** (3) Focuses on interdisciplinary strategies with older adults: individual, family, and group therapy; selected mental health, social work, case management; and environmental intervention. Emphasis placed on the use of these strategies as preventive, as well as supportive, measures for the well, transition, and frail elderly. Meets seminar requirement. Pre: graduate standing.

**SW 717 Social Work Practice with Children and Families** (3) Advanced practice course for students specializing in social work with children and families. Designed to provide students with an in-depth understanding of both theoretical formulations and therapeutic techniques for practice in the field of family and child welfare. Emphasis placed on the development of specialized knowledge and skills for assessment, intervention, and evaluation of a variety of common child and family practice situations. Pre: completion of foundation courses.

**SW 718 Seminar in Social Work Practice with Children and Families** (3) Designed for students in the child and family concentration and builds upon past knowledge and intervention in practicum classes and in the practicum. Students integrate, demonstrate, and extend earlier learning, acquire new knowledge, and learn and practice new skills. Organized around student case presentations in a consultation format. Meets seminar requirement. Pre: 717.

**SW 722 Social Work Practice in Health Care** (3) Didactic and experiential learning activity focuses on the major role functions of the social worker in the health field including assessment, contracting, counseling, advocacy, discharge planning, family group work, community and team building. Covers health care policy, research directions in practice and social work management issues. Pre: completion of foundation courses.

**SW 723 Seminar in Social Work Practice in Health Care** (3) The use of case studies developed by the students. The seminar is examined in three areas of health care: primary care provided in health departments and medical groups, hospital-based services, and long-term care. Meets seminar requirement. Pre: 722.

**SW 724 Seminar in Social Work Practice in Mental Health** (3) Prepares students for social work practice in mental health settings. As the first course in the concentration, it focuses primarily on minor or short-term mental dysfunctioning (e.g., reactive depression, anxiety). Built on conceptual foundations including cultural implications of mental health, human ecology, life cycle/events, strengths assessments, and research. Includes a seminar component which involves student case presentations and consultations. Pre: completion of foundation courses.

**SW 725 Social Work Practice in Mental Health** (3) Prepares students to work with persons who are experiencing major mental disorders and to improve the systems of care that have been developed to serve this population. It reviews the history of the community mental health movement, discusses relevant policies and laws, and describes the current mental health system in the U.S. and Hawai‘i. Pre: 724.

**SW 726 Social Work Practice with the Aged** (3) Designed for social work students specializing in social work practice with the aged and their families. Examines normative and pathological aging and its impact on physical processes, intellectual functions, and personality. Emphasis is placed on the development of specialized knowledge and skills for assessment, intervention, and evaluation of a variety of issues and needs common in later life. Discussions on the applicability of leading interventions with the older adult and the family, along with ethnocultural and gender considerations. Pre: completion of foundation courses.

**SW 727 Seminar in Social Work with the Aged** (3) Designed for social work students in the aged concentration, builds upon past knowledge and skill development from courses and practicum. Students examine micro and macro interventions used for a wide range of issues and problems encountered by older adults and their families through the use of both case presentation and case consultations assignments. Meets seminar requirement. Pre: 726.

**SW 731 Social Policy Analysis** (3) Students pursue in-depth a specific topic in the areas of social planning, social policy analysis, evaluation of social programs, administration, supervision, and consultation. Selectively a comparative perspective is introduced and case studies used to illustrate concepts, principles, and techniques, with implications for practice. Meets seminar requirement. Pre: consent.

**SW 737 Social Work and the Law** (3) Knowledge of judicial systems and law relevant to social work practice in corrections, child-family welfare, health, and mental health. Skills for effective participation in all legal process are acquired in moot court and in practice for testifying. Pre: graduate standing.

**SW 741 Review of Research in Social Work** (3) In-depth study of research in a substantive area. Each seminar will be devoted to a particular topic, e.g.,

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Key to symbols & abbreviations: see the first page of this section.
foster care of children, effectiveness of social work intervention, etc. Pre: 650.

SW 743 Individual or Group Research Project—Plan B (V) Independent research (group of two to seven students or by an individual student) undertaken under the sponsorship of a faculty advisor. Elements are selection of a topic related to the practice of social work or knowledge relevant to that practice, utilization of empirical research methodology in collecting and analyzing original data, and preparation of a scholarly paper. Pre: 650.

SW 744 Individual or Group Research Project—Plan B (V) Same as 743. Pre: 743.

SW 746 Individual or Group Research Project—Plan B (V) Same as 743.

SW 750 Analysis and Development of Knowledge for Social Work (3) Focuses on developing an understanding of philosophy of science, theory development, social work epistemology, and the analysis and development of knowledge for social work practice. Pre: PhD candidate in social welfare or consent.

SW 751 Research Design and Cross-Cultural Applications (3) Empirical research methodology with emphasis on design principles and measurement theory; design and measurement issues and problems in cross-cultural research. Pre: PhD candidate in social welfare or consent.

SW 752 Qualitative Research: Philosophical, Methodological and Analytic Approaches (3) Theories and methods of qualitative research; problem formulation, informant selection, study design, data collection, analysis utilizing qualitative approaches. Repeatable three times. A-F only. Pre: 640 or 651 or equivalent; departmental approval.

SW 755 Specialization Integration Seminar (3) Culminating experience in social welfare doctoral specialization; integration of PhD core and specialization course work. Pre: classified student in PhD in social welfare program or consent.

SW 774 Cultural Factors in Work with Hawaiians (3) Hawaiian culture, past and present. Explores and examines possible approaches to working with Hawaiians and part-Hawaiians. Special emphasis on supports in the Hawaiian system that may promote maximal functioning for those Hawaiians experiencing problems in today’s society. Meets seminar requirement. A-F only. Pre: graduate standing.

SW 776 Seminar on Women and Health (3) Women’s health and the role of women health professionals. Current literature and research regarding attitudes, roles, rights, and health care. Pre: graduate standing or consent. (Cross-listed as NURS 744)

SW 790 Second-Year Practicum (V) Instruction in the field is continued. The practicum of the second year provides an opportunity for the student to test out concepts, principles, theories, and alternate approaches in actual practice settings. Pre: 691.

SW 791 Second-Year Practicum (V) Same as 790.

SW 800 Dissertation Research (V) Repeatable one time.

Sociology (SOC)

College of Social Sciences

In addition to the prerequisites specified below, all 300-level courses have a prerequisite: SOC 100 or a 200-level sociology course, or consent. In addition to the prerequisites specified below, all 400-level courses require SOC 300 or consent. All prerequisite courses require a minimum grade of C (not C-).

SOC 100 Introduction to Sociology (3) Basic social relationships, social structures, and processes. DS

SOC 214 Introduction to Race and Ethnic Relations (3) Race and ethnic relations in world perspective; social, economic, and political problems associated with perception, existence, and accommodation of these groups within the wider society. DS

SOC 218 Introduction to Social Problems (3) Theoretical and substantive survey of the nature and causes of social problems; selected types: poverty, inequality, deviance, etc. DS

SOC 231 Introduction to Juvenile Delinquency (3) Forms of juvenile deviance; conditions and processes that result in alienation and deviance of youth. Juvenile corrections as institutionalized societal responses. DS

SOC 251 Introduction to Sociology of the Family (3) Family patterns, mate selection, parent-child interaction, socialization of roles, legal sanctions, trends in organization, functions. DS

SOC 300 Principles of Sociological Inquiry (4) (3 Lec, 2 50-min Lab) Basic methods of sociology for production and analysis of data. Foundations for understanding research and for advanced courses in methods and statistics. DS

SOC 300A Principles of Sociological Inquiry (4) (3 Lec, 2 50-min Lab) Basic methods of sociology for production and analysis of data. Foundations for understanding research and for advanced courses in methods and statistics. DS

SOC 301 Survey of Urban Sociology (3) The city in historical and comparative perspectives. Interplay of demographic, economic, and cultural factors in urban growth. Urban process, development, and interdependence. DS

SOC 311 Survey of Social Inequality and Stratification (3) Emphasis on stratification theory and research; definition and measurement of socioeconomic status; racial, ethnic and gender inequality; differences in lifestyles and life chances; social mobility. DS

SOC 313 Survey of Sociology of Work (3) Work from viewpoint of individuals; meaningfulness versus productivity; how work, economics, and the industrial system affect individual goals. DS

SOC 316 Survey of Social Change (3) Causes, processes, and effects of social change, using single- and multi-cause models in simple and complex industrialized societies. DS

SOC 318 Women and Social Policy (3) Social and economic policies affecting women in families, education, social services, government, health care, the economy; public policy implementation and development; policy impact on women. Pre: 100 or any 200-level SOC course, or WS 151 or any 200- or 300-level WS course; or consent. (Cross-listed as WS 318) DS

SOC 321 Survey of Sociological Theory (3) Major theorists and their influences, from Comte to today. DS

SOC 332 Survey of Sociology Law (3) Law as a political enforcement of the social order; how it is organized and operates; determinants of effectiveness; ways it adapts to and facilitates changing social conditions. DS

SOC 333 Survey of Criminology (3) Concepts used in crime, law enforcement, criminal justice, and corrections. Types of criminal behavior; costs and effects of control. DS

SOC 335 Survey of Drugs and Society (3) Use of mood- and mind-altering drugs in America among adults, youth, and cross-culturally. Illicit drug culture, psychadelics, and perception; social norms and deviant behavior. DS

SOC 336 Deviant Behavior and Social Control (3) Interrelations of deviance, criminology, juvenile delinquency, corrections, social control, sociology of law. Key concepts, theories. DS

SOC 341 Survey of Social Psychology (3) Major principles; social attitudes, theories of conformity and change, person perception and attribution theory, social role, role conflict and role behavior, group structure, and behavior. DS

SOC 352 Survey of Sociology of Education (3) Formal education as one aspect of socialization. Emphasis on American system: business, military, and religious institutions. DS

SOC 353 Survey of Sociology of Aging (3) Aging as a social phenomenon, including social impacts of growing elderly population and emerging social patterns among the elderly. Important theoretical perspectives and cross-national research. DS

SOC 354 Survey of Medical Sociology (3) Social factors in disease and treatment; roles of patients and healers; nature of healing professions; use of medical services; alternative systems of medical organization. DS

SOC 356 Sociology of China (3) Social institutions, family, community, education, stratification, government, economy; impact of modernization and revolution on their contemporary transformation. A-F only. DS

SOC 357 Sociology of Japan (3) Persistence and change in economy, policy, religion, education, family, and other institutions of modern Japan. DS

SOC 358 Sociology of Korea (3) Social institutions, family, education, religion, cultural values, social classes, economic development, social movements, gender relations, North-South relations, and unification issues. A-F only. Pre: 100 or any 200-level SOC course, or consent. DS

SOC 362 Sociology of Gender (3) Effect of sex and gender roles (both traditional and nontraditional) on attitudes and behavior within the family and educational, economic, and governmental systems. Recommended: at least one WS course. Pre: 100 or any 200-level SOC course, or WS 151 or any 200- or 300-level WS course; or consent. (Cross-listed as WS 362) DS

SOC 374 Law, Politics and Society (3) Relationships between law, politics, and society will be explored. Emphasis is placed on several dimensions of legality; legal “indeterminacy” and some of the many things that law does for us and to us; law’s response to violence; the connection between law and social change; access to the law and its sociological dimensions; how/why law fails and what happens when it does. A-F only. Pre: 100 or any 200-level SOC course, or a 100-level or 200-level POLS course, or consent. (Cross-listed as POLS 374) DS

SOC 401 Analysis in Urban Sociology (3) Urbanization in developed and developing countries, the rural-urban continuum, structure and process of metropolitan regions, theories of urban location and growth, housing and urban renewal. DS

SOC 411 Analysis in Social Stratification (3) Approaches to research in social inequality; community studies; historical and cross-cultural analyses of poverty, working class, middle class, power structure, social mobility, etc. DS

SOC 412 Analysis in Population and Society (3) Global and U.S. patterns of population growth; composition and distribution, elementary demographic techniques; development issues and population policy. Pre: 300 or consent. (Cross-listed as PPST 412) DS

SOC 413 Analysis in Economy and Society (3) Study of the dominant trend of economic changes and its impact on society; globalization of economic activities and transformation of industrial society to postindustrial one; corporate restructuring and downsizing and their impact on employment and income distribution; gender relations in workplaces; the impact of globalization on the newly industrializing countries. Pre: 300 or consent. DS
SOC 415 Technology and Society (3) Nature of technology, social forces that affect its adoption; impact on society; innovation. DS

SOC 418 Women and Work (3) Gender and racial division of labor nationally and internationally; racial and gender differences in wages, training, working conditions and unemployment; historical trends and future directions. Pre: 300, or one 300-level WS or ES course; or consent. (Cross-listed as ES 418 and WS 418) DS

SOC 419 Analysis in Formal Organizations (3) Schools, hospitals, industries, prisons, and government agencies analyzed in terms of self-actualization, alienation, human relations, communication, leadership, organizational conflicts. DS

SOC 431 Analysis in Criminology/Juvenile Delinquency (3) Research in systematic social deviant behavior. Scaling and measurement of delinquents/criminals, official data, gangs, identification and measurement of delinquent/criminal value orientations, etc. DS

SOC 432 Analysis in Corrections (3) Behavioral assumptions of various correctional practices and modes of organization; current "in-community" approaches. DS

SOC 633 Analysis in Law and Social Change (3) Interrelationships between legal orders and other social institutions; use of "law" to change major status relationships, e.g., boss-worker, woman-man, child-adult. DS

SOC 435 Women and Crime (3) Women’s relations with the criminal justice system; types of women’s offenses; responses to women’s crime; women as victims; women as workers in the criminal justice system. Recommended: at least one WS course. Pre: 300, or WS 151 or any 200- or 300-level WS course; or consent. (Cross-listed as WS 435) DS

SOC 441 Social Structure and the Individual (3) Effects of social institutions on individuals. Role of socioeconomic status, cultural background, family structure, peer group, schools, and occupational roles in socialization. DS

SOC 445 Analysis in Gender Violence (3) Historical and structural theories of gender-based violence, including domestic and sexual abuse, prostitution, trafficking, cross-cultural perspectives, social policy and practices. Junior standing or graduate standing only. Pre: 300 or consent. (Once a year) DS

SOC 446 Analysis in Rape and Sexual Abuse (3) Theories, methodologies, and research findings on rape victimization and treatment; sexual abuse of women and children in Hawai’i. Recommended: at least one WS course. Pre: 300, WS 151 or any 200- or 300-level WS course; or consent. (Cross-listed as WS 446) DS

SOC 451 Analysis in Marriage and the Family (3) Theory and methods of studying social interaction in marriage and the family; examination of marriage, mating, love, and choice. Empirical research emphasizing Hawai’i. DS

SOC 452 Marriage and Family: A Feminist Perspective (3) Sex-role socialization, motherhood, work-family conflicts. Alternative family structures in U.S. and other countries. Recommended: at least one WS course. Pre: 300, or WS 151 or any 200- or 300-level WS course; or consent. (Cross-listed as WS 452) DS

SOC 453 Analysis in Sociology of Aging (3) Social and research issues significant to delivery of long-term care services to the elderly; cost, quality, availability of services, evaluation of programs, role of family, formal and informal care services. DS

SOC 454 Analysis in Medical Sociology (3) Application of sociological theories and concepts to medical social situations and behavior; problems of obtaining data for research. DS

SOC 455 Sociology of Religion (3) Seminar in research on sociological aspects of religious sectarianism; attention to Hawai’i. Pre: 300 or consent. (Cross-listed as REL 452) DS

SOC 456 Racism and Ethnicity in Hawai’i (3) The historical and contemporary social processes involved in inter-ethnic relations in Hawai’i. Pre: 300 or one 300-level ES course; or consent. (Cross-listed as ES 456) DS

SOC 457 Sociology of the Arts (3) Relation of art to society; role of artist, audience, critic, patron, museum; Western and other societies; attitudes toward new styles. DS

SOC 459 Popular Culture (3) Popular culture as manifested in film, sports, TV, comics, magazines, etc.; relation to sociological theories and studies. DS

SOC 475 Analysis in Survey Research (3) Survey research design and analysis, including theory selection, sampling techniques, data collection, computerized data analysis, and writing up research reports of the findings. DS

SOC 476 Social Statistics (3) Common statistical procedures emphasizing univariate and bivariate description; some attention to multivariate techniques and statistical inference, within context of research procedures. Pre: 300 or consent. Co-requisite: 476L. DS

SOC 476L Social Statistics Laboratory (1) Required lab for computer applications for analysis of sociological data. CR/NCR only. Co-requisite: 476. DS

SOC 478 Analysis in Field Research Methods (3) Techniques for collecting and analyzing qualitative data. Participant observation; small groups in natural settings; community studies. Grounded theory; theories of everyday life; reality construction. DS

SOC 491 Discussion Group Leader—Freshman Seminar (6) Students lead a freshman seminar section of sociology and meet weekly with instructor for substantive background. DS

SOC 492 Politics of Multiculturalism (3) The development of ethnic relations and political approaches to multiculturalism in two multiethnic nations: Canada and the U.S. A-F only. Pre: 300 or one 300-level ES course; or consent. (Cross-listed as ES 492) DS

SOC 495 Topics in Sociology (3) Topics course that explore current issues and try new ideas. Repeatable two times. Pre: 300 or consent. DS

SOC 496 Topics in Sociology: Student Projects (V) Students create their own study group and solicit an advisor from faculty. Consult department for assistance. DS

SOC 499 Directed Reading or Research (V) All graduate courses in the department require classified graduate standing in sociology or consent. Additional prerequisites are specified below.

