

MUS 385 Electronic Music (2) Basic techniques of electronic sound synthesis. Pre: 286 and 288.

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 20th-Century Techniques (2) Theoretical techniques in music literature of the 20th century; emphasis on writing as the synthesis of concepts. Harmony, counterpoint, serial techniques, texture, and form. 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.

MUS 410 (Alpha) Ensembles (1) Performance of literature for ensembles and performing groups of various sizes and kinds. (B) Hawaiian chorus. **AHL1**; (C) University Chamber Singers. **AHL1**; (D) piano-vocal collaboration; (E) piano duo; (F) chamber music; (G) guitar; (K) jazz; (M) contemporary music; (N) theater music; (O) percussion; (P) flute. Repeatable. Pre: audition or consent.

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. Repeatable. Pre: 311 in same section or consent.

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. Pre: 412.

MUS 414 University Concert Choir (1) Performance of a cappella literature and major choral works. Repeatable. Pre: choral experience and consent.

MUS 415 Opera Workshop (V) Opera in performance. Styles and characterizations. Performance of scenes and one complete work. Repeatable. Pre: upper division standing or consent.

MUS 416 (Alpha) University Symphony Orchestra (1) Performance of orchestra literature, including major works for chorus and orchestra, opera and dance. (B) symphony, **AHL1**; (C) chamber orchestra, **AHL1**. Repeatable. Pre: audition or consent.

MUS 417 University Javanese Gamelan (1) Performance of jogja and solo gamelan traditions; *Ujon-Ujon*, *Wajang Kulit*, *Wajang Wong*. Repeatable. Pre: 311H or consent.

MUS 418 Collegium Musicum (1) Performance of medieval, Renaissance, and Baroque literature for ensembles and performing groups of various

kinds and sizes. Repeatable. Pre: audition or consent. **AHL1**

MUS 419 (Alpha) University Band (1) Performance of literature, including works by contemporary composers. (B) symphonic wind ensemble; (C) symphonic band; (D) concert band; (E) marching band; (F) marching band percussion. Repeatable. Pre: audition or consent. **AHL1**

MUS 420 (Alpha) Music Literature Lab (2) Problems of style and interpretation and their implications in performance. Inquiry with laboratory performance. (B) solo voice; (C) piano. Repeatable. Pre: two semesters of 232 in appropriate area or 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 twice. Pre: 231B, THEA 321 and THEA 322, audition, or consent. (Cross-listed as THEA 421)

MUS 455 Freshman Seminar Leader (6) Peer teaching of introductory music courses through the freshman seminar program. Pre: upper division standing or consent.

MUS 457 Asian and Pacific Music in Education (2) Musical concepts in songs, dances, and instrumental music of Asia, Hawai'i, and other Pacific Islands, appropriate for K-12. Pre: 353, 354, or 355 and 356. (Cross-listed as TECS 457)

MUS 458 Vocal Techniques for Solo and Ensemble Singing (2) Scientific studies of vocal mechanism; application to techniques of singing. Pre: 232B and 282.

MUS 459 Vocal Pedagogy (2) Pedagogical methods for individual voice instruction; participation in applied music teaching. Pre: 458.

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. 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. Pre: 265 and 266, or consent.

MUS 464 Opera (3) Historical study from Monteverdi to present. Pre: 265 and 266, or consent.

MUS 465 Keyboard Music (3) Study of literature for harpsichord, piano, and organ from Renaissance to present; development of historical styles. Pre: 265 and 266, or consent.

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.

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. 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.

MUS 485 Intermediate Practicum in Music Composition (V) Creative writing beginning with smaller forms. Repeatable. Pre: 286 or consent.

MUS 487 Advanced Practicum in Music Composition (3) Creative writing in larger forms. Composition majors only. Repeatable. Pre: 485 or 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. 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. Pre: appropriate lower division music courses or consent and graduate standing.

MUS 610 Advanced Ensemble (1) Projects in study and performance. Repeatable. Pre: 432.

MUS 625 Advanced Conducting (2) Conducting instrumental and choral groups. Pre: 326.

MUS 626 Advanced Conducting (2) Continuation of 625.

MUS 640 Philosophy and Aesthetics of Music (3) Exploration of major Western ideas in philosophy and aesthetics, and examination of Eastern and African traditions where they intersect or have relevance. Pre: consent.

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 653 Music Curriculum Theory and Design (3) Procedures for planning, teaching, evaluating, and administering music programs in elementary, secondary, and higher education. Evaluation of current programs; procedures for change. 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. (Cross-listed as EDCI 655)

MUS 657 World Musics in Undergraduate Education (2) Concepts and materials at junior college and undergraduate levels. Preparation for structuring and teaching courses in non-Western musics. Pre: graduate status in music and undergraduate ethnomusicology course (or concurrent).

MUS 659 Seminar in College Music Teaching (3) Examines components of good teaching, adult learning theories, course organization, methodologies, 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. 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 historicosocial context of principal musical traditions. (B) Asia; (C) Oceania. Repeatable. Pre: consent.

MUS 678 (Alpha) Advanced Problems in Ethnomusicology (3) (B) transcription of music performance; (C) movement analysis; (D) other. 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) atonal analysis and set theory; (I) Schenkerian analysis. Pre: 286 and graduate standing.

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 diction for singers. Repeatable. 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 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.

Instruction is given in 14 individual lessons per semester, either one half-hour lesson per week (1 credit hour) or one full-hour lesson per week (2 or more credit hours). Lessons are not made up unless instructor is notified a reasonable time in advance of the excused absence.

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 audited 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; (D) South Indian singing; (E) Hawaiian chant; (F) shakuhachi; (I) other; (J) gottuvadyam vina. Repeatable for four semesters. Pre: audition or consent.

MUS 231 (Alpha) Applied Music, Western (V) 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) saxophone; (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 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.

MUS 330 (Alpha) Advanced Applied Music, Ethnic (V) Individual instruction in instrumental and dance performance at advanced level. See 230 for list of sections. Repeatable for six semesters. Pre: advancement from 230 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 (V) 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 332 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; (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.

MUS 636 Graduate Recital (V) For students accepted for MMus in performance. Individual instruction in solo vocal or instrumental performance at graduate level; full recital required. (B) voice; (C) piano; (H) violin; (I) viola; (J) cello; (K) bass; (M) flute; (N) oboe; (O) clarinet; (P) bassoon; (Q) saxophone; (R) trumpet; (S) French horn; (T) trombone; (U) tuba; (X) euphonium; (Y) percussion.

Natural Sciences (NSCI)

College of Natural Sciences

NSCI 501 Seminar for Science Teachers (1) 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 502 Conceptual Chemistry for Teachers (V) Combined lecture, laboratory and discussion course. Principles of chemistry taught in a conceptual hands-on manner appropriate for science teachers. Repeatable one time. Pre: CHEM 151 or CHEM 161 or CHEM 171, or consent.

NSCI 503 Computers in Classroom (V) Combined lecture, laboratory and discussion course on the use 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 505 Conceptual Physics for Teachers (V) Major concepts of physics 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 (1) 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)

NSCI 620 Seminar on Preparing Future Faculty (1) Role and responsibilities of college teaching, academic expectations, policies and procedures in different types of institutions of higher learning, developing the requisite skills for obtaining teaching positions and skills necessary for a successful career in college teaching. Open to graduate students advanced to candidacy for Master or PhD degrees. A-F only. Repeatable nine times. Pre: consent.

See also the biology professional development course, BIOL 501, under the Biology (BIOL) course listing in this section of the Catalog.

Nursing (NURS)

School of Nursing and Dental Hygiene

NURS 200 Consumer Health Online (3)

Explores and evaluates consumer health and medical information, support groups, and self-help communities on the Internet. The focus is on informed decision-making and active participation in personal health and medical care. Pre: e-mail address, internet access, and computer availability; or consent. Open to non-nursing majors with consent.

NURS 201 Healing and Wellness (3) Course is built upon the dimensions that comprise healing and wellness and is based upon the mind-body-spirit model of the human energy system. Theoretical/research concepts and experiential interventions and strategies will be explored to enhance health and wellness with self and others. Pre: Introductory English or consent. Open to non-nursing majors with consent.

NURS 203 Statistical Concepts for Health Professionals (3) Descriptive methods; graphic methods; central tendency; variability; normal curve; sampling theory; correlation and regression; reliability and significance; inferential methods as applied to health care research. A-F only.

NURS 301 Nursing: The Next Generation (3) Survey of nursing theories, conceptual frameworks, and decision-making, emphasizing the role of the professional nurse. Examination of professional nursing practice and roles in diverse community settings. Restricted to majors. A-F 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)

NURS 310 Psychosocial Nursing Concepts (3) Examination of psychosocial concepts in relationship to therapeutic use of self within nursing practice. Focuses on concepts of communication, interpersonal relationships, and culture. 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 nursing care. Application of concepts from microbiology, chemistry, anatomy, physiology, and psychology. Restricted to majors. Pre: 330 or consent.

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 (3) Application of assessment skills in dry lab and clinical settings; communication skills, interviewing techniques, and physical examination skills. Pre: admission to the School of Nursing and Dental Hygiene or consent. Co-requisite: 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, 331.

NURS 340 Ethical Legal Aspect Health-care (3)

Ethical dilemmas and legal issues in health care; focus on decision-making in professional activity 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 342 Health-care/Nursing in Japan in Comparison with the United States (3)

Comparison of Japanese health-care system and professional nursing practice with that of the United States. Field trip to Japan includes interactions with Japanese nursing students. 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 345 The Brain (3) Introduction to neuroanatomy, neurochemistry, and neurophysiology for undergraduate students interested in any health profession. Pre: open to non-nursing majors with consent.

NURS 346 The Reflective Clinician (2)

Examines the effect of the arts on the subjective human experience. Approaches and knowledge from the humanities are used to explore and enhance the therapeutic effectiveness of the nurse. Pre: open to non-nursing majors with consent.

NURS 347 Pharmacobehavioral Aspects of Substance Use/Abuse (3)

Survey of physiobehavioral effects of major categories of used/abused substances including opiates, sedative/hypnotics, common "recreational" drugs, and abused foods. Pre: open to non-nursing majors with consent.

NURS 348 Nursing Care of HIV Infected Client (2)

Discussion of selected aspects of HIV disease, manifestations, systems affected, and nursing considerations. Legal and social implications affecting nursing care of HIV positive

clients are explored. Pre: open to non-nursing majors with consent.

NURS 349 Introduction to Pain Management (2)

A fundamental course on pain, using cancer-related pain as the model. Discussion of effective assessment, treatment, management, and evaluation of pain. Pre: open to non-nursing majors with consent.

NURS 350 Chronic Illness in Children and Adolescents (V)

Explores the impact of chronic illness on children, adolescents, families, and communities. A variety of specific chronic conditions will be examined. 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. Pre: open to non-nursing majors with consent. (Cross-listed as DH 361) Spring only.

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 and community settings. Pre: 311, 331/331L. 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 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: 370, 370L, and 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. Pre: 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: 370, 370L, and 371.

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. Pre: 371, 371L. 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: 372L.

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. Pre: 371/371L. 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: 372.

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. Pre: 371 and 371L; 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: 373L.

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. Pre: 371/371L. 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: 373.

NURS 399 Directed Reading/Research I, II (V) Limited to juniors and seniors in nursing.

NURS 410 Case Management in Managed Care (2) Case Management as a delivery system, impact on health-care outcomes, relationship to health-care economics, knowledge and skills necessary for case managers. Includes lecture, discussion, and field trips. Pre: 331 or consent; open to non-nursing majors with consent.

NURS 411 NCLEX Review (2) Overview of the NCLEX-RN licensure examination and regular, systematic practice in taking multiple choice examinations. Pre: open to non-nursing majors with consent.

NURS 412 Fund of Occupational Health Hazards (2)

Introduction to occupational health and four major types of health and safety hazards in the workplace. Review of OSHA regulations related to health care industry. Pre: open to non-nursing majors with consent.

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. CR/NC only. Repeatable. Pre: 370.

NURS 430 Hazardous Materials (3) Introduction to state and federal environmental regulations relative to hazardous substances. Analysis of specific health and environmental impacts of hazardous waste. Pre: CHEM 152 (or concurrent) or consent. (Cross-listed as ENBI 420 and GEOG 420)

NURS 437 Rural Health Teams (3) Introduction to concepts and skills of interdisciplinary practice and capacity building focused on 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. Pre: completion of junior year 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 and completion of junior year; or consent.

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, continuity of care and managed care are included. Pre: 373, 373L. 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: 470L.

NURS 470L Adult Health Nursing II Lab (3)

Application of the nursing process, concepts of ethics, continuity of care and managed care in the care of multiple adult clients and their families with complex adult health problems in acute care and the community. Pre: 373, 373L. 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: 470.

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. Pre: 373 and 373L; 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: 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. Pre: 373, 373L. 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: 471.

NURS 472 Introduction to Critical Care Concepts (2)

Introduction to nursing concepts, theory, and research utilized in a critical care setting. Pre: 470 or consent. Open to non-nursing majors with consent.

NURS 475 Complex Nursing Practice (2)

Examination of comprehensive care of clients with complex needs within the health care system. Emphasis on quality management, continuity of care, culture, and ethics. Pre: 441, 471, and 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. Co-requisites: 439, 475L.

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. Pre: 441, 471, 471L. 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: 439, 475.

NURS 486 Professional Issues and Trends (2)

Opportunity to study issues in nursing within context of health-care system and changing society. Aspects of nursing history; professionalism; credentialing; legal and ethics issues. Pre: completion of junior year or consent.

NURS 491 Seminar in Perioperative Nursing I

(3) Development of a knowledge base for the professional and technical practice of perioperative nursing. Repeatable once. Pre: 470 or RN license or consent. Co-requisite: 491L.

NURS 491L Perioperative Nursing Clinical I

(3) Application of clinical knowledge to the care of the surgical client. Development of skills for professional and technical perioperative nursing practice. Repeatable once. Pre: 470 or RN license or consent. Co-requisite: 491.

NURS 492 Seminar in Perioperative Nursing II

(3) Further expands the perioperative nursing knowledge base by focusing on nursing care in specialty surgical services. Repeatable once. Pre: 491 and 491L, or consent. Co-requisite: 492L.

NURS 492L Perioperative Nursing Clinical II

(3) Integration of basic surgical concepts in the care of the client receiving specialty surgical services. Continued development of skills for professional and technical perioperative nursing practice. Repeatable once. Pre: 491 and 491L, or consent. Co-requisite: 492.

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

NURS 601 Medical Care Systems (3) Organization of medical care services; interpretation of need and demand; types, numbers, nature, relationships of medical institutions and manpower; financing medical care; national plans for medical care.

NURS 602 Fundamentals of Health Administration (V) Fundamental concepts and methods of modern management in health care settings. (Cross-listed as PH 602)

NURS 603 Legal Basis for Health Services (3)

Basis for regulation of public health; aspects of administrative law—including disclosure, confidentiality, consent, interference with person and property, permits, licenses, search and inspection, abatement, seizure, liability, legislative process and politics—influencing public policy development.

NURS 604 Leadership and Organizational Behavior in Health Services (3)

Personnel supervision, leadership modes in health-care systems; organizational and work group behavior, development of effective organizational performance. Application of behavioral sciences in health administration. Pre: 602 or consent.

NURS 605 Health Promotion and Disease Prevention (2)

Teaching and learning concepts and the role of advanced practice nurses are applied to 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 private health services; capital development and planning;

procedures of fiscal management as administrative controls. Pre: 602 or consent.

NURS 609 Introduction to Health Policy (3) Review of contemporary national health policy issues and concerns. International comparison of policy evolution. Pre: 601.

NURS 610 Telehealth: Analysis and Applications (3) Analysis and application of telecommunications and information technology for improving patient care and community health. Using a proposal development and technology assessment framework, participants will develop a new application related to their professional interests.

NURS 611 Mental Health Assessment and Diagnosis (2) Identification and synthesis of pertinent biopsychosocial, cultural, and spiritual data to complete a comprehensive psychiatric evaluation.

NURS 612 Advanced Health Assessment (2) (2-Lec, 1-Lab) Provides a framework for the development of skills for systematic and comprehensive data collection, organization, precise recording, accurate assessment and communication of data reflecting the biopsychophysical status of individuals across the life span. Pre: 639 or consent. Co-requisite: 675.

NURS 613 Pathophysiology for Advanced Practice (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 manifestations and selection of assessment and management protocols.

NURS 615 Mental Health Nursing I (3) Focus on mind-body relationship in illnesses and culturally specific interventions for health promotion and prevention of common and acute mental health concerns in individuals, groups, families, and communities. Pre: 611 and 632 (or concurrent).

NURS 616 Physiology of Behavior (3) Survey of neuroanatomy, neurochemistry, and neurophysiology of behavior, including arousal, movement, emotion, memory, learning, feeding and sexuality. For nurses, psychology or biomedical students. No prerequisites but **STRONGLY RECOMMENDED** as a prerequisite for 623 (Psychopharmacology).

NURS 618 Biobehavioral Concepts (1) Critical analysis of biobehavioral concepts and relevant measurement instruments for advanced nursing practice in multicultural settings.

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 Advanced Practice Nursing I (3) Health promotion and disease prevention for health assessment and counseling of culturally diverse individuals are presented. Concepts and knowledge for the recognition, evaluation, and management of common illnesses encountered in primary care are included. Pre: 612 and 613, or consent. Co-requisite: 631.

NURS 622 Mental Health Nursing II (3) Identify risk factors and focus on cultural specific intervention strategies for chronic mental health concerns with individuals, groups, families, and communities. Pre: 615.

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 Clinical Management Issues in Psychopharmacology (2) Review of the neurobiological concepts underlying the pharmacotherapies utilized in the major mental disorders (neurobiological disorders). Emphasis is placed upon the clinical management of the pharmacotherapies in prescriptive practice. Pre: consent.

NURS 627 Child/Family Health Assessment (4) (2 Sem, 8-hr Lab) Opportunity to develop specialized clinical competence in assessment of children as a basis for the development of clinical specialization. Development of the individual's potential toward health maintenance functioning.

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. Pre: consent.

NURS 630 Information Systems in Healthcare (3) Introduction to information systems in health care as pertaining to nursing and health care. Demonstrate competency in the use of nursing and health information systems in clinical practice.

NURS 631 Advanced Practice Clinical I (4) Supervised clinical practicum for community-based Advanced Practice Nursing I. Pre: 612. Co-requisite: 621.

NURS 632 Therapeutic Modalities (2) Psychotherapy theories and models utilized in interventions relevant to diverse cultures and ethnic groups.

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: admission to advanced practice nursing - PC option or consent of instructor, and 605, 612, 613, 620, 630, 639; or consent.

NURS 634 Child Health: Special Problems (5) (2 Sem, 12-hr Lab) Focuses on assessment and intervention with infants, children, and adolescents with ambulatory acute or chronic health problems or potential for compromised growth and development. Emphasizes critical analysis of research in pediatric health-care problems. Pre: 633.

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 and concerns specific to women. Co-requisite: 639 and one of 631, 644, or 734.

NURS 636 Women's Health: Special Problems (5) (2 Sem, 12-hr Lab) Focuses upon assessment and intervention of at-risk and high-risk women during pregnancy, interconception, and the menopausal years. Emphasizes critical analysis of research in pregnancy, family planning, and common gynecological problems. Pre: 635 or consent.

NURS 637 Delivery of Nursing Care in a Rural Community (V) Supervised clinical community-based practicum for advanced practice nurses in rural health care. Pre: 621 and 631.

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 641 Community Partnership and Health Policy I (2) Multidisciplinary health professional course analyzes influences of healthcare delivery systems, leadership, health education and team building. Involves policy formation strategies, resource management, and teaching portfolios. Pre: consent.

NURS 642 Community Partnership and Health Policy II (2) Multidisciplinary health professional course utilizes education and research to address impact of health education. Students lead educational sessions about the influence of health policies. Pre: 641 or consent.

NURS 643 Advanced Practice Nursing II (3) Management of health/illness status with emphasis on acute conditions commonly seen in primary care. APN-client relationship, role in practice, culturally relevant care, diagnosis, client appropriate treatment, education, family centered are also discussed. Pre: 621 and 631, or consent. Co-requisite: 644.

NURS 644 Advanced Practice Clinical II (4) Application in clinical settings of the concepts and principles of assessment, diagnosis, evaluation, management and professionalism as covered in NURS 643. Pre: 621 and 631; or consent. Co-requisite: 643.

NURS 645 Advanced Practice Mental Health Practicum I (V) Supervised application of theories, research findings, skills and interventions for advanced practice nursing in primary, acute and chronic care with individuals, groups, families, or communities with socioeconomically and/or culturally diverse populations. Repeatable one time. Co-requisite: 611, 615, 622, or 632.

NURS 646 Advanced Practice Mental Health Practicum II (V) Further supervised application of theories, research findings, skills and interventions for advanced practice nursing in primary, acute and chronic care with individuals, groups, families, or communities with socioeconomically and/or culturally diverse populations. Repeatable one time. Pre: 645. Co-requisite: 611, 615, 622, or 632.

NURS 648 Graduate Cooperative Education in Nursing I (2) First semester of a two-semester course with a seminar on advanced practice role development and practice in addition to paid work experiences. CR/NC only. Repeatable once. Pre: 621 and 631, or concurrent; or 611 or 632, or concurrent.

NURS 649 Graduate Cooperative Education in Nursing II (1) Second semester of a two-semester course with a seminar on advanced practice role development and practice in addition to paid work experience. CR/NC only. Repeatable once. Pre: 648.

NURS 650 Complementary and Traditional Care (3) A review of theoretical systems and approaches to complementary and traditional care in culturally diverse populations with a focus on wellness. Appropriate for all health-care professionals.

NURS 651 Pain: Its Pathophysiology, Assessment, and Management (3) In-depth study of the theoretical concepts of pain. Theories are evaluated for their potential use in the delivery of health care, emphasizing the assessment and management of pain.

NURS 660 (Alpha) Selected Topics in Nursing (3) Advanced study, exploration of special topics in clinical nursing. (D) developmentally disabled children and their families; (I) current issues in professional nursing.

NURS 662 Management and Leadership of Clinical Systems (3) Study of theoretical and conceptual basis of leadership and management applied to changing clinical systems.

NURS 663 Clinical Systems Management I (3) Analysis of various clinical management concepts and health-care delivery systems influencing outcomes, process, and costs in the delivery of care. Pre: 662 (or concurrent) or consent.

NURS 664 Clinical Systems Practicum (3) Supervised experience in clinical systems management for the nursing administrator. Pre: 663 (or concurrent) or consent.

NURS 665 Clinical Economics and Finance (3) Economic and financial concepts and tools for developing and managing patient care processes.

NURS 675 Advanced Practice Clinical (V) Application of concepts and principles of assessment, diagnosis, management, and evaluation of clients in supervised clinical practicum for advanced practice nursing. A-F only. Pre: 612.

NURS 681 Environmental Determinants of Health (2) Environmental factors in personal and community health; implications for public health practice. Consideration of major issues from local, U.S., and international perspectives. (Cross-listed as PH 681)

NURS 683 Occupational Health I (2) Historical development of occupational health; occupational diseases and accidents; control of hazards in occupational environment; study of selected occupations and specific problems. Pre: consent.

NURS 685 Ergonomics (2) The technology of work design, including consideration of the biology of work, the psychology of work, and methods of studying work. Pre: 683 or consent.

NURS 687 Environmental Toxicology (3) Biochemical basis for toxic effects. Emphasis on environmental toxicants. Pre: upper division course including lab in biochemistry or physiology, or consent.

NURS 688 Environmental Health for Developing Countries (3) Appropriate technologies for environmental health interventions; emphasis on water and sanitation for rural developing countries. Pre: consent.

NURS 691 Occupational Safety (2) Hazard recognition, analysis, and control. Accident causation and investigation. Measurement/evaluation of safety program elements. Ergonomics of work. Pre: consent. Recommended: 683.

NURS 694 Hazardous Materials Management (2) Introduction to the fundamental concepts of hazardous materials management. Emphasis on laws, ordinances, regulations, and control strategies. Pre: consent.

NURS 695 Successful Aging: Physiologic (3) Advanced study of the functional, cultural, psychological, and socioeconomic phenomena that impact the physiology of normal and abnormal aging. Emphasis is on promoting successful aging among elder residents of the Pacific Basin and applications to primary health care. Pre: consent.

NURS 699 Directed Study or Research (V) Directed study of problems related to nursing theory and practice. Pre: consent.

NURS 700 Thesis Research (V) Research for master's thesis.

NURS 705 Management of Ambulatory Care Services (2) Structure and organization of group medical practices, community health centers, ambulatory surgical facilities, other forms of ambulatory medical care. Management, governance, ownerships, capital development, special problems. Pre: 606.

NURS 710 Designing and Conducting Clinical Trials (3) Small group sections will guide students as they produce their own clinical trial protocol. Topics like ethics and statistical power will be addressed briefly. Repeatable one time. Pre: any graduate level statistics course.

NURS 720 Politics of Health/Policy Process (3) Constitutional, legal, governmental framework of health. Policy process, analytic techniques, assessing alternatives, adoption, implementation, evaluating effectiveness. Impact of constraints on policy analysis strategy. Pre: PH 608 or consent. (Cross-listed as PH 710)

NURS 733 Advanced Practice Nursing III (3) Management of chronic illness using selected health-care systems in culturally diverse communities. Management includes practice, consultation, education, research, and evaluation. Pre: 643 and 644; or consent. Co-requisite: 734.

NURS 734 Advanced Practice Clinical III (4) Third clinical practicum for advanced practice nursing. Emphasis is on integration of knowledge, skills, and outcomes evaluation. Pre: 643 and 644, or consent. Co-requisite: 733.

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. Pre: 639 (or concurrent) or consent.

NURS 741 Quantitative Methods and Measures (3) Critical analysis of quantitative research methods used to analyze problems of interest to nursing in culturally diverse populations. Pre: 620 or consent.

NURS 742 Qualitative Methods and Measures (3) Application of qualitative research methods in the development of clinical nursing disciplinary knowledge related to culturally diverse populations. Pre: 620 or consent.

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: graduate standing or consent. (Cross-listed as SW 776)

NURS 745 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 748 Supervised Practicum in Teaching (2) Supervised experience in instructional planning and teaching. Pre: 747 (or concurrent) or consent.

NURS 751 Evidence-Based Practice I (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 761 Evidence-Based Practice II (3) Second course in analysis of specific concepts and theoretical formulations of nursing and other disciplines. Continuation of 751. Pre: 751 or consent.

NURS 774 Clinical Systems Management II (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 systems management for the nursing administrator. Pre: 664 and 774 (or concurrent), or consent.

NURS 777 Nursing Research Practicum I (3) Directed research experience providing opportunity to gain mastery of faculty research. Repeatable once. Pre: 741 and 742.

NURS 778 Nursing Research Practicum II (2) Examination of federal regulations, institutional procedures, legal, and ethical correlates for the protection of human research subjects in culturally diverse populations. Pre: 777 or consent.

NURS 797 (Alpha) Exploration in Public Health (V) Investigation of emergent fields of inquiry in public health. (B) biostatistics; (C) health planning; (D) environmental health; (E) epidemiology; (G) gerontology; (H) health services administration; (I) international health; (J) maternal and child health; (M) population and family planning; (O) health education; (R) public health nutrition; (S) community health development; (T) public health science; (U) public health. Pre: consent. (Cross-listed as PH 797)

NURS 800 Dissertation Research (V) Research for doctoral dissertation. Repeatable. Pre: consent.

Obstetrics and Gynecology (OBGN)

School of Medicine

OBGN 531 7-Week OB/GYN Clerkship (10)
Unit VI—7-week basic obstetric/gynecology clerkship. Repeatable once. 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 twice. CR/NC only. Pre: third-year standing, and concurrent registration in 532 courses and SURG 535.

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) OB—2 wks/ GYN—2 wks; (E) high-risk OB; (F) endocrinology; (G) oncology; (H) topics with individual preceptor; (I) extramural electives. Repeatable twice for each alpha. CR/NC only. Pre: 531, 532, or 533.

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 SOEST and the Mānoa 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 100 Marine Option Program Seminar (1)
Statewide overview of ocean issues and the organizations involved with marine activities, management, education, research and business. Exploration of opportunities for internships, research projects, study and careers. Proposal writing, project implementation, and report preparation guidelines. Portions on HITS with participation of students and faculty from throughout UH system. Orientation to the Marine Option Program.

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. NS2

OEST 261 People, 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 or ZOOL 200.

OEST 300 Ocean Internships and Research (V)
With faculty guidance, students design and carry out marine-related internships, practica, research projects, or field experience on or off campus. Repeatable once. Pre: a minimum cumulative GPA of 2.5, junior or senior standing in any field of study, and OEST 100 or consent.

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. (Cross-listed as OCN 310 and MET 310)

OEST 310L Global Environmental Change Laboratory (2) (2-hr Lab) Laboratory course to supplement OEST 310. Quantitative aspects of global environmental change will be addressed through problem solving and computer modeling. A–F only. Pre: MATH 241, MATH 242, PHYS 170, PHYS 170L, CHEM 161, and CHEM 161L; or consent. Co-requisite: 310. (Cross-listed as MET 310L and OCN 310L)

OEST 480 Sea Systems I (3) (1 Lec, 2 Discussion) The development of society is traced as it has occurred about water systems: lakes, rivers, seas, and oceans, from earliest beginnings until the 19th century. Cross-disciplinary perspectives integrate art, natural sciences, social sciences, literature, engineering, and technology. Lectures, discussions, and the Socratic method are employed. Pre: upper division standing or consent.

OEST 481 Sea Systems II (3) (1 Lec, 2 Discussion) The development of society about water systems is examined for the current century, and projections are made for the next. Cross-disciplinary perspectives integrate art, natural sciences, literature, engineering and technology, and history. Pre: upper division standing or consent.

OEST 489 World Maritime History (3) A survey of world maritime history from earliest times to the present, with emphasis on the evolution of nautical technology, motives for maritime enterprises, and the impact of cross-cultural encounters between oceanic peoples. Pre: HIST 151 and HIST 152 (or concurrent), or consent. (Cross-listed as HIST 489)

OEST 668 Maritime Archaeology Techniques (6) (5 7-hr Lab) Laboratory and field training in the principles and practice of methods of maritime archaeology—coastal habitations, shipwrecks, waterlogged artifacts; survey, mapping, excavation, conservation. Summer only, full-time. Repeatable. Pre: ANTH 210 or consent. (Cross-listed as ANTH 668)

OEST 680 The Sea and Society to 1900 (3)
Evolution of societies as affected by marine technology, culture, law, policy, and the geophysical relationship between land and water masses. Pre: graduate standing or consent.

OEST 681 Sea and Society: 20th–21st Century (3) In-depth examination of society's modern evolution and projected development into the next century, focusing on the marine aspects of technology, science, law, military, commerce, population distribution, and environmental management. Pre: graduate standing or consent.

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 Seminar (2) Interdisciplinary approach to problems relating to humans and their interactions with the world's oceans and coasts. Theme changes each semester. Repeatable.

Ocean and Resources Engineering (ORE)

School of Ocean and Earth Science and Technology

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.

ORE 394 Marine Biotechnology (4) A lecture and laboratory course on both the theory and practice of developing commercial products from marine microorganisms. The course will cover all stages of product development including marine environments likely to contain microorganisms that can make products of interest, screening microbes for desired products, optimization of product production and large-scale production systems. Open to students from microbiology, ocean engineering and other ocean sciences. Pre: consent. (Cross-listed as MICR 394)

ORE 411 Buoyancy and Stability (3) Ship nomenclature and geometry, hydrostatic principles of surface ships and underwater vehicles in free-floating, partially waterborne, and damaged conditions. Subdivision of ships. Launching. Pre: CE 270 or equivalent.

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

ORE 601 Ocean Engineering Lab (3) Design, construction, and evaluation of an ocean engineering system. Field experience supplemented with appropriate theory. Pre: consent.

ORE 603 Oceanography for Ocean Engineers (3) Discussion of the physical, chemical, and geological ocean environments for ocean engineers. Description of the world's oceans and dynamic processes; introduction to analytical description, circulation, waves, tides, and measurements. Pre: consent.

ORE 607 Water Wave Mechanics and Design Criteria (3) Governing equations in free surface flows, deterministic and probabilistic wave theories, wave transformation, wave induced coastal currents, ocean engineering operational sea state and design wave criteria. Pre: consent.

ORE 608 Statistics for Ocean Engineers (3)
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) Hydrodynamics of ships, coastal and offshore structures. Wave forces by potential theory and by Morison's equation. Method of source distribution for potential flow problems. Flows with prescribed body motion, fixed and freely floating bodies. Pre: 607. Co-requisite: 608.

ORE 612 Dynamics of Ocean Structures (3) Response of floating platforms and vessels to wave action, spectral analysis in sea keeping. 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 Basic Design of Ships and Offshore Structures (3) Owner's requirements, design criteria, characteristics of merchant ships and offshore structures. Conceptual and preliminary design procedures, design spiral, computer-aided ship design. Pre: 411 and 612.

ORE 631 Structural Design of Ships (3) Design of ocean structures to withstand hydrostatic and hydrodynamic loading of the sea. Considerations include material type, safety factors, stress concentrations, and fatigue. Applications made to submersibles, cargo ships, and/or offshore platforms. Pre: 630 or consent.

ORE 652 Near-Shore Survey Design (3) Introduction to near-shore and offshore environments, planning and conducting field programs, ocean instrumentation, reduction and analyses of data, presentation of results. Pre: 603 or consent.

ORE 661 Introduction to Coastal and Harbor Engineering (3) Operational sea state and design wave criteria. Solution of practical problems related to planning, design, construction, and maintenance of beaches, harbors, and other coastal structures. Partially satisfies ORE design-course requirements. Pre: consent.

ORE 662 Design of Coastal and Harbor Structures (3) Planning and design of seawalls, groins, jetties, and breakwaters. Layout of ports. Design requirements for harbor entrances and channels. Littoral drift and sedimentation problems. Navigation and mooring requirements. Pre: 661 or consent.

ORE 664 Near-Shore Processes and Littoral Drift (3) Sediment transport by waves and currents in coastal areas and its effect on morphological processes. Effect of manmade structures on littoral drift and shoreline. Pre: 607 or consent.

ORE 677 OTEC Systems (3) Ocean thermal energy conversion (OTEC) systems, thermodynamics, alternative processes, co-products, and environmental context. Pre: ME 311 or equivalent.

ORE 678 Marine Mining Systems Technology (3) Activities in marine minerals development are examined in a multidisciplinary systems approach involving engineering, Earth and environmental sciences and economics. Pre: OCN 631 or consent.

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

ORE 700 Thesis Research (V) Pre: candidacy for MS in ocean engineering.

ORE 707 Nonlinear Water Wave Theories (3) Higher-order theories. Forced oscillations. Stoke's theory. Nonlinear shallow-water wave equations and hydraulic jumps; effects of rotation. Internal waves. Analytical techniques necessary will be developed as course progresses. Pre: consent.

ORE 766 Numerical Analysis of Hydrodynamic Problems (3) Numerical methods for solving potential flow problems encountered in coastal and offshore engineering. Boundary element,

finite difference, and finite element methods are used for the solution of initial-boundary-value problems. Pre: consent.

ORE 783 Ocean Engineering Design Project (3) Hands-on experience in the design of an offshore engineering (fall) or coastal engineering (spring) project. Pre: 612 for offshore engineering, and 661 for coastal engineering; or consent.

ORE 791 Special Topics in Ocean Engineering (V) Course content will reflect special interests of visiting and permanent faculty. Pre: consent.

ORE 792 Seminar in Ocean Engineering (1) Attendance at 15 approved seminars is required along with submission of notes. Topics to be selected by students.

ORE 800 Dissertation Research (V) Pre: candidacy for PhD in ocean engineering.

Oceanography (OCN)

School of Ocean and Earth Science and Technology

OCN 201 Science of the Sea (3) Structure, formation, and features of ocean basins; seawater properties and distributions; currents; waves; tides; characteristics of marine organisms; marine ecological principles; man and the sea. Field trip required. NS2

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. NS2

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. (Cross-listed as OEST 310 and MET 310)

OCN 310L Global Environmental Change Laboratory (2) (2-hr Lab) Laboratory course to supplement OCN 310. Quantitative aspects of global environmental change will be addressed through problem-solving and computer modeling. A-F only. Pre: MATH 241, MATH 242, PHYS 170, PHYS 170L, CHEM 161, and CHEM 161L; or consent. Co-requisite: 310. (Cross-listed as MET 310L and OEST 310L)

OCN 312 Geomathematics (3) Mathematical methods of geologic and geophysical science. Emphasis on application to earth-science problems using linear algebra, vector calculus, partial differential equations, and numerical solutions. Pre: MATH 242 or consent. (Cross-listed as GG 312)

OCN 315 Modeling Natural Systems (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: consent. (Cross-listed as PHIL 315)

OCN 320 Aquatic Pollution (3) Pollution of freshwater and marine systems by human activities. Causes, consequences, and correctives. Pre: 201 or consent.

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.

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.

OCN 363 Earth System Science Databases (3) Combined lecture, discussion, and laboratory course on global Earth system databases and satellite instrumentation, including computer laboratory. A-F only. Pre: MATH 244 or consent.

OCN 401 Biogeochemical Systems (3) Relationship of biogeochemical cycles in the atmosphere, lithosphere, and biosphere to global chemical cycles and planetary climatic conditions. GES degree foundation course. A-F only. Pre: consent.

OCN 402 Solar Nebula to the Human Brain (3) Changes in the chemical composition from solar nebula to meteorites, bulk earth, earth's mantle and crust, sedimentary rocks, hydrosphere, biosphere and human body and underlying principles. Pre: CHEM 161 and 162, or consent.

OCN 423 Marine Geology (3) Sediments, structure, geophysics, geochemistry, history of ocean basins and margins. Pre: GG 302 and GG 308; or consent. (Cross-listed as GG 423)

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. (Cross-listed as GG 444) (Alt. years)

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. Repeatable. Pre: ANSC 200 (or concurrent) and ANSC 201 (or concurrent) or BIOL 172 (or concurrent). (Cross-listed as ANSC 450)

OCN 499 Undergraduate Thesis (3) Directed research course in which the student carries out a scientific project of small to moderate scope with one or more chosen advisers. The student must complete a document in the style of a scientific journal article. Repeatable once. Pre: consent.

OCN 620 Physical Oceanography (4) Introduction to properties of seawater, oceanographic instruments and methods, heat budget, general ocean circulation, regional oceanography, waves, tides, sea level. Repeatable. 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 622 Geological Oceanography (3) Marine geological processes, ocean basin structure and tectonics, sedimentation. Pre: GG 101.

OCN 623 Chemical Oceanography (3) Chemical processes occurring in marine waters; why they occur and how they affect oceanic environment. Pre: CHEM 171 or equivalent.

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. Spring 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. Spring only.

OCN 630 Physical Oceanography Lab (1) (1 3-hr Lab) Techniques and methods of analysis. Pre: MATH 244 and consent.

OCN 631 Ocean Minerals (3) Distribution, origin, processes of formation. Sulfides, oxides, and placer minerals. Comparative studies of continental ore bodies. Submarine rift, subduction, and abduction. Pre: one of 622, 623, GG 407, GG 430, or GG 603.

OCN 633 Chemical Oceanography Lab Methods (2) (1 Lec, 1 2-hr Lab) Lab and field analytical techniques. Pre: consent.

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 161, CHEM 162, and MATH 241.

OCN 635L Radiochemical Techniques (1) (1 3-hr Lab) Radiation detection and measurement, separation and manipulation of radionuclides, experimental design and use of tracers. Student projects based on individual interests. Pre: 635 (or concurrent) and consent.

OCN 638 Earth System Science and Global Change (3) Global view of the planet and how it functions as an integrated unit. Biogeochemical processes, dynamics, and cycles, and analysis of natural and human-induced environmental change. Chemical history of ocean-atmosphere-sediment system and co-evolution of the biota. Repeatable once. Pre: BS in environmentally related science or one year of chemistry, physics, and calculus. (Cross-listed as GG 638)

OCN 640 Advanced Physical Oceanography (3) Ocean structure and circulation, interaction between ocean and atmosphere, interpretation of oceanographic data, comparison of theories and observations. Pre: 620.

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. 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 once. 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 pressure-temperature conditions. Pre: CHEM 171, MATH 242, PHYS 152, and consent. (Cross-listed as GG 644)

OCN 645 Marine Organic Geochemistry (3) Processes responsible for cycling of organic material in marine waters and sediments. Pre: 622, 623, and CHEM 272; or consent.

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. Pre: MATH 244.

OCN 653 Methods in Microbiology Oceanography (3) (1 8-hr Lab) Modern methods for sampling microbial populations from the sea and for quantifying biomass and in situ rates of metabolism. Integrated field projects, theme varies. Pre: 621 or 623, and 626; or consent.

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 403 and MATH 404.

OCN 663 Satellite Oceanography (3) Techniques of satellite observations of the ocean, including temperature, pigment concentration, currents, and winds; analysis of a satellite data set as term project. Pre: 620 or consent.

OCN 664 Oceanographic Instrumentation and Technology (3) Measurement techniques in physical oceanography, including pressure, temperature, salinity, oxygen, optical sensors, current meters, navigation systems, ocean acoustics, and mooring structures. Includes a laboratory research project. Pre: 620 or consent.

OCN 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. Pre: MATH 402 and MATH 403 (or their equivalents) and either OCN 620 or MET 600; or consent. (Cross-listed as MET 665)

OCN 666 Large-Scale Ocean-Atmosphere Interactions (3) This lecture/seminar course 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. Pre: 620 or MET 600; or consent. (Cross-listed as MET 666)

OCN 667 Advanced Geophysical Fluid Dynamics I (3) Basic concepts and equations to describe large-scale ocean circulation; numerical models; boundary layers; models of wind-driven circulation of a homogeneous ocean. Pre: 620 and 662, or consent.

OCN 668 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 672 Seminar in Tectonics (3) Evolution of ocean basins, margins, foldbelts, and platforms, from plate tectonics and regional synthesis of structure, petrology, geophysics, and stratigraphy. Repeatable once. Pre: consent. (Cross-listed as GG 672)

OCN 674 Paleooceanography (V) Study of the paleoceanographic and paleoclimate evolution of the Earth's oceans, atmosphere, and biosphere. Repeatable. Pre: consent. (Cross-listed as GG 674)

OCN 699 Directed Research (V) Pre: consent.

OCN 700 Thesis Research (V) Research for master's thesis.

OCN 735 Seminar in Oceanography (2)

OCN 750 Topics in Biological Oceanography (V) Seminar. Literature and concepts in one of several active fields considered in detail. Repeatable. 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.

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. 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.

OEST

See Ocean and Earth Science and Technology

Pacific Islands Studies (PACS)

School of Hawaiian, Asian and Pacific Studies

PACS 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: any two of the following:

250, 251, 252, 253, 254, 255, 256, 257; second may be taken concurrently; or consent. (Cross-listed as ENG 371)

PACS 399 Directed Research (V)

PACS 462 Drama and Theatre of Oceania (3) Survey of the contemporary drama and theatre of Oceania that combines island and Western traditions. Includes Papua New Guinea, Hawai'i, Fiji, Samoa, Australia, New Zealand. Pre: ANTH 350 or THEA 101, or consent. (Cross-listed as THEA 462)

PACS 491 The Contemporary Pacific (3)

Examination of critical issues in the contemporary Pacific.

PACS 492 Topics in Pacific Islands Studies (3) Repeatable two times. Pre: 491.