SOC 500 Master's Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent. DS

SOC 605 Seminar in Advanced Statistics (3) Multivariate analysis. Analysis of variance; multiple regression procedures; multiple classification analysis, stepwise regression, discriminant functional analysis, and path analysis. Co-requisite: 605L. DS

SOC 605L Advanced Statistics Laboratory (1) Required lab for computer applications for analysis of sociological data. CR/NCR only. Co-requisite: 605. DS

SOC 606 Research Methods and Design (3) Emphasis on theory selection, theory construction, and choice of research strategies. DS

SOC 608 Survey Research Design and Analysis (3) Survey study designs, survey sampling, questionnaire construction, interviewing, pre-tests, pilot studies, logic of measurement and association, table construction, and elaboration models. Pre: consent. (Cross-listed as EDEA 608) DS

SOC 609 Seminar Qualitative Research (3) Advanced seminar on conducting fieldwork in natural social settings with emphasis on qualitative techniques, political and ethical considerations, data management and assessment, interpretation and reflective writing. Repeatable one time.

SOC 611 Classical Sociological Theory (3) Seminar offers a critical overview of major perspectives and representative works in sociological theory from 19th-century to the 1960s, including intellectual contexts and historical development. A-F only. Pre: graduate standing. Fall only.

SOC 612 Contemporary Sociological Theory (3) Seminar offers a critical overview of major perspectives and representative works in sociological theory from the 1960s to the present, including intellectual contexts and historical development. A-F only. Pre: graduate standing. Spring only.

SOC 613 Organizational Analysis (3) Theoretical approaches to organizations; organizational structure and process; organizational pathologies and effectiveness; the organization and its environment.

SOC 615 Sociology of Health and Health Services (3) Covers the major paradigms in medical sociology for analyzing social epidemiology, the political economy of health systems, health service organizations, health and wellness behaviors, illness perception and help-seeking, doctor-patient interactions, and adaptations to illness. Pre: graduate standing or consent.

SOC 616 Seminar in Stress and Health (3) Analysis of current theory and empirical research on relationship of stress and health; sociological, psychological, and community psychiatry models and current issues.

SOC 631 Seminar in Criminology (3) Major current theories, history of their development, elaborations of typologies, implications for treatment modalities.

SOC 632 Criminal Justice System (3) Examination of the criminal justice system; the exercise of discretion and limits placed upon it. Pre: consent.

SOC 638 American Punishment (3) Examines the history of American criminal punishment, from the birth of the penitentiary to the rise of the prison-industrial complex. A-F only. Pre: graduate standing. (Cross-listed as AMST 638)

SOC 691 Methods of Demographic Analysis (3) Statistical evaluation and analysis of population data; data sources; population growth; composition; standardization of rates; mortality and the life table; nuptiality and fertility; distribution, migration, urbanization; projections and stable population theory. Pre: graduate standing or consent. (Cross-listed as PH 659 and PSST 691) DS

SOC 699 Directed Reading/Research (V) DS


SOC 701 Seminar in Evaluation Research (3) Research design, data collection, field problems and analysis in the evaluation of social programs. Examples from criminal justice, corrections, drug treatment, mental health, and public health.

SOC 705 Multivariate Analysis (3) Application to population data. Multiple classification analysis, path analysis, logit and multinomial logit regression and hazard models. Repeatable one time.

SOC 706 Cultural Analysis (3) Contemporary issues in cultural sociology, covering key theoretical perspectives, analytic methods and substantive areas for empirical research. A-F only.

SOC 711 Seminar in Sociology of Knowledge (3) Sociological theory applied to bases of knowledge.
in everyday life, professional communities, and the sciences. Research and theory-building activities of sociologists; ethnmethodology; construction of social structure, culture, and consciousness. Repeatable one time only.

SOC 715 Seminar in Current Issues in Sociology (3) Substantive areas that are of current interest and the focus of research, but not addressed in other courses. Repeatable two times.

SOC 716 Seminar in Medical Sociology (3) Application of theoretical paradigms and methodologies to the examination of selected research topics in the field of medical sociology. Repeatable one time. Pre: 615 or consent.

SOC 719 Sociology of Family (3) Discusses major perspectives in the field and examines related empirical research. Topics may include formation and dissolution of unions, intergenerational relations over family life cycle, families in the new economy. A-F only. (Cross-listed as PPST 719) (Alt. years)

SOC 720 Comparative Study of East Asia (3) Comparative analysis of social organization, social processes, and change of both capitalist and communist countries of East Asia, with each other and other regions of the world. Pre: 611 or consent.

SOC 721 Social Change—Pacific Islands (3) Analysis of social change; transformation from subsistence societies to commodified, wage-labor societies with participation in world economy.

SOC 722 Modern Japanese Society (3) Social and behavioral studies of Japanese values, social organization, and personality development. Problems of value conflict, political protest, world role, tradition, and social change. Repeatable one time only.

SOC 723 Seminar in Modern Chinese Society (3) Developmental policies, social change, and impact on modern Chinese social institutions. Includes China, Hong Kong, and Taiwan. May include social and demographic change, population, social stratification, gender, and family problems. Repeatable one time.

SOC 725 Seminar in Race Relations (3) Comparative view of how “races” and “ethnic” groups develop and function. Sociological theories of race relations, assimilation, acculturation, and pluralism.

SOC 730 Conflict Analysis/Resolution (3) Seminar on the analysis of conflict resolution. Faculty from law, planning, political science and guest practitioners will present multidisciplinary analysis and intervention strategies on contemporary conflicts. A-F only. Pre: graduate standing or consent.

SOC 741 Seminar in Social Structure and the Individual (3) Intensive study and individual research projects in a selected topic. Theoretical and methodological issues in relating social and individual levels of analysis. Recommended: 612.

SOC 750 Seminar in Social Movements (3) Study of sociology of social movements, plus independent student research. Repeatable one time.

SOC 751 Development in Asia (3) Theories and available research methods examined for applicability to developing areas; specific examples from Asia. A-F only. Repeatable one time. Pre: graduate standing or consent.

SOC 753 Urban Sociology (3) Demographic trends in urban growth; nature and dimensions of urbanization and urbanism; ancient, American, and Third World cities; ecological theories of urban growth; lifestyles.

SOC 754 Seminar in Social Stratification (3) Classical theories of social class, contemporary developments; crucial research issues, appropriate methodologies. Repeatable one time only. Pre: classified graduate standing or consent.

SOC 800 Dissertation Research (V) Research for doctoral dissertation.

Spanish (SPAN) College of Languages, Linguistics and Literature All courses are conducted in Spanish. A grade of C or better in the prerequisite course is required for continuation.

SPAN 101 Elementary Spanish (3) Conversation, grammar, reading. Pre: 101. HSL

SPAN 102 Elementary Spanish (3) Conversation, grammar, reading. Pre: consent. HSL

SPAN 103 Intensive Elementary Spanish (6) Course content of SPAN 101 and 102 covered in one semester. Three two-hour sessions per week plus laboratory practice. HSL.

SPAN 201 Intermediate Spanish (3) Continuation of oral practice and grammar study; increasing emphasis on reading and written composition. Laboratory drill. Pre: 102. NI HSL.

SPAN 202 Intermediate Spanish (3) Continuation of 201. Pre: 201. NI HSL.

SPAN 203 Intensive Second-Year Spanish (6) Course content of SPAN 201 and 202 covered in one semester. Three two-hour sessions per week plus laboratory practice. Pre: 102 or 103. NI HSL.

SPAN 258 Intermediate Spanish Abroad (3) Intensive course of full-time formal instruction on the second-year level in Spanish language and culture in a Spanish-speaking country. Pre: 102. NI HSL.

SPAN 259 Intermediate Spanish Abroad (3) Continuation of 258. NI HSL.

SPAN 300 Reading in Spanish (3) Development of language skills through reading of literary and cultural texts. Pre: 202 or placement exam or consent.

SPAN 301 Grammar and Composition (3) Selected grammar review and intensive practice in effective use of the written language. Pre: 202 or consent.

SPAN 302 Grammar and Composition (3) Selected grammar review and intensive practice in effective use of the written language. Pre: 301 or consent.

SPAN 303 Conversation I (3) Intensive practice in spoken Spanish. Pre: 301 (or concurrent), or consent.

SPAN 304 Conversation II (3) Continuation of 303. Pre: 303 or consent.


SPAN 306 Commercial Spanish (3) Language as used in business communication; commercial terminology. Pre: 301 or consent.

SPAN 330 Phonetics and Pronunciation Practice (3) Analysis of the Spanish phonological system, in contrast with English. Practice in pronunciation; laboratory drill. Pre: 301.

SPAN 351 Spanish Cultural Perspectives (3) Survey of the history and cultures of Spain. Pre: 301 or consent. DH

SPAN 352 (Alpha) Latin American Cultural Perspectives (3) Survey of the history and cultures of Latin America. (B) Pre-Columbian and Colonial periods; (C) Independence, nationhood and current issues. Repeatable one time for other topics, but not for the same topic. Pre: 301 or consent. DH

SPAN 358 Third-Level Spanish Abroad (3) Intensive course of full-time formal instruction on the third-year level in Spanish language and culture in a Spanish-speaking country. Pre: 202 or 250 or equivalent.

SPAN 359 Third-Level Spanish Abroad (3) Continuation of 358.

SPAN 360 Intensive Third-Level Spanish Abroad (V) Intensive course of formal instruction on the third-year level in Spanish language and culture in a Spanish-speaking country. For semester programs only. Pre: 202 or 260 or equivalent.

SPAN 361 Masterworks of Spanish Literature (3) Reading and discussion of representative works of Spanish literature: origins to 18th century. Pre: 301 or consent. DL

SPAN 362 Masterworks of Spanish Literature (3) Reading and discussion of representative works of Spanish literature: 18th century to present. Pre: 301 or consent. DL.

SPAN 371 Spanish-American Literature (3) Reading and discussion of representative works of Spanish-American literature: Colonial period through Romanticism. Pre: 301 or consent. DL.

SPAN 372 Spanish-American Literature (3) Reading and discussion of representative works of Spanish-American literature: Modernism to the present. Pre: 301 or consent. DL.

SPAN 399 Directed Reading (V) Independent study of approved reading with faculty supervision. Repeatable two times. A-F only. Pre: 301 (or concurrent), consent and departmental approval.

SPAN 400 Spanish Language in Society (3) Explores issues in Spanish language in society (media, communication, advertising, government, technology). Introduces and examines current sociolinguistic and sociopragmatic issues. Pre: 330 or consent.

SPAN 403 Advanced Composition and Conversation (3) Advanced practice; emphasis on building active vocabulary. Pre: 302 or consent.

SPAN 405 Spanish-English Translation (3) Factors in the art of translation. Practice in translating material from Spanish to English and the reverse. Pre: 305 or consent.


SPAN 452 The Structure of Spanish (3) Analysis of morphology, syntax, and semantics. Pre: 302, 330, and one of 361, 362, 371, or 372; or consent.

SPAN 458 Fourth-Level Spanish Abroad (3) Intensive course of full-time formal instruction on the fourth-year level in Spanish linguistics, civilization, culture, and literature in a Spanish-speaking country. Pre: any two of 301, 302, 303, 358, 359, or 360.

SPAN 459 Fourth-Level Spanish Abroad (3) Continuation of 458.

SPAN 460 Intensive Fourth-Level Spanish Abroad (V) Intensive course of formal instruction on the fourth-year level in Spanish language and culture in a Spanish-speaking country. For semester programs only. Pre: 360 or equivalent.

SPAN 461 Spanish Neoclassicism/Romanticism (3) Representative works from Spanish Neoclassicism (18th century) and Romanticism (19th century). Genres: theater, poetry, essay, novel. Pre: 361 or 362, or consent. DL.

SPAN 477 U.S. Latino Literature (3) Study of the literature of U.S. Hispanics written in Spanish or bilingually. Pre: 371 or 372, or consent. DL.

SPAN 478 Hispanic Women’s Literature (3) The feminine experience in Western literary and cultural traditions as seen by women in Spain and Latin America. Pre: one of 361, 362, 371 or 372; or consent. DL.

SPAN 480 Hispanic Theater (3) Study of representative authors and plays from Spain and Latin America. Repeatable one time. Pre: one of 361, 362, 371, or 372; or consent. DL.

SPAN 495 (Alpha) Topics in Hispanic Scholarship (3) Hispanic authors, periods, or themes. (B)
literature and society. DL: (C) Hispanic poetry, DL: (D) literature and film. DH. Repeatable for other topics, but not for the same topic. Pre: one of 361, 362, 371, or 372; or consent.

SPAN 496 Studies in Latin American and Iberian Film (3) Intensive study of selected topics in Latin American and/or Iberian cinemas; e.g. national or regional issues, periods, movements or issues, major filmmakers, film theory and criticism. Repeatable two times. Pre: one of 361, 362, 371 or 372; or consent. DH

SPAN 499 Directed Reading and Research (V) Independent study of approved readings and research with faculty supervision. A-F only. Repeatable two times. Pre: consent of instructor and departmental approval.

SPAN 658 Seminar in Spanish Linguistics (3) Repeatable. Pre: graduate standing or consent.

SPAN 660 Medieval Spanish Literature (3) Representative readings in prose and poetry, from origins through 15th century. Pre: graduate standing or consent.

SPAN 665 (Alpha) Golden Age Literature (3) Spanish literature from the 16th and 17th centuries. (B) theater; (C) prose; (D) poetry; (E) Cervantes. Pre: graduate standing.

SPAN 669 19th-Century Spanish Realism (3) Nineteenth-century Spanish realism in the novel. Authors include Galdós, Clarín, Alarcón, Pardo Bazán, Blasco-Ibáñez, Valera. Pre: graduate standing or consent.

SPAN 670 (Alpha) 20th-Century Spanish Literature (3) Representative works from 20th-century literature. Genres: poetry, theater, essay, novel. (B) generation of 1898: (C) pre-Civil War; (D) post-Civil War. Pre: graduate standing or consent.


SPAN 681 Colonial Spanish-American Literature (3) Spanish-American literature from period of discovery to independence. Representative authors such as Sor Juana, Bernal Díaz del Castillo. Pre: graduate standing or consent.

SPAN 682 Spanish-American Poetry (3) Study of representative poets from all periods: Martí, Darió, Mistral, Guillén, Neruda, Paz, etc. Pre: graduate standing or consent.

SPAN 683 Spanish-American Short Story and Essay (3) Study of representative writers from various periods: Sor Juana, Palma, Quijote, Reyes, Borges, etc. Pre: graduate standing or consent.

SPAN 695 Seminar in Hispanic Literature (3) A period, author, genre, or region. Repeatable unlimited times with consent. Pre: graduate standing or consent.

SPAN 699 Directed Research (V) Pre: consent of department chair.

Special Education (SPED)

College of Education

SPED 404 and 485 are prerequisites for the graduate program in special education. Current TB clearance, background check, and liability insurance is a requisite for 390, 400, 490, 491, 626, 627, 628, and courses requiring practicum experiences.

SPED 201 Disability and Diversity (3) Explores the changing disability experience (from "stereotype" to "normalization") as depicted in film, literature and dialogue with persons with disabilities in the Pacific region. Students will employ "technologies for voice" to share stories. A-F only. DS

SPED 304 Foundations of Inclusive Schooling (3) Foundations of "special education" exploring phi-

loosphies, diverse and historical viewpoints, laws, and service delivery. Students reflect upon texts, films and interviews with persons with disabilities, their families and professionals to understand the culture of disability. DS

SPED 390 Student Teaching: Elementary/Secondary and Special Education (V) Full-time supervised experience in school. Repeatable up to 12 credits. A-F only. Pre: 400 and requirements for registration listed under "student teaching." Co-requisite: 391.


SPED 392 Student Teaching in Special Education Modified (V) Modified student teaching for students from another institution completing student teaching at UH or for students who have prior extensive teaching experience. A-F only. Pre: requirements for registration listed under "Student Teaching," approval of review committee and consent.

SPED 400 Field Training in Special Education (V) Students participate in classroom settings appropriate to concurrently enrolled courses; supervision provided by participating teacher and college supervisor. Repeatable up to 30 credits. A-F only. Pre: 404 (or concurrent) or consent. Co-requisite: one of 461, 462, 485 or 487.

SPED 414 Education of Gifted Students (3) Characteristics and educational provisions for gifted children and youth with particular attention to psychological aspects of creativity.

SPED 415 Education Program for the Gifted/Talented (3) Utilization and evaluation of teaching/learning models for gifted/talented students, including consideration of roles, expectations for learning, and organizational procedures. Pre: 414 or consent.

SPED 421 Strategies for Reading Difficulties (3) Overview of methods, programs, and strategies for reading instruction designed to improve the performance of elementary students, grades K-6, who experience difficulties in reading acquisition, fluency, and comprehension. A-F only.

SPED 425 Partnerships with Families and Professionals (3) Knowledge and skills for relating effectively with families and professionals on behalf of the children and youth with and without disabilities. Coverage of the context in which family members and school personnel interact. A-F only.

SPED 433 Physical Education for Students with Disabilities (4) (3 Lec, 1 1-hr. Lab) Basics of various disabilities, assessment of physical and motor skill status, individualized activity programs for children and youth with disabilities; relationships between school/community/agencies providing special programs and services. Required field experience. Repeatable one time. A-F only. Pre: KRS 270 or KRS 353, or consent. (Cross-listed as KRS 443)

SPED 444 Educating Exceptional Students in Regular Classrooms—Elementary (3) Teaching elementary students with disabilities and those who are gifted/talented. Meeting academic/social needs, classroom management, motivation, peer interaction, collaboration between special and regular educators. Includes an emphasis on instruction in writing. (Cross-listed as ITE 444)

SPED 445 Educating Exceptional Students in Regular Classrooms—Secondary (3) Teaching secondary students with disabilities and those who are gifted/talented. Meeting academic/social needs, classroom management, motivation, peer interaction, collaboration between special and regular educators. Includes an emphasis on instruction in writing. (Cross-listed as ITE 445)

SPED 446 Seminar in Special Education (3) Study of issues, trends, and research into special education programming and service delivery. Repeatable two times. Pre: consent.

SPED 451 Programs for Infants/Toddlers (3) Examination of current research, theory, issues, and models in programs for infants and toddlers including criteria for evaluation. Repeatable Pre: FAMR 230 (or concurrent) or FAMR 331 (or concurrent). (Cross-listed as EDCS 451)

SPED 452 Preschool Children—Special Needs (3) Examination of application of current research and practices for serving preschool children with special needs. Pre: FAMR 230 (or concurrent), or consent.