PACS 495 Encountering Tourism in Asian-Pacific Societies (3)

A critical examination of a wide spectrum of issues relating to the evolution and current impact of tourism on contemporary Asian and Pacific Islands societies. Topics include colonial antecedents, social impacts, cultural and environmental concerns, case studies (including Hawai'i). Pre: ASAN 201 or ASAN 202, or consent. (Cross-listed as ASAN 495)

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

Enrollment for degree completion. Pre: master's Plan B or C candidate and consent.

PACS 690 Graduate Seminar: Change in the Pacific (3)

Interrelationship of change in selected Pacific Islands regions, institutions, and processes. Pre: consent.

PACS 691 Approaches to Pacific Islands Studies (3)

Introduction to Pacific Islands studies as an interdisciplinary field of research and scholarship.

PACS 692 Research Materials and Design (3)

Research materials and methods in Pacific Islands studies. Pre: 691 or consent.

PACS 693 Cultural Identities (3)

(2.5-hr Seminar) Comparative study of cultural identities in the United States and Pacific Islands. Pre: 480 or ENG 480, or consent.

PACS 699 Directed Reading and Research (V)

PACS 700 Thesis Research (V)

Pali (PALI)

College of Languages, Linguistics and Literature

PALI 381 Elementary Pali (3) Reading simple texts from Pali canon. Grammar taught as needed for the reading. Pre: SNSK 182 or equivalent.

PALI 382 Elementary Pali (3) Continuation of 381.

PALI 481 Intermediate Pali (3) Continuation of 382. Reading various Hinayāna texts. Pre: 382.

PALI 482 Intermediate Pali (3) Continuation of 481.

Pathology (PATH)

School of Medicine

PATH 470 Immunopathology Seminar (1)

Autoimmune diseases and transplantation immunity. Pre: MICR 361 and consent.

PATH 499 Directed Research (V) Pathology of aging, nutrition, alcoholism, and immunology. Open to selected undergraduate students. 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. CR/NC only. Pre: BIOM 555.

PATH 599 Electives in Pathology (V)

Individualized instruction in clinical and/or anatomic pathology. Third-year elective. Pre: consent.

PATH 670 Immunopathology Seminar (1)

Autoimmune disease and transplantation immunity. Pre: MICR 625 and 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.

PATH 701 Research in Pathology Residency Program (V)

Selected topics. Pre: MD degree and residency in pathology in affiliated hospitals.

Peace Studies (PACE)

College of Social Sciences

PACE 210 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.

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.

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 ENG 109, 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.

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 200 or consent. (Cross-listed as ANTH 345)

PACE 373 Nonviolent Political Alternatives (3)

Exploration of scientific and cultural resources for nonviolent alternatives in politics as bases for future and transformative inquiry and action. Pre: Any POLS 100- or 200-level course, or consent. (Cross-listed as POLS 373)

PACE 397 Nonviolent Alternatives (3)

Seminar in which students examine the roots of nonviolence in human experience and explore alternatives to problems ranging from domestic violence to international war.

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 United States, European, Australian, and Hawaiian peace, thought, and action. Also surveys early Christian and secular attitudes to war. Open to nonmajors. Pre: 210 (or concurrent) or consent.

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.

PACE 447 Mediation Skills: U.H. 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: 210 or concurrent.

PACE 478 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.

PACE 485 Topics in Peace and Conflict Resolution (3)

Recent issues, practices in peace and conflict resolution. Repeatable. Pre: 210 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: 210 and two other PACE courses and consent.

Pediatrics (PED)

School of Medicine

PED 531 7-Week Pediatric Clerkship (10)

Unit VI—7-week basic pediatric clerkship. 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 twice. Pre: third-year standing and concurrent registration in 532 courses and SURG 535.

PED 545 (Alpha) Unit VII Electives in Pediatrics (V) Fourth-year elective course 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) pediatrics in school and early intervention program. CR/NC only. Repeatable twice per alpha. Pre: 531 or 532.

PED 599 Directed Reading/Research (V) CR/NC only. Pre: consent.

PH

See Public Health

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.

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.

PHRM 499 Directed Reading and Research (V) Directed reading and research in experimental pharmacology. Pre: consent.

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

PHRM 512 (Alpha) Unit II Concurrent Elective (1) Elective course 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. 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 600 Pharmacology: Actions and Uses of Drugs (9) Systematic consideration of history, chemistry, actions, dangers, fates, uses of major classes of drugs in medicine. Pre: consent.

PHRM 613 Seminar in Pharmacology (1) Reporting and discussion of current research in pharmacology.

PHRM 614 Seminar in Pharmacology (1) Continuation of 613.

PHRM 635 Experimental Chemotherapy (2) Use of anticancer, antiviral, and immunosuppressive drugs at clinical and investigative levels evaluated from the experimental bases of chemoprophylaxis and chemotherapy. Pre: consent. (Alt. years)

PHRM 637 Advanced Autonomic and Autacoid Pharmacology (2) Selected topics on autacoid agents and drugs affecting the autonomic nervous system. Repeatable. Pre: consent. (Alt. years)

PHRM 639 Advanced Cardiovascular Pharmacology (2) Selected topics on drug effects on cardiac and vascular smooth muscle. Repeatable. Pre: consent. (Alt. years)

PHRM 640 Neuropharmacology (2) Physiology and pharmacology of peripheral and central nervous systems with particular emphasis on chemistry of synapses and on modes of synaptic transmission. Pre: consent. (Alt. years)

PHRM 641 Pharmacological Techniques (V) Program in which new students rotate through labs of faculty members to become familiar with ongoing research projects and techniques. Pre: consent.

PHRM 699 Directed Research (V)

PHRM 700 Thesis Research (V)

PHRM 800 Dissertation Research (V)

Philosophy (PHIL)

College of Arts and Humanities

PHIL 100 Introduction to Philosophy: Survey of Problems (3) Great philosophical issues, theories, and controversies. **AHL2**

PHIL 101 Introduction to Philosophy: Morals and Society (3) Social and individual values, obligations, rights, responsibilities. **AHL2**

PHIL 102 Asian Traditions (3) Universal themes and problems from Asian perspective. **AHL2**

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. **AHL2**

PHIL 110 Introduction to Logic (3) Principles of modern deductive logic.

PHIL 211 History of Philosophy I (3) An introduction to the history of philosophy based on translations of texts originally written in classical Greek or Latin. **AHL2**

PHIL 212 History of Philosophy II (3) Introduction to the history of philosophy based on translations of texts originally written in post-classical Latin or Arabic. **AHL2**

PHIL 213 History of Philosophy III (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. **AHL2**

PHIL 300 Business Ethics (3) Case studies and critical analyses of ethical issues in business. Readings from business, philosophy, law, etc. Pre: one of 100, 101, 102, 103, 211, 212, 213, MGT 301; or consent.

PHIL 301 Ethical Theory (3) Problems and methods in theory of moral conduct and decision. Pre: 101.

PHIL 302 Political Philosophy (3) Problems and methods in modern theories of the state. Comparison of anarchism, liberalism, and Marxism. Pre: 101.

PHIL 303 Social Philosophy (3) Problems and methods in examination of contemporary American life, values, and institutions in light of traditional philosophical problems of freedom, justice, authority, equality. Pre: 101.

PHIL 304 Metaphysics (3) Problems and methods arising from attempts to understand rationally what is, what appears to be, and what is not. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

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: one 100- or 200-level PHIL or REL course.

PHIL 306 Philosophy of Art (3) Problems and methods in aesthetic valuation and in appreciation, creation, and criticism of artworks. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 307 Theory of Knowledge (3) Problems and methods in epistemology. Nature of knowledge, its varieties, possibilities, and limitations. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 308 Philosophy of Science (3) Problems and methods. Domains of inquiry, methods of validation, and attendant moral concerns. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

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: 101 or consent.

PHIL 315 Modeling Natural Systems (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: consent. (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: one of 100, 101, 102, 103, 211, 212, 213; or consent.

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: one of 100, 101, 102, 103, 110, 211, 212, or 213; or consent.

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: 101 or consent.

PHIL 320 American Philosophy (3) Survey of major philosophers and schools in development of American thought up to modern times. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 330 Islamic Philosophy (3) Survey of major philosophers and schools: Kindi, Razi, Avicenna, Ghazali, Ibn Tufayl, Averroes, etc. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 350 Indian Philosophy (3) Survey of major orthodox and heterodox systems: Vedas, Upanishads, Bhagavadgita, Vedanta, Jainism, Buddhism. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 360 Buddhist Philosophy (3) Survey of central thinkers and schools. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 370 Chinese Philosophy (3) Survey of important schools and thinkers in classical Chinese traditions: Confucianism, Taoism, Mohism, Legalism. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 380 Japanese Philosophy (3) Survey of central thinkers and schools from ancient to modern. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 399 Directed Research (V) Repeatable up to a maximum of 6 credits. Pre: consent.

PHIL 400 Introduction to Analytical Philosophy (3) Major themes in logical atomism, logical positivism, and linguistic analysis. Readings from G. E. Moore to present. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 401 Introduction to Existential Philosophy (3) Major themes from contemporary investigations into meaning of human existence. Readings from Kierkegaard to Sartre. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 402 Introduction to Phenomenology (3) Methods of analyzing the structures of experience, as developed by Husserl, Heidegger, Merleau-Ponty, Sartre, etc. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

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: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 410 Philosophy and Psychoanalysis (3) Contributions of depth psychology to philosophical understanding of the nature of man, society, art, religion, and morality. Freud, Jung, Adler, Reich, and Marcuse. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

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. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 415 Philosophy of History (3) Introduction to theories of history. Continuity and change; cyclical and linear views, "meaning" in history;

social, political, and religious perspectives. Pre: one of 100, 101, 102, 103, 211, 212, 213, HIST 151, HIST 152; or consent.

PHIL 417 Philosophy in Literature (3) Philosophical themes in the literary mode in world literature. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 418 Feminist Issues in Philosophy (3) Examination of a number of basic feminist issues in philosophy within the areas of ethics, philosophy of religion, and epistemology/methodology. Pre: one of 100, 101, 102, 103, 211, 212, 213, any WS course; or consent. (Cross-listed as WS 419)

PHIL 422 Philosophical Psychology (3) Classical and modern theories of mind and action; various analyses of motivation, intention, rationality, self-deception. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 436 Philosophy of Language (3) Contemporary theories in semantics and syntax; problems of meaning, reference, speech acts, etc. Pre: one of 100, 101, 102, 103, 110, 211, 212, 213; or consent.

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 one of ANTH 150, BIOL 310, PHIL 100, PHIL 101, PHIL 102, PHIL 103, PHIL 316, WS 151, WS 362, or instructor's consent. (Cross-listed as WS 438)

PHIL 445 Symbolic Logic (3) Intermediate-level course on techniques; propositional calculus and first-order predicate calculus. Pre: 110 or any MATH course or consent.

PHIL 448 (Alpha) Individual Philosophers (3) Examination of work of a major Eastern or Western philosopher. Repeatable three times with consent. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 449 Philosophical Topics (3) Concentration on a topic of current philosophic concern. Repeatable once with consent. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 452 Philosophy of Social Sciences (3) Epistemology of social existence and conceptual and methodological foundations of the social sciences. Pre: one of 100, 101, 102, 103, 211, 212, 213; or consent.

PHIL 491 Teaching Philosophy (6) For philosophy majors who lead, under supervision, a freshman seminar section of philosophy. Pre: consent.

PHIL 492 Philosophy with Children (3) Enhancing critical thinking and oral communications skills through consideration of how to teach philosophy to elementary school children (grades K-6). Pre: 100, 101, 102, 103, 211, 212, 213; 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 501 Metaphilosophy: Philosophy in Schools (V) Theory and practice, content and methodology of doing philosophy with children, grades K-8. Repeatable one time.

PHIL 609 Advanced Symbolic Logic (3) Basic course in theory of logistic systems covering the sentential and first-order functional calculus. Pre: 445, graduate standing, or consent.

PHIL 610 Studies in Social Philosophy (3) Key issues in social philosophy, including the nature of community, the family, and other social institutions. Repeatable once with consent. Pre: graduate standing or consent; 303 recommended.

PHIL 611 Studies in Ethics (3) Key issues in ethical and metaethical theory. Repeatable once with consent. Pre: graduate standing or consent. Recommended: 301.

PHIL 612 Studies in Political Philosophy (3) Key issues in political philosophy including the nature and justification of political authority. Repeatable once with consent. Pre: graduate standing or consent. Recommended: 302.

PHIL 613 Studies in Philosophy of Law (3) Key issues in legal theory and reasoning. Repeatable once with consent. Pre: graduate standing or consent. Recommended: 318.

PHIL 614 Studies in Metaphysics (3) Key issues in ontological and cosmological theory. Problems of materialism, idealism, phenomenism, etc. Repeatable once 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 once with consent. Pre: graduate standing or consent. Recommended: 306.

PHIL 617 Studies in Epistemology (3) Key issues in theory of knowledge. Nature of truth. *A priori* knowledge, problems of induction, perception, and knowledge of material world. Repeatable once with consent. Pre: graduate standing or consent. Recommended: 307.

PHIL 619 Studies in Philosophy of Language (3) Key issues in theory of meaning, truth, reference, predication, etc. Pre: graduate standing or consent. Recommended: 445.

PHIL 620 Studies in Philosophy of Mathematics (3) Key issues in foundations of mathematics: mathematical truths, axioms, proofs, etc. Pre: graduate standing or consent. Recommended: 400 or 445.

PHIL 621 Studies in Philosophy of Science (3) Key issues in the theory of scientific truth and knowledge. Repeatable once with consent. Pre: one of 308, 316, graduate standing; or consent.

PHIL 622 Studies in Hermeneutics (3) Important debates concerning the methodology of textual interpretation. Pre: graduate standing or consent.

PHIL 625 Philosophical Movements and Schools (3) Study of a collection of texts by different authors who constitute a recognized movement or philosophical school. Repeatable three times with consent. Pre: graduate standing or consent.

PHIL 630 History and Theory of Science (3) An exploration of problems at the intersection of historical studies of science as a process and philosophical analysis of basic concepts of the

sciences. Pre: one of 308, 316, graduate standing; or consent.

PHIL 665 Zen (Ch'an) Buddhist Philosophy (3) Analysis of epistemological, metaphysical, and ethical theories. Pre: graduate standing or consent. Recommended: 406.

PHIL 670 Confucianism (3) Ethical, social, institutional problems in classical theory. Repeatable once 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 once with consent. Pre: graduate standing or consent. Recommended: 370.

PHIL 672 Taoism (3) Critical examination and evaluation of major philosophical ideas in Lao Tzu, Chuang Tzu, and the Neo-Taoists. Repeatable once with consent. Pre: graduate standing or consent. Recommended: 370.

PHIL 699 Directed Research (V) Repeatable. Pre: graduate standing and consent.

PHIL 711 Seminar on Nagarjuna (3) Close examination of the most significant of Nagarjuna's philosophical writings. Pre: graduate standing or consent.

PHIL 712 Seminar on Aristotle (3) Close examination of the most significant of Aristotle's philosophic writings. Pre: graduate standing or consent.

PHIL 713 Seminar on Kant (3) Close examination of the most significant of Kant's philosophical writings. Repeatable once with consent. Pre: graduate standing or consent.

PHIL 714 Seminar on Plato (3) Close examination of the most significant of Plato's philosophical writings. Pre: graduate standing or consent.

PHIL 715 Seminar on Nietzsche (3) Close examination of the most significant of Nietzsche's philosophical writings. Pre: graduate standing or consent.

PHIL 716 Seminar on Spinoza (3) Close examination of the most significant of Spinoza's philosophical writings. Pre: graduate standing or consent.

PHIL 717 Seminar on Whitehead (3) Whitehead's revolutionary process philosophy and process theology through his major texts. Pre: graduate standing or consent.

PHIL 720 Seminar on Individual Philosophers (3) The most significant texts of an important philosopher. A different philosopher will be chosen 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 such as "killing and dying" or "deconstruction." Repeatable two times with consent. Pre: graduate standing or consent.

PHIL 735 Seminar on Philosophical Periods (3) Close study of a period of significant and connected philosophical activity within a philosophic tradition. Repeatable two times with consent. Pre: graduate standing or consent.

PHIL 740 Seminar in Philosophical Texts (3) Reading, analysis, and critical discussion of one (or of several closely related) philosophical text in its

original language (sometimes in conjunction with established translation). Repeatable two times with consent. Pre: graduate standing or consent.

PHIL 750 Seminar in Indian Philosophy (3) Major philosophical problems in the development of Indian thought during its formative period. Repeatable once with consent. Pre: graduate standing or consent. Recommended: 350.

PHIL 760 Seminar in Buddhist Philosophy (3) Major philosophical problems in the development of Buddhist thought during its formative period. Repeatable once with consent. Pre: graduate standing or consent. Recommended: 360.

PHIL 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 once with consent. Pre: graduate standing or consent. Recommended: 370.

PHIL 771 Seminar in I-Ching (3) Metaphysical, epistemological, ethical, and axiological views of I-Ching and its claim as foundational work for classical Confucianism, Taoism, and Neo-Confucianism. Pre: graduate standing or consent.

PHIL 780 Seminar in Japanese Philosophy (3) Various periods, movements, and thinkers in Japanese philosophy. Topic changes each semester. Consult department for more information. Repeatable once with consent. Pre: graduate standing or consent. Recommended: 380.

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 792 Seminar in Comparative Philosophy: On the Self (3) Philosophical theories of the self with reference to psychological and social theories and/or non-Western tradition of thought. Pre: graduate standing or consent.

PHIL 800 Dissertation Research (V)

PHRM

See Pharmacology

Physics (PHYS)

College of Natural Sciences

Credit toward the degree given for either 151/151L or 170/170L; and similarly for either 152/152L or 272/272L. However, the courses may come from different sequences.

PHYS 100 Survey of Physics (3) Mechanics, electricity and magnetism, waves, optics, atomic and nuclear physics. Only algebra and geometry used. For nonscience majors. **NS2**

PHYS 100L Survey of Physics Lab (1) (1 3-hr lab) Hooke's law, falling bodies, collisions, Boyle's law, electric and magnetic fields, induction, waves, optics. Pre: 100 (or concurrent). **NS2**

PHYS 122 Introduction to Science: Physical (3) Characteristics of science, historical development of scientific concepts, and interactions with society illustrated by topics from physical sciences. **NS2**

For key to symbols and abbreviations, see the first page of this section.

PHYS 122L Introduction to Physical Lab (1) (1 3-hr Lab) Lab experiments illustrating topics and methods in the physical sciences. Pre: 122 (or concurrent). **NS2**

PHYS 151 College Physics (3) Noncalculus physics. Mechanics, wave motion, heat. Pre: MATH 140 or knowledge of trigonometry. **NS2**

PHYS 151L College Physics Lab (1) (1 3-hr Lab) Introduction to experimental analysis, physical observation and measurement, experiments on conservation laws, fluid friction, oscillations. Pre: 151 (or concurrent). **NS2**

PHYS 152 College Physics II (3) Electricity, magnetism, optics, modern physics. Pre: 151. **NS2**

PHYS 152L College Physics Lab II (1) (1 3-hr Lab) Optics, electric and magnetic fields, DC and AC circuitry. Pre: 151L or 170L, and 152 (or concurrent). **NS2**

PHYS 170 General Physics I (4) Mechanics of particles and rigid bodies, wave motion, thermodynamics and kinetic theory. Pre: MATH 242 or MATH 252 (or concurrent). MATH 216 may be substituted with consent. **NS2**

PHYS 170L General Physics I Lab (1) (1 3-hr Lab) Similar to 151L but at 170 level. Pre: 170 (or concurrent). **NS2**

PHYS 272 General Physics II (3) Electricity and magnetism. Pre: 151/151L or 170/170L and MATH 242 or MATH 252. MATH 216 may be substituted with consent. **NS2**

PHYS 272L General Physics II Lab (1) (1 3-hr Lab) Similar to 152L but at 272 level. Pre: 272 (or concurrent), and 151L or 170L. **NS2**

PHYS 274 General Physics III (3) Relativity, introduction to quantum mechanics, atomic and nuclear physics, geometrical and physical optics. Pre: 272/272L or 152/152L, and MATH 243 or MATH 253 (or concurrent); or consent.

PHYS 274L General Physics III Lab (1) (1 3-hr Lab) Experiments illustrating concepts of 274, including speed of light, photoelectric effect, neutron activation of silver, Michelson interferometer. Pre: 152L or 272L, and 274 (or concurrent).

PHYS 305 Computational Physics (3) Computer basics, numerical methods, and the solution of physics problems using computers. Pre: 152 or 272, and MATH 244 or MATH 253 (or concurrent); or consent.

PHYS 310 Theoretical Mechanics I (3) Particle dynamics, rigid-body dynamics, planetary motion. Pre: 151 or 170, and MATH 244 or MATH 253 (or concurrent); or consent.

PHYS 311 Theoretical Mechanics II (3) Rigid-body mechanics continued, fluid dynamics, wave motion, theory of relativity. Pre: 310.

PHYS 350 Electricity and Magnetism (3) Electrostatic and magnetostatic fields in vacuum and in matter; induction; Maxwell's equations; AC circuits. Pre: 152 or 272; and MATH 244 or MATH 253 (or concurrent); or consent.

PHYS 399 Individual Work in Advanced Physics (V) Limited to students with a minimum cumulative GPA of 2.7 or a minimum GPA of 3.0 in physics.

PHYS 400 Applications of Mathematics in Physical Sciences (3) Mathematical methods, techniques; applications to problems in physical

sciences. Pre: MATH 244 or MATH 253 and MATH 311, or consent. Recommended: upper division mathematics course.

PHYS 430 Thermodynamics and Statistical Mechanics (3) Laws of thermodynamics, heat transfer, kinetic theory, statistical mechanics. Pre: 274 and MATH 244.

PHYS 440 Solid-State Physics I (3) Crystal structure: lattice vibrations; phonon effects; electronic processes in solids (metals, semiconductors, and superconductors). Pre: 274 and 350 (or concurrent).

PHYS 441 Solid-State Physics II (3) Energy-band calculations, optical processes, Josephson effect, theories of dielectrics and magnetism, physics of color centers, order-disorder transformation. Pre: 440.

PHYS 450 Electromagnetic Waves (3) Field equations, plane, spherical and guided waves. Pre: 350.

PHYS 460 Physical Optics (3) Polarization, coherence, Fraunhofer and Fresnel diffraction, optics of solids, laser optics. Pre: 274.

PHYS 475 Electronics for Physicists (3) AC/DC circuits, transistors, analog/digital integrated circuits, simple computer interfacing. Interfacing electronics to laboratory experiments is stressed. Pre: junior standing, and 152L or 272L.

PHYS 480 Quantum Mechanics I (3) Wave mechanics, Schrodinger equation, angular momenta, potential problems. Pre: 274, 310, 350, and MATH 244 or MATH 253, and MATH 311; or consent. Co-requisite: 400.

PHYS 480L Advanced Physics Lab (2) Advanced experiments in gamma spectroscopy, x-rays, light scattering, Mössbauer effect, spin resonance, Zeeman effect, solid-state devices. Pre: 274L and 480 (or concurrent), or consent.

PHYS 481 Quantum Mechanics II (3) Continuation of 480; atomic physics, scattering, perturbation theory. Pre: 480.

PHYS 481L Advanced Physics Lab (2) Advanced experiments in gamma spectroscopy, x-rays, light scattering, Mössbauer effect, spin resonance, Zeeman effect, solid-state devices. Pre: 274L and 480 (or concurrent), or consent.

PHYS 490 Modern Physics (3) Introduction to nuclear and elementary-particle physics. Pre: 480 (or concurrent).

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

PHYS 505 Conceptual Physics for Teachers (V) Major concepts of physics 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 NSCI 505)

PHYS 600 Methods of Theoretical Physics (3) Mathematical tools of theoretical physics. Continuation of 400 but with an independent selection of topics. Pre: 400 or consent. (Alt. years)

PHYS 610 Analytical Mechanics I (3) Dynamics of particles, particle systems; rigid bodies; Lagrangian and Hamiltonian equations; special relativity. Pre: 400 (or concurrent), 600 (or concurrent); or MATH 402. (Alt. years)

PHYS 650 Electrodynamics I (3) Potential theory, Maxwell's equations, electromagnetic waves, boundary value problems. Pre: 450; and 400 (or concurrent), 600 (or concurrent), or MATH 402. (Alt. years)

PHYS 651 Electrodynamics II (3) Relativistic electrodynamics, radiation by charged particles. Pre: 650. (Alt. years)

PHYS 660 Advanced Optics (3) Wave motion, interference, diffraction, fundamentals of spectroscopy, optics from the point of view of electromagnetic theory, lasers. Pre: 460.

PHYS 670 Quantum Mechanics (3) Physical basis and formulation of quantum theory. Exact solutions of Schrodinger equation and their applications. Approximation methods. Applications to atomic, nuclear, and molecular physics. Pre: 481 and MATH 402, or equivalent.

PHYS 671 Quantum Mechanics (3) Physical basis and formulation of quantum theory. Exact solutions of Schrodinger equation and their applications. Approximation methods. Applications to atomic, nuclear, and molecular physics. Pre: 670.

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 with consent.

PHYS 695 Seminar on Atomic and Solid-State Physics (1) Reports and discussion on recent developments in atomic, surface, 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 700 Thesis Research (V) Research for master's thesis.

PHYS 711 Topics in Particles and Fields (3) Topics in current theoretical research; e.g., unified field theories, general relativity, gravitation, and cosmology. Repeatable. 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 713 Advanced Topics in Condensed Matter Theory (3) Topics in condensed matter theory, e.g., group theory, many-body techniques, renormalization group, density functional theory, other topics of current interest. Repeatable. Pre: 670 and 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; electrodynamics; 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 and 772, 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)

School of Medicine

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. **NSI**

PHYL 103L Physiology and Anatomy Lab (1) Laboratory course to complement 103. Co-requisite: 103. **NSI**

PHYL 141 Human Anatomy and Physiology (3) Anatomy, histology, physiology, biochemistry, genetics of human organ systems presented in integrated anatomy-physiology format. Priority to students in nursing. Pre: high school chemistry. **NSI**

PHYL 141L Human Anatomy and Physiology Lab (1) Anatomy, histology, physiology, biochemistry, genetics of human organ systems presented in integrated anatomy-physiology format. Priority to students in nursing. Pre: 141 or consent. **NSI**

PHYL 142 Human Anatomy and Physiology (3) Continuation of 141. Pre: 141. **NSI**

PHYL 142L Human Anatomy and Physiology Lab (1) Anatomy, histology, physiology, biochemistry, genetics of human organ systems presented in integrated anatomy-physiology format. Priority to students in nursing. Pre: 142 or consent. **NSI**

PHYL 301 Human Anatomy and Physiology (4) Integrated presentation of human anatomy and physiology. An optional laboratory course (PHYL 301L) is available separately. Pre: CHEM 151 and one of 103, BIOL 171, or ZOOL 101.

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.

PHYL 302 Human Anatomy and Physiology (4) Continuation of 301. Pre: 301, ANAT 301, or consent.

PHYL 302L Human Anatomy and Physiology Lab (1) Continuation of 301L. Pre: 301, 301L, or consent. Co-requisite: 302.

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: 301 and 302 or equivalent with consent.

PHYL 402 Human Physiology: Integrative Systems (4) Senior-level course in integrative systems (central nervous system and endocrinology). Complements 401. Pre: 401 and either BIOC 341 or CHEM 152, or consent.

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: 301 and 302, or 401, or ZOOL 430; or consent.

PHYL 403L Environmental Physiology Lab (1) Laboratory experiences in measuring human physiological responses to environmental stress. Complements 403.

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. Pre: 301 and 302, or KLS 253 and KLS 254; or consent.

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. (Cross-listed as ANTH 450)

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. Pre: upper division standing.

PHYL 499 Directed Research (V) Pre: junior or senior undergraduate status.

PHYL 500 Master's Plan B/C Studies (1) Enrollment for degree completion. 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) cardiopulmonary-renal physiology; (C) cardiovascular physiology. CR/NC only. 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. 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, or KLS 253 and KLS 254. (Cross-listed as KLS 601)

PHYL 602 Human Endocrinology (3) Comprehensive survey of physiology of human endocrine system. Pre: 401 or 603, or consent.

PHYL 603 Medical Physiology (6) Basic human physiology for pre-medical, medical, and graduate students. Covers membrane, nerve, muscle, cardiovascular, respiratory, renal, gastro-intestinal, energy-balance, thermo-regulatory, central nervous system, and endocrine physiology. Pre: consent.

PHYL 604 Clinical Exercise Testing (4) Instruction and fieldwork in conducting exercise tests in symptomatic persons to equip students to pass ACSM exercise test technician certification. CR/NC only. Pre: 301 and 302, or KLS 253 and KLS 254; and consent.

PHYL 606 Human Neurophysiology (2) Physiology of human nervous system with emphasis on special senses and control and coordination of movement. Repeatable. Pre: 302 or 603; or consent.

PHYL 607 Membrane Physiology (3) Properties and functions of cell membranes and their relation to membrane structure at molecular level. Biophysical techniques used to study cell membranes. Pre: 603 or 606, or consent.

PHYL 608 Water and Electrolyte Balance (3) Effects of various environments (e.g., high altitude, deep sea, cold, heat, and exercise) on water and electrolyte endocrinology. Pre: 603 or consent.

PHYL 609 Cardiovascular Physiology (3) Selected topics in cardiovascular physiology. Emphasis on dynamic aspects of the heart and circulation. Pre: 603 or consent.

PHYL 610 Experimental Physiology (2) Biophysical approach to selected techniques of quantitative experimental physiology. Pre: 603 or consent.

PHYL 611 Advanced Pulmonary Physiology (3) Topics in pulmonary physiology including classical physiology (e.g., ventilation, perfusion) and neoclassical physiology (cell biology and toxicity). Term paper required. Pre: 603 and consent.

PHYL 612 Experimental Endocrinology (2) Principles and experimental techniques of endocrinology. Pre: 602 or consent.

PHYL 613 Seminar in Physiology (1) Discussion of current research in physiology.

PHYL 614 Seminar in Physiology (1) Continuation of 613.

PHYL 615 Introduction to Axonology (3) Advanced course in the electrophysiology of nerve and muscle with emphasis on research technique. Pre: 603 and 606, or consent. (Cross-listed as ZOOL 615)

PHYL 616 Physiology of Thermoregulation (3) Physiological and behavioral mechanisms by which animals and man regulate body tempera-

ture, heat production, and heat loss to environment. Basic principles of heat transfer. Pre: 603 or consent.

PHYL 642 Cellular Neurophysiology (3) Biophysical and membrane mechanisms of conduction, synaptic transmission, other electrical responses to nerve cells. Pre: one upper division biological science course, 5 credit hours of chemistry, and MATH 241; or consent. (Cross-listed as ZOOL 642)

PHYL 642L Neurophysiology Laboratory (2) Use of various extra-cellular and intracellular recording and stimulating techniques and apparatus as applied to semi-isolated neural preparations, mainly from invertebrates. Pre: one of 615 (or concurrent), 642 (or concurrent), ZOOL 430, or ZOOL 432; or consent. (Cross-listed as ZOOL 642L)

PHYL 699 Directed Research (V) Research experience in physiology.

PHYL 700 Thesis Research (V)

PHYL 701 Undersea and Hyperbaric Physiology (3) Physiological responses of man and diving mammals to undersea and hyperbaric environments. Physics and chemistry of pressure and the ocean. Decompression, scuba diving, hyperbaric medicine. Pre: 603 or consent.

PHYL 710 Special Topics: Water and Electrolytes (1)

PHYL 711 Special Topics: Environmental Physiology (V)

PHYL 712 Topics: Nerve, Muscle, Physiology (V) Advanced treatment of selected topics at the frontiers of physiology. Repeatable. Pre: one 600-level course covering the area in question and consent. (Cross-listed as ZOOL 712)

PHYL 800 Dissertation Research (V)

PLAN

See Urban and Regional Planning

Plant Molecular Physiology (PMP)

College of Tropical Agriculture and Human Resources

PMP 201 The Biotechnology Age: Issues and Impacts (3) Introduction to the basic concepts, goals and practical impacts of biotechnology. Real-life case studies are used to explore socio-ethical, economic, and environmental issues raised by cloning, DNA testing, gene therapy and genetically engineered food, medicines, and vaccines using microbes, plants and animals. Pre: BIOL 101 or consent. (Cross-listed as BIOL 201)

PMP 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: BIOL 275 or consent. (Cross-listed as BIOL 401)

PMP 499 Directed Research (V) Limited to undergraduate students qualified to carry on research problems in plant physiology, biochemistry, and molecular biology.

PMP 610 Plant Physiology Seminar (1) Study and discussion of significant topics and problems in plant physiology, biochemistry, and molecular biology.

PMP 620 Plant Biochemistry (3) Comprehensive study of chemical constituents and biochemical processes unique to the plant kingdom with emphasis on selected aspects of current interest. Pre: ENBI 402 or consent. (Cross-listed as ENBI 610)

PMP 670 Plant Cell Physiology (3) Comprehensive study of unique structural and functional features of plant cells. Structure and function of cell walls, membranes, and organelles; stimulus perception and propagation. Pre: BOT 470 and either BIOC 441 or ENBI 402.

PMP 673 Organization and Expression of the Plant Genome (3) Organization and expression of nuclear and plastid genomes of higher plants. Transcriptional regulation and structure of plant genes. Gene regulation during development. Pre: CMB 451 and either BIOC 441 or ENBI 402.

PMP 680 Methods in Plant Molecular Biology (3) (1 Lec, 2 3-hr Lab) Advanced methodology and research strategies. Hands-on laboratory training in basic and current molecular procedures for plant research. Pre: one of 673, BIOC 481, BIOC 620, or BIOC 626.

PMP 699 Directed Research (V)

Plant Pathology (PPTH)

College of Tropical Agriculture and Human Resources

PPTH 210 Environmental Resources: Issues and Options (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 AGRS 210) **NSI**

PPTH 405 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: BOT 101 or MICR 130.

PPTH 491 Topics in Plant Pathology (V) Study and discussion of significant topics, problems. Offered by visiting faculty and/or for extension programs. Repeatable.

PPTH 499 Directed Research (V) Limited to undergraduate students qualified to carry on research in plant pathology. Pre: consent.

PPTH 612 Plant Epidemiology and Disease Management (2) Principles of epidemiology as a basis for disease management. Pre: 405, AREC 310, or consent.

PPTH 612L Plant Epidemiology and Disease Management Lab (1) (1 3-hr Lab) Methodology and applications of epidemiology as a basis for disease management. Co-requisite: 612.

PPTH 616 Plant Nematology (3) (2 Lec, 1 3-hr Lab) Advanced classification and studies of nematodes associated with economic crops. Pre: 405.

PPTH 630 Plant Virology (4) (2 Lec, 2 3-hr Lab) Isolation, identification, and molecular biology of plant viruses; biological and physical properties. Pre: 405, ENBI 402, or consent.

PPTH 646 Plant-Bacterial Interactions (3) Diagnosis, molecular biology, genetics, and infection mechanisms of bacterial plant pathogens and symbionts. Pre: one of BIOC 481, MICR 351, MICR 475, or consent. (Cross-listed as MICR 646)

PPTH 646L Plant-Bacterial Interactions Lab (2) (2 3-hr Lab) Diagnostic methods, virulence evaluations, genetics, and molecular biology of plant bacteria. Pre: one of BIOC 481, MICR 351, MICR 475, or consent. Co-requisite: 646.

PPTH 660 Seminar (1) Seminars in contemporary plant pathology. Pre: graduate standing or consent.

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

PPTH 700 Thesis Research (V) Pre: candidacy for master's degree and approval of proposal.

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

PMP

See Plant Molecular Physiology

Polish (POLH)

College of Languages, Linguistics and Literature

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

POLH 101 Elementary Polish (4) Conversation, lab drill, grammar, reading. **HSL**

POLH 102 Elementary Polish (4) Continuation of 101. Pre: 101. **HSL**

POLH 201 Intermediate Polish (3) Reading, conversation and composition, laboratory drill. Pre: 102. **HSL**

POLH 202 Intermediate Polish (3) Continuation of 201. Pre: 201. **HSL**

Political Science (POLS)

College of Social Sciences

Either 110, 120, 130, 170, or 171 is a prerequisite to all 300-level courses, except those noted otherwise.

POLS 110 Introduction to Political Science (3) Discussion of politics as an activity and of political problems, systems, ideologies, processes. **SS**

POLS 120 Introduction to World Politics (3) Power and contemporary world politics since 1945 with emphasis on the U.S. role. **SS**

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. **SS**

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 United States.

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. **SS**

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. **SS**

POLS 221 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. **SS**

POLS 271 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.

POLS 272 Race and Politics (3) Racial inequality in the United States; mechanisms of institutional racism in employment, education, criminal justice, electoral politics. **SS**

POLS 300 Political Philosophy and Theory I (3) Theories, approaches, concepts, and issues developed or raised in history of western political philosophy and thought. A-F only.

POLS 301 Political Philosophy and Theory II (3) Survey of major historical schools and/or contemporary directions in non-western political thought. A-F only.

POLS 302 American Political Theory (3) Origins and development of American political thought.

POLS 305 (Alpha) Topics in Political Philosophy and Theory (3) Significant works, historical continuities, themes, and issues. (B) political philosophy of Aristotle; (D) feminist theory; (F) revolution and utopia; (H) classical political philosophy; (I) Marxist philosophy. (305D cross-listed as WS 405)

POLS 307 Biopolitical Theory (3) The implications, for political theory, of biological theories about human behavior, especially in relation to political socialization, participation, behavior, and culture.

POLS 308 Applied Biopolitics (3) Effect of biological theory and knowledge about human behavior upon study and practice of political organization and ideology, and public policies of political egalitarianism toward human health, intelligence and laterally, age, sex, and race.

POLS 310 Political Inquiry and Analysis (3) Introductory survey and analysis of methods used in empirical research, policy analysis, and social criticism.

POLS 311 Political Inquiry and Analysis II (3) Applied workshop in political research methods.

POLS 320 International Relations I (3)

Introduction, with emphasis on concepts and theories.

POLS 321 International Relations II (3)

Decision-making behavior of international actors; strategies of peacemaking.

POLS 325 (Alpha) Topics in International Relations (3)

Structure and processes of relations between states. (D) modern war and security; (E) international organization.

POLS 326 International Law (3)

Nature and function of international law in international politics.

POLS 327 International Law II (3)

Principles, norms, cases, and their role in international politics.

POLS 328 American Foreign Policy (3)

Purposes, methods, strengths, obstacles, prospects; factors affecting American foreign policy; impact abroad and at home.

POLS 329 International Relations Lab (1)

Co-requisite: 320 or 325E.

POLS 330 American Politics (3)

Institutions (parties, interest groups, legislatures, executives, local government); policies (national defense, poverty, energy, etc.).

POLS 331 American Politics II (3)

Examination of voters and voting processes (participation, apathy, socialization, symbolic process, media, etc.); ideologies and belief systems.

POLS 335 (Alpha) Topics in American Politics (3)

Specific institutions and processes of the American governmental system. (D) public opinion and politics; (F) American legislative behavior; (G) American environmental politics; (H) the presidency.

POLS 336 Power in America (3) Analysis of sources of political, economic, and social power in the United States and the institutions through which it is exercised.

POLS 340 Comparative Politics (3) Introduction to theory and methodology of comparing political systems and development trends; emphasis on industrial nations.

POLS 341 Comparative Politics of Developing Countries (3) Theories and case studies.

POLS 345 (Alpha) Topics in Comparative Politics: Country/Regional (3)

Analysis of political structure of processes in specific countries and regions. (B) Southeast Asia; (C) Pacific Islands; (D) communism in Asia; (F) Middle East; (G) Philippines; (H) Japan; (I) Europe; (J) India; (R) Russian politics. Pre: 110 or consent.

POLS 346 (Alpha) Topics in Comparative Political Process (3)

(B) peasant politics; (E) health and environment.

POLS 350 Administration and Society (3)

Historical emergence of modern bureaucracy; mutual impact of administrative forms on social life; relation of bureaucracy to capitalism and patriarchy; constitution of the administered individual. Pre: one of 110, 120, 130, 170, 171, or consent.

POLS 351 Political Leadership (3)

Exploration of concepts and theories of political leadership, partly through biography, as preparation for public service or advanced scholarly inquiry.

POLS 352 Comparative Public Administration (3)

Implementation of government policies through administrative systems in different countries.

POLS 353 Alternatives to Bureaucracy (3)

Theory and practice of non-hierarchical organizations: feminist and women's organizations; co-ops, communes, and collectives; indigenous people's organizations; workplace democracy and social change. Pre: one of 110, 120, WS 151, or consent. (Cross-listed as WS 353)

POLS 355 (Alpha) Topics in Administration (3)

Development of administrative practices and growth of administrative structures; organization theory; specific administrative practices. (C) organization theory.

POLS 360 Public Law and Judicial Behavior I (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.

POLS 361 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 United States Supreme Court in Constitutional issues.

POLS 365 Topics: Public Law and Judicial Behavior (3)

Current issues; recent research findings; practical research undertaken by student.

POLS 370 Politics and Public Policy (3)

Overview of the policy-making process in various political arenas (families, cities, nations, etc.); emphasis on conceptual and empirical analysis.

POLS 371 Political Design and Futuristics (3)

Alternative future social and political possibilities; design of means of realization of desirable futures.

POLS 373 Nonviolent Political Alternatives (3)

Exploration of scientific and cultural resources for nonviolent alternatives in politics as bases for future and transformative inquiry and action. Pre: Any POLS 100- or 200-level course, or consent. (Cross-listed as PACE 373)

POLS 374 Women and Politics (3)

Women's role in political institutions and processes in the United States and other countries. Female and male approaches to power; feminist political goals and actions. Pre: one of 110 (or concurrent), WS 151 (or concurrent), or WS 362 (or concurrent); or consent. (Cross-listed as WS 374)

POLS 375 (Alpha) Topics in Politics and Public Policy (3)

Politics and public policy or political design and futuristics. (B) film studies; (D) ocean politics; (F) politics of health; (I) political economy.

POLS 376 Racism and Sexism (3)

Policy course. Racial and sexual discrimination and governmental efforts to combat them.

POLS 378 The Politics of Media (3)

Study of the political manipulation of aural and verbal images. Exercises to increase media literacy.

POLS 380 Hawai'i Politics I (3) Introduction to study of institutions, processes, and issues.

POLS 381 Hawai'i Politics II (3) Application of theoretical modes and techniques to institutions, processes, and issues that characterize politics in Hawai'i.

POLS 385 (Alpha) Topics in Hawai'i Politics (3)

Intensive examination of particular institutions, processes, and issues. (B) the military in Hawai'i; (D) alternative politics in Hawai'i. Pre: one of 110, 120, 130, 170, or 171; or consent.

POLS 390 Colloquium in Political Science (3)

Seminar in specialized subjects in political science. Pre: consent.

POLS 391 Colloquium in Political Science (3)

Seminar in specialized subjects in political science. Pre: consent.

POLS 392 Teaching Political Science (6)

Practicum for majors who lead, under supervision, a freshman seminar section of 110 or serve as undergraduate teaching assistants. Pre: senior standing and consent.

POLS 395 Practicum in Political Science (V)

Field placement integrated with academic study of political institutions and practices. Repeatable once.

POLS 399 Directed Reading and Research (V)

Pre: consent.