SPED 461 Assessment, Planning, and Instruction for Students with Mild/Moderate Disabilities (3) Techniques in the assessment, planning, and instructional process appropriate for students with mild/moderate disabilities. Stress on program development to facilitate inclusion of students with disabilities into general education environment. Pre: 404 (or concurrent), 406, and 485; or consent.

SPED 462 Assessment, Planning, and Instruction for Students with Severe Disabilities/Autism (3) Techniques in the assessment, planning, and instructional process appropriate for students with severe disabilities. Focus on program development to facilitate the inclusion of students with disabilities into general education settings. Pre: 400 (or concurrent), 404, and 485; or consent.

SPED 480 Technology for Children with Disabilities (3) Overview of technologies for children with disabilities, highlighting battery operated toys, low and high tech augmentative communication systems, software, computers and alternative input devices (keyboards, switches, trackballs, touch windows), and multimedia techniques for discovery and independence for children with disabilities and their families.

SPED 485 Classroom Organization and Management (3) Knowledge and skills related to basic organizational management of an inclusive classroom, including scheduling, grouping, and stress and time management; techniques of applied behavior management, emphasizing behavior change and practical implementation of learning principles.

SPED 486 Theoretical Basis for Teaching Special-Needs Students (3) Survey of biophysical, behavioral, social/ecological, psychodynamic/psychoeducational, cognitive/developmental, counter-theoretical approaches to teaching exceptional students. Opportunity for the development and/or strengthening of one’s own theoretical frame of reference.

SPED 487 Characteristics/Strategies for Teaching At-Risk Students (3) Survey of educational, behavioral, and emotional characteristics of students who are at-risk for school failure and strategies to work with such students.

SPED 490 Internship in Special Education-Post Baccaulareate Programs (6) Supervised teaching experience instructing students with special needs (i.e., students with mental retardation, emotional/behavioral disorders, learning disabilities, severe multiple disabilities) in on-the-job K-12 educational settings. Repeatable two times. Restricted to students employed in special education settings and who are enrolled in either the PBCE and SpEd dual prep or PBSCspEd programs; must enroll for two consecutive semesters. A-F only. Pre: 400 (6 crs) and consent.

SPED 491 Student Teaching in Special Education-Post Baccaulareate Programs (6) Supervised teaching experience instructing students with special needs (i.e., students with mental retardation, emotional/behavioral disorders, learning disabilities, severe multiple disabilities) in K-12 educational settings under a master teacher. Repeatable one time. Restricted to students who are enrolled in either the
in student performance. Emphasis on the conceptual basis for changing behavior and use of technologies for changing behavior in school and community settings. Pr: 485 or consent.

SPED 605 Collaboration in School and Community Settings (3) Collaboration skills necessary to function as team members and to ensure the success of students with disabilities in inclusive school and community settings. Pr: consent.

SPED 606 Language Development for Deaf Children (3) General theories of first and second language development applied to development of ASL and English in deaf children. Relationship of theory to educational practice. Taught in ASL and English. Repeatable one time. Pre-admission into Deaf Education program or consent. (Alt. years)

SPED 607 Audiology and Spoken English for Deaf Students (3) Developmental principles of audiology and speech (i.e., spoken English) will be used to examine assessment procedures and intervention strategies appropriate to deaf students in a variety of educational placements. Classroom applications will be presented. Taught in ASL and English. Repeatable one time. A-F only. Pr: admission into Deaf Education program or consent. (Alt. years)

SPED 608 Literacy Development for Deaf Students (3) Basic concepts related to language, language development and recognition of language-related learning problems of deaf students; strategies for teaching reading and writing to deaf students. Repeatable one time. A-F only. Pr: 461 and 606, or consent. (Alt. years)


SPED 610 Advanced Assessment and Curriculum Development—Deaf (3) Assessment methods and techniques used with deaf students that emphasize the bond between curriculum-based assessment and curriculum-based programming through planning and providing cyclical instruction across content areas based on feedback. Taught in ASL and English. Repeatable one time. A-F only. Pr: 609 or consent. (Alt. years)

SPED 611 Advanced Methods and Strategies for Students with Mild/Moderate Disabilities (3) Techniques for providing effective instruction including: best instructional practice, lesson planning, teacher-directed and student-directed instructional strategies, and curricular approaches for working with students with mild/moderate disabilities. A-F only. Pr: 404, 461, and 485; or consent. Co-requisite: 626.

SPED 612 Individuals with Severe Disabilities (3) Etiology, characteristics, and developmental concerns among individuals with severe disabilities; historical, philosophical, theoretical and legal issues affecting individuals with severe disabilities; multicultural, family, and consumer issues; professional and ethical issues providing services. Pr: 404 or consent.

SPED 613 Advanced Assessment and Curriculum Development (3) Assessment methods and techniques that emphasize the bond between curriculum-based assessment and curriculum-based programming. Planning and cyclical instruction across content areas based on ongoing diagnostic assessment. Pr: 461 or consent. Co-requisite: 626.

SPED 614 Assessment and Instruction—Severe Disabilities and Autism (3) Basic principles of assessment, instructional development; application of formal and informal assessment procedures for goal selection, formulating instructional plans, and adapting instructional materials to accommodate learning needs of students with severe disabilities and autism. Pr: consent.

SPED 615 Family-Centered Approaches in Deaf Education (1) Prepare teachers to deliver family-centered home-based services to families of deaf children using the SKI-H model. Course will be taught in ASL and English. Repeatable one time. A-F only. Pr: 606, 607 and 608; or consent. (Alt. years)

SPED 616 Collaboration/Working with Deaf Students in Inclusive Settings (3) Collaboration skills for working with general education teachers, specialists, paraprofessionals, families and community members to support the success of deaf students in inclusive settings. Taught in ASL and English. Repeatable one time. A-F only. Pr: 606, 607 and 608; or consent. (Alt. years)

SPED 617 Transition Strategies for Deaf Students (1) Collaborative model for facilitating the transition of deaf and hard-of-hearing students to develop appropriate transition plans and effective plans of study. Taught in ASL and English. Repeatable one time. A-F only. Pr: 606, 607 and 608; or consent. (Alt. years)

SPED 618 Adaptations and Special Procedures—Students/Severe Disabilities/Autism (3) Adaptations and special intervention procedures to support the individualization of services to students with severe disabilities; selection of appropriate materials, teaching techniques, curriculum development. Pr: 611 or consent.

SPED 621 Language Arts Strategies: Students with Mild/Moderate Disabilities (3) Basic concepts related to language, language development, and recognition of language-related learning problems of students with mild/moderate disabilities; strategies for teaching language arts curricula (listening, speaking, reading, writing) to students of all ages with learning problems. Pr: 611 or consent.

SPED 622 Children’s Literature for Deaf Students (3) Introduction to English literature translated into American Sign Language (ASL) including discussion of ASL literature genres, the importance of translation, selection of literature; story reading, book reading, and retelling. Taught in ASL. Repeatable one time. A-F only. Pr: 609 or consent. (Alt. years)

SPED 625 Teaching Skills for Social Competence (3) Issues in social development, self-determination, and social skills competence training for children and youth with disabilities; experience in group social skills training and development of individualized programs. Pr: either 485 or 630, and either 611 or 614 or consent.

SPED 626 Field Experiences in Special Education (3) Students spend a minimum of nine hours per week in settings appropriate to concurrently enrolled courses; supervision provided by participating teacher and college supervisor. Repeatable three times. Pr: consent.

SPED 627 Advanced Practicum (6) Supervised education/community experiences; minimum of 20 hours weekly with special-needs population (MR, LD, SED, SMH); pre-school through postsecondary settings (public/private). Related seminar or equivalent and completion of SPED core required. Repeatable one time. Pr: consent.

SPED 628 Internship (3) Supervised education/community experiences with special needs populations (MR, LD, SED, SMH); preschool through postsecondary settings. Completion of SPED core required; must enroll for two consecutive semes-
SPED 620 Clinical Practice Special Projects (V) Development and implementation of a field-based research professional development project under the direction of the student’s advisor; limited to students enrolled in the interdisciplinary program. Repeatable up to 12 credits. A-F only. Pre: advisor’s approval.


SPED 631 Early Intervention for Special Populations (3) Issues important to early childhood special education. Early screening and assessment, working with families, curriculum options/models, program evaluation. Pre: 404 or consent.


SPED 633 Motor Development/Intervention for Students with Severe Disabilities (3) Normal/abnormal motor development; description/etiology of physically disabling conditions influencing motor development; analysis/application of assessment/intervention strategies to promote motor development; positioning and handling skills. Pre: 614 (or concurrent) or consent.

SPED 634 Adapted Physical Education (3) Factors essential to practice of adapted physical education; disabilities, problems, and needs of physically challenged pupils with emphasis on accepted procedures for meeting these needs. Repeatable one time. Pre: consent. (Cross-listed as KRS 634)

SPED 635 Procedures for Preschool Children with Disabilities/Autism (3) Assessment and intervention strategies to promote behavior change with young children with disabilities. Promoting child skill gains and integrated programming options. Pre: 631 or consent.

SPED 640 Seminar on Mild/Moderate Disabilities (3) Study, issues, research, program development in the area of mild/moderate disabilities. Repeatable two times. Pre: consent.

SPED 642 Seminar on Applied Research/Special Education (3) Study and development of applied research topics in special education. Repeatable two times. Pre: consent.

SPED 652 Transition/Supported Employment (3) Transition planning for youth with disabilities in preparation for employment as adults in private and public sector businesses. Pre: consent.

SPED 695 Plan B Master’s Project (V) Independent study for students working on a Plan B master’s project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. Pre: graduate standing in Special Education.

SPED 699 Directed Reading/Research (V) Individually reading/research. Pre: consent of instructor and department chair.


SPED 705 Seminar in Exceptionalities (3) Current and historical topics, issues, and trends in the field of exceptionalities. Repeatable with different content. Pre: consent.

SPED 706 Doctoral Internship (6) Supervised internship (minimum 18 hours per week) in program development and administration or research in the student’s area of emphasis. Pre: consent.

SPED 740 Single-Case Experimental Design (3) Advanced single-case experimental design; examines the logic of internal and external validity of small “N” design and its functionalist foundations. Pre: consent.

SPED 745 Special Topics in Exceptionalities (3) Critical examination and discussion of historical or current topic in early intervention, special education, and/or developmental disabilities. Repeatable two times. A-F only. (Once a year)

SPED 760 Grant Development/Procurement (3) Overview of grant development and procurement processes related to special education personnel preparation and research and demonstration programs. Students design a grant proposal related to a particular problem or need within their employment settings. Pre: consent.

Speech (SP)

College of Arts and Humanities

SP 151 Personal and Public Speech (3) Develops communication skills necessary to function effectively in today’s society. Students will enhance their communication skills in one-on-one situations, public speaking, and small group situations. Ideal for new majors and upper majors. DA

SP 170 Introduction to Nonverbal Communication (3) Beginning course on the fundamental components of nonverbal communication. Aspects of body movements, facial expressions, eye behavior, physical appearance, voice, touch, space, smell, time, and environmental features will be examined in a lecture/discussion format. Extensive practice in skills.

DS

SP 181 Introduction to Interpersonal Communication (3) Introduction to basic principles of interaction between two people. Emphasis is on enhancement of skills in a variety of interpersonal contexts.

DS

SP 185 Multicultural Communication Skills (3) Expose students to practical skills needed for effective intercultural communication. Offer guidelines for improvement in diverse cultural settings such as business, education, counseling, and healthcare.

DS

SP 251 Principles of Effective Public Speaking (3) Combined lecture/laboratory providing extensive practice in preparing and presenting effective public speeches with special emphasis on organization, outlining, audience analysis, analytical reasoning, and delivery skills.

DA

SP 290 Interviewing (3) Principles and practice: training in informational, persuasive, employment, appraisal, and research interviewing. Pre: one of 151, 170, 181, 185, 251 or 301; or consent. NI

SP 301 Introduction to Speech Communication Theories (3) Introduction to the theoretical perspectives that are the foundations of the speech communication discipline. Pre: one of 151, 170, 181, 185, or 251; or consent.

DS

SP 302 Research Methods (3) Introduction to methods of inquiry in the field of speech. Topics include research design and problem formulation, sampling, analytic and observational techniques, and data interpretation. Pre: 200-level speech course (or concurrent) or consent.

DS

SP 333 Storytelling (3) Aesthetic communication through storytelling for entertainment and education. Oral tradition; analysis of story types; techniques of preparation and presentation; performance. Pre: one of 151, 170, 181, 185, 251 or 301; or consent. DA

Key to symbols & abbreviations: see the first page of this section.

SP 335 Story Theater (3) Techniques and procedures for staging and performing narrative fiction. Pre: one of 151, 170, 181, 185, 251 or 301; or consent. DA

SP 351 Professional Presentations (3) Extends application of public speaking skills to professional contexts: group sales, press conferences, and corporate/virtual reporting. Focus on organization, preparation, and delivery. Pre: 251 or consent.

SP 352 Group Decision-Making and Leadership (3) Study of decision-making within the small group. Effects of organization, leadership, membership, and goals on achieving group purposes. Pre: one of 151, 170, 181, 185, 251 or 301; or consent.

SP 353 Argumentation and Debate (3) Adapting communication theory to forensic strategies for social action. Practice in formal argument. Pre: one of 151, 170, 181, 185, 251 or 301; or consent.

SP 361 Leadership Skills (3) Principles and practices of organizational speech and its relationship to networks, leadership, power, conflict, cultures, and other contemporary views of organizational work, change, and development. Pre: one of 151, 170, 181, 185, 251 or 301; or consent. DS

SP 370 Verbal Communication (3) Roles of language; perception and assumption in human relationships; relation of language symbols to emotion and attitudes. Pre: upper division standing or consent.

DS

SP 380 Family Communication (3) Focuses on the role of interaction patterns (both constructive and destructive) in the evolution of family communications. The impact of family dynamics upon these interaction patterns is given equal attention. Pre: one of 151, 170, 181, 185, 251 or 301; or consent. DS

SP 381 Interpersonal Relations (3) Theory and research on the development, maintenance, and termination of interpersonal relationships. Pre: one of 151, 170, 181, 185, 251 or 301; or consent. DS

SP 385 Culture and Communication (3) Survey of major factors affecting interpersonal communication between members of different cultures. Emphasis upon interaction between U.S. and Asian-Pacific peoples. Pre: one of 151, 170, 181, 185, 251 or 301; or consent.

DS

SP 386 Special Topics in Culture and Communication (3) Contemporary research and theory on intercultural communication. Pre: one of 151, 170, 181, 185, 251 or 301; or consent. DS

SP 390 Interrogation and Interviewing (3) Survey of theory and research on the communicative demands of obtaining reliable information from others. Pre: one of 151, 170, 181, 185, 251 or 301; or consent. DS

SP 395 Research on Speech Behavior (3) Survey of research on speech behavior. Verbal and nonverbal data collection; analysis of research data. Students design and implement a research project. Repeatable three times. Pre: 301 and 302. DS

SP 399 Internship (V) Analysis and application of speech/communication knowledge and behaviors in organizational settings. Repeatable up to six credits. A-F only. Pre: consent.

SP 454 Political Communication (3) Survey of interpersonal and mass communication theories in the political context. Topics may include communication in public opinion processes, elections, debates, political campaigning and lobbying. Pre: upper division standing or consent. DS
SP 455 Conflict Management (3) Examination of the theories, assumptions, practices, models, and techniques of managing interpersonal conflicts. Pre: one of 151, 170, 181, 185, 251, 301 or 381. DS

SP 464 Analysis of Public Communication (3) Analysis of communication in public settings; perspectives on the study of argumentative strategy and public messages (including political or public service ads). Pre: 364 or consent. DS

SP 470 Nonverbal Communication (3) Understanding communication beyond the words themselves. Review of theory and research on gestures, facial expressions, touch, personal space, and physical appearance. Pre: 151, 170, 181, 185 or 251; or consent. DS

SP 481 Relational Management (3) Survey and critical discussion of current theory and research in relational management literature. Focus on conversation management, deception, jealousy, privacy, communication of emotions. Pre: 301 or 302 (or concurrent), and 381; or consent. DS

SP 490 The Helping Relationship (3) Theory and application of personal and interpersonal elements affecting communication in human-service professions. Supervised practice, video lab. Pre: one of 151, 251 or 301 or PSY 100. (Cross-listed as PSY 477) DS

SP 493 Teaching Speech (6) For speech majors who lead, under supervision, a freshman seminar section of speech. Pre: senior standing and consent.

SP 495 Health Communication (3) Develop understanding of how speech communication functions to facilitate or inhibit the delivery of health care in a variety of contexts. Focus on compliance process, physician-patient interaction, nurse-physician interaction. Pre: 364 or 381, or consent. DS

SP 499 Directed Reading (V) Pre: consent of department chair and instructor.

SP 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Repeatable two times. Pre: master’s Plan B candidate and consent.

SP 601 Theories in Speech Communication (3) Major theoretical foundations; humanistic and social scientific perspectives. Examination of the research and the development of different models of human communication. SP majors only. Pre: graduate standing in SP, or consent.

SP 602 Research Methods in Speech (3) Design and analysis of quantitative research in speech. Focus on measurement, research design, descriptive and inferential statistics. SP majors only. Pre: graduate standing in SP, or consent.

SP 620 Practicum for Instructional Communication (V) Combined seminar and lecture/discussion format on techniques and procedures for teaching speech skills and their related components in a laboratory setting. CR/NC only. Repeatable one time. SP majors only. Pre: graduate standing in SP, or consent.

SP 660 Business Communication (3) Analysis of communication issues in business through discussion of verbal/nonverbal messages, interpersonal relationships, conflict, and persuasion. Focus on interview, group communication, and public speaking skills. Pre: 601 (or concurrent) or 602 (or concurrent), or consent.

SP 664 Persuasion and Social Influence (3) Theories of persuasion and resistance to persuasion; assessment of attitudes and measurement of change. Pre: 601 (or concurrent) or 602 (or concurrent) or consent.

SP 670 Message Processing (3) Theories of human message processing. Effects of verbal and nonverbal codes, channels, and message forms on encoding and decoding. Pre: 601 (or concurrent) or 602 (or concurrent); or consent.

SP 681 Relational Communication (3) Major models and theories of interpersonal speech communication; research on interpersonal relationships; interaction and functions of human discourse. Pre: 601 (or concurrent) and 602 (or concurrent); or consent.

SP 699 Directed Research (V) Repeatable unlimited times. Only three credits can count toward degree.

SP 700 Thesis Research (V) Repeatable three times.

SP 702 Researching Relational Communication (3) Methodological and analytical issues of research related to relational communication. Focus on repeated measures, multivariate analysis, longitudinal analysis, and reliability and validity issues. Pre: 602 or consent.

SP 721 Approaches to Instructional Communication (3) Speech communication theories and models in instructional environment; emphasis on development training in educational settings. Pre: 601 (or concurrent) or 602 (or concurrent), or consent.

SP 752 Group Decision-Making (3) Theory, concepts, research, and application of small group interaction and decision-making. Pre: 601 (or concurrent) or 602 (or concurrent), or consent.

SP 764 Seminar in Persuasion and Influence (3) Contemporary research in persuasion and influence. Repeatable two times. Pre: 664 (or concurrent) or consent.

SP 770 Issues in Message Processing (3) Contemporary research in verbal and nonverbal message processing. Repeatable one time. Pre: 601 (or concurrent) or 602 (or concurrent), or consent.

SP 781 Seminar in Relational Communication (3) Contemporary research in interpersonal relations. Repeatable one time. Pre: 681 or consent.

SP 785 Research on Intercultural Communication (3) Functional approach to the study of speech communication in intercultural settings. Examination of culture-based variables and their impact on social influence, relational management, and message processing. Repeatable one time. Pre: 664, 670 or 681; or consent.

SP 795 Seminar in Health Communication Research (3) Contemporary interpersonal and/or public communication issues in health communication research. Topics include speech communication functions such as information management, interpersonal influence, relational management, emotional management, social influence. Repeatable one time. Pre: 664, 670 or 681; or consent.

Surgery (SURG) School of Medicine

SURG 531 Surgery Clerkship I, II, (10) A clinically based, introductory course in general surgery and selected subspecialties. Repeatable one time. CRM only. Pre: BIOM 555 and third-year standing.

SURG 532 Surgery Longitudinal Clerkship (5) A clinically based, year-long, introductory in general surgery and selected subspecialties. Outpatient-conducted one day per week for six months in a community-based, ambulatory care facility. Inpatient-conducted for four weeks in an acute-care hospital facility. Repeatable one time. CR/NC only.

SURG 541 Emergency Medical Care (6) Clinical experiences in management of medical, surgical, and psychiatric problems requiring urgent care. Pre: 531 and fourth-year standing.

SURG 545 (Alpha) Unit VII Electives in Surgery (V) Advanced clinical experience in: (B) urology; (C) ophthalmology; (D) otolaryngology; (E) plastic surgery; (F) neurosurgery; (G) orthopaedic; (H) anesthesia; (I) surgical intensive care; (J) subinternship—general surgery; (K) subinternship—pediatric surgery; (M) radiology-diagnostic; (N) radiology-oncology; (O) emergency medicine; (P) other surgical specialties; (Q) subinternship—cardiovascular surgery; (R) surgical research; (S) surgical anatomy; (T) surgical preceptorship in Asia. Repeatable one time. CR/NC only. Pre: 531 or 532 for all except (M) and consent for (R) and (S).

Tahitian (TAHT)

College of Languages, Linguistics and Literature

TAHT 103 First Year Tahitian (3) Basic core skills of listening, speaking and grammar of spoken Tahitian in a condensed format. Meets three 50-minute sessions weekly.

TAHT 104 First Year Tahitian (3) Basic core skills of listening, speaking and grammar of spoken Tahitian in a condensed format. Meets three 50-minute sessions weekly. Pre: 103 or consent.

TAHT 203 Second Year Tahitian (3) Intermediate core skills of listening, speaking, and knowledge of grammar for spoken Tahitian in a condensed format. Meets three 50-minute sessions weekly. Pre: 104. NI

TAHT 204 Second Year Tahitian (3) Intermediate core skills of listening, speaking, and knowledge of grammar for spoken Tahitian in a condensed format. Meets three 50-minute sessions weekly. Pre: 203 or consent. NI

TAHT 301 Third-Level Tahitian (3) Continuation of 202. Conversation, advanced reading, composition. Pre: 204 or consent.

TAHT 302 Third-Level Tahitian (3) Continuation of 301.

TAHT 358 Third-Level Tahitian Abroad (3) Full-time formal instruction at the University of French Polynesia in Tahiti. Third-year level in Tahitian language and culture. Pre: 204 and consent.

TAHT 359 Third-Level Tahitian Abroad (3) Continuation of 358. Pre: 301 or 358; and consent.

TAHT 401 Fourth-Level Tahitian (3) Continuation of 302. Advanced conversation, reading, and writing with focus on modern formal and colloquial Tahitian styles. The language in the realms of storytelling, radio, folklore, traditional and modern writing. Survey of modern and classical language. Pre: 302 or consent.

TAHT 402 Fourth-Level Tahitian (3) Continuation of 401. Pre: 401 or consent.

TAHT 458 Fourth-Level Tahitian Abroad (3) Full-time formal instruction at the University of French Polynesia in Tahiti. Fourth-year level in Tahitian language and culture. Pre: 302 and consent.

TAHT 459 Fourth-Level Tahitian Abroad (3) Continuation of 458. Pre: 401 or 458, and consent.

Thai (THAI)

College of Languages, Linguistics and Literature

THAI 101 Beginning Thai I (4) Listening, speaking, reading, writing. Structural points introduced inductively. Meets one hour daily, Monday–Friday; four out of five hours devoted to directed drill and practice; daily lab work. HSL

THAI 102 Beginning Thai II (4) Continuation of 101. Pre: 101 or consent. HSL

THAI 107 Reading and Writing Thai Script (3) Focus on Thai script reading and writing skills. For students with some aural and spoken skills in Standard Thai equivalent to those completing THAI 102 or higher, but cannot read or write in Thai script. Lab work. Pre: consent. HSL

THAI 112 Intensive Elementary Thai (10) HSL
THAI 201 Intermediate Thai I (4) Continuation of 102. Integrated development of skills in listening, speaking, reading and writing in Thai script. Meets 5 hours a week, lab work. Pre: 102 or consent. NI HSL

THAI 202 Intermediate Thai II (4) Continuation of 201. Pre: 201 or consent. NI HSL

THAI 212 Intensive Intermediate Thai (10) NI HSL

THEA 301 Third-Level Thai (3) Continuation of 202. Advanced conversation and reading, emphasis on modern written texts. Lab work. Pre: 202 or equivalent or consent.

THEA 302 Third-Level Thai (3) Continuation of 301. Pre: 301 or equivalent.

THEA 303 Accelerated Third-Level Thai (6) Continuation of 202. Meets six hours a week. Advanced conversation and reading; emphasis on modern written texts. Lab work. Pre: 202 or equivalent.

THEA 401 Fourth-Level Thai (3) Continuation of 302/303. Advanced conversation and reading of specialized, scholarly texts. Pre: 302 or 303 or equivalent.

THEA 402 Fourth-Level Thai (3) Continuation of 401. Pre: 401.


THAI 415 Thai Language in the Media (3) Development of reading and oral comprehension of authentic Thai language used in print and broadcast media through reading Thai newspapers, viewing and listening to Thai television and radio programs. Oral and written reports. Repeatable one time. Pre: 402, 404 (or equivalent), or consent.

THAI 451 Structure of Thai (3) Standard language and regional and social variants. Pre: LING 320 and one Southeast Asian language. DH

THAI 452 Structure of Thai (3) Continuation of 451. DH

THAI 461 (Alpha) Readings in Thai Contemporary Prose Literature: the Short Story (3) Selected readings in Thai short stories from early 1930s to present. Oral and written reviews (B) 1930-1969; (C) 1970-present. Repeatable one time with consent. Pre: 401 or consent. DL

THAI 462 (Alpha) Readings in Thai Contemporary Prose Literature: the Novel (3) Selected readings in Thai novels from early 1930s to present. Oral and written reviews. (B) 1930-1969; (C) 1970-present. Repeatable one time with consent. Pre: 402, 461(B) or 461(C), or consent. DL

Theater (THEA)

College of Arts and Humanities

THEA 101 Introduction to World Drama and Theatre (3) (2 Lec, 1 1-hr Lab) Performance traditions of Africa, Asia, Australia, Europe, North America, and the Pacific Islands from the 5th century B.C. to the present. Analysis of political, religious, and technological conditions of theatre. Includes practical theatre workshop. DA

THEA 200 (Alpha) Beginning Theater Practicum (1) Beginning workshop experience in the practical application of theater skills. (B) acting; (C) stagecraft; (D) costume; (E) theater management. Repeatable up to four credits in each alpha. Pre: for 200B, audition and performance of role in a Department of Theatre and Dance production; for 200E theatre majors only or consent.

THEA 201 Introduction to the Art of the Film (3) Introduction to the aesthetics of silent and sound movies. Technical subjects analyzed only as they relate to theme and style. DH

THEA 214 Development of the Sound Film (3) Growth and changes in aesthetics of the sound film from 1929 to present; films by Renoir, Welles, Eisenstein, etc. Pre: 201. (Alt. years) NI DH

THEA 220 Beginning Voice and Movement (3) Introduction to vocal and movement techniques to increase self-awareness and potential for self-expression. Repeatable one time. Pre: consent. DA

THEA 221 Acting I: Introduction to Performance (3) Concentration on voice, relaxation, body awareness, and freedom from self-consciousness through theater games, improvisations, monologues, and exercises. Emphasis on ensemble work. Repeatable one time with consent. DA

THEA 222 Acting II: Basic Scene Study (3) Basic character study and understanding of creation of roles through working on scenes from modern and contemporary plays. Repeatable one time with consent. Pre: 221. NI DA

THEA 240 Introduction to Theater Production (3) (3 Lec, 1 3-hr Lab) Survey class introducing basic tools, materials and skills of Technical Theatre: production, rigging, lighting, costume, make-up and painting. DA

THEA 241 Film/TV Production Process (3) Entry-level course details three phases of the production process: pre-production, production, and post-production. A-F only. Pre: consent. DA

THEA 311 World Theater I: Myth to Drama (3) Myth and ritual into drama, 1000 B.C.-1500 A.D. Development of Western and Asian secular drama from sacred and ritual beginnings. Required of all majors. Pre: 101 or consent. (Alt. years) DL

THEA 312 World Theater II: Elite–Popular (3) Court and marketplace, 1500–1700. Contrast between elitist and popular forms in Western and Asian theater. Required of all majors. Pre: 311 or consent. (Alt. years) DL

THEA 318 Playwriting (3) One-act plays; practice in writing in dramatic form. Repeatable one time. Pre: grade of B or better in composition or consent. DA

THEA 319 Screenwriting (3) Characterization, structure, theme, image, and other components of writing for film. Pre: 201 and grade of B or better in composition, or consent. (Alt. years) DA

THEA 321 Acting III: Monologue/Audition Techniques (3) Focus on the individual student: preparation of material from all genres and styles with emphasis on line reading and responsiveness to direction. Repeatable one time with consent. Pre: 222 and consent. DA

THEA 322 Acting IV: Method Acting (3) Further exploration of character development through exercises and scene study. Class presentation of scenes for criticism and review. Repeatable one time with consent. Pre: 222 and consent. DA

THEA 323 Film/TV Acting (3) Acting techniques for film and TV production. Students appear in scenes from TV and film scripts. Repeatable one time. Pre: 101 or 222 or COM 201 or consent. DA

THEA 324 Advanced Film/TV Acting (3) Advanced acting techniques for film and TV production. Taping/filming of scenes and full-length scripts. Repeatable one time. Pre: 323 and consent. DA

THEA 325 Asian Acting for Western Actors (3) Principles of acting based on traditional Asian models. Voice, movement exercises. Pre: 222. DA

THEA 334 Taiji (T’ai Chi) for Actors I (3) Taijiqian (T’ai Chi Ch’uan) movement training. Repeatable two times. Pre: sophomore standing or higher, or consent. (Cross-listed as DNCE 334) DA

THEA 343 Theatre Production (3) Workshop in principals and techniques of contemporary technical design, drafting, scenery construction, rigging, special effects, and sound design and production. Pre: any course in THEA or DNCE, production experience or consent. (Consent required for production experience option) (Alt. years) DA

THEA 345 Introduction to Lighting Design and Technology (3) Basic principles of lighting design and associated technologies. Includes functions and properties of light, lighting and control equipment, working procedures, and drafting and paperwork techniques. Pre: 240 or DNCE 250, or consent. (Once a year) DA

THEA 353 Creative Thinking in Scenic Design (3) Workshop introducing the basic principles and approaches of scenic design, with emphasis on the creative process. Pre: a course in THEA or DNCE, production experience, or consent. (Consent required for production experience option) DA

THEA 354 Introduction to Costume Construction (4) Workshop introducing basic principles and techniques of theatrical costume construction, and a survey of theatrical-related resource materials. DA

THEA 356 Costume for the Stage (3) Survey of historical costume; workshop in translation of historical styles into theatrical form. Repeatable one time. Pre: 240 or consent. DA

THEA 357 Stage Makeup Workshop (3) Theory and practice; corrective and three-dimensional makeup, modeling with paint, beads, mustaches. Repeatable one time. Pre: 240 or consent. DA

THEA 380 Beginning Directing (3) Basic practical course in how to direct a play. Students will direct scenes. Pre: upper division theatre majors or consent. DA

THEA 400 (Alpha) Advanced Theater Practicum (I) Advanced workshop experience in the practical application of theater skills. (B) acting; (C) stagecraft; (D) costume; (E) theater management. Repeatable up to four credits per alpha. Pre: audition and performance of role in a Department of Theatre and Dance production for (B); consent for (C) and (D); theatre majors only or consent for (E).

THEA 411 World Theater III: Realism (3) The rise of realism, 1700–1918. Development of romantic and regional forms of drama and theater, and the impact of realism. Required of all majors. Pre: 312 or consent. (Alt. years) DL

THEA 412 World Theater IV: Modern (3) Pluralism in modern theater, 1918–present. Reactions to realism and current Western and Asian alternative theater forms. Required of all majors. Pre: 411 or consent. (Alt. years) DL

THEA 413 (Alpha) Approaches to Dramatic Texts (3) Intensive analysis and discussion of dramatic texts from a variety of authors. Understanding trends and variations in dramatic form and content. (B) contemporary British and American drama; (C) political drama in the West. Pre: one of 311, 312, 411, 412, or consent. DA

THEA 416 Women in Drama and Theater (3) The role of women and their presentation in theater from ancient Greece to the present; focus on socio-political status of women. Pre: 311. (Cross-listed as WS 414) DH

THEA 418 Advanced Playwriting (3) Workshop in experimental writing in dramatic form; full-length play. Repeatable one time. Pre: 318. DA

THEA 420 (Alpha) Intermediate Voice for the Actor (3) Training in proper and dynamic use of the voice for the actor. (B) Western traditions; (C) Asian traditions. Repeatable two times. Pre: 220 or consent. DA
THEA 421 Acting V: Musical Comedy (3)
Training in skills required to perform in musicals. Students present scenes from musical comedies for criticism and review. Repeatable two times with consent. Pre: one of 321, 322, MUS 231B, or consent; and/or audition. (Cross-listed as MUS 421) DA

THEA 422 Acting VI: Period Styles (3)
Presentation acting in comedy and tragedy; emphasis on performance styles in Elizabethan, Restoration, and 18th-century drama. Repeatable one time with consent. Pre: 321 and 322, or consent. DA

THEA 426 South/Southeast Asian Acting Workshop (3) Training in skills and techniques for selected traditional Chinese theater forms. Emphasis on movement and vocal technique. Repeatable to six credits. Pre: 222 or consent. (Alt. years) DA

THEA 427 Chinese Acting Workshop (V) Training in skills and techniques for selected traditional Chinese theater forms. Emphasis on movement and vocal technique. Repeatable to six credits. Pre: 222 or consent. (Alt. years) DA

THEA 428 Japanese Acting Workshop (V) Training in skills and techniques for selected traditional Japanese theater forms. Emphasis on movement and vocal technique. Repeatable to six credits. Pre: 222 or consent. (Alt. years) DA

THEA 429 Contemporary Performance Practices (3) Focus on individual training in the skills and techniques of contemporary experimental theater including acting, directing, and self-scripting. Repeatable two times. Pre: one of 222, 318, 380, or consent. DA

THEA 433 Movement Workshop (V) Special workshops in movement relating to specific departmental theatrical productions beyond the scope of movement taught in 437 and 438. Repeatable one time. Pre: one of 435, DNCE 435, or consent. (Alt. years) (Cross-listed as DNCE 433) DA

THEA 434 Taiji (T’ai Chi) for Actors II (3) Intermediate-level Taijiquan (T’ai Chi Ch’uan) movement training. Repeatable two times. Pre: 334 or consent. (Cross-listed as DNCE 434) DA

THEA 435 Movement for Actors (3) Training actors to discover experientially the sources of movement; to teach skills for analyzing movement for its mechanical, anatomical, spatial, and dynamic content; and then to apply these skills in a role. Pre: 222 or consent. (Cross-listed as DNCE 435) DA

THEA 436 Advanced Movement for Actors (3) Detailed development of material presented in 435. Focus on Barteneff fundamentals and movement analysis as it applies to the physical interpretation of theatrical roles. Pre: one of 435, DNCE 435, or consent. (Alt. years) (Cross-listed as DNCE 436) DA

THEA 437 Period Movement Styles, 1450–1650 (3) Movement styles and social movement of European societies in the Renaissance and early Baroque periods. Pre: one of 435 or DNCE 435, or one semester of a 100-level dance technique class. (Alt. years) (Cross-listed as DNCE 437) DA

THEA 438 Period Movement Styles, 1650–1800 (3) Movement styles and social movement of the Baroque and pre-Romantic periods in Europe and the American Colonies. Pre: one of 435, DNCE 435, one semester of a 100-level dance technique class, or consent. (Alt. years) (Cross-listed as DNCE 438) DA

THEA 439 Musical Theater Dance Forms (3) Theatrical dance forms used in 20th-century musical theater. Pre: 100 level or above dance technique class, 421, or consent. (Alt. years) (Cross-listed as DNCE 439) DA

THEA 445 Intermediate Lighting Design (3) Workshop in intermediate techniques and skills of lighting design; storytelling, analysis, research, investigation, questioning, problem solving and the execution of successful design projects. Pre: 345. DA

THEA 446 Topics in Costume Construction (3) In-depth exploration of costume production techniques; construction, crafts, and new materials; Western and Asian. Repeatable one time. Pre: 356 or consent. DA

THEA 447 Stage Management (3) Business, organization and management for theater and dance productions. Pre: junior standing or consent.