POLS 401 Senior Seminar in Political Science (3)

Discussion of issues and questions of concern to graduating seniors in political science. Topical focus varies. Pre: senior standing.

POLS 462 Asian Women (3) History, culture, and contemporary reality of Asian women in Asia and the United States. Includes critical analysis of American feminist methodology and theory. Pre: one of 305D, WS 360, WS 361, WS 405, or consent. (Cross-listed as AMST 438 and WS 462)

POLS 484 Society and Politics in China (3)

Interdisciplinary review and analysis of the social and political issues in contemporary China, the interchange between state and society in national policies, the relationship between cultural tradition and technological modernization in the social transformation process. Pre: ASAN 310, ASAN 312, or SOC 356; or consent. (Cross-listed as ASAN 484)

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 (3)

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. (B) methods and nations; (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 once.

POLS 615 (Alpha) Topics in Political Thought (3) Specific traditions and individuals, or particular issues and problems. (B) Communism; (C) feminist theory. Pre: graduate standing or consent. (615C cross-listed as WS 615)

POLS 620 Introduction to Political Behavior (3) Introduction focused on individual behavior (political socialization, political psychology, etc.) and institutional behavior (legislative behavior, judicial behavior, etc.).

POLS 630 International Relations (3) Analysis of theories: actors, decisions, systems, conflict, integration, alternative approaches to validation. Pre: graduate standing or consent.

POLS 633 International Conflict Resolution (3) Analysis of international conflict and conflict resolution. Theory and practice of negotiation, mediation, conciliation, facilitation, and other "third-party" methods of peaceful settlement. Pre: graduate standing or consent.

POLS 635 (Alpha) Topics in International Relations (3) (B) international relations and war; (C) dependencies; (D) U.S.–China relations (E) international organization; (F) modeling international systems; (G) U.S.–Japan relations. 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 645 (Alpha) Politics and Development: Regional (3) Politics of particular regions; particular development processes. (B) Middle East; (C) China. (645C cross-listed as ASAN 608)

POLS 646 (Alpha) Politics and Development: Topical (3) (B) agriculture; (F) political ecology and development.

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 652 Comparative Public Administration (3) Detailed examination of implementation of governmental policy in different countries. Pre: graduate standing.

POLS 655 (Alpha) Topics in Public Administration (3) Theoretical and applied examination of public administration structures and processes. Pre: graduate standing or consent.

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 671 Public Policy (3) Examination of theory and practice of formation and implementation; emphasis on American politics. Pre: graduate standing. Co-requisite: PUBA 661.

POLS 672 Politics of the Future (3) Introduction to political futures studies; 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 674 New Age Politics (3)

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 676 Nonviolent Political Alternatives (3) Exploration of nonviolent, nonkilling alternatives in political science research, teaching, and public service.

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.

POLS 682 Indigenous Politics (3) Historical treatment of the contact between state and indigenous peoples and a survey of contemporary indigenous political initiatives: social movements, media, indigenous studies programs, and events. A–F only.

POLS 685 (Alpha) Topics in Asian and/or Pacific Politics (3) (B) Japanese politics; (C) Korean politics; (D) Chinese foreign policy. 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 692 Teaching Initiative in Political Science (3) This course combines the study of the theoretical and practical aspects of teaching political science with supervised classroom teaching of POLS 110. Repeatable once.

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 once. 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 701 Seminar in Empirical Theory (3) Pursuit of individual empirically based research topics. Repeatable. Pre: graduate standing.

POLS 702 Seminar: Research Methods (3) Conceptual strategies, data collection approaches, and data analysis techniques appropriate to political inquiries. Repeatable.

POLS 710 Seminar: Political Thought (3) Pre-announced topics. Repeatable. At least one section a year.

POLS 730 Seminar: International Relations (3) Pre-announced problems of both international organization and politics. Repeatable. At least one section a semester.

POLS 735 Seminar: Peace/Development Connection (3) Relationship between peace and development with special emphasis on hunger and militarism in Asia, the Pacific, and Africa. Pre: graduate standing. (Cross-listed as SOC 735)

POLS 740 Seminar: Comparative Government and Politics (3) Pre-announced topics. Repeatable. At least one section a semester.

POLS 750 Seminar: Public Administration (3) Pre-announced administrative theory, comparative and development administration, and functional aspects. Repeatable. At least one section a year.

POLS 770 Seminar: Public Policy (3) Pre-announced topics. Repeatable. Pre: consent of instructor. At least one section a year.

POLS 780 Seminar: Politics of Regions (3) Analysis of political development, international relations, decision-making processes, and systems of political thought in regions and subregions of the world. Repeatable.

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 behaviors. Open to nonmajors. A–F only. Pre: an introductory social science course (ANTH 150; ECON 120, 130, 131; GEOG 151; POLS 110; or SOC 100) or consent.

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.

PPST 401 Forced Migration (3) Global view of refugee and other forced migration; emphasis on humanitarian assistance. Pre: 101 or any PPST 300-level course; or consent. Graduate students taking the course for graduate credit should have taken 650 or 691; or consent.

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. (Cross-listed as SOC 412)

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)

PPST 649 Faculty Seminar Series (1) Seminar required of all graduate certificate students. Single credit course in which program faculty present ongoing research in their fields of specialization. Pre: consent. Co-requisite: 650.

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 661 Demography of Human Fertility (3) Causes of variation in human fertility between and within societies and over time; role of economic

and social factors. Implications for population policy. Pre: 650 and 691. (Cross-listed as SOC 661)

PPST 662 Migration and Population Distribution (3) Analysis of the nature, causes, and consequences of human migration and population distribution, especially in relation to economic development, urbanization, and demographic change. Pre: 650 and 691, or consent.

PPST 672 Demographic History of Southeast Asia (3) Seminar in Southeast Asian population histories. Contrasts with East and South Asian population histories. Links among demography, subsistence activities and social institutions. Evolution of indigenous and colonial population records. Practical applications of historical demographic methodology. A–F only. Pre: graduate standing or consent. (Cross-listed as ASAN 672)

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: basic statistics or consent. (Cross-listed as PH 659)

PPST 692 Estimation from Limited Data (4) Analysis of limited and defective data on populations with particular reference to Asia and the Pacific. Pre: 691.

PPST 695 Demographic Surveys (3) Design, field execution, and analysis. Sampling techniques, field operations, sampling error, analysis. Pre: 691.

PPST 699 Directed Reading and Research (V) Pre: consent of program director or instructor.

PPST 705 Multivariate Analysis (3) Application to population data. Multiple classification analysis, path analysis, logit and multinomial logit regression, and hazard models. Pre: one graduate-level course in social or biomedical sciences. (Cross-listed as SOC 705)

PPST 750 Interdisciplinary Seminar in Population Studies (3) Major theoretical developments and research problems in population studies as seen by various behavioral sciences and related applied disciplines. Pre: 650 and 691.

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.

PORT 101 Elementary Portuguese (4) Reading, conversation, laboratory drill, grammar. HSL

PORT 102 Elementary Portuguese (4) 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

PPST

See Population Studies

Prakrit (PRAK)

College of Languages, Linguistics and Literature

PRAK 481 Introduction to Prakrit (3) Survey of principal Prakrit languages; selected readings and analysis. Pre: PALI 381, PALI 382, SNSK 281, and SNSK 282; or equivalent.

PRAK 482 Introduction to Prakrit (3) Continuation of 481.

Psychiatry (PSTY)

School of Medicine

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 twice. CR/NC only. Pre: third-year standing and concurrent registration in 532 courses and SURG 535.

PSTY 545 (Alpha) Unit VII Electives in Psychiatry (V) Opportunities for fourth-year students to acquire in-depth psychiatric experience. (B) adult inpatient PSTY; (C) child PSTY; (D) forensic PSTY; (E) journal editing; (F) community mental health; (G) PSTY aspects of OBGYN, 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 PSTY. 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 (X0X)

PSY 100 Survey of Psychology (3) An overview of the field: psychophysiology, perception, learning, cognition, stress, personality, social psychology. SS

PSY 201 Unit Mastery Instruction (3) Principles, techniques, issues, and philosophy. Laboratory provides working experience with this instruction technique. Pre: 100 and written consent.

PSY 202 Psychology of Women (3) Survey of topics in psychology relevant to women's lives: socialization of gender, mental health, violence against women, achievement motivation, life-span issues, domestic violence. Pre: 100 or WS 151. (Cross-listed as WS 202) SS

PSY 402 History of Psychology (3) Origin and development of contemporary points of view. Pre: 100. Recommended: 9 credit hours in psychology.

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.

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 once.

PSY 409 General Psychology: Advanced Topics (3) In-depth coverage of some area of theory and research. Repeatable to 6 credit hours. Pre: 100.

PSY 600 Methodologic Foundations of Psychology (3) Methods used in psychological research; observational, correlational, and experimental types of design.

PSY 603 Current Developments in Psychological Research I (1) Results of current research programs in terms of their historical and theoretical contexts. CR/NC only.

PSY 604 Current Developments in Psychological Research II (1) Results in current research programs will be presented and evaluated in terms of their historical and theoretical contexts. CR/NC only.

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)

PSY 703 Seminar in Teaching Psychology (1) Theory and methods. Observation. Experience in preparation of lectures, discussions, quizzes, and examinations; class presentations. Current and needed research. Pre: consent.

PSY 800 Dissertation Research (V) Research for doctoral dissertation.

PSYCHOMETRICS (X1X)

PSY 210 Statistical Techniques (3) Frequency distributions; graphic methods; central tendency; variability; correlation; reliability; tests of significance. Pre: 100.

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.

PSY 311 Introduction to Methodology in Psychology (3) Emphasis on experiment control, data description and analysis, and communication of findings. Pre: 100.

PSY 412 Individual Differences and Measurements (3) Individual differences in personality, aptitude, intelligence; test construction, validation, administration, interpretation. Pre: 100. Recommended: 210.

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 6 credit hours. Pre: 100.

PSY 610 Introduction to Quantitative Methods (3) Review of elementary statistical methods. Introduction to general linear models as principle of data analysis. Pre: 210. (Cross-listed as EDEP 601 and SW 651)

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. Pre: 610. (Cross-listed as EDEP 603 and SW 653)

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 co-variance to regression analysis. Nonlinearity and treatment of missing data. Pre: 610 or consent. (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. Pre: 611, 612, and 613. (Cross-listed as EDEP 606 and SW 656)

PSY 615 Nonparametric Methods for Behavioral Sciences (3) Conditions for valid applications of nonparametric statistical techniques; theoretical and methodological perspectives. Pre: 610 or consent. (Cross-listed as EDEP 607 and SW 657)

PSY 616 Measurement and Evaluation (3) Theory of measurement and evaluation; analysis of experimental and standardized tests and scales. Pre: 412 or consent. (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. Pre: 616 or consent. (Cross-listed as EDEP 626)

PSY 719 Research in Psychometrics (3) Supervised reading, discussion, research projects in areas of special interest. Repeatable. Pre: 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. Pre: 100.

PSY 321 Experimental Psychology (3) Original experiments; laboratory techniques. Control of variables, apparatus design, statistics in research. Pre: 100, either 210 or SOCS 225, and 311.

PSY 322 Learning and Motivation (3) Theoretical interpretations; survey of major theorists and contemporary controversial issues; major influences in classical and instrumental conditioning. Pre: 100. Recommended: 220.

PSY 323 Animal Psychology (3) Biological, ecological, social, and learned bases of animal behavior based on laboratory and field investigations. Pre: 100. Recommended: 311.

PSY 324 Psychology of Emotion (3) Survey of traditional views and leading theories, and research in related topics. Pre: 100. Recommended: 220 or 322.

PSY 325 Cognitive Psychology (3) Mental processes of humans and other organisms. Survey of major theories and findings in cognitive psychology. Pre: 100 or consent.

PSY 429 Experimental Psychology: Advanced Topics (3) Coverage in-depth of some area of theory and research. Repeatable to 6 credit hours. Pre: 100.

PSY 621 Behavioral Psychology (3) Basic learning theory; concepts for the comprehensive study of human behavior. Issues in behavioral psychology and potential research problems in various areas of human behavior. Pre: 220 or consent.

PSY 622 Animal Learning (3) Principal findings and major theories in animal learning. Detailed consideration of the contemporary literature.

PSY 625 Knowledge and Wisdom (3) Topics in the psychology of mind from Western and/or Asian perspectives. Repeatable in different topics. Pre: 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. Pre: 325 or consent.

PSY 627 Learning, Language, and Cognition (3) Theory, research, and method in study of language acquisition; the function of language in intellectual activities; application to cognitive behavior modification.

PSY 721 Seminar in Experimental Psychology (3)

PSY 722 Seminar in Learning (3)

PSY 726 Seminar in Cognitive Science (3) Topics on the conceptual and biological bases of mind. Emphasis on representation, modeling, and connectionism. Topics vary from semester to semester. Repeatable in different topics. Pre: graduate standing or consent.

PSY 729 Research in Experimental Psychology (3) Supervised reading, discussion, research projects in areas of special interest. Repeatable.

PSYCHOBIOLOGY (X3X)

PSY 230 Introduction to Psychobiology (3) Survey of study of behavior from a natural sciences viewpoint. Evolution, ethological analysis of behavior genetics, neural mechanisms, drugs and behavior, biological development. Pre: 100.

PSY 331 Physiological Psychology (3) Physiological basis of vision, audition, motivation, emotion, and learning. Pre: 100 and 230.

PSY 332 Sensory Processes (3) Major determinants of sensory experience: vision, audition, taste, smell, touch, pain, psychophysical methods. Pre: 100. Recommended: 230.

PSY 439 Psychobiology: Advanced Topics (3) Coverage in-depth of some area of theory and research in psychobiology, physiological psychology, or sensory processes. Repeatable to 6 credit hours. Pre: 100.

PSY 631 Comparative Psychology (3) Comparative study of natural behavior, learned behavior, sensory processes, social behavior in animals.

PSY 632 Selected Topics in Comparative Psychology (3) Intensive review of comparative, communicative, sensory, or learning mechanisms in animals. Pre: 631.

PSY 633 Behavioral Processes of Marine Mammals (3) Sensory, learning, and social processes. Pre: 631.

PSY 634 Physiological Psychology (3) Relation of central and peripheral nervous systems to behavior.

PSY 731 Seminar in Physiological Psychology (3)

PSY 732 Seminar in Comparative Psychology (3)

PSY 733 Seminar in Perception (3)

PSY 739 Research in Psychology (3) Supervised reading, discussion, research projects in areas of special interest. Repeatable.

DEVELOPMENTAL PSYCHOLOGY (X4X)

PSY 240 Developmental Psychology (3) Emotional, mental, physical, social development from infancy to adulthood; interests and abilities at different age levels. Pre: 100.

PSY 341 Social Development of Children (3) Survey of socialization process and acquisition of social behavior. Pre: 100 and 240.

PSY 342 Adult Development and Aging (3) Overview from a multidisciplinary, life-span perspective. Includes research techniques, personality development, family relationships, occupational attainment, death. Pre: 100. Recommended: 240.

PSY 442 The Exceptional Child (3) Evaluation of physical, emotional, and intellectual deviations; effects on growth and development of children. Pre: 100. Recommended: 240.

PSY 449 Development Psychology: Advanced Topics (3) Coverage in-depth of some area of theory and research. Repeatable to 6 credit hours. Pre: 100.

PSY 640 Developmental Foundations (3) Historical, theoretical, and methodological foundations of developmental psychology.

PSY 641 Developmental Phenomena (3) Graduate-level introduction to the analysis of biological, cognitive, and social development. Pre: 640.

PSY 642 Cognitive Development (3) Familiarizes students with current research and theory in cognitive development through readings of original journal articles and monographs. Repeatable once. Pre: 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.

SOCIAL PSYCHOLOGY (X5X)

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. Pre: 100.

PSY 351 Cross-Cultural Psychology (3) Psychological theories and cultural systems; understanding of own and other cultures; psychological and cultural perception of social motivation; cultural similarities and differences in interpersonal relations. Pre: 100. Recommended: 311.

PSY 352 Psychology of Human Sexuality (3) Psychosocial aspects of human sexual relationships. Social psychology of emotional and physiological arousal, interpersonal attraction, and societal regulation of intimate relationships. Pre: 100.

PSY 459 Social Psychology: Advanced Topics (3) Coverage in-depth of some area of theory and research. Repeatable to 6 credit hours. Pre: 100.

PSY 650 Social Psychology (3) Theories and research in social cognition and behavior. Pre: 250.

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.

PSY 654 Psychology and Social Issues (3) Conflict, dissent, community issues, problems; social change and its relation to mental disorder.

PSY 655 Applied Social Psychology (3) Problems in use of social psychology principles in human affairs; multidisciplinary considerations.

PSY 751 Seminar in Social Psychology (3)

PSY 759 Research in Social Psychology (3) Supervised reading, discussion, research projects in areas of special interest. Repeatable.

PERSONALITY/TRANSPERSONAL PSYCHOLOGY (X6X)

PSY 260 Psychology of Personality (3) Scientific study of personality, its meaning, assessment, development, relation to cultural-social determinants. Pre: 100.

PSY 361 Transpersonal Psychology (3) Psychological study of transpersonal human capacities, potentialities, awareness, and growth. Pre: 100.

PSY 469 Personality: Advanced Topics (3) Coverage in-depth of some area of theory and research in personality or transpersonal psychology. Repeatable to 6 credit hours. Pre: 100.

PSY 660 Personality Theory and Research (3) Methods of measurement, antecedents, structure, dynamics, situational determinants of individual reactions. Evaluation of theories and related research. Pre: 260.

PSY 761 Seminar in Personality (3)**PSY 763 Seminar in Transpersonal Psychology (3)****PSY 764 Seminar in Humanistic Psychology (3)**

PSY 769 Research in Personality (3) Supervised reading, discussion, research projects in areas of special interest. Repeatable.

ADJUSTMENT/CLINICAL (X7X)

PSY 170 Psychology of Adjustment (3) Understanding, evaluating, and improving adjustment. Ideas and techniques concerning behavior change and personal growth. SS

PSY 270 Introduction to Clinical Psychology (3) History, theories, types of psychological problems, methods of assessment, forms of intervention, current developments. Pre: 100.

PSY 371 Abnormal Psychology (3) Nature and causes of psychoses; abnormalities of intelligence; psychotherapy. Pre: 100. Recommended: 270.

PSY 472 The Personal Journal (3) Use and analysis of the personal journal for self-insight and growth. Pre: 18 credit hours in psychology, previous experience with a journal, and consent.

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.

PSY 477 The Helping Relationship (3) Theory and application of personal and interpersonal elements affecting communication of human-service professionals. Supervised practice, video lab. Pre: 100 or SP 151. (Cross-listed as SP 490)

PSY 478 Teaching Psychology of Adjustment (6) Supervised experience. Pre: 100 and consent, which must be obtained in the previous semester.

PSY 479 Advanced Topics in Adjustment/Treatment/Prevention (3) Coverage in-depth of some area of theory and research. Repeatable to 6 credit hours. Pre: 100.

PSY 670 Introduction to Clinical Psychology (3) Preparation for being a clinical psychologist; assessment, research, teaching, treatment, scientific and professional ethics, standards, and communication. Pre: consent.

PSY 671 Introduction to Assessment I (3) Psychometric theory; principles and methods of intellectual, cognitive, and neuropsychological assessment. Pre: 670 or consent.

PSY 672 Introduction to Assessment II (3) Principles and methods of behavioral assessment. Pre: 670 or consent.

PSY 674 Child Psychology and Treatment (3) Disturbances in the development of child behavior and techniques for amelioration. Professional ethics and standards. Pre: 670 and 671.

PSY 675 Adult Treatment (3) Methods of treating adult behavior disorders. Pre: 670 (or concurrent) and 671, or consent.

PSY 677 Practicum in Treatment: Children (3) Supervised experience in analyzing and developing methods for therapeutic change. Repeatable. Pre: consent.

PSY 678 Practicum in Treatment: Adults (3)

Supervised experience in analyzing and developing methods for therapeutic change. Repeatable. Pre: consent.

PSY 679 Practicum in Clinical Psychology (V) Repeatable. Pre: consent.

PSY 771 Theory and Practice of Family Therapy (3) Emphasis on application of systems theory. Pre: graduate standing or consent.

PSY 773 Seminar in Psychopathology (3)**PSY 774 Seminar in Clinical Psychology (3)****PSY 775 Seminar in Psychological Therapies (3)**

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 778 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. Pre: consent.

APPLIED PSYCHOLOGY (X8X)

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.

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)

PSY 480 Industrial and Organizational Psychology (3) Issues in the application of psychological principles in work settings; employee selection, training performance appraisal, worker motivation and satisfaction, leadership, organization theory. Pre: 100. Recommended: 311.

PSY 481 Environmental Psychology (3) Psychological aspects of problems of ecology, environment, and the future. Pre: 100. Recommended: 311 or ARCH 202.

PSY 489 Applied Psychology: Advanced Topics (3) Coverage in-depth of some areas of theory and research. Repeatable to 6 credit hours. Pre: 100.

PSY 680 Introduction to Community Psychology (3) Review of history, theoretical perspectives, prevention, intervention, methodology, professional issues, and future directions.

PSY 681 Seminar in Organizational Change (3) Concepts of organizations, organizational development and decline, institutional climate, commitment, leadership, structure, governance, the consultation process, strategies/techniques for promoting institutional change and enhancing effectiveness. Pre: consent.

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)

PSY 789 Community Psychology Research (3) Supervised reading, discussion, research projects in areas of special interest. Repeatable.

RESEARCH (X9X)

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. 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) Interprets the American political economy and its public institutions and links these to companion economic institutions. Includes communication processes in organizational settings and information resources relevant to public service work.

PUBA 601 Policy and Organizational Processes (7) Examines origins of policies in social issues; their implementation and evaluation; normal public organizations and the prospects for change; ethical dilemmas in public setting; and the importance of cultural differences in Hawai'i. Pre: 600.