THEA 448 Introduction to Computer-Aided Design for the Theatre (3) Basic concepts and techniques of 2D computer-aid design. Lecture/ workshop covers language and commands common to most CAD packages with a focus on technical drawings for theatre design and an introduction to 3D computer drafting and modeling techniques. Pre: 345 or consent. (Once a year)

THEA 453 Scenic Design (3) Workshop in advanced techniques and skills of scenic design; model making, rendering, and drafting. Pre: 353 or consent. DA

THEA 456 Costume Design (3) Advanced techniques and skills in design; intensive work on design problems in plays from various periods. Pre: 356 or consent. DA

THEA 462 Drama and Theater of Oceania (3) Survey of the contemporary drama and theater of Oceania that combines island and Western traditions. Includes Papua New Guinea, Hawai‘i, Fiji, Samoa, Australia, New Zealand. Pre: 101 or ANT 350, or consent. (Cross-listed as PACS 462) DH

THEA 464 Drama and Theater of Southeast Asia and India (3) Court, folk, popular traditions, and the manner of their production. Pre: consent. DH

THEA 465 Drama and Theater of China (3) Yuan, southern, spoken drama; Beijing opera and the manner of their production. Pre: consent.

THEA 466 Drama and Theater of Japan (3) No, Kyogen, Bunraku, Kabuki, modern drama, and the manner of their production. Pre: junior standing.

THEA 470 Creative Drama (3) Dramatic activities for young people. For teachers, group workers, recreation majors, and others dealing with children. Supervised field activities. Pre: junior standing or consent. DA

THEA 474 Theater for Children (3) Theories and principles of formal theater for children. Study of and practice in the selection, direction, and production of plays. Pre: junior standing or higher, or consent. DA

THEA 475 Puppetry for Young Children (3) Methods of constructing puppets and stages with and for children 3 to 8 years of age. Use of puppets in the creative arts. Fieldwork. Pre: junior standing or consent.

THEA 476 Puppetry (3) History and scope of puppetry. Construction and presentation of puppets for adult and child audiences. Repeatable one time. Pre: junior standing or above, or consent. DA

THEA 477 Masks and Giant Puppets (3) History, construction, and performance techniques for masks and large puppets. For teachers, recreation directors, and others working with students aged 10 to 18 and adults. Pre: junior standing or above, or consent. DA

THEA 480 Intermediate Directing (3) Workshop; students direct one-act plays. Repeatable one time with consent. Pre: 380 and consent. (Alt. years) DA

THEA 490 Experimental Theater Studio (3) Working collectively, students research, write, design, develop, and perform a full-length production. Repeatable two times. Pre: 6 credits above the 200 level in acting, directing, playwriting, dancing; or consent. DA

THEA 492 (Alpha) Topics in Drama and Theater (3) B Qigong (Ch’i Kung) for actors; (C) Shakespeare in performance. Skills and techniques for performing in Shakespearean productions; (D) topics in European theatre. Repeatable one time per topic, repeatable two times for (B). Pre: 434 or consent for (B), 222, or consent for (C), junior standing or consent for (D).

THEA 499 Directed Work (V) Individual projects; tutorial. Repeatable two times. Pre: consent.

THEA 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate and consent.

THEA 600 Seminar in Theater Research (3) Bibliography and research methods; preparation for thesis and dissertation writing. Required of all graduate theater majors.

THEA 611 Seminar in Major Dramatic Theory (3) Major theories of Western drama from Aristotle to Roland Barthes. Repeatable one time with consent. Pre: 412 or consent. (Alt. years)

THEA 612 History of Western Theater I (3) Theater as a cultural and social institution in the West, from ancient Greece to Restoration England. Pre: one of 311, 312, 411, 412, or consent. (Alt. years)

THEA 613 History of Western Theater II (3) Theater as a cultural and social institution in the West, from the 18th century to the present. Pre: one of 311, 312, 411, 412, or consent. (Alt. years)

THEA 615 (Alpha) Topics in Theory and Criticism (3) (B) performance theory. Pre: 311, 312, 411, and 412; or consent. (Alt. years)

THEA 616 Script Analysis (3) Study of dramatic texts in a seminar format; analysis of Western and Asian classical to post-modern plays. Pre: 312 or consent.


THEA 620 Advanced Voice for the Actor (3) Training at advanced level in speaking and vocal skills and techniques in preparation for a solo performance. Repeatable one time. A-F only. Pre: 420 or consent. (Alt. years)

THEA 619 Advanced Topics: Playwriting and Dramatic Theory (3) Readings, research, writing, and seminar discussions. Pre: 418, 611, and consent.

THEA 621 Acting VII: Great Roles (3) Great roles from the Western theater repertory; focus on the individual actor and performance styles. Repeatable one time with consent. Pre: 422 and consent.

THEA 625 Experimental Asian Acting (3) Integration of movement, vocal technique, and concepts of traditional Asian genres into the actor’s repertory. Exploration of application to contemporary Asian and non-Asian texts. Workshop format. Repeatable one time. Pre: consent.

THEA 634 Taiji Weapons for Actors (3) Advanced level Taijiquan (T’ai Chi Ch’uan) weapons training. Repeatable two times. Pre: 334 or 434, or consent.

THEA 640 Problems in Design and Theatre (3) Workshop dealing with special topics in lighting design, sound design, technical design, production stage management, and special effects. Repeatable three times with consent. Pre: 343 or 445 or consent.

THEA 653 Problems in Scenic Design (3) Workshop dealing with special topics in scenic design, related skills, and portfolio preparation. Repeatable two times with consent. Pre: 453 or consent. (Alt. years)

THEA 656 Problems in Costume Design (3) Workshop dealing with special topics in costume design and related skills. Repeatable one time with consent. Pre: 456 or consent.
THEA 657 Seminar in Design (3) Research, design, and discussion exploring collaborative design problems and solutions. Pre: 445, 453, 456, and consent.

THEA 660 Asian Theater Field Research (3) Goals and methods. Interview, questionnaire, observation, and performance study as research techniques. Practical application by designing a research project. Pre: 600.

THEA 663 (Alpha) Topics in Asian Theater (3) Comparative and cross-cultural examination. (B) origins; (C) theories and systems; (D) modern Asian drama. Repeatable one time. Pre: consent.

THEA 678 (Alpha) Topics in Youth Theatre/Dance (3) Creative movement/drama, puppetry, and theater/dance. (B) production concepts. Repeatable when topics change. Pre: one of 470, 474, 475, 476, 477, DNCE 490; or consent.

THEA 680 Directing Asian Theater (3) Directing traditional Asian theater pieces and Western plays performed with Asian techniques; development of new performance styles based on Asian examples; directing of scenes and one-act plays. Repeatable one time with consent. Pre: graduate theatre major and one Asian theatre course, or consent.

THEA 682 Graduate Workshop in Directing (3) Direction of scenes and major one-act plays. Pre: thesis production. Repeatable one time with consent. Pre: 681 or consent.

THEA 683 Workshop in Directing Process (3) Methods class in theater production for the director. Covers organization and techniques such as rehearsal planning, scheduling, and execution. Repeatable one time.

THEA 684 Theatre Governance (3) Covers the economic and managerial skills for starting a professional and/or non-profit theatre company or forming an arts organization: artistic directorship, board development, non-profit legalities, season planning, fundraising, budgeting, publicity, international activities, etc. Pre: 600 or consent.

THEA 690 Graduate Theater Workshop (V) Practical and supervisory theater work pertinent to professional degree objectives on productions being done in Kennedy Theatre or in other venues, by approval. Repeatable up to 6 credit hours. Pre: consent.

THEA 691 Seminar in Teaching Dance/Theater (5) Pedagogy and classroom experiences in teaching dance and technique. (Alt. years) (Cross-listed as DNCE 691)

THEA 693 Internship: Youth Theater/Dance (V) Supervised leadership experiences in theater/dance program with children. Students spend nine hours per week in supervised setting and three hours in weekly class meeting. Pre: one of 470, 476, or DNCE 490; or consent. (Cross-listed as DNCE 693)

THEA 695 Creative Projects (V) MFA play or dance productions, design projects, original full-length plays.

THEA 699 Directed Research (V) Reading or research in theater theory or history; reading and practice in particular areas of dramatic production. Repeatable two times. Pre: consent.

THEA 700 Thesis Research (V)

THEA 705 Seminar in Western Drama and Theater (3) Special topics. Repeatable when topics change. Pre: consent.

THEA 763 (Alpha) Seminar in Asian Theater (3) (B) Southeast Asia and India; (C) China; (D) Japan. Repeatable two times. Pre: one of 464, 465, 466, or consent.


THEA 800 Dissertation Research (V)

Tongan (TONG) College of Languages, Linguistics and Literature Students choosing Tongan for the language requirement should realize it may not be offered if demand is limited.

TONG 101 Beginning Tongan (4) Listening, speaking, reading, and writing skills. Structural points introducedductively. History and culture. Meets four (4) hours weekly. HSL

TONG 102 Beginning Tongan (4) Continuation of 101. Pre: 101 or consent. HSL

TONG 201 Intermediate Tongan (4) Listening, speaking, reading, and writing skills. History and culture. Meets four (4) hours weekly. Pre: 102 or consent. NF HSL

TONG 202 Intermediate Tongan (4) Continuation of 201. Pre: 201 or consent. NF HSL

Translation and Interpretation (TI) College of Languages, Linguistics and Literature Some courses require a language exam before being allowed to enroll. Please check the website at cits.hawaii.edu for current courses offered and further details.

TI 401 Principles of Translation (3) Student awareness of the translation process and the criteria for evaluating translations. Includes readings and discussions of the translation process, terminology research as well as intensive practice in precise writing, paraphrasing, and summarizing. Pre: at least 300-level proficiency in a second language.


TI 403 Introduction to Interpretation (3) Develop an awareness of the principles and the current issues involved in interpretation. Theoretical principles, ethics, and underlying techniques will be discussed in reference to conference, court, community, etc., interpreting. Pre: at least 300-level proficiency in a second language.

TI 405 Court Interpreting I (3) Introduction to the legal system, as well as theoretical principles, ethics, practical techniques, and current issues surrounding the practice and profession of court and other legal interpreting. Repeatable one time.

TI 406 Community Interpreting (3) Basic principles, ethics and skills involved in community interpreting: practical information about the community interpreter’s role and profession; practice of various community interpreting situations and techniques. Repeatable one time.

TI 407 Court Interpreting II (3) Combined lecture/discussion/practice. Continuation of 405 Court Interpretation, diving deeper into the practical side of oral interpreting for various proceedings, including arraignments, trials, witness testimonies, etc. Must be bilingual. Real courtroom observations required. Repeatable one time. Pre: 405 or consent. Spring only.

TI 411 (Alpha) Technical Translation (English) (3) Language specific course. Basic techniques and procedures used in bilingual translation of nonfiction texts. Emphasis on stylistic, structural, cultural, lexical, and terminological problems. Translation into English only. (G) general skills; (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time. Pre: senior or graduate standing and pass CITS screening exam. Co-require: 401, 413 and 421.

TI 412 (Alpha) Technical Translation (English) (3) Translation of nonfiction texts into English. Forms and formats. Emphasis on editing target version and producing camera-ready copy. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time. Pre: 411, senior or graduate standing, and pass CITS screening exam. Co-requis: 402, 414, and 452.

TI 413 (Alpha) Translation Skills (Second Language) (3) Language specific course. Basic techniques and procedures for bilingual translation of nonfiction texts. Emphasis on the stylistic, syntactic, cultural, lexical, and terminological problems. Translation from English into student’s working languages. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time. Pre: senior or graduate standing, and pass CITS screening exam. Co-require: 401, 411, 421.


TI 421 Research Tools and Technological Aids for Translation (3) Word processing, graphics, spreadsheet, database management, and communication programs for professional practice. Reference and bibliographic search. Traditional and nontraditional resources. Repeatable one time. Pre: senior or graduate standing, and pass CITS screening exam. Co-require: 401 and 411.

TI 422 Computer-Assisted Translation (3) (1 Lec, 1.5-1 hr Lab) The use of computers as aids in the translation process. Basic desktop publishing and technical writing. Computer aids for terminology studies and glossary building. Repeatable one time. Pre: 421, senior or graduate standing, and pass CITS screening exam. Co-require: 402, 412, 452.

TI 432 (Alpha) Consecutive Interpretation (3) Extensive note-taking and note-reading in a bilingual context. Focuses on the translation of numbers, acronyms, initials, and economic and financial information. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time. Pre: 431, senior or graduate standing, and pass CITS screening exam. Co-require: 402, 412, and 452.

TI 442 (Alpha) Simultaneous Interpretation (3) Simultaneous interpretation of speeches. Focus on the study of formulaic and frozen language characteristically used in international meetings. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time. Pre: 441, senior or graduate standing, and pass CITS screening exam. Co-require: 402, 422, and 452.

TI 452 (Alpha) Sight Translation (3) Basic course. Focus on the ability to translate orally information from a written text. Emphasis on improving linguistic (discourse analysis) and communicative (public speaking) skills. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time. Pre: 451 or senior or graduate standing and pass CITS screening exam. Co-require for translation students: 402, 412, 442, and 444. Co-require for interpretation students: 402, 432, and 442.

TI 499 Directed Reading/Studies (V) Basic course. Focus on the ability to orally translate information from a written text. Emphasis on improving linguistic (discourse analysis) and communicative (public speaking) skills. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time.

Key to symbols & abbreviations: see the first page of this section.
Travel Industry Management (TIM)  School of Travel Industry Management

Students should check with the department for grade requirements for prerequisites.

TIM 099 International Exchange Programs (V)  UH Mānoa School of Travel Industry Management majors participating in approved international exchange programs. CR/NC only.

TIM 100 Internship I (2)  Introduction to travel industry. Discussion of job search strategies, TIM internship requirements, career and academic planning. CR/NC only.

TIM 101 Introduction to Travel Industry Management (3)  Overview of travel industry and related major business components. Analysis of links between hotel, food, transportation, recreation, and other industries comprising tourism.

TIM 200 Internship II (2)  A minimum of four hundred hours of travel industry experience. Comprehensive report by student and performance evaluation from employer required. CR/NC only. Pre: TIM major, 100, and 101. NI

TIM 300 Internship III (2)  A minimum of four hundred hours of travel industry experience. Position must be different from TIM 200 position and of a more responsible nature or in a different organization. Comprehensive report by student and performance evaluation from employer required. CR/NC only. Pre: TIM major and 200.


TIM 302 Information Systems Technology (3)  Computer applications in the travel industry; operation and evaluation of specific travel industry systems and applied business systems. Pre: 101 and ICS 101.

TIM 303 Management of Service Enterprises (3)  Principles and philosophies of management with special emphasis on those principles and theories that are most relevant to management in service-based industries. Students may not earn credit for 303 and BUS 315. Pre: 101 or consent.

TIM 304 Principles of Travel Industry Marketing (3)  Concepts, problems, processes of marketing within the travel industry; development of marketing strategies including price, promotion, and price for travel institutions. Students may not earn credit for 304 and BUS 312. Pre: 101.


TIM 311 Club Management (3)  Introduction to club and institutional management, including operations, services, and facilities. A-F only. Pre: 101.

TIM 313 Foodservice Management (3)  Critical and essential aspects of managing foodservice operations including principles of food safety and sanitation, procedural knowledge in front and back of the house and guest relations. A-F only. Pre: 101 and 303.

TIM 314 Hotel Management (3)  Comprehensive understanding of hotel management and functional departments including front office, accounting, housekeeping, food and beverage, marketing, security and safety. Simulation of management trainee programs by hotel concepts, tools and theories of decision-making relevant to hotel operations. A-F only. Pre: 101 and 303.

TIM 315 Quality Food Management (3)  Explore various aspects of the quality in foodservice operations and develop strategies to measure and improve the quality. A-F only. Pre: 101 and departmental approval.

TIM 316 Events Planning and Marketing (3)  Introduction to special event planning processes and techniques. Emphasis on designing, planning, marketing, management, staging events, legal compliances, risk management, financial control, and successful event evaluation. A-F only. Pre: 313 and junior standing.

TIM 319 Quantity Foods and Institutional Purchasing (4)  (3 Lec, 1-3-hr Lab) Quantity food and beverage operations, menu development and costing, dietary menu claims, purchasing procedures, inventory control, procurement, transportation, legislation. Institutional foodservice sanitation, Hazard Analysis Critical Control Point and National Restaurant Association Certification. Pre: FSHN 181 and FSHN 181L, or consent. (Cross-listed as FSHN 312)

TIM 320 Introduction to Tourism Economics (3)  Examine structure of travel industry from an economic perspective. Topics include: the determinants of consumer demand for leisure travel, structure of competition among suppliers of tourism services, benefits and costs of tourism development to the host community, government’s role in the taxation, subsidy, regulation and protection of the tourism industry, tourism’s impact on the environment, and sustainable tourism development. A-F only. Pre: ECON 120 or 130 or 131; or consent. (Cross-listed as ECON 320) DS

TIM 321 Sociocultural Issues in Tourism (3)  Positive and negative impacts of tourism on society, social change, culture, residents, developing countries, and environment. Role of social planning. Pre: 101. DS

TIM 324 Geography of Global Tourism (3)  The landscape in relation to resources, spatial patterns of supply and demand, impacts of tourism development, and models of tourist space. Flows between major world regions. Pre: sophomore standing or higher, or consent. (Cross-listed as GEOG 324) DS

TIM 325 Tourism Development: Hawai'i and Asia Pacific (3)  Tourism development in Hawai'i and other Asia Pacific destinations. Analysis of key factors essential to stages of development, travel trends, and structural changes. Pre: 101.