PUBA 612 Ethics and the Public Interest (1) Examination of the relevance of an ethical code for individuals working in public institutions; problems presented by unethical practices; ethical dilemmas faced by individuals. Pre: 600 and 601.

PUBA 613 Cultural Perspectives (1) Aimed at sensitizing students to the significance of culture in public service. The focus is on the cultural differences that individuals bring to settings, as well as culture of organizations. Pre: 600 and 601.

PUBA 620 Reforming Public Organizations (3) Explores the possibilities for reducing the most difficult aspects of the bureaucratic form in public organizations while increasing effectiveness and accountability.

PUBA 622 Strategies of Change (3) Examines the assumptions of the different theories of change; TQM, action research, and organizational culture. Examines different techniques of organizational diagnosis and explores specific interventions.

PUBA 626 Results Accountability and Outcomes (3) This course provides an introduction to results accountability, a movement occurring both locally and nationally that calls providers of services to clearly articulate the results they achieve through the investment of commu-

nity resources, either in the form of tax dollars or donated funds. A-F only. Pre: consent.

PUBA 660 (Alpha) Topics in Public Issues (3) In-depth analysis of significant contemporary issues related to public service work in Hawai'i and the Pacific: (B) public policy theory and analysis; (C) budgetary processes and reform.

PUBA 661 Collaboration Between Sectors (3) Examines theories and practices of multisector collaboration (public, private, nonprofit). The use of collaboration as an alternative way of solving public problems.

PUBA 662 Applied Policy Analysis (3) Explores significant contemporary policy issues relating to public administration practice. Develops analytic techniques and models of public policy-making processes, and looks at how social forces and political and economic pressures influence policy orientations. Pre: graduate standing and consent.

PUBA 690 Practicum (3) Placement of students in public, private, and nonprofit organizations where they can observe and analyze organizational functions and processes while undertaking projects of use to the host agency. Pre: 600 and 601.

PUBA 699 Directed Reading (V)

PUBA 700 Thesis Research (V)

PUBA 709 Capstone Planning Seminar (1) Develops topics, methods, objective, and resources to guide work of capstone seminar. Pre: 600 and 601.

PUBA 710 Capstone Seminar (3) Integrates public administration core courses by incorporating theoretical, analytical, and practicum observations into examination of public issue of importance to Hawai'i and the Pacific. Pre: 600 and 601.

Public Health Sciences and Epidemiology (PH)

School of Medicine

The courses listed below are offered subject to student interest and faculty availability. Please consult the current Schedule of Classes for confirmed offerings each semester. Individuals who are not public health students require instructor consent to enroll in courses; all courses 600 level and above require graduate standing. For additional information, contact the School of Medicine's Office of Graduate Student Academic Services.

PH 401 Introduction to Public Health (3) Health as a basic human right; history of public health as an integral part of social and cultural evolution. Economics of health also considered.

PH 410 Growing Old in a New Age (3) A survey course in gerontology that introduces students to biological, psychological, social, and societal aspects of aging. Taught on cable television or via HITS. Pre: graduate standing or 100-level course work in human development or social sciences, or consent.

PH 415 Geography of Health and Disease (3) Principles, methods, and research design of medical geography. Analysis of place as applied to questions of health and disease. Overview of

global health issues. Pre: GEOG 380 or consent. (Cross-listed as GEOG 415)

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

PH 602 Fundamentals of Health Administration (V) Fundamental concepts and methods of modern management in health-care settings. (Cross-listed as NURS 602)

PH 616 Basic Concepts of International Health (3) World development, resultant interdependent global health problems; development of international health and related technical assistance agencies, their methodologies, and effectiveness; special emphasis on health problems of Asia and the Pacific. Pre: consent.

PH 617 Comparative Public Health Systems (3) Health systems in selected countries and communities of Asia and Pacific. Historical development and relevant sociocultural, economic, political factors influencing development. Pre: 616.

PH 618 Cross-Cultural Perspectives in International Health (3) Discussion of international health activities in cross-cultural perspective; exchange of technologies, information, values, attitudes.

PH 623 Social Science and Public Health (2) Individual and community health; implications for public health practice, individual and social change processes.

PH 631 Nutritional Epidemiology (3) Dietary, biochemical, anthropometric and clinical methods used for evaluating nutrition and diet in the etiology and epidemiology of disease. A-F only. Pre: 663 and FSHN 487 or equivalent; or consent.

PH 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.

PH 636 Community Services for the Elderly (V) Field visits to institutions and non-institutional facilities for the elderly; interviews with older people. Designed to give students understanding of how needs of the elderly are met at the community level. Pre: consent.

PH 639 Aspects of Aging (3) Interdisciplinary consideration of social, psychological, economic, health-related aspects of aging.

PH 640 Health and Aging (3) Biological and physiological changes associated with aging. Social, psychological, environmental factors associated with health maintenance. Major threats to health, changing patterns of morbidity and mortality of the aged. Pre: 639 or consent.

PH 644 The Special Child (3) Discussion of the health and psychosocial needs and organization, delivery, and financing of health care for children with special health-care needs.

PH 647 Issues and Concepts in MCH (3) Major health problems affecting children and women in their childbearing years. Analysis of biological, psychological, environmental factors impinging on their health. Implications for service delivery.

PH 649 Leadership Skills in MCH I (3) Needs and resource assessment; planning, implementing, and evaluating MCH services. Pre: 647 (or

concurrent), 654 (or concurrent), and 663 (or concurrent); or consent.

PH 654 Introduction to Public Health Statistics

(3) Organization, summary, presentation, and logical interpretation of statistical data (descriptive statistics). Probability, statistical inference, elementary tests of significance, sampling. A–F only. Pre: one year of high school algebra, or MATH 24 and MATH 25, or equivalent.

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. Pre: MATH 203 or MATH 205 or equivalent course in calculus, and graduate standing; 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. Pre: 655, completion of one semester of calculus; or consent.

PH 658 Computer Applications in Public Health (2) Applications of computers to problems common to public health. Emphasis on data analysis and processing using existing computer programs. Pre: 654.

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; nuptiality and fertility; distribution, migration, and urbanization; projections and stable population theory. Pre: 654 or comparable statistics course, or consent. (Cross-listed as PPST 691 and SOC 691)

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 662 HIV and the Human Condition (3) An interdisciplinary look at HIV disease from the perspectives of public health, social work, medicine, and nursing. The course will provide an overview of the major issues relating to HIV/AIDS. (Cross-listed as SW 662)

PH 663 Principles of Epidemiology I (2)

Research methods and evaluation of research in epidemiology. Pre: 654 or consent.

PH 664 Principles of Epidemiology II (3) Study design, epidemiologic methods, and grant proposal writing. Pre: 654 and 663; or consent.

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. Pre: 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. Pre: 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. Pre: MICR 351 and TRMD 604; or consent. (Cross-listed as TRMD 605)

PH 668 Tropical Medicine and Microbiology Lab (3)

Laboratory projects in infectious diseases microbiology; practical experience in use of instruments, equipment, and procedures used in public health and diagnostic microbiology, and research on infectious diseases. Pre: TRMD 605 or consent. (Cross-listed as TRMD 606)

PH 669 Laboratory Aspects of Parasitic Diseases (2)

Lectures and practical training in public health aspects of laboratory techniques for parasitological diseases with special reference to the Pacific Basin. Pre: consent. (Cross-listed as TRMD 669)

PH 670 Culture and Community (2) Individual and community health in cultural perspective: consideration relevant to cross-cultural training and practice.

PH 671 Prevention: Principles for Health Practice (3)

Introduction to prevention principles/concepts for utilization in planning and delivery of health-care services. Includes assessing health conditions and designing prevention strategies. Pre: consent. (Cross-listed as SW 674)

PH 676 Communication Processes in Public Health (3)

Communication theory and its application to public health practice. Selection and use of communication techniques emphasizing communication processes in community and health organization contexts.

PH 681 Environmental Determinants of Health

(2) Environmental factors in personal and community health; implications for public health practice. Consideration of major issues from local, U.S., and international perspectives. (Cross-listed as NURS 681)

PH 682 Medical and Veterinary Entomology

(3) Vector control; insects and other arthropods in relation to human and animal diseases. Pre: ENTO 263 or consent. (Cross-listed as ENTO 661)

PH 689 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. (Cross-listed as CE 635)

PH 690 Water Quality Biology (3)

Fundamental microbiology involved in environmental engineering processes and research with special emphasis on mixed culture systems, biochemistry, and microbiological aspects of water supply protection, wastewater treatment, and disposal. Pre: consent. (Cross-listed as CE 636)

PH 699 Directed Reading/Research (V)

Pre: consent.

PH 700 Thesis Research (V)

Pre: consent.

PH 710 Politics of Health/Policy Process (3)

Constitutional, legal, governmental framework of health. Policy process, analytic techniques, assessing alternatives, adoption, implementation, evaluating effectiveness. Impact of constraints on policy analysis strategy. Pre: 608 or consent. (Cross-listed as NURS 720)

PH 718 Ethical Issues in International Health

(3) Definition of ethics—social values for health professionals; problems related to medical technology; international research activities; relationships between ethics, law, health. Pre: consent.

PH 727 Primary Health Care Management of Populations at Risk (3)

Health and development concepts; strategies in planning, implementation and management of primary health care in developing countries and for under-served at-risk populations in cross-cultural settings.

PH 728 Research in Primary Health Care (3)

Problem analysis of primary health-care interventions, operations research, research design, and strategies for integrative versus selective approaches for specific disease: meta and impact analyses.

PH 734 Health and Development: The First Three Years (3)

(Seminar) This course focuses on development and the factors influencing healthy child development in the first three years of life. Nutrition, parent-child relationships, family environment, sociodemographics, health supervision of the child, health education of the caregivers, heredity, resiliency, and special needs are examined with regard to their influence on physical/motor, cognitive/language, social emotional, and adaptive development. The role and timing of interventions to promote healthy development are addressed. Open to nonmajors. Pre: instructor consent. (Previous course in human development recommended)

PH 735 Child and Family Violence (3)

Dynamics of child abuse and neglect and issues related to child maltreatment and family violence. Includes legal, cultural, and social aspects. (Cross-listed as SW 759)

PH 736 Interdisciplinary Perspectives in Child Abuse and Neglect (3)

Interdisciplinary approaches, discussions, and collaborative methods for practice in child abuse and neglect. Content includes legal, medical, education, nursing, social work, public health, and psychology aspects. Pre: 735. (Cross-listed as SW 760)

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 745 Explorations in Maternal and Child Health and Disabilities I (V)

This course is 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)

This course is 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 Techniques in Epidemiological Research (3) Multiple variable statistical methods currently used in chronic disease epidemiology. Logistic regression, conditional logistic regression, proportional hazards regression modelling, generalized estimating equation-based methods, delta method approximations, exact tests. Pre: 656, 663, completion of one semester of calculus; or consent.

PH 748 Applied Multivariate Analysis in Health Sciences (3) Statistical methods for the analysis of many variables, variance and co-variance, treatment of categorical data. Applications to biomedical data. Pre: 656 or equivalent.

PH 752 Epidemiological Modeling of Diseases (3) Theoretical model building in disease dynamics; analytical methods and applications. Pre: 654 and 663; or consent.

PH 753 Life Table and Survival Analysis (3) Construction and interpretation of various types of life tables, treatment of censored data, proportional hazards, relative risk regression models, and parametric survival analysis. Pre: 654.

PH 754 Categorical Data Analysis (3) Theory and practice of statistical analysis of cross-classified data, especially from public health and social sciences, including loglinear models, response models, proportional odds models, and others. Pre: 654.

PH 755 Seminar in Tropical Medicine and Public Health (1) Weekly discussion and reports on current advances in tropical medicine and public health. Repeatable. (Cross-listed as TRMD 690)

PH 756 Special Topics in Tropical Medicine (1) Advanced instruction in frontiers of tropical medicine and public health. Repeatable. (Cross-listed as TRMD 705)

PH 765 Evaluative and Action Research in Public Health (3) Seminar on evaluative and action research in community health and social action programs. Case studies, concepts of effective action research within constraints of community settings. Development, testing of research proposals.

PH 770 Environmental Epidemiology (3) Epidemiology of environmental hazards such as asbestos, lead, noise, and pesticides. Pre: 654, 663, and 681; or consent.

PH 777 Research Design in Public Health (3) Principles of research applicable to inquiry; problem definition, data gathering and appropriate analytic methods. Pre: consent.

PH 778 Qualitative Research Methods (3) Advanced seminar in research design and methodology using qualitative approach, with an emphasis on qualitative theory and method, data collection and analysis, applied to health behavior research. Pre: 618 or 670, and 654 or 777.

PH 780 Preventive Medicine Seminar (1) Designed to develop problem-solving skills in the area of health promotion and disease prevention for residents and potential residents in the preventive medicine residency program.

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. Pre: consent.

PH 789 Seminar in Community Health Development (V) Graduate seminar for students in department of community health development. Sections: (1) gerontology; (2) health planning; (3) health services administration; (4) maternal and child health; (5) mental health; (6) health education. Repeatable. Pre: consent.

PH 791 (Alpha) Advanced Public Health Practice (3) Observation, study, and practical work in student's area of emphasis. (B) biostatistics; (E) epidemiology; (G) gerontology; (T) public health science. 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. Pre: consent.

PH 797 (Alpha) Exploration in Public Health (V) Investigation of emergent fields of inquiry in public health. (B) biostatistics; (E) epidemiology; (S) community health development; (T) public health science; (U) public health. Pre: consent. (Cross-listed as NURS 797)

PH 800 Dissertation Research (V) Pre: consent.

Quantitative Methods (QM)

College of Business Administration

QM 250 Applied Math in Business (3) The algebra and geometry of linear, 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.

QM 301 Business Statistics I (3)

QM 302 Business Statistics II (3)

QM 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 adviser.

QM 451 Nonparametric Methods (3) Techniques for estimation of parameters and testing hypotheses that require no assumption about the form of the distribution function; application to business problems. Pre: BUS 310. (Cross-listed as ITM 451)

QM 453 Sample Methods (3) Theory and practice in the selection and statistical treatment of probability samples most appropriate for estimating characteristics of diverse populations. Pre: BUS 310. (Cross-listed as ITM 453)

QM 454 Experimental Design (3) Analysis of variance techniques for identification and measurement of factors or treatments which affect productivity or quality of output in action systems. Pre: BUS 310. (Cross-listed as ITM 454)

QM 455 Applied Regression Analysis (3) Application of multiple regression analysis to practical business problems. Related techniques of analysis of variance and co-variance, and discriminant analysis also discussed. Pre: BUS 310. (Cross-listed as ITM 455)

Real Estate (RE)

College of Business Administration

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; investments, 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 340 Administration of Real Property Assets (3) How business firms and investors manage their real property assets in terms of the legal, financial, and physical dimensions of real property. Case studies in hotels, condominiums, and office buildings in the environment in Hawai'i.

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. May be repeated for credit with permission.

RE 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 adviser.

RE 673 Business Property Administration (3) Use of real property resources by business firms, including determination of real property requirements, development, financing, investments, legal environment, and valuation of business real estate. Pre: BUS 612 or BUS 615, or consent.

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. Pre: 673.

RE 675 Development of Real Property (3) Economic, market, and financial analyses of real property projects by students organized into teams. Includes site analysis and acquisition, planning, design, and construction. Pre: 300 or 673, or consent.

RE 690 Topics in Real Property Analysis (3) Consideration of selected special issues currently impacting real property in Hawai'i and the Pacific Basin. Repeatable. Pre: 300 or 673, or consent.

Religion (REL)

College of Arts and Humanities

In addition to those specified for individual courses below, 150, 151, or an appropriate 200-level course is generally a prerequisite to all upper division religion courses.

REL 150 Introduction to the World's Major Religions (3) Buddhism, Christianity, Confucianism, Islam, Hinduism, Judaism, Shinto, Taoism. **AHL2**

REL 151 Religion and the Meaning of Existence (3) Basic ideas and issues in contemporary religious thought about the meaning of existence. **AHL2**

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. **AHL2**

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. **AHL2**

REL 202 Understanding Indian Religions (3) Teachings and practices of major religious traditions of India. **AHL2**

REL 203 Understanding Chinese Religions (3) Taoist, Confucian, Buddhist, socialist, and folk beliefs and practices in their social and historical context. **AHL2**

REL 204 Understanding Japanese Religions (3) Broad survey, with primary focus on Shinto, Buddhist, and modern sectarian movements, analyzed in relation to social and cultural themes of major historical periods. **AHL2**

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. **AHL2**

REL 207 Understanding Buddhism (3) Survey of major forms and practices. **AHL2**

REL 208 Understanding Judaism (3) Survey from origin to modern times; emphasis on Jewish thought in Talmudic and medieval periods.

REL 210 Understanding Christianity (3) History of ideas concentrating on events, persons, and issues with the greatest impact on the evolution of Christianity. **AHL2**

REL 300 The Study of Religion (3) Definitions and functions of religion; methodologies by which it is studied; relationship to other areas of human endeavor.

REL 302 Soul, Self, and Spirit (3) A psychological survey of religious conceptions and constructions of self and personality. Pre: 150, 151, or consent.

REL 303 Creation and Evolution (3) An exploration of interactions between science and religion with a focus on cosmogonies. Pre: 150 or consent.

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, 207, or consent.

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 151.

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, 151, or consent.

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 151, or consent.

REL 352 Comparative Ethics (3) Ethical thought and practice in major world religions. Pre: 150 or consent.

REL 353 Witches and Witchcraft (3) Persecution of witches, witchcraft in Europe, 1300–1700, 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.

REL 356 Women and Religion (3) Examining roles of, and attitudes toward, women in major religious traditions through autobiographies, films, and primary texts. Pre: 150, 151, or consent.

REL 361 Love, Sex, and Religion (3) Love and sex as themes in religions of Asia and the West. Pre: 150 or consent.

REL 383 Mysticism East and West (3) Mystic 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.

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.

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: 151.

REL 399 Directed Reading (3) Pre: one 200-level religion course.

REL 409 Life and Teachings of Jesus (3) Critical study of synoptic gospels and of extra-Biblical sources. Pre: 201 and upper division standing, or consent.

REL 422 Anthropology of Religion (3) Myth, witchcraft, symbolism, values, ritual, spirit possession, shamanism, religious healing, and millennial cults in primitive, folk, and urban societies. Pre: ANTH 200 or consent. (Cross-listed as ANTH 422)

REL 431 Health/Medicine in Religion (3) Issues of health and disease in the light of religious beliefs and practices. Pre: 150 or consent.

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)

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: 207 or consent.

REL 476 Taoism in China (3) Seminar on early Chinese religion, formative years (Han-Sui), developing years (T'ang-Sung), and modern period. Emphasis on religious Taoism. Pre: 203 or consent.

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.

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, 207, or consent.

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, courses in Pacific Islands, or consent.

REL 495 Seminar in Religion (3) Topics pre-announced each semester. Pre: upper division standing or consent.

REL 499 Directed Reading or Research (V) Repeatable. 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 (3) Practicum in methods of research, argument, and discourse in scholarly writing about selected topics in religious studies. Pre: 600 and consent.

REL 630 Field Research in Religion (3) Independent field study of an Asian or Polynesian religion at an appropriate academic or religious institution abroad or in Hawai'i. Repeatable up to

6 credit hours. Pre: 600, 6 credits of area studies, and consent of graduate chair and instructor.

REL 650 Seminar on World Religions (3) Theoretical and methodological issues in the study of world religions. Not repeatable. Pre: 600 or consent.

REL 661 (Alpha) Seminar on East Asian Religions (3) Selected historical, thematic, and textual research topics in East Asian Buddhist schools and traditions: (B) Chinese religions (repeatable up to 9 credit hours); (C) Japanese religions (repeatable up to 9 credit hours); (D) East Asian Buddhism (repeatable up to 6 credit hours; pre: 661B or 661C).

REL 662 (Alpha) Seminar on South Asian Religions (3) Selected historical, thematic, and textual research topics in Indian religious traditions: (B) Indian religions (repeatable up to 9 credit hours); (D) Indian Buddhism (not repeatable).

REL 663 (Alpha) Seminar in Polynesian Religions (3) Selected historical, thematic, and textual research topics in Polynesian and Hawaiian religious traditions: (B) Polynesian religions (repeatable up to 9 credit hours); (C) Hawaiian religion (repeatable up to 9 credit hours).

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 (not repeatable; pre: 600 and 650); (C) teaching religion practicum (not repeatable; pre: 600, 650, and 680B).

REL 699 Directed Reading and Research (V)

REL 700 Thesis Research (V) Pre: graduate standing and consent of thesis chair.

Reproductive Biology (REPR)

School of Medicine

REPR 499 Directed Reading/Research (V)

REPR 603 Biology of Gametes, Fertilization, and Embryos (2) Morphological and physiological aspects of gamete formation and maturation, sperm-egg interactions, fertilization, and early development. Pre: BIOC 441 (or concurrent) and consent.

REPR 611 Seminar in Biomedical Sciences (1) Presentation and discussion of current research topics in biomedical sciences. Repeatable. Pre: consent. (Cross-listed as CMB 611)

REPR 633 Sexual Behavior Research (V) Individual research on psychological, social, or biological aspects of sexual behavior. Pre: PSY 100, PSY 170, ZOOL 101, and consent.

REPR 699 Directed Research (V)

REPR 700 Thesis Research (V) 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) Pre: admission to candidacy (PhD program).

Russian (RUS)

College of Languages, Linguistics and Literature

All courses are conducted in Russian except 107 and 108.

RUS 101 Elementary Russian (4) Conversation, lab drill, reading, writing, grammar. **HSL**

RUS 102 Elementary Russian (4) Continuation of 101. Pre: 101. **HSL**

RUS 107 Reading Scientific Russian (3) Intensive course for reading scientific literature. Basic Russian grammar; reading and translating. For science majors.

RUS 108 Reading Scientific Russian (3) Continuation of 107. Pre: 107.

RUS 201 Intermediate Russian (4) Reading, conversation, laboratory drill, grammar, composition. Pre: 102. **HSL**

RUS 202 Intermediate Russian (4) Continuation of 201. Pre: 201. **HSL**

RUS 209 Russian Phonetics (3) Basic theory of Russian sound system; practice in pronunciation, intonation, and fluency. Pre: 102. May be concurrent with 201.

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. **HSL**

RUS 303 Advanced Russian (3) Systematic practice for control of spoken and written Russian, vocabulary building, fluency in various subjects, accuracy in sentence structure, phrasing stylistic appropriateness. Pre: 202

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.

RUS 312 Readings in Russian Civilization and Literature (3) Continuation of 311. Pre: 311.

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 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 431 Russian Folklore (3) Selected Russian folk narratives, bylinas, songs, and proverbs. Influence of folklore on major Russian authors. Pre: 312 or consent.

RUS 441 Russian Short Story (3) Origin and development (19th and 20th century); the major writers. Pre: three years of Russian or consent.

RUS 442 Russian Novel (3) Origin and development from 18th century to present. Pre: three years of Russian language or consent.

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. Pre: 312, LLEA 351, or consent.

RUS 452 Topics in 19th- and 20th-Century Russian Literature (3) Continuation of 451. Pre: 312, LLEA 352, or consent.

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. Pre: consent of chair.

RUS 615 Russian Poetry (3) Classical and contemporary Russian poets.

RUS 617 Russian Drama (3) Representative plays of 18th, 19th, and 20th century.

RUS 618 Comparative Grammar: Russian and English (3) Selected problems in modern Russian compared with English.

RUS 619 Advanced Russian Morphology and Syntax (3) In-depth analysis of special topics of grammar and syntactical categories. Topics may include complex sentences, lexical-syntactical categories, idiomatic expressions, etc. Pre: 306.

RUS 621 Old Church Slavonic Grammar and Texts (3) Phonemics, morphophonemics, declension, conjugation, and syntax; readings in selected texts written before 1100; some consideration of common Slavic. Pre: graduate standing.

RUS 622 Historical Grammar of Old Russian Language (3) Old Russian phonology, morphemics, syntax, and lexicology in contrast with modern Russian; some comparison with contemporary Ukrainian and Byelorussian, etc. Readings and linguistic analysis of medieval Russian literary texts. Pre: 621.

RUS 641 Old Russian Literature (3) Origins and development of literary trends and genres—chronicles, historical tales, lives—10th–17th century. Pre: graduate standing.

RUS 642 18th-Century Russian Literature (3) Authors and their works; development of the main genres; West European trends and cultural influences. Pre: 641.

RUS 650 Historical Development of Russian Literary Style (3) Role of the oral tradition, old church Slavonic, vernacular elements, and Western borrowings; influence of Lomonosov, Pushkin, Tolstoy, etc. Pre: 622 or 641.

RUS 699 Directed Reading (V) Pre: consent of department chair.

RUS 735 Seminar in Russian Language or Literature (3) Literary or linguistic topics, movements, genres, or their representatives. Repeatable. Pre: consent.

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 five hours weekly; daily lab work. **HSL**

SAM 102 Elementary Samoan (4) Continuation of 101. **HSL**

SAM 107 Elementary Samoan for Professionals (4) Development of listening, reading, writing, and other communication skills for nursing and social work students. Culture and history integrated with language study. **HSL**

SAM 108 Elementary Samoan for Professionals (4) Continuation of 107. **HSL**

SAM 201 Intermediate Samoan (4) Continuation of 102. Meets five hours weekly, four of five hours devoted to drill and practice. Daily lab work. Pre: 102. **HSL**

SAM 202 Intermediate Samoan (4) Continuation of 201. **HSL**

SAM 208 Special Samoan: Reading and Writing (3) For partially bilingual students whose aural-oral skills in Samoan were acquired informally. Emphasis on reading, writing, and grammar through 202 level.

SAM 227 Overview of Samoan Literature in English (3) Survey of major writers of Samoan literature in English; lectures, discussions,

short paper.

SAM 301 Third-Level Samoan (3) Continuation of 202. Conversation, advanced reading, and composition. Meets three times weekly; additional lab work. Pre: 202.

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: SAM 202 or equivalent; or consent.

SAM 421 Samoan Ceremonial Speech (3) Development of oratory skills in Samoan ceremonial speech. Emphasis on institutionalized applications such as the kava ceremony and formal speechmaking. Pre: 402.

SAM 422 Samoan Ceremonial Speech (3) Continuation of 421.

SAM 431 Samoan Oral Traditions (3) Historical survey and analysis of the oral traditions and genealogies of Samoa with special emphasis on the relationship of these traditions with Samoan ceremonial speech. Pre: 302.

SAM 432 Samoan Oral Traditions II (3) Continuation of 431. Pre: 431 or consent.

SAM 452 Structure of Samoan (3) Study of modern Samoan grammar including some sociolinguistic background. Pre: 202 or LING 102, or consent.

SAM 461 Traditional Samoan Literature (3) A survey of the major genres of traditional Samoan literature. Taught in the Samoan language. Pre: 302 or consent.

Sanskrit (SNSK)

College of Languages, Linguistics and Literature

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. Pre: 182. **HSL**

SNSK 282 Intermediate Sanskrit (3) Continuation of 281. **HSL**

SNSK 381 Third-Level Sanskrit (3) Continuation of 282. Reading and analysis of various classical texts. Pre: 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. Pre: 382.

SNSK 482 Fourth-Level Sanskrit (3) Continuation of 481.

SNSK 685 Advanced Readings in Sanskrit (3) Reading, analysis, and interpretation of selected texts. Repeatable. Pre: 482.

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 111 Practicum for Foreign T.A.'s (3) Extensive practice for foreign teaching assistants in speaking in classroom situations with an emphasis on oral skills, American cultural expectations, and classroom management. Pre: ELI 080.

SLS 302 Second Language Learning (3) Theoretical foundations for the learning and teaching of second/foreign languages. Pre: upper division standing.

SLS 303 Second Language Teaching (3) Survey of methodology; basic concepts and practices. Pre: 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. Pre: 302.

SLS 313 Techniques in Second Language Teaching: Listening and Speaking (3) Methods and materials. Issues in teaching; survey of available materials and practice in their adaptation. Pre: 302.

SLS 380 Bilingual Education (3) Survey and analysis of current thinking and practices in bilingual/bicultural education; special emphasis on ESL/EFL. Pre: 302, graduate standing; or consent.

SLS 418 Instructional Media (3) Theoretical foundation and practical applications of using electronic and audiovisual media in second language teaching. Pre: 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. Pre: 302 and LING 102, or graduate standing; or consent. **AHL3**

SLS 441 Language Concepts for Second Language Learning and Teaching (3) Language analysis—phonology, syntax, semantics, discourse for teaching second languages. Pre: 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. Pre: 302.

SLS 490 Second Language Testing (3) Measurement and evaluation of achievement and proficiency in second language learning. Pre: 302, 441, LING 102, or graduate standing.

SLS 499 Directed Reading/Research (V) For liberal studies majors. Pre: a minimum cumulative GPA of 2.7 or a minimum GPA of 3.0 in major, or consent of department chair.

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

SLS 520 Topics in Second Language Teaching (V) Approaches and methodology in teaching second languages; research in second language acquisition and sociolinguistics. Repeatable three times. CR/NC only. Pre: teaching certificate.

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 ESL teachers and researchers. Pre: graduate standing or consent.

SLS 612 Alternative Approaches to Second Language Teaching (3) Examination, comparison with conventional approaches; interpersonal relationships in language teaching. Pre: 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. Pre: 600 or consent.

SLS 614 Second Language Writing (3) Problems in teaching second language composition. Survey materials; use, modification, and development. Error analysis. Pre: 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. Pre: 600 or consent.

SLS 630 Second Language Program Development (3) Designing, implementing, and evaluating language programs; systems-based approach to program and curriculum development. Pre: 600 or consent.

SLS 640 English Syntax (3) English clause structure in relation to second language learning and teaching. Pre: 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. Pre: 441, 460, or ENG 401.

SLS 650 Second Language Acquisition (3) Theory and research. A–F only. Pre: 490 and 600; or consent.

SLS 660 Sociolinguistics and Second Languages (3) Theoretical and practical aspects of language, culture, and society. A–F only. Pre: 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 and interpretation of data. Pre: 490, 600, and graduate standing; or consent.

SLS 671 Research 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. Pre: 490 or consent.

SLS 672 Second Language Classroom Research (3) Survey of research on second language classrooms and analysis of methodological issues. Pre: 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. Pre: 441 or LING 422, and 600; or consent.

SLS 675 Second Language Interpretative Qualitative Research (3) Philosophical and theoretical aspects of second language interpretative qualitative research. Pre: 600 and 660 (or concurrent); or consent.

SLS 678 Microanalysis in Second Language Research (3) Discourse analysis and verbal report as qualitative approaches to second language research; their theories and methodologies; practical application. Pre: 600 or consent.

SLS 680 (Alpha) Topics in Second Language Acquisition (3) Variable topics in special areas of second language studies: (E) second language learning (Pre: 650); (N) second language analysis (Pre: 640); (P) second language pedagogy (Pre: 600 or consent); (R) second language research methodology (Pre: 670 or 675 or 678; or consent); (U) second language use (Pre: 660). Repeatable if different alpha.

SLS 690 ESL Teaching Practicum (3) Student teaching in ESL classroom. Pre: 600, advancement to candidacy, and consent.

SLS 699 Directed Reading/Research (V) Individual reading in various fields of ESL. CR/NC only. Pre: consent of department chair and instructor.

SLS 700 Thesis Research (V) Thesis research for Plan A students.

SLS 710 Teaching Second Languages (3) Analysis of methods; implications of recent and current research. A–F only. Pre: 650 and 660; or consent.

SLS 730 Seminar in Second Language Education (3) Current issues and problems. Repeatable. Pre: 600 and advancement to candidacy; or consent.

SLS 750 Seminar in Second Language Acquisition (3) Issues in theory and research in second language acquisition of child and adult. Repeatable. Pre: 441 and 460; or consent.

SLS 760 Seminar in Second Language Use (3) Second language/dialect use in multilingual communities. Repeatable. Pre: 660 or consent.

SLS 775 Seminar in Second Language Qualitative Research: Methods (3) Methodology of qualitative research in second language and multilingual contexts; data collection and analysis; ethics and style in research reporting. Pre: 675 or consent.

SLS 799 Apprenticeship in Teaching (V) An experienced-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. CR/NC only. Pre: graduate standing and consent.

Social Sciences (SOCS)

College of Social Sciences

Two kinds of courses are available directly from the College of Social Sciences: interdisciplinary courses and courses on tools, techniques, theories, and methods shared by the social science disciplines. The broader perspective and opportunity for cross-disciplinary interaction make these courses attractive.

SOCS 220 Computer Applications in Social Sciences (3) Word processing, spreadsheets, database management, introductory statistics; other social sciences applications. Lab required.

SOCS 225 Statistical Analysis for Social Sciences (3) Statistical reasoning in the analysis of social science data, including descriptive statistics, exploratory data analysis, inference measures of association, decomposition of variance, and regression analysis. Lab required. Pre: any 100 level social science course or consent.

SOCS 250 Social Science Enquiry (3) Survey of enquiry methods in social sciences with an emphasis on the development of skills of enquiry, including critical thinking, evidence gathering and evaluation, reasoning, and argumentation. Pre: any 100-level social science course or consent.

SOCS 600 Social Science Theory (3) History and theory of social science.

SOCS 601 Topics in Teaching Innovations (3) Examination and critical analysis of contemporary curriculum and instruction issues in social sciences. Concepts, theories, principles underlying active learning, critical thinking, values inquiry, assessment, and multidisciplinary approaches to integration of knowledge.

Social Work (SW)

School of Social Work

SW 402, 403, 440, 490, and 491 are open only to majors who complete 200 and all 300-level SW courses with a grade of C or better.

SW 200 The Field of Social Work (3) Orientation to the profession of social work; historical development, values and philosophy, scope and aims.

SW 302 General Social Work Practice I (3) Orientation to practice principles, concepts, values, knowledge base, and their application. Pre: majors only.

SW 303 General Social Work Practice II (3) Introduction to practice skills with individuals, families, groups, and communities. Pre: majors only. Co-requisite: 391.

SW 325 History of Social Welfare (3) Historical developments and implications of social welfare activities, institutions, and policies and European backgrounds; introduce social welfare developments in selected non-European countries. Recommended: 200.

SW 326 Social Welfare as a Social Institution (3) Study of U.S. social welfare institutions and policies as an expression of societal response to human needs; interrelationship of American value system to goals, objectives, and policies of social security programs; focus on examination of Hawai'i's social service programs. Recommended: 200.

SW 360 Human Development and Behavior for Social Work Practice (3) Examination of social and cultural variables such as human development and behavior; use of knowledge in these areas by social work practitioners. Recommended: 200.

SW 361 Sociocultural Content for Social Work Practice (3) Examination of ethnicity, class, and sex statuses as these affect human development and behavior for social work practice. Recommended: 200.

SW 380 Topics in Social Welfare (V) An examination of current trends in the field of social welfare.

SW 391 Junior Practicum (3) Introduction to field instruction; application of social work knowledge, skills, and values to field experience. Pre: 302, majors only, junior standing, and completion of required sophomore and first-semester junior-level SW courses. Co-requisite: 303.

SW 402 General Social Work Practice III (3) Use of problem-solving process in practice with individuals, families, groups, and communities. Pre: majors only, senior standing, completion of required sophomore- and junior-level SW courses. Co-requisite: 490.

SW 403 General Social Work Practice IV (3) Examination of practice methods and interventive models; identification and analysis of issues related to practice. Pre: majors only, senior standing, completion of required sophomore- and junior-level SW courses. Co-requisite: 491.

SW 440 Research Development in Social Welfare (3) Introduction to and application of language of research, theoretical concepts underlying advancement of knowledge, practical steps in research. Pre: senior standing.

SW 474 Social Work with Adult and Juvenile Offenders (3) Problems, issues, developments in juvenile and criminal justice; effectiveness of current interventive techniques, preventive and correctional efforts. Pre: senior standing or consent.

SW 475 Social Services with Children (3) Study of current social services for children in the U.S. with focus on familiarization of child welfare programs and services in Hawai'i. Pre: senior standing or consent.

SW 477 Social Welfare Concepts and Issues in Gerontology (3) Aging and its effect on the individual, family groups, associations, and communities. Impact of aging on social service delivery systems, public policy and role of social work. Pre: senior standing or consent.

SW 480 Topics in Social Welfare (V) An examination of current trends and issues in social work.

SW 490 Senior Practicum (4) Field instruction, application, and integration of classroom knowledge with field experiences. Pre: majors only, senior standing, completion of required sophomore- and junior-level SW courses. Co-requisite: 402.

SW 491 Senior Practicum (4) Field instruction, application, and integration of classroom knowledge with field experiences. Pre: majors only, senior standing, completion of required sophomore- and junior-level SW courses. Co-requisite: 403.

SW 499 Directed Reading and Research (V) Planned individualized study or research in special area related to social work practice interest. Up to 3 credit hours. Pre: majors only, senior standing, and consent of program chair and faculty adviser.

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

SW 606 Social Work Practice with Individuals (3) This beginning practice course introduces students to the basic processes of social work and the roles and skills needed for generalist practice. Relevant theories of social work practice with individuals are explored for the efficacy with various problems and for their applicability to practice with various ethnicities, social classes, and oppressed populations. Interviewing and interpersonal skill development are incorporated. A-F only. Pre: admission to MSW program. Fall only.

SW 607 Social Work Practice with Families and Groups (3) This practice course builds upon the generalist framework and foundation content presented in 606. Special emphasis is given on models for assessment, intervention, and evaluation of practice with families and groups. Relevant theories of groups and the principles of group dynamics and group work methods are examined in regard to task, therapeutic, psychoeducational, and social development

groups. Family content includes structural, behavioral, communication/experiential, and culturally-specific theories of intervention. Pre: 606.

SW 630 Social Welfare Policy and Services (3)

Examines in a historical and comparative framework the economic, social, political, organizational, and administrative factors influencing the development, formulation, and implementation of social welfare policies in the U.S. The course provides opportunity for the application of various models of social policy analysis in major areas of social welfare programming and service delivery. A-F only. Pre: graduate standing. Fall only.

SW 631 Social Work Practice in Communities and Organizations (3) Community

conceptualization; organized roles of developer, enabler, broker, mediator, and advocate; diagnostic and problem-solving technology; the special characteristics of the social worker as community organizer; matrix of structural objectives; sources and use of power; how to build an organization; and interorganizational negotiation. A-F only. Pre: 606, graduate standing, and consent. Spring only.

SW 632 Social Welfare Change through Legislation (3) Introduction to the social worker's role as a change agent through the use of the legislative process. Includes a review of social needs and problems, the legislative process per se and study of basic skills necessary in making appropriate social work input into the legislative process for the enactment of social welfare legislation. Pre: graduate standing.

SW 633 Organization and Administration in Social Work (3) Introduction to formal organization theory. Social service administration examined and implications for service delivery systems developed. Pre: graduate standing.

SW 640 Introduction to Scientific Methods and Principles in Social Work (3) Understanding and interpreting results of nomothetic and idiographic research; design principles and statistical analyses and their relationship to practices; use of published research. A-F only. Pre: graduate standing. Fall only.

SW 642 Nomothetic Research in Social Work Practice (3) Classical experimental and survey research methods specific to social work. Basic statistical techniques appropriate to those designs. Recommended for students planning to take 743. Pre: 640.

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 the behavioral sciences. Review of elementary statistical methods. Introduction to the general linear model as principle of data analysis. Pre: 640 or consent.

SW 652 Computer Applications in the Behavioral Sciences (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. Pre: 640 or 651. (Cross-listed as EDEP 602)

SW 653 Design and Analysis of Psychological Experiments (3) Analysis of variance and other modes assessing results of experiments; relation of analysis to design. Pre: 651. (Cross-listed as PSY 611 and EDEP 603)

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 co-variance to regression analysis. Pre: 651 or consent. (Cross-listed as PSY 612 and EDEP 604)

SW 655 Factor Analysis (3) Theory and method of factor analysis and related methods of multivariate analysis. Pre: 654 or consent. (Cross-listed as PSY 613 and EDEP 605)

SW 656 Multivariate Methods (3) Multivariate forms of analysis, variance, co-variance, discriminant analysis, canonical correlation, and principal components analysis. Pre: 654 or consent. (Cross-listed as PSY 614 and EDEP 606)

SW 657 Nonparametric Methods for the Behavioral Sciences (3) Conditions for valid applications of nonparametric statistical techniques in the behavioral sciences presented from both theoretical and methodological perspectives. Pre: 651 or consent. (Cross-listed as PSY 615 and EDEP 607)

SW 658 Measurements and Evaluation (3) Theory of measurement and evaluation; analysis of tests and scales emphasizing statistical and psychological analysis of experimental and standardized tests and scales. Special topics include measurement of attitude and mental health concepts and measurement issues in cross-cultural research. Pre: 651. (Cross-listed as PSY 616 and EDEP 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, theories and evidence 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) This course 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 provide students with an overview of human behavior and healthy and unhealthy development over the life span. A-F only. Pre: 659. Spring only.

SW 661 Problems in Human Sexuality (3) Problems associated with human sexuality, attitudes, culture, and range of individual differences and approaches to resolving these problems. Pre: graduate standing.

SW 662 HIV and the Human Condition (3) An interdisciplinary look at HIV disease from the perspectives of public health, social work, medicine, and nursing. The course will provide an overview of the major issues relating to HIV/

AIDS. Pre: graduate standing. (Cross-listed as PH 662)

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. 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 Prevention, Concepts, and Principles for Health Care Practice

(3) An introduction to the principles and concepts of prevention and their application to health services planning and delivery. Integration of concepts of social epidemiology and social work practice. Meets seminar requirement. Pre: graduate standing and consent. (Cross-listed as PH 671)

SW 677 Ethnic and Minority Content in Social Work

(2) Emphasis is on social work principles and concepts in relation to known information about various ethnic groups. The concepts "ethnicity" and "minority," defined within the context of the American culture, are discussed as horizontal and vertical paradigms with conflicting goals that contribute to social and cultural change. Pre: graduate standing.

SW 680 Topics in Social Welfare (V) Current trends in field of social welfare. Recent courses have focused on child abuse and neglect, justice system, 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 (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 699 Directed Reading and Research (V)

Students, on the basis of special interest, select a faculty member to work with on a problem for which planned individualized study or research is deemed advisable. Pre: consent.

SW 700 Thesis Research (V) Independent research under supervision of a thesis committee. Includes formal proposal and defense of finished research.

SW 706 Family Therapy (3) Advanced knowledge and skills in the field of family therapy through both didactic and experiential teaching leading to systematic intervention in dysfunctional family systems. Pre: 606 or consent.

SW 707 Methods of Group Psychotherapy (3)

This course is designed specifically to train students in the theory and practice of leading psychotherapy groups; it includes historical developments, research, theories, and application of group psychotherapy, group techniques and exercises. Pre: 607 or consent.

SW 708 Social Work Practice with Peoples of Hawai'i (3)

The course places special emphasis on practice adaptations necessary in working with specific ethnic groups in Hawai'i. Thinking and belief patterns, feelings, and designs for living are considered in relation to differential treatment approaches. Pre: graduate standing.

SW 712 Social Work Practice and Sex-Related Problems (3)

SW 713 Social Work Practice with Sexually Oppressed Groups (2) Application of social work knowledge and skills to problems associated with sexually oppressed, e.g., women, homosexually oriented, aged, disabled, victims of rape. Meets seminar requirement. Pre: graduate standing.