TIM 327 Travel Distribution Management (3)  History, development, operations, and management of travel distribution organizations including: travel agents, tour operators and wholesalers, specialty channels, meeting planners, incentive houses, travel associations, and other destination management organizations. Evolution and economics of the distribution of travel products through destination databases and electronic commerce. Pre: 302.

TIM 332 Revenue Management (3)  Introduction to the theory and practice of revenue management in the hospitality industry; cost controls, financial analysis, pricing, marketing, forecasting, economic analysis, and applications. Pre: 101 and ACC 202. NI

TIM 333 Hotel/Resort Facilities and Design (3)  Comprehensive understanding of facilities management and design including maintenance systems, sustainable development options and design and environmental management. A-F only. Pre: 313 and 314.


TIM 350 Introduction to Tourism Management (3)  Introduction to managerial and operational issues related to all modes of travel industry used by tourists into or within a tourist destination. Passenger behavior; transport infra-structure; transport networks; regulation; sustainable transport. Pre: 101.


TIM 352 Air Transportation Management (3)  Marketing, management and strategies used by airlines, airports, catering, and aircraft manufacturers. Pre: 350 (or concurrent), or consent.

TIM 354 Surface Tourism Transportation Management (3)  Management of surface tourism transportation such as car rental, bus and coach operators, drive tourism, intercity rail, taxi, etc. Includes marketing, ownership and financing, operations, regulation and promotion, human resources. Pre: 350 or concurrent.

TIM 365 Economics in Travel Industry (3)  Microeconomic theory of consumer behavior and demand production cost analysis, market structure and pricing in travel companies. Economic impact of tourism. Students may not earn credit for 365 and BUS 313. Pre: either ECON 120 or ECON 130.

TIM 368 TIM Study Abroad (V)  Study abroad instructional experience emphasizing international travel, tourism and hospitality-related topics at equivalent, accredited programs. Content varies depending on location of instruction and instructor. Course qualifies as either a TIM or general elective with pre-approval or department. Repeatable unlimited times. Pre: consent.

TIM 369 (Alpha) Current Topics in Travel Industry Management (V)  (B) resort development; (C) assets management; (D) transportation and public policy; (E) management by cultural values; (F) tourism industry development; (G) hospitality management; (H) hotel management; (I) restaurant management; (J) tourism management; (K) recreation management; (M) leisure management; (N) transportation management; (O) travel industry management education; (P) travel industry management technology; (Q) meetings, incentives, conventions, and exhibition management. Repeatable five times with consent.

TIM 399 Directed Reading and Research (V)  Reading and research into problems in hotel, restaurant, transportation or tourism sectors of the travel industry. Pre: junior standing or above, a minimum cumulative GPA of 2.5 and consent of dean’s office and instructor based upon student’s written proposal of content and objectives of course program.

TIM 400 (Alpha) Internship IV (2)  (B) executive internship; (C) community service internship. Restricted to majors. CR/NC only. Pre: 200 and consent.

TIM 402 Resort Mixed Use Development (3) Critical and essential aspects of developing and managing resort mixed use facilities. Includes multidimensional and dynamic interrelationships of site development and facilities, business mix, management structures and systems, and industry practices. A-F only. Pre: 313 and 314. Recommended: 333 and 401. Fall only.

TIM 420 Principles of Sustainable Tourism (3) Seminar examining the social, environmental, economic factors of sustainable tourism development. Emphasis on methods and processes and the role of stakeholders (government, industry, host community, tourists). Group projects. A-F only. Pre: 101 and departmental approval.

TIM 431 Strategic Management for the Travel/ Hospitality Industry (3) Strategic management in the travel/hospitality industry. Case study analysis, discussion and written reports, covering strategies, management problems and industry issues. A-F only. Pre: 303, 304, 305 and graduating senior.

TIM 442 Advanced Topics in Air Transportation (3) Advanced level of discussion in terms of air transportation, including management, economics, strategy, regulation, operating performance, fleet management, and network management. Pre: 353 (undergraduate) or consent (graduate).

TIM 469 (Alpha) Advanced Topics in Travel Industry Management (V) (B) tourism planning; (C) advanced travel industry management; (D) advanced hospitality management; (E) advanced hotel management; (F) advanced restaurant management; (G) advanced tourism management; (H) advanced recreation management; (I) advanced leisure management; (J) advanced transportation management; (K) advanced travel industry management education; (L) advanced travel industry management technology; (M) advanced meetings, incentives, conventions, and exhibition management; (O) advanced food and beverage management; (P) leadership and advanced human resources; (Q) advanced assets management. Repeatable five times with consent for (B), (C), (D), (E), (F), (G), (H), (I), (J), (K), (L), (M); repeatable six times for (O), (P), and (Q). A-F only for (O), (P), and (Q).

TIM 500 Master's Plan B/C Studies (1) Enrollment for degree completion. Pre: master's Plan B or C candidate with consent.

TIM 606 Hospitality Management (3) Advanced study of management accounting within industry: responsibility accounting, pricing decisions, concepts and application of central systems, financial planning, price level impacts, performance evaluation. Pre: graduate standing or consent.

TIM 607 Global Tourism Analysis (3) International trade theory and regional analysis methodologies applied to tourism and the service industry, including travel balances, trade balances, international transactions flow, economic impacts, environmental economics, demand theory and forecasting. Pre: graduate standing or consent.

TIM 610 Research Applications in Travel Industry Management (3) Analysis of methodologies appropriate for research in travel industry management. Survey of the literature of applied techniques and approaches including explanatory approaches. Familiarization with research design and implementation of development of research proposals. Pre: graduate standing or consent.

TIM 640 Financial Management for the Travel Industry (3) Applications of financial analysis to both the domestic and international travel industry. Pre: graduate standing or consent.

TIM 645 Tourism Field Studies (3) Integration of concepts and application of knowledge and skills from other courses to a selected field study project. Pre: any two 600-level TIM courses completed and a third concurrent; or consent.

TIM 694 Professional Paper (3) Independent project or paper under faculty supervision in lieu of Plan A. TIM 700 thesis. Requires proposal approved by supervisor and graduate chair prior to registration. A-F only. Pre: three 600-level TIM courses completed or consent.

TIM 695 Seminar: Travel Industry Management Policy (3) Integration of learning through analysis of policy issues, trends, and problems in the travel industry. A-F only. Pre: three 600-level TIM courses completed or consent.

TIM 699 Directed Reading (V) Independent study of approved, advanced reading with faculty supervision. Requires proposal approved by student and approved by supervisor and graduate chair before registration. Repeatable one time.

TIM 700 Thesis Research (V) Independent supervised research. Formal and oral written presentation of research findings. Repeatable up to six credits.

Tropical Agriculture and Human Resources (TAHR)

TAHR 099 International Exchange Study/Research (V) Study overseas in an approved international or similar exchange program. CR/NC only. Pre: consent of academic advisor.

Tropical Medicine and Medical Microbiology (TRMD)

School of Medicine

TRMD 499 Reading and Research (V) Directed reading and research in laboratory; diagnostic aspects of bacterial, parasitic, and viral infections. Repeatable unlimited times. Pre: consent.

TRMD 500 Master's Plan B/C Studies (1) Enrollment for degree completion. Repeatable unlimited times. Pre: master's Plan B or C candidate and consent.

TRMD 512 Unit II Concurrent Elective (1) Elective for first-year medical students. CR/NC only. Pre: BIOM 551 and consent. Fall only.

TRMD 513 Unit III Concurrent Elective (1) Elective for first-year medical students. CR/NC only. Pre: BIOM 551 and consent.

TRMD 514 Unit IV Concurrent Elective (1) Elective for second-year medical students. CR/NC only. Pre: BIOM 551 and consent.

TRMD 515 Unit V Concurrent Elective (1) Elective for second-year medical students. CR/NC only. Pre: BIOM 551 and consent.

TRMD 525 Unit V Block Elective (1) Required elective for second-year medical students; objectives to be determined by contract. One option is a review of USMLE step. CR/NC only. Pre: BIOM 551.

TRMD 545 Topics in Tropical Medicine (V) Elective for fourth-year medical students for advanced study of selected topics within the field of tropical medicine and medical microbiology. Pre: fourth-year standing.

TRMD 595 (Alpha) Selected Topics in Infectious Diseases (1) Elective for medical students; (B) infectious diseases; (C) parasitology; (D) epidemiology; (E) immunology. MD majors only. CR/NC only. Pre: MDEN 554 or consent. Fall only.

TRMD 599 (Alpha) Selected Research Topics in Infectious Diseases (1) Research elective for medical students; (B) infectious diseases; (C) parasitology; (D) epidemiology; (E) immunology. MD majors only. CR/NC only. Pre: MDEN 554 or consent. Fall only.

TRMD 604 Infectious Disease Micro I (3) Pathogenesis, epidemiology, immunobiology of infectious diseases caused by bacterial and fungal pathogens; principles of host-pathogen interactions; public health aspects of infectious diseases. Repeatable one time. A-F only. Pre: MICR 551 or consent. (Cross-listed as PH 667)

TRMD 605 Infectious Disease Micro II (3) Pathogenesis, epidemiology, immunobiology of infectious diseases caused by viruses and parasites; principles of host-pathogen interactions; public health aspects of infectious diseases. Repeatable one time. A-F only. Pre: 604 and MICR 551, or consent. (Cross-listed as PH 667)

TRMD 606 Tropical Medicine Laboratory Rotations (V) Practical experience in use of equipment and procedures in infectious disease and immunology research; introduction to research in tropical medicine. Repeatable unlimited times. Pre: 604 (or concurrent), or consent. (Cross-listed as PH 667)

TRMD 607 Neurovirology (1) Seminar on neuroviral diseases giving basic of viruses causing nervous system diseases and discussing recent advances in the research field of neurovirology. Pre: MICR 351 or equivalent; or consent. Fall only.

TRMD 609 Advances In Medical Immunology (3) Presentations/discussions of current literature concerning recent advances in immunology relevant to disease and to disease processes. Pre: consent. (Alt. years: spring)

TRMD 650 Advanced Epidemiological Ecology of Infectious Diseases (2) Applications of population biology, pathogen/host life history, and population genetics to infectious disease epidemiology, including micro- and macroparasites, and implications to disease control and prevention of strategies. A-F only. Pre: 604 (or concurrent) and 605 (or concurrent), or consent. (Alt. years: spring)

TRMD 652 Advanced Genetics and Evolution of Infectious Diseases (2) An evolutionary perspective to examine the interactive responses between infectious agents and the immune system. Topics will include natural selection, life history evolution, population genetics of pathogens and hosts, and anti-microbial resistance. A-F only. Pre: 604 (or concurrent) and 605 (or concurrent), or consent. (Alt. years: spring)

TRMD 653 Bioinformatics for Infectious Diseases (1) Combined lecture/computer lab on bioinformatic tools used in genomics, including sequence
assembly, search algorithms, alignment, phylogenetics, and molecular evolution/epidemiology. Focus will be on infectious disease examples. Open to nonmajors. A-F only. Pre: 604 (or concurrent) and 605 (or concurrent) or consent. Fall only.

TRMD 671 Advanced Medical Parasitology (2) Consideration of ultrastructure, physiology, biochemistry, in-vitro cultivation and host-parasite relationship of parasites of medical importance. A-F only. Pre: consent. (Alt. years: fall)

TRMD 672 Advanced Medical Virology (2) In-depth study of the major groups of viruses pathogenic for human; virus replication, host range, pathogenesis, immunology, and epidemiology. Pre: 605 or equivalent, or consent. (Alt. years: fall)

TRMD 673 Advanced Medical Bacteriology (2) Role of bacteria in infectious diseases, with emphasis on clinical aspects and identification of etiological agents. Pre: 605 or equivalent, or consent.

TRMD 690 Seminar in Tropical Medicine and Public Health (1) Weekly discussion and reports on current advances in tropical medicine and public health. (Cross-listed as PH 755)

TRMD 695 Plan B Master’s Project (5) Independent study for students working on a Plan B master’s project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. Pre: graduate standing in TRMD.


TRMD 700 Thesis Research (V) Research for master’s thesis. Approval of department faculty required. Repeatable unlimited times.

TRMD 705 Special Topics in Tropical Medicine (1) Advanced instruction in frontiers of tropical medicine and public health. Repeatable three times. (Cross-listed as PH 756)

TRMD 800 Dissertation Research (V) Research for doctoral thesis. Approval of department faculty is required. Repeatable unlimited times.

Key to symbols & abbreviations: see the first page of this section.

TPSS 300 Tropical Production Systems (4) (3 Lec, 1 3-hr Lab) Comparisons and contrasts of crop management systems, techniques, and technologies in protected and open field production of tropical crops. Pre: 200 or consent. DB

TPSS 304 Fundamentals of Soil Science (4) (3 Lec, 1 3-hr Lab) Origin, development, properties, management of tropical soils; classification of Hawaiian soils. A-F only. Pre: one of CHEM 151, CHEM 161, CHEM 171 or CHEM 181A or consent. (Cross-listed as NREM 304) DP DY

TPSS 311 Current Topics in Plant Science (1) Undergraduate seminar that provides the presentation and discussion of topics of current relevance to students preparing for careers in applied plant sciences. Oral focus designation. A-F only. Pre: 200 or NREM 210, or consent. (Cross-listed as NREM 311)

TPSS 322 Marketing Perishable Products (3) Problems, agencies, functions, costs, prices, regulations affecting marketing; proposed improvements. Pre: ECON 130, NREM 220; or consent. (Alt. years) DS

TPSS 341 Accounting and Financial Analysis (3) Principles and methods of agricultural accounting. Preparing and interpreting financial statements. Sources and costs of credit, capital budgeting, tax management, estate planning. Repeatable one time. A-F only. Pre: ECON 130 or NREM 220, or consent. (Cross-listed as NREM 341) DS

TPSS 350 Tropical Landscape Practices (3) (2 Lec, 1 3-hr Lab) Concepts and techniques of landscape installation and management in the tropics. Pre: 200 and 360; or consent. DB

TPSS 351 Enterprise Management (3) Overview of financial tools essential for developing new enterprises, analyzing business performance, obtaining bank financing, improving productivity, and reducing risk. Other topics: personnel management, taxation, and business plans. Students will become proficient with Excel. Pre: ECON 130, NREM 220; or consent. (Cross-listed as NREM 351)

TPSS 352 Landscape Architecture History, Theory, and Practice (3) Surveying the development of landscapes as an art form from Mesopotamia to present. Exploring the theory, profession and art of landscape architecture in the world by physical, social, economic, political, and cultural environmental factors. (Alt. years) DH

TPSS 353 Tropical Landscape Planting Design and Graphics Studio (3) Basic skills of landscape graphic design, construction of commercial vegetable gardens. Pre: 200 or concurrent. A-F only. DB

TPSS 354 Horticultural Practices (2) (1 Lec, 1 3-hr Lab) Techniques of culture and management of horticulture crops. Pre: 200 (or concurrent). DB

TPSS 359 Ornamental Plant Materials (3) (2 Lec, 1 3-hr Lab) Identification, origin, use, and cultural requirement of trees, shrubs, vines, and groundcovers used in Hawaiian landscapes. Pre: 200 or consent. DB

TPSS 371 Genetics: Theory to Application (3) Fundamentals of genetic theory using microbiological and plant pathogen control and plant and animal breeding as practical applications. Repeatable one time. A-F only. Pre: BIOL 172 and CHEM 162, or consent. (Cross-listed as PEP 371)

TPSS 401 Vegetable Crop Production (3) (2 Lec, 1 3-hr Lab) Crop biology, requirements, and production techniques for commercial vegetable production in Hawai‘i will be stressed. Pre: 300 or consent. DB

TPSS 402 Flower and Foliage Crop Production (4) Biology and production of cut flowers, blooming potted plants, foliage plants under field and protected cultivation in Hawai‘i and globally. Pre: 300 or consent. DB

TPSS 403 Tropical Fruit Production (3) (2 Lec, 1 3-hr Lab) Botanical aspects and horticultural management practices of selected tropical and subtropical fruit crops, with emphasis on small scale commercial production in Hawai‘i. Pre: 300 or consent. DB

TPSS 404 Tropical Folage Production (3) (2 Lec, 1 3-hr Lab) Combined lecture-lab on foliage crop production in Hawai‘i. Crop biology, requirements and production techniques. Pre: 300 or consent. DB

TPSS 405 Turfgrass Management (4) (3 Lec, 1 3-hr Lab) Adaptability and selection, establishment, and cultural practices of grasses for various types of turf. Pre: 200 or consent. DB

TPSS 409 Cultural Biogeography (3) Co-evolution of human societies and plants over the last 10,000 years. Foraging, farming and urban societies economies; spread and modification of selected plants; issues of preservation of genetic resources and traditional plant knowledge. To be the form and function of gardens. Pre: junior standing or higher, or consent. (Cross-listed as GEOG 409) DS

TPSS 416 Introduction to Social, Ethical and Political Issues Associated with Biotechnology (3) Introduces concepts of biotechnology, fundamental issues associated with use of this technology, with special emphasis on agricultural biotechnology. A-F only. Pre: 200 or BIOL 171 or NREM 210, or consent. (Once a year)

TPSS 420 Plant Propagation (3) (2 Lec, 1 3-hr Lab) Theoretical and applied aspects of seed and vegetative propagation technology including fruits, flowers, vegetables, and landscape plants. Pre: 200 or consent. DB

TPSS 421 Tropical Seed Science (2) (1 Lec, 1 3-hr Lab) Principles of seed science, seed physiology, seed production, and genetic modification. Hawai‘i’s seed industry and biotechnology. A-F only. Pre: 200 or consent. DB

TPSS 429 Spreadsheet Modeling for Business and Economic Analysis (3) Introduction to quantitative decision making methods for effective agribusiness management in resource allocation, scheduling, logistics, risk analysis, inventory, and forecasting. Emphasis on problem identification, model formulation and solution, and interpretation and presentation of results. A-F only. Pre: ECON 130 or NREM 220, and either ECON 321 or NREM 310; DB

TPSS 430 Nursery Management (3) (2 Lec, 1 3-hr Lab) Management practices in production and operations of commercial nurseries in Hawai‘i. Pre: 200 and 364; or consent. DB

TPSS 435 Environmental Soil Chemistry (3) Study of soil chemical processes such as weathering, adsorption, precipitation, and ion exchange; causes of soil acidity, alkalinity, and salinity; prediction of behavior of pollutants; management strategies to minimize environmental contamination by nitrate, phosphate and trace elements such as As, Pb, and Se. A-F only. Pre: 304 or consent. Fall only. DB

TPSS 440 Tissue Culture/Transformation (3) (2 Lec, 1 3-hr Lab) Application of plant tissue culture for plant scientists; study of the growth and development of plant tissues in culture as influenced by chemical and environmental factors, and the regeneration of plants following plant transformation by biocontrol and other molecular approaches. Pre: 420 or consent. Recommended. DB

TPSS 450 Nutrient Management of Soils and Plants (4) (3 Lec, 1 3-hr Lab) Principles and mache-
nisms governing the availability of plant nutrients in soil and nutrient management for enhanced plant productivity and maintenance for environmental and soil quality. Pre: 304 and CHEM 161, or consent. DB

TPSS 453 Plant Breeding and Genetics (3) (2 Lec, 1 3-hr Lab) Unique aspects of plant genetics and applications to crop improvement, with emphasis on breeding plants in Hawai‘i. Pre: BIOL 375 (or concurrent) or consent. DB

TPSS 460 Soil Plant Environment (3) (2 Lec, 1 3-hr Lab) Principles of soil-plant-atmosphere continuum that influence crop growth and development. Methods to estimate the impact of soil conditions on crop performance. Use of crop models to simulate effects of planting date, plant spacing and density, fertilizer rate, rainfall or irrigation, and daily weather on crop yield and farm income. Pre: 304 and either PHYS 151 or PHYS 170, or consent. DB

TPSS 463 Irrigation and Water Management (3) Basic science of growth and development, irrigation requirements, irrigation efficiencies, different methods of irrigation, planning, design and management of an irrigation system, fertigation and impact of irrigation on soil and water quality. Pre: NREM 205 (or equivalent) and NREM/TPSS 304 (or equivalent), or consent. (Alt. years) (Cross-listed as NREM 463)

TPSS 470 Plant Physiology (3) Integration of form and function from cellular to whole plant levels in processes from seed germination, through photosynthesis, growth, and morphogenesis, to flowering and senescence. A-F only. Pre: BIOL 171 and CHEM 152, or consent. Co-requisite: 470L. (Cross-listed as BOT 470) DB

TPSS 470L Principles of Plant Physiology Lab (1) (1 3-hr Lab) Principles of experimentation in plant physiology, includes individual investigations. A-F only. Pre: consent. Co-requisite: 470. (Cross-listed as BOT 470L) DY

TPSS 473 Post-Harvest Physiology (3) Comparative physiological and biochemical processes during growth, maturation, ripening, and senescence in fruits, vegetables, and flowers related to changes in quality and storage life. Tropical commodities emphasized. A-F only. Pre: 200, BIOL 171, or BOT 201; CHEM 152; or consent. DB

TPSS 481 Weed Science (3) (2 Lec, 1 3-hr Lab) Weed classification, identification, adaptations for weediness; principles of weed control; properties, uses, and action of herbicides. Lab: pesticide application equipment and techniques, no-till farming, greenhouse and field experiments. A-F only. Pre: 200 and CHEM 152, or consent. Fall only. (Cross-listed as PEPS 481) DB

TPSS 491 Experimental Topics (V) Study and discussion of significant topics, problems. Offered by visiting faculty and/or for extension programs. Repeatable. Pre: consent.

TPSS 492 Internship (4) Integration and application of academic knowledge and critical skills emphasizing professional development. Placement with an approved cooperating supervisor/employer. Pre: consent.

TPSS 499 Directed Studies (V) Supervised individual instruction in field laboratory and library. Repeatable. CR/NC only. Pre: 364 or consent.

TPSS 500 Master’s Plan B/C Studies (1) Enrollment for degree completion. Pre: master’s Plan B or C candidate or consent.

TPSS 601 Crop Modeling (3) (2 Lec, 1 3-hr Lab) Principles of modeling crop growth and development, model types, techniques, simulation. Modeling influence of climate/environment on phenology, growth, development of horticultural crops. Pre: BOT 470 and NREM 310, or consent.

TPSS 603 Experimental Design (4) (3 Lec, 1 3-hr Lab) Design of experiments and variance analyses in biological and agricultural research. Pre: graduate standing or consent. Recommended: ZOOL 632. (Cross-listed as ANSC 605)

TPSS 604 Advanced Soil Microbiology (4) (3 Lec, 1 3-hr Lab) Study of biochemical and biogeochemical transformations mediated by soil microorganisms, emphasis on processes important to plant growth productivity and environmental quality. Pre: 304 and MICR 351, or consent.

TPSS 610 Nutrition of Tropical Crops (3) (1 2-hr Lec, 1 3-hr Lab) Mineral nutrition of plants in relation to plant metabolism, mechanisms of ion uptake, long-distance transport of solutes, and interaction at the root-soil interface. Special emphasis on problems associated with tropical crops. Pre: 450 and 470, or consent. (Alt. years)

TPSS 614 Molecular Genetics of Crops (3) (2 Lec, 1 3-hr Lab) Applications of molecular genetics to crop improvement. Pre: 453 and MBBE 402; or consent.

TPSS 615 Quantitative Genetics (3) Applications of quantitative genetics to crop and animal improvement. Pre: 453 and 603, or consent.

TPSS 640 Advanced Soil Chemistry (3) (2 Lec, 1 3-hr Lab) Physio-chemical processes in soils and soil solutions, with emphasis on ionic equilibria, mineral stability, organic complexation, and surface sorption of major plant nutrients and heavy metals. A-F only. Pre: 435 and CHEM 351, or consent.

TPSS 650 Soil Plant Nutrient Relations (4) (2 Lec, 2 3-hr Lab) Soil-plant interactions, emphasis on characteristics of tropical soils and plants influencing nutrient uptake by plants. Diagnostic methods to identify nutrient deficiencies and element toxicity. Pre: 450 or consent.

TPSS 652 Information Research Skills (1) Examines the use of libraries and information technology for scholarly investigation in support of scientific research; provides experience utilizing and critically evaluating a variety of print and electronic sources in basic and applied sciences. Pre: consent. (Cross-listed as ANSC 652, FSHN 652, and NREM 652)

TPSS 654 Communications in the Sciences (1) (3 Lec/Lab combination) Laboratory-type course for improving communication abilities in the sciences and engineering. Presentations to lay audiences are emphasized. Hands-on experience in techniques and methods is provided.

TPSS 657 Grant Writing for Graduate Students (1) Combined lecture/discussion on grants and grant writing. Designed to introduce graduate students to grants and grant proposal writing through lectures, class discussion, writing assignments, and peer review. Open to CTAHR graduate students only; others with consent. Fall only. (Cross-listed as ANSC 657 and FSHN 657)

TPSS 664 Orchiology (3) (2 Lec, 1 3-hr Lab) Classification, culture, cytonomics, breeding of orchids. Pre: consent. Recommended: 200 and 402.

TPSS 666 Graduate Seminar (1) Presentation of research reports; reviews of current literature in plant and soil sciences. Pre: graduate standing or consent.

TPSS 670 Agrarian Systems Analysis (3) Comparative analysis of philosophy and processes of interdisciplinary and participatory approaches to sustainable development and rural resource management including farming systems research and extension (FSRau), agroecosystem analysis (AEA), participatory action research (PAR), and rapid rural appraisal (RRA). Repeatable. Pre: consent.

TPSS 674 Plant Growth and Development (3) Contemporary literature is used as the basis for understanding the philosophy for whole plant growth and development. Aspects covered include vegetative and reproductive development, seed dormancy, senescence, abscission, and relevant biochemical and molecular processes. Pre: 470 and MBBE 402, or consent.

TPSS 680 Geospatial Analysis of Natural Resource Data (3) The application of geostatistics to estimate spatial dependence to improve soil and regional sampling; provide insight into underlying soil, geographic, and geologic process, and to provide quantitative scaling up of point measurements to fields, regions, and watershed. State-space modeling also will be included. A-F only. Pre: GEOG 488 or ZOOL 631 or consent. (Cross-listed as GEOG 680)

TPSS 695 Plan B Master’s Project (3) Independent study for students working on a Plan B master’s project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. A-F only. Pre: graduate standing in TPSS program.

TPSS 699 Directed Research (V) In-depth study of specialized problems. CR/NC only. Pre: consent.

TPSS 700 Thesis Research (V) CR/NC only. Pre: consent.

TPSS 711 Special Topics (V) Specialized topics from various areas of plant and soil research such as experimental techniques, growth regulation, morphogenesis, genetics and breeding, culture and nutrition of tropical crops. A-F only. Pre: consent.

TPSS 800 Dissertation Research (V) CR/NC only. Pre: consent.

Urban and Regional Planning (PLAN)

College of Social Sciences

PLAN 310 Introduction to Planning (3) Perspectives on planning; planning tools and methods; specific Hawai‘i planning—research problems from a multidisciplinary approach. Pre: junior standing or consent. DS

PLAN 399 Directed Reading in Planning (V) Independent research on topics in urban and regional planning. Pre: 310.

PLAN 495 Land and Housing Issues (3) Analyzes selected land and housing issues. Pre: 310 or consent. DS

PLAN 500 Master’s Plan B/C Studies (1)

PLAN 600 Public Policy and Planning Theory (3) Designed to a) impart a historic and comparative perspective on the evolution of urban and regional planning in public policy; b) explore the spatial and built environment dimensions of society, planning and policy; c) assess the justifications for planning and differing processes of planning in the U.S. and Asia-Pacific with a focus on the role of the planner in policy formulation and implementation. A-F only. Repeatable two times.

PLAN 601 Planning Methods (3) Basic methods in planning including problem definition, research design, survey research, statistics and computer applications. Repeatable one time. Pre: one of ECON 321, GEOG 380, or SOC 476.

PLAN 602 Advanced Planning Theory (3) Advanced planning theory for PhD students (others by petition) to prepare for careers in planning education and high level professional practice. Covers key contemporary planning policy issues and themes from the perspective of values, explanations of the real world, policy alternatives and implementation. Students must have passed 600 or equivalent (by petition) with a B or better. Repeatable one time. Pre: 600 or consent.

PLAN 603 Economic Analysis for Urban Planning and Policy (3) Reviews and builds skills in applying basic theories and principles of urban and regional economics in contemporary U.S., Hawai‘i

Key to symbols & abbreviations: see the first page of this section.
PLAN 605 Planning Models (3) Allocation, decision, derivation, and forecasting models used in the analysis of demographic, economic, land use, and transportation phenomena in urban and regional planning. Repeatable one time. Pr: one of ECON 521, GEOG 380, or SOC 476; or consent.
COMMUNITY PLANNING AND SOCIAL POLICY
PLAN 610 Community Planning and Social Policy (3) Social issues and conditions; consequences of social policies experienced by different groups; community social plans and programs organized by various kinds of agencies and organizations. Repeatable one time. Pr: 600 (or concurrent) or consent.
PLAN 615 Housing (3) Housing delivery systems as an aspect of urban and regional planning. Pr: 610 or consent.
PLAN 616 Community-Based Planning (3) Planning and programmatic aspects of community-based development projects. East-West and local planning perspectives on participatory development and intentional communities. Pr: 600 (or concurrent).
PLAN 619 Multiculturalism in Planning and Policy (3) Graduate seminar focuses on issues of governance, policy and planning in diverse multicultural societies. Differences in backgrounds, languages, privilege, preferences and values are often expressed in planning and policy controversies such as affirmative action and land use planning. Will examine these controversies and explore theories of governance in a multicultural setting. Pr: 600 or consent.
ENVIRONMENTAL PLANNING AND RESOURCE MANAGEMENT
PLAN 620 Environmental Policies and Programs (3) Survey of the political, institutional, economic and scientific aspects of environmental policies and programs. Repeatable one time. A-F only. Pr: 600 (or concurrent) or consent.
PLAN 622 Environmental Impact Assessment (3) Theory and practice of environmental impact assessment. Policy and planning frameworks supporting environmental assessment in the U.S. and abroad. Cumulative environmental effects and strategic environmental assessment. Pr: graduate standing. (Cross-listed as GEOG 622) DS
PLAN 624 Environmental Valuation and Policy (3) Build valuation skills to assess best use, conservation, and policies relating to environmental amenities. Provides an overview of policy solutions to environmental degradation used by planners. Pr: 600 and 603.
PLAN 625 Environmental Planning (3) Knowledge and skills needed to prepare environmental plans and impact assessments mandated by national, state and local governments. A-F only. Pr: 620 (or concurrent) or consent.
PLAN 626 Topics in Resource Management (3) Issues, analytic techniques and management strategies for different resource systems including land, water, energy, coastal resources, forests and fisheries. Course focus varies from year to year. Repeatable one time. A-F only. Pr: consent.
PLAN 627 Negotiation and Mediation in Planning (3) Applicability and limitations of selected approaches; role of planners; impact on planning. Pr: 600 or consent.
reproducing gender inequality. Women as producers and consumers of media. Feminist alternatives to mainstream media. Pre: one of 151, 362, SOC 362. DS

WS 381 Gender, Sexuality and Literature (3) Basic concepts and representative texts for the study of literary constructions of gender and sexuality. Pre: two ENG DL courses; second may be taken concurrently; or consent. (Cross-listed as ENG 382) DL

WS 384 Women and Politics (3) Women’s role in political institutions and processes in the U.S. and other countries; female and male approaches to power; feminist political goals and actions. Pre: 151 (or concurrent) or 362 (or concurrent) or any 100 level WS course (or concurrent); or consent. (Cross-listed as POLS 384) DS

WS 390 Gender and Race in U.S. Society (3) Historical and sociological studies of race and gender in U.S. society; grassroots feminist and race/ethnic activism in the mainland and Hawai`i. A-F only. Pre: 151, ES 101, or Social Science Cores. (Cross-listed as ES 390) DS

WS 392 Sexualities (3) Multi-disciplinary course draws from psychology, sociology, biology, history, cultural anthropology, law, Hawaiian, ethnic, feminist, gender, and queer studies to explore human sexualities with emphasis on the U.S., Hawai`i and the Asia-Pacific regions. A-F only. Pre: one of 151, 202, 315 or 590; or consent. DS

WS 399 Directed Reading (V) Pre consent.

WS 414 Women in Drama and Theater (3) The role of women and their representation in the theater from ancient Greece to the present; focus on the socio-political status of women. Pre: THEA 311 or consent. (Cross-listed as THEA 414) DH

WS 418 Women and Work (3) Gender and racial division of labor nationally and internationally; racial and gender differentials in wages, training, working conditions and unemployment; historical trends and future directions. Pre: one 300-level WS or ES course, or SOC 300; or consent. (Cross-listed as ES 418 and SOC 418) DS

WS 419 Feminist Issues in Philosophy (3) Examination of basic feminist issues in philosophy, and of responses to them. Pre: any course 200 or above in PHIL or WS, or consent. (Cross-listed as PHIL 418) DH

WS 430 Seminar in the Biology of Women (3) Embryological, anatomical, and physiological development of human female; hormonal, neural, and behavioral determinants of female sexual behavior; psychobiology of pregnancy, ovariectomy, and menopause. Pre: 350 or BIOL 172 or BIOL 350, or consent. (Cross-listed as BIOL 430) DS

WS 435 Women and Crime (3) Women’s relations with the criminal justice system; types of women’s offenses; responses to women’s crime; women as victims; women as workers in the criminal justice system. Recommended: at least one WS course. Pre: 151 or any 200- or 300-level WS course, or SOC 300; or consent. (Cross-listed as SOC 435) DS

WS 436 Gender, Justice and Law (3) Exploration of landmark U.S. Supreme Court cases related to sex and gender. Topics may include sex discrimination, sexual orientation discrimination, privacy, and reproductive freedom. A-F only. Pre: one of 151, 175, 176, 202, 360, 381, or consent. (Cross-listed as AMST 436 and POLS 436) DS

WS 437 Gender and Violence (3) Interdisciplinary course will examine western constructs of gender violence on its correlates with ethnicity, class, sexuality, nation, and empire. Repeatable one time. A-F only. Pre: one of 151, 202, 360, 361, 439, 460, 462, or consent. DS

WS 438 Gender and Environmental Philosophy (3) Interdisciplinary approach to women’s perspective and roles on ecological and environmental issues; critical analysis of eco-feminism as a social and political movement; cross-cultural comparison of women’s roles in human ecology. Pre: any course 200 or above in PHIL or WS or any course 200 or above with a DB or DP designation, or consent. (Cross-listed as PHIL 438) DH

WS 439 Feminist Theory (3) Contemporary debates in feminist theory concerning gender, race, and class; subjectivity and representation; gender and colonialism; bodies, sexualities and "nature." Pre: any 300 level WS or POLS course, or consent. (Cross-listed as POLS 339) DS

WS 440 Feminist Methods and Research (3) Overview of feminist research methodologies; emphasis on historical and cultural context and diverse expressions of women’s gendered identities. Pre: 151 (or concurrent), AMST 202 (or concurrent), or one ENG DL course (or concurrent); or consent. (Cross-listed as AMST 455 and ENG 455) DL

WS 446 Analysis in Rape and Sexual Abuse (3) Theories, methodologies, and research findings on rape victimization and treatment; sexual abuse of women and children in Hawai`i. Recommended: at least one WS course. Pre: 151 or any 200- or 300-level WS course, SOC 300; or consent. (Cross-listed as SOC 446) DS

WS 452 Marriage and Family: Feminist Perspective (3) Sex role socialization, motherhood, work-family conflicts. Alternative family structures in U.S. and other countries. Recommended: at least one WS course. Pre: 151 or any 200- or 300-level WS course, or SOC 300; or consent. (Cross-listed as SOC 452) DS

WS 453 Gender Issues in Education (3) Examination of current and historical issues in education and how they are impacted upon by gender. Emphasis on historical and cultural context and diverse expressions of women’s gendered identities. Pre: 151 (or concurrent), AMST 202 (or concurrent), or one ENG DL course (or concurrent); or consent. (Cross-listed as EDUCS 453 and EDEF 453) DS

WS 456 Politics of Men and Masculinity in U.S. Culture (3) Examines American understandings of man, manhood, and masculinity, at the intersection of gender, race, class, and sexuality in the context of the American nation and empire building in the 19th and 20th centuries. A-F only. Pre: one of 151, 175, 176, or 202; or consent.

WS 460 Feminism, Nation and Empire (3) Examines U.S. feminist movements in the 19th and 20th century by exploring how U.S. racism, nationalism and imperialism have provided the context from which feminism emerged. A-F only. Pre: 151, 360; or consent. DS

WS 462 Asian Women (3) History, culture, and contemporary reality of Asian women in Asia and the U.S. Includes critical analysis of American feminist methodology and theory. Pre: 360, 439 or AMST 310, AMST 316, AMST 318, AMST 373, AMST 455, or POLS 339; or consent. (Cross-listed as AMST 438 and POLS 372) DS

WS 463 Gender Issues in Asian Society (3) Construction of gender identities in contemporary Asia. How these interface with other aspects of social difference and inequality (e.g. with class, religion, ethnicity). Pre: any WS or ASAN 201 or ASAN 202, or consent. (Cross-listed as ASAN 463) DS

WS 481 Women and Film (3) Exploration of film as a philosophical and artistic form in the context of gender, race, and sexuality. Pre: one of 151, 175, 176, and THEA 201; or consent. DH

WS 483 Studies in Literature and Sexuality and Gender (3) Intensive study of selected problems and issues in the construction and representation of sexuality and gender in specific genres, social and cultural contexts, thematic or figurative clusters. Repeatable one time. Pre: ENG 382 and one 300-level ENG course; or consent. (Cross-listed as ENG 482) DL

WS 492 Women in Revolt (3) Conditions under which women’s activism and participation in protest and revolutionary movements developed in the 19th- and 20th-centuries. Cross-cultural comparisons. (Cross-listed as HST 492) DS

WS 495 Selected Topics (3) Problems and issues for reading and research: feminist theory, criticism, affirmative action, etc. Pre: any WS course in appropriate area. DS

WS 496 Teaching Women’s Studies (3) Strategies for teaching women’s studies; addressing complex issues of gender, race, nation, class, sexuality and culture in a contemporary multiethnic campus environment. Emphasis on classroom techniques, teaching pedagogies, and hands-on experience. Repeatable one time. CR/NC only. Pre: 151 and one or more WS course with a grade of B or better in all relevant courses, instructor recommendation; or consent.

WS 602 Transnational Feminist Teaching and Research (3) Introductory graduate seminar designed to develop common vocabulary and explore the core debates in transnational feminist teaching and research to encourage critical reflection about teaching assumptions, approaches, and techniques in the contemporary college or university environment. A-F only. Pre: graduate standing and no waiver.

WS 610 Faculty Seminar Series (1) Seminar/discussion to introduce students to the Certificate to the Woman’s Studies faculty and their areas of research, and to initiate student’s graduate studies in a woman’s studies field. Repeatable one time. Pre: classified graduate status (or status pending) and consent.

WS 612 Women in American Culture (3) Historical and contemporary status of women in the U.S.; women’s roles as defined by legal, educational, political, economic, and social institutions; implications for social science method. (Cross-listed as AMST 612)

WS 613 Feminist Research and Methods of Inquiry (3) Examination of an emergent body of literature about how to shape questions concerning gender, race, class, colonialism, and other vectors of power. Includes methods from social sciences and humanities and debates in the philosophy of science. Repeatable one time. Pre: classified graduate status and consent.

WS 615 Feminist Theory (3) Selected ideas from contemporary feminist theory concerning power, knowledge, and self; articulating women’s voice; deconstructing gender. (Cross-listed as POLS 615C)

WS 620 Feminism and Its “Others” (3) Relationship between feminist and other sites of critical insight and scholarship that have contributed to creating anticolonial, antiracist, antiethnopohobic theory, method and action. Questions the legacy of feminist coalitional practice that engages the ongoing transformations that have begun to produce new alliances and coalitions that disrupt traditional boundar- ies of identity and power. A-F only. Pre: graduate standing, no waiver.

WS 623 Topics in Feminist Social Policy Research (3) Feminist social scientists from a variety of fields have explored issues of gender, social change and social justice. Draws from their work to critically examine strategies for conducting social policy research that is feminist in values and impact.
Zoology (ZOOL)

College of Natural Sciences

All courses required for the BS and BA degrees and minor require a minimum grade of C (not C-) or better.

ZOOL 101 Principles of Zoology (3) Structure, development, physiology, reproduction, evolution, behavior, and ecology of animals. DB

ZOOL 101L Principles of Zoology Laboratory (1) Laboratory to accompany 101. Pre: 101 (or concurrent). DY

ZOOL 200 Marine Biology (2) Biology and ecology of marine plants and animals; coral reefs, the deep sea, rocky shores, marine mammals, fisheries, aquaculture, pollution, and conservation of marine resources. DB

ZOOL 200L Marine Biology Lab (1) (1 3-hr Lab) Laboratory, field trips to accompany 200. Pre: 200 (or concurrent). DY

ZOOL 306 Ethology (2) Introduction to animal and human ethology and sociobiology; emphasis on social and interspecific behavior, its causes and adaptive significance. Lab optional. Pre: 101 and 101L with C grade, or BIOL 265 with C grade; or consent. DB

ZOOL 306L Ethology Lab (1) (1 3-hr Lab) Application of methods in demonstrations, films, and projects. Pre: 306 (or concurrent). DY

ZOOL 320 Vertebrate Zoology (3) Introduction to the evolution and systematics of vertebrates, with emphasis on comparative morphology, physiology, and ecology. Pre: BIOL 265. Co-requisite: 320L. DB

ZOOL 320L Vertebrate Zoology Lab (2) (2 3-hr Lab) Laboratory to accompany 320. Pre: BIOL 172 and BIOL 172L. Co-requisite: 320L. DB

ZOOL 340 Parasitology (2) Animal parasites of man, and domestic and wild animals: systematics, comparative morphology, life history, pathology, treatment, control. Pre: BIOL 275. DB

ZOOL 340L Parasitology Lab (2) (2 3-hr Lab) Laboratory to accompany 340. Pre: 340 (or concurrent) and BIOL 275. DY

ZOOL 399 Directed Study (V) Pre: written consent.

ZOOL 410 Corals and Coral Reefs (3) The biogeography, evolution, ecology, and physiology of corals and coral reefs, and the application of this information to the management of coral reefs. Emphasis will be placed on processes such as dispersal, the evolution and operation of mutualisms, calcification, reproduction, and the maintenance of diversity. Pre: BIOL 265. Spring only.

ZOOL 416 Histology (3) Functional microanatomy of the animal body, emphasizing vertebrates. Oriented toward pre-professional students. Pre: BIOL 275. Recommended: BIOL 406. DB

ZOOL 416L Histology Lab (2) (2 2-hr Lab) Light microscopic study of animal tissues, especially vertebrates. Primarily for pre-professional students. Pre: BIOL 275. Recommended: BIOL 406. Co-requisite: 416. DY

ZOOL 417 Microtechnique (3) (2 Lec, 2 3-hr Lab) Preparation of animal tissues and organs for microscopic examination; introduction to cytochemical and histochemical techniques. Pre: BIOL 275 or consent. DB

ZOOL 420 Developmental Biology (3) Fundamental principles, methods, concepts, and significance of developmental biology, emphasizing experimental methods. Pre: BIOL 275. Recommended: BIOL 416. DB

ZOOL 420L Developmental Biology Lab (2) (2 3-hr Labs) Analysis of animal development by experimental methods, using local organisms. Pre: 420 (or concurrent) and BIOL 275, or consent. Recommended: BIOL 406. DY


ZOOL 432 Comparative Physiology (3) Physical-chemical cellular mechanisms underlying function of organ systems; general principles inferable from study of adaption to diverse environments. Pre: BIOL 171 and 172, and MBBE 402 (or concurrent) or BIOL 441 (or concurrent); or consent. DB

ZOOL 439 Animal Ecology (3) Principles and theories; examples from current experimental and analytical literature. For students in biological sciences. Pre: BIOL 265 and MATH 205 or 215 or 241; or consent. DB

ZOOL 439L Animal Ecology Lab (2) (2 4-hr Lab) Introduction to methodology, experience in characterizing populations and communities. Pre: BIOL 265. DY

ZOOL 442 Introduction to Neuroscience (3) Nerve cells, their signalling capabilities and the developmental organization of nervous systems, both invertebrate and vertebrate, for sensory reception, integration, behavioral command and learning; insights from on-going research using molecular, genetic, biophysical, and imaging methods. Pre: BIOL 275 or consent. Spring only.

ZOOL 450 Natural History of Hawaiian Islands (3) (2 Lec, 1 1-hr Lab) Geography, geology, climatology, biotic environment of Pacific Basin and Hawaiian Islands; endemism and evolution in terrestrial and marine biota. Pre: one semester of biological sciences at college level. (Cross-listed as BOT 450) DB

ZOOL 460 Avian Biology (3) Broad coverage of the morphology, physiology, ecology, behavior, and evolution of birds, emphasizing the relation of birds to general theory in biology. Pre: BIOL 265. DB


ZOOL 465L General Ichthyology Lab (1) (2 2-hr Lab) Overview of the major orders and families of fishes of the world; introduction to local Hawaiian fishes; coverage of basic fish anatomy; introduction to field and laboratory techniques in fish research. Pre: BIOL 265. Co-requisite: 465. DY

ZOOL 466 Fisheries Science (3) General characteristics of fisheries; harvesting methods; principles and techniques to derive data and analyze fish populations. Field trips. Pre: one of the following: 410, 465, 470, 608, or 620; or consent. DB

ZOOL 467 Ecology of Fishes (3) Reproduction, early life history; age and growth, feeding, niche specificity, competitive interactions, communities, and evolutionary mechanisms. Pre: 465 or consent. DB

ZOOL 470 Limnology (2) Biology, physics, chemistry of lakes, streams, estuaries. Pre: BIOL 172 or consent. Co-requisite: 470L. DB

ZOOL 470L Limnology Lab (1) (1 3-hr Lab) Experimental and descriptive field projects on the biology, chemistry, hydrology, and physics of lakes, streams, and estuaries. Pre: BIOL 172 or consent. Co-requisite: 470. (Alt. years) DY


ZOOL 475L Biology of the Invertebrates Lab (2) (2 3-hr Lab) Pre: BIOL 172 and CHEM 161, or consent. Co-requisite: 475. DY

ZOOL 480 Animal Evolution (3) Process of evolution: genetic basis, natural selection, population genetics, speciation, the fossil record. Pre: BIOL 265. Recommended: a BIOL or ZOOL course at 300 or 400 level. DB

ZOOL 485 Biogeography (3) Distribution of plants and animals and processes that cause, maintain, and modify them. Approach is synthetic and dynamic. Pre: BIOL 172. DB

ZOOL 487 Molecular Ecology (3) Practical introduction to molecular methods used to address ecological and evolutionary questions. Advanced undergraduate/graduate level. Two 3-hour labs/week. Focus on methods and application to independent research project. A-F only. Pre: BIOL 265/265L (or equivalent) or BIOL 275/275L (or equivalent), and BIOL 375/375L, and consent. (Alt. years) DB

ZOOL 490 (Alpha) Seminar in Zoology (1) Reports on research, reviews of literature, or research experience. Required of students majoring in zoology or entomology. (B) general zoology; (D) animal behavior; (E) ecology; (F) physiology; (G) developmental biology; (H) marine biology. Pre: 306 or equivalent or consent for (D).

ZOOL 492 Teaching Internship (1) Teaching internship in zoology. Required of ZOOL BS degree students. ZOOL BS majors only. CR/NC only. Pre: Laboratory in an upper division ZOOL course.

ZOOL 499 Directed Reading or Research (V) Performance of a laboratory, field or library research project under the direction of a faculty advisor. Preparation of a proposal and written final report required. Limited to zoology majors.

ZOOL 500 Master's Plan B/C Studies (1) Enrollment for degree completion. Pre: master's Plan B or C candidate and consent.

ZOOL 606 Principles of Animal Behavior (2) Critical review of theories of ethology, sociobiology, social and interspecific behavior, communication, and evolutionary theory. Lab optional. Pre: graduate standing.

ZOOL 606L Principles of Animal Behavior Lab (1) (1 3-hr Lab) Group or individual research projects depending on interest of students. Pre: 606 (or concurrent).

Key to symbols & abbreviations: see the first page of this section.
ZOOL 608 Fish Behavior and Sensory Biology (2) Lectures, readings and presentations on sensory systems and behavior of fishes. A-F only. Pre: 306, 430, 465, 606; or consent. Co-requisite: 608L. (Alt. years)

ZOOL 608L Fish Behavior and Sensory Biology Laboratory (1) Laboratory study of fish sensory systems and behavior. A-F only. Pre: 306, 430, 465, 606; or consent. Co-requisite: 608L. (Alt. years)

ZOOL 610 Topics in Development and Reproductive Biology (V) Discussion and survey of literature on specific topics; some field and lab work may be required. Repeatable three times.

ZOOL 619 Seminar on Science Teaching (2) Effective teaching methods, organization of courses, lectures, laboratory exercises; development and evaluation of examinations; computers and audio-visual aids. Open to graduate students in various science disciplines. Repeatable one time. (Cross-listed as NSCI 619)

ZOOL 620 Marine Ecology (3) Principles of ecology of marine biota and environment. Pre: graduate standing in zoology, oceanography, or botany; or consent.

ZOOL 623 Quantitative Field Ecology (3) (1 Lec, 1 2-hr Lab, 1 Discussion) Formal quantitative approach in identifying, designing, performing, analyzing, and interpreting ecological field problems. Pre: 439, 439L, and 631; or consent. (Alt. years)

ZOOL 631 Biometry (4) (3 Lec, 1 2-hr Discussion) Basic statistical methods: design of studies; data exploration; probability; distributions; parametric and nonparametric one-sample, two-sample, multi-sample, regression, and correlation analyses; frequency tables. Pre: MATH 241 or consent.

ZOOL 632 Advanced Biometry (4) (3 Lec, 1 2-hr Discussion) Multivariate statistical methods: multiple regression and correlation; multivariate analysis of variance; general linear models; repeated measures and multivariate analysis of variance; loglinear analysis and logistic regression. Pre: 631 and MATH 241, or consent.

ZOOL 642 Cellular Neurophysiology (3) Biological and membrane mechanisms of conduction, synaptic transmission, and other electrical responses of nerve cells. Pre: consent. (Alt years: spring)

ZOOL 652 Population Biology (3) (1 Lec, 2-hr Lab) Theory and applications of population biology; behavior of population models, as revealed by analytical methods and computer simulation; application to population problems such as endangered species; discussion of classical and current literature in population biology. Pre: one of the following: 439, 467, 620, 621, 623, BOT 453, BOT 454, BOT 456, NREM 680, PEPS 671; or consent. (Cross-listed as BOT 652)

ZOOL 690 Conservation Biology (3) (1 Lec, 1 2-hr Discussion) Theories and concepts of ecology, evolution and genetics for conservation of biological diversity. Topics will include restoration ecology, management planning, laws and policies, biological invasions. Pre: BIOL 375 and either 480 or BOT 462; and either 410, 439, 467, 612, 625, BOT 453, BOT 454, BOT 456, or BOT 492. (Cross-listed as BOT 690)

ZOOL 691 (Alpha) Seminar in Zoology (1) Reports on research or reviews of literature. Graduate students required to take this or one topics course per year. (B) general zoology; (C) zoology literature; (D) animal behavior; (E) ecology; (F) animal physiology; (G) development biology; (H) marine biology. Repeatable five times.

ZOOL 699 Directed Research (V) Directed research and reading in various fields of zoology.

ZOOL 700 Thesis Research (V)

ZOOL 710 Topics in Biometry (V) Selected advanced topics in experimental design or data analysis for biologists. Repeatable unlimited times. Pre: 631 and 632, or consent.

ZOOL 712 Topics in Nerve/Muscle Physiology (V) Advanced treatment of selected topics under current active investigation. Repeatable unlimited times. Pre: a graduate course in physiology, neurobiology, or related subjects and consent.

ZOOL 714 Topics in Animal Behavior (V) Lecture-discussion of selected topics. Repeatable three times. Pre: consent.

ZOOL 718 Topics in Animal Physiology (V) Selected problems in environmental physiology, electrophysiology, or neurophysiology. Basic concepts and measurements of function at the organismic or cellular level. Repeatable three times.

ZOOL 719 Topics in Systematics and Evolution (V) Selected problems of current or historic interest. Repeatable three times. Pre: consent.

ZOOL 739 Topics in Ecology (V) Selected advanced topics in ecology; discussion of literature and in depth survey of specific areas. Repeatable three times up to nine credits. Pre: graduate standing and consent.

ZOOL 750 Topics in Conservation Biology (V) Advanced topics in conservation and environmental biology. Repeatable three times. A-F only. Pre: consent. (Cross-listed as BOT 750)

ZOOL 800 Dissertation Research (V)