SW 715 Therapeutic Strategies with the Older Adult (3)

The course focuses on interdisciplinary strategies with older adults: individual, family, and group therapy; eclectic mental health approaches; 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)

An advanced practice course for students specializing in social work with children and families. It is 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)

This seminar is designed for students in the child and family concentration and builds upon past knowledge and skill development in practice classes and in the practicum. Students integrate, demonstrate, and extend earlier learning, acquire new knowledge, and learn and practice new skills. The course is 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, case management, discharge planning, family group work, community and team building. Course content 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)

Through the use of case studies developed by the students, social work practice 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)

This course 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). The course is built on conceptual foundations including cultural implications of mental health, human ecology, life cycle/events, strengths assessments, and research. It 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)

This course 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 United States and Hawai'i. Pre: 724.

SW 726 Social Work Practice with the Aged (3)

This course is designed for social work students specializing in social work practice with the aged and their families. It 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 certain 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)

This course, 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 730 Social Planning (3) Introduction to social planning with emphasis on planning within the social welfare sector. Overview of social planning perspectives; examination of alternative theoretical framework in social planning, particularly social development formulations; in-depth analysis of the social welfare planning sector including theoretical perspectives; value-factual premises in need definition, primary tasks (allocation-coordination), organizational contexts, planning strategies and instrumentation, and professional roles. Pre: 631 or consent.

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: 630 or consent.

SW 733 Program Development, Funding, and Evaluation (3)

Basic concepts in program planning and development; implementation strategies; grants administration—proposal formulation and development, proposal negotiation, and project administration;

evaluation of social services. Pre: graduate standing and 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 the 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., foster care of children, effectiveness of social work intervention, etc. Pre: 650.

SW 742 Review of Research in Social Work (3) Continuation of 741.

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 adviser. 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 745 Social Work Research Seminar (2) For students who will be conducting Plan A thesis or Plan B research project. Focus on conceptualizing, designing, and implementing an empirical study, measurement issues, and computer applications. Meets seminar requirement. Pre: 640.

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 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 759 Child and Family Violence (3) Dynamics of child abuse and neglect and issues related to child maltreatment and family violence. Includes legal, cultural, and social perspectives. (Cross-listed as PH 735)

SW 760 Interdisciplinary Perspectives in Child Abuse and Neglect (3) Interdisciplinary approaches and collaborative methods for practice in child abuse and neglect. Includes legal, medical, educational, nursing, social work, public health, and psychological aspects. Meets seminar requirement. Pre: PH 735. (Cross-listed as PH 736)

SW 772 Seminar in International Social Work (3) Approaches to social problems and trends in the profession in international, cross-cultural perspectives. Emphasis on developmental aspects of social work. Political, economic, social, and cultural forces shaping social welfare in national development. Meets seminar requirement. Pre: graduate standing 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 780 Seminar in Substantive Field (V) Current problems and issues in fields such as mental health, child welfare, institutional care, public welfare; possible solutions. Meets seminar requirement. Pre: graduate standing.

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 once.

Sociology (SOC)

College of Social Sciences

In addition to the prerequisites specified below, all 300-level courses have as 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.

SOC 100 Introduction to Sociology (3) Basic social relationships, social structures, and processes. **SS**

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. **SS**

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. **SS**

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. **SS**

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. **SS**

SOC 300 Principles of Sociological Inquiry (3) (2 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. Pre: one of 100, 214, 218, 231, or 251; or consent.

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.

SOC 311 Survey of Social Inequality and Stratification (3) Introduction to social stratification theory and research; definition and measurement of socioeconomic status; racial, ethnic and gender inequality; differences in lifestyles and life chances; social mobility. Pre: one of 100, 214, 218, 231, or 251; or consent.

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.

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.

SOC 317 Survey of Sociology of the Community (3) Definitions, models, and theories; classic studies with applications from participant/members and sociologist/observers; intentionality in organizational work, communes, and social networks; special reference to local community.

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 WS 151; or consent. (Cross-listed as WS 318)

SOC 321 Survey of Sociological Theory (3) Major theorists and their influences, from Comte to today.

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.

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.

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, psychedelics, and perception; social norms and deviant behavior.

SOC 336 Deviant Behavior and Social Control (3) Interrelations of deviance, criminology, juvenile delinquency, corrections, social control, sociology of law. Key concepts, theories.

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.

SOC 343 Survey of Total Institutions (3) Erving Goffman's concept of total institutions as applied to prisons, mental hospitals, leprosaria, military establishments, ocean vessels, etc., and to "social self" and "social interaction."

SOC 352 Survey of Sociology of Education (3) Formal education as one aspect of socialization. Emphasis on American system; business, military, and religious institutions.

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.

SOC 354 Survey of Medical Sociology (3) Social factors in disease and treatment; illness behavior, roles of patients and healers; nature of healing professions; use of medical services; alternative systems of medical organization.

SOC 356 People and Institutions of China (3) Social institutions, family, community, education, stratification, government, economy; impact of modernization and revolution on their contemporary transformation.

SOC 357 People and Institutions of Japan (3) Persistence and change in economy, policy, religion, education, family, and other institutions of modern Japan.

SOC 358 People and Institutions of Korea (3) Institutional analysis of contemporary North and South Korea: family, socialization, economy, polity, religion; social class, urban-rural differences, economic-political ties.

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. (Cross-listed as WS 362) **SS**

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.

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.

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. (Cross-listed as PPST 412)

SOC 413 Analysis in Economy and Society (3) Study of the dominant trend of economic change 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.

SOC 415 Technology and Society (3) Nature of technology, social forces that affect its adoption; impact on society; innovation.

SOC 416 Analysis in Deliberate Social Change (3) Consequences, intended or not, of educational interventions, dispute settlement, community development, family assistance, housing, etc. Recommended: 316.

SOC 417 Comparative Study—Small Communities (3) Problems of studying the small community in various settings in non-Western societies; use of data as indicators of social change.

SOC 418 Women and Work (3) Gender division of labor nationally and internationally; sex differentials in labor supply, training, wages, working conditions, and unemployment; historical trends and future directions. Pre: one 300-level SOC or WS course. (Cross-listed as WS 418)

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.

SOC 431 Criminology/Juvenile Delinquency (3) Research in systematic social deviation. Scaling and measurement of delinquents/criminals, official data, gangs, identification and measurement of delinquent/criminal value orientations, etc.

SOC 432 Analysis in Corrections (3) Behavioral assumptions of various correctional practices and modes of organization; current "in-community" approaches.

SOC 433 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. Recommended: 332.

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. Pre: one 100- or 200-level SOC or WS course. (Cross-listed as WS 435)

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.

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. Pre: 300 or consent. (Cross-listed as WS 446)

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.

SOC 452 Marriage and Family: A Feminist Perspective (3) Sex-role socialization, mate selection, motherhood, career-family conflicts. Alternative family structures in U.S. and other countries. Pre: 200-level SOC course or WS 351, and upper division social science major. (Cross-listed as WS 452)

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. Pre: 353.

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.

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)

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.

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.

SOC 459 Popular Culture (3) Popular culture as manifested in film, sports, TV, comics, magazines, etc.; relation to sociological theories and studies.

SOC 472 Modern Sociological Theory (3) Current theories such as functionalism, conflict theory, social exchange, and symbolic interaction in the works of Parsons, Merton, Mead, Homans, and others.

SOC 475 Analysis in Survey Research (3) Survey research design and analysis, including theory selection instrument construction, sampling techniques, data collection, computerized data analysis, and writing up research reports of the findings. Pre: 300 or consent.

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.

SOC 476L Social Statistics Laboratory (1) Required lab for computer applications for analysis of sociological data. CR/NC only. Co-requisite: 476.

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.

SOC 479 Theories of Social Conflict (3) Classical and contemporary theories whose major dynamic element is conflict; theories that assign conflict lesser importance.

SOC 491 Discussion Group Leader—Freshman Seminar (6) Students lead a freshman seminar section of sociology and meet weekly with instructor for substantive background. Pre: senior standing and consent.

SOC 495 (Alpha) Topics in Sociology (3) Faculty projects normally limited to 10 students. Topics pre-announced each semester. Pre: 300 or consent.

SOC 495B Seminar: Tutoring and Testing (3) For students assisting in the self-study section of 100. Teaching, evaluating, test questions. Pre: consent.

SOC 496 Topics in Sociology: Student Projects (V) Students create their own study group and solicit an adviser from faculty. Consult department for assistance.

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.

SOC 604 Methods of Research in Criminal Justice (3) Multidisciplinary perspective on methods and techniques of research in the correctional and remediating professions for practicing and potential correctional or social workers.

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. Pre: 476.

SOC 605L Advanced Statistics Laboratory (1)
Required lab for computer applications for analysis of sociological data. CR/NC only. Pre: 476 or consent. Co-requisite: 605.

SOC 606 Research Methods and Design (3)
Emphasis on theory selection, theory construction, and choice of research strategies.

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)

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 reflexive writing. Repeatable once only. Pre: 478 or consent.

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 sociology 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. Pre: 419.

SOC 615 Sociology of Health Services (3)
Utility of sociological concepts and social research methods for analyzing relationships among individuals' social characteristics, health status and needs, and use of health services.

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 661 Demography of Human Fertility (3)
Causes of variation in human fertility between and within societies and over time; role of economic and social factors. Implications of population policy. Pre: PPST 650 and PPST 691. (Cross-listed as PPST 661)

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: 476. (Cross-listed as PH 659 and PPST 691)

SOC 699 Directed Reading/Research (V)

SOC 700 Thesis Research (V) Research for master's thesis.

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. Pre: statistics.

SOC 705 Multivariate Analysis (3) Application to population data. Multiple classification analysis, path analysis, logit and multinomial logit regression and hazard models. Repeatable once only. (Cross-listed as PPST 705)

SOC 706 Historical Social Analysis (3) Methods of historical sociological analysis as they are related to various sociological theoretical perspectives.

SOC 710 Seminar in Comparative Sociology (3)
Conduct of comparative social research; special advantages and problems in theoretical development and research strategies. Substantive focus in Pacific rim. Pre: 605 and 606, or consent.

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; ethnomethodology; construction of social structure, culture, and consciousness. Repeatable once 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 once.

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 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 areas 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 once only.

SOC 723 (Alpha) Seminar in Modern Chinese Society (3) Developmental policies and social change and impact on modern Chinese social institutions. (B) political change. Focus on politics in China, Hong Kong, and Taiwan. Special emphasis on democracy movement and reunification themes; (C) social and demographic change. Focus on population, social stratification, gender, and family problems. Repeatable once in different area. Pre: 356 (or concurrent).

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 735 Peace/Development Connection (3)
Relationships between peace and development with special emphasis on hunger and militarism in Asia, the Pacific, and Africa. (Cross-listed as POLS 735)

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. Pre: one year of graduate work in social sciences or consent.

SOC 751 Social Change in Developing Areas (3) Theories and available research methods examined for applicability to developing areas; specific examples from Asia. Repeatable once only. Pre: upper division course in research methods.

SOC 752 Seminar in Demography (3) Recent literature and materials for measurement of population change in developing countries in Asia. Determinants and consequences of policy and population change. Pre: PPST 650.

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 once only. Pre: classified graduate standing or consent.

SOC 800 Dissertation Research (V) Research for doctoral dissertation.

Soil Science (SOIL)

College of Tropical Agriculture and Human Resources

SOIL 304 Fundamentals of Soil Science (4) (3 Lec, 1 3-hr Lab) Origin, development, properties, management of tropical soils; classification of Hawaiian soils. Pre: CHEM 151 or CHEM 171.

SOIL 430 Soil Chemistry (3) (2 Lec, 1 3-hr Lab) Study of soil chemical processes such as weathering, adsorption, precipitation, and ion exchange; causes of soil acidity, alkalinity, and salinity; reactions between soils and fertilizers, pesticides, or heavy metals. Pre: 304 or consent.

SOIL 450 Soil Fertility (4) (3 Lec, 1 3-hr Lab) Principles of plant-soil interactions and nutrient availability relative to soil, chemical, and physical properties. Soil fertility evaluation. Nutrient management for enhanced crop production/minimum environmental pollution. Pre: 304 and CHEM 161.

SOIL 460 Soil Physics (3) (2 Lec, 1 3-hr Lab) An analysis of the size, shape, arrangement, and mineral composition of soil particles and the application of physics to predict soil behavior and performance in the field. Pre: 304 and either PHYS 151 or PHYS 170.

SOIL 461 Soil, Erosion, and Conservation (3) Processes and factors which influence erodibility and determine erosion; principles of erosion control; soil conservation as an element of resource stability and sustainable agriculture. Pre: 304 and consent.

SOIL 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 and development. Pre: 304 and MICR 351, or consent.

SOIL 640 Advanced Soil Chemistry (3) (2 Lec, 1 3-hr Lab) Physio-chemical properties of soils and soil solutions with emphasis on ionic equilibria and surface-solution relationships. Pre: 430 and CHEM 351, or consent.

SOIL 650 Advanced Soil Fertility (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 deficiency and element toxicity. Pre: 450.

SOIL 660 Hydrologic Processes in Soils (3) (2 Lec, 1 3-hr Lab) Hydrologic properties of soils and the processes involved in water infiltration, drainage, and solute transport. Emphasis on measurement of key parameters required for modeling. Pre: either 460 or GG 455, and MATH 243; or consent.

SOIL 670 Soil Formation and Classification (4) (3 Lec, 1 3-hr Lab) Weathering and alteration of rocks, formation of soils, comprehensive review of effects of climate, vegetation, drainage, topography, and time on formation of soils; classification of soils with emphasis on soil taxonomy. Emphasis on tropical soils. Pre: 304 and 430, or consent.

SOIL 671 Soil and Clay Mineralogy (3) (2 Lec, 1 3-hr Lab) Instrumental analysis of soil minerals with emphasis on clay size material. Pre: 304 and 430.

SP

See Speech

SPA

See Speech Pathology and Audiology

Spanish (SPAN)

College of Languages, Linguistics and Literature

All courses, except 405, are conducted in Spanish.

SPAN 101 Elementary Spanish (4) Conversation, laboratory drill, grammar, reading. **HSL**

SPAN 102 Elementary Spanish (4) Continuation of 101. **HSL**

SPAN 103 Intensive Elementary Spanish (8) Course content of SPAN 101 and 102 covered in one semester. Five two-hour sessions per week plus laboratory practice. **HSL**

SPAN 105 Accelerated Elementary Spanish (4) Course content of SPAN 101 and 102 covered in one semester. Four one-hour sessions per week plus laboratory practice. For students with two to three years of Spanish. Satisfactory placement score required.

SPAN 111 Introduction to Spanish for TIM Majors (3)

SPAN 112 Introduction to Spanish for TIM Majors (3)

SPAN 201 Intermediate Spanish (3) Continuation of oral practice and grammar study; increasing emphasis on reading and written composition. Laboratory drill. Pre: 102. **HSL**

SPAN 201A Intermediate Spanish (3) Continuation of oral practice and grammar study; increasing emphasis on reading and written composition. Laboratory drill. Pre: 102. **HSL**

SPAN 202 Intermediate Spanish (3) Continuation of 201. Pre: 201. **HSL**

SPAN 202A Intermediate Spanish (3) Continuation of 201A. Pre: 201A. **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. **HSL**

SPAN 204 Spanish: Business/TIM (3) Continuation of 102. Specific aspects of Spanish language and culture for the purpose of meeting social demands and working requirements in business and TIM. Pre: 102 or consent. **HSL**

SPAN 205 Spanish: Business/TIM (3) Continuation of 204. Pre: 204 or consent. **HSL**

SPAN 210 Intensive Reading (3) Intensive reading and vocabulary development. Pre: 202 (or concurrent) or consent. Recommended for majors.

SPAN 214 Spanish: Engineering/Science (3) Continuing development of communication skills in Spanish; special emphasis on reading of scientific-content materials. Listening practice in lab. Pre: 102 or consent. **HSL**

SPAN 215 Spanish: Engineering/Science (3) Continuation of 214. Pre: 201, 214, or consent. **HSL**

SPAN 224 Spanish for Education (3) Continuing development of communication skills in Spanish; special emphasis on reading of education-content materials. Listening practice in lab. Pre: 102. **HSL**

SPAN 225 Spanish for Education (3) Continuation of 224. Pre: 201 or 224. **HSL**

SPAN 234 Spanish for Tropical Agriculture (3) Continuing development of communication skills in Spanish; special emphasis on reading of tropical-agriculture-content materials. Listening practice in lab. Pre: 102. **HSL**

SPAN 235 Spanish for Tropical Agriculture (3) Continuation of 234. Pre: 201 or 234. **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. **HSL**

SPAN 259 Intermediate Spanish Abroad (3) Continuation of 258. **HSL**

SPAN 260 Intensive Intermediate Spanish Abroad (V) Intensive course of formal instruction on the second-year level in Spanish language and culture in a Spanish-speaking country. For semester programs only. Pre: 102. **HSL**

SPAN 301 Conversation I (3) Intensive practice in spoken Spanish. Pre: 303 (or concurrent), or consent.

SPAN 302 Conversation II (3) Continuation of 301. Pre: 301 or consent.

SPAN 303 Grammar and Composition (3) Selected grammar review and intensive practice in effective use of the written language. Pre: 202 or consent.

SPAN 304 Grammar and Composition (3) Selected grammar review and intensive practice in effective use of the written language. Pre: 202 or consent.

SPAN 305 Introduction to Spanish-English Translation (3) A practical introduction to Spanish-English translation with translations of texts from Spanish to English and the reverse. Pre: 303 and/or 304, concurrently; or consent.

SPAN 306 Commercial Spanish (3) Language as used in business communication; commercial terminology. Pre: 202 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: 202.

SPAN 351 Spanish Civilization (3) Survey of culture and institutions of modern Spain. Pre: 202 or consent.

SPAN 352 Spanish-American Civilization (3) Survey of culture and institutions of modern Spanish America. Pre: 202 or consent.

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 259 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: 18th century to present. Pre: 303 or consent.

SPAN 362 Masterworks of Spanish Literature

(3) Reading and discussion of representative works of Spanish literature: origins to 18th century. Pre: 303 or consent.

SPAN 371 Spanish-American Literature (3)

Colonial period through Romanticism. Pre: 303 or consent.

SPAN 372 Spanish-American Literature (3)

Continuation of 371: Modernism to the present. Pre: 303 or consent.

SPAN 403 Advanced Composition and

Conversation (3) Advanced practice; emphasis on building active vocabulary. Pre: 304 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: 304 or consent.

SPAN 451 Introduction to Spanish Linguistics

(3) Evolution of Spanish from Latin; modern social and geographical dialects. Pre: 330.

SPAN 452 The Structure of Spanish (3)

Analysis of morphology, syntax, and semantics. Pre: 304, 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: 301, 303, 304 or 359 or 6 hours of 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, 362, or consent.

SPAN 477 U.S. Latino Literature (3)

A study of the literature of U.S. Hispanics written in Spanish or bilingually. Pre: 371 or 372.

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: 361 and 362, or 371 and 372; or consent.

SPAN 480 Hispanic Theater (3)

Study of representative authors and plays from Spain and Latin America. Repeatable once. Pre: one of 361, 362, 371, or 372; or consent.

SPAN 495 (Alpha) Topics in Hispanic

Scholarship (3) Hispanic authors, periods, or themes. (B) literature and society; (C) Hispanic poetry; (D) literature and film. Repeatable for

other topics, but not for the same topic. Pre: consent.

SPAN 506 Spanish for Reading Proficiency (3)

Reading of scholarly and technical Spanish for graduate students; open to undergraduates with consent from department chair. Not applicable to undergraduate language requirement. CR/NC only. Repeatable once only.

SPAN 625 Stylistics and Advanced Composition

(3) Analysis of representative prose with variations in style: colloquial, informal, formal expository, poetic, epistolary, etc. Practice in writing in those styles. Pre: graduate standing or consent.

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 form 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 Galdos, Clarin, Alarcon, Pardo Bazan, Blasco-Ibanez, 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 680 Spanish-American Novel (3)

Critical analysis of major Spanish-American novels. 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 Diaz del Castillo. Pre: graduate standing or consent.

SPAN 682 Spanish-American Poetry (3)

Study of representative poets from all periods: Marti, Dario, Mistral, Guillen, 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, Quiroga, Reyes, Borges, etc. Pre: graduate standing or consent.

SPAN 695 Seminar in Hispanic Literature (3)

A period, author, genre, or region. Repeatable. Pre: graduate standing or consent.

SPAN 699 Directed Research (V) Pre: consent of department chair.

Special Education (SPED)

College of Education

SPED 404, 461, 462, and 485 are prerequisites for the graduate program in special education. Current TB clearance is a requisite for 390, 400, 490, 491, 626, 627, 628, and courses requiring practicum experiences.

SPED 390 Student Teaching: Elementary/Secondary and Special Education (5) Full-time supervised experience in school. Repeatable two times. A-F only. Pre: 400 and requirements for registration listed under "student teaching." Co-requisite: 391.

SPED 391 Seminar for Student Teachers: Elementary/Secondary and Special Education

(1) Seminar relating current educational theories with experiences in student teaching. Repeatable two times. A-F only. Pre: requirements for registration listed under "student teaching." Co-requisite: 390.

SPED 400 Field Training in Special Education

(V) Students spend from three to nine hours per week (45 total hours per credit) in settings appropriate to concurrently enrolled courses; supervision provided by participating teacher and college supervisor. Repeatable three times. A-F only. Pre: 404 (or concurrent). Co-requisite: one of 461, 462, or 485.

SPED 404 Foundations of Inclusive Schooling

(3) Exceptionality examined from life-cycle perspective. Survey of characteristics, causes, prevalence, assessment, and intervention related to individuals who differ in cognitive, sensory, physical, communicative, emotional/behavioral, or social areas. Focus on educating students with disabilities in inclusive classrooms. Requires three hours/week field experience.

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, expectancies 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 443 Physical Education for Students with

Disabilities (3) Basics of various disabilities, assessment of physical and motor skill status, individualized activity programs for children and youth with disabilities; relationships among school/community/agency providing special programs and services. Pre: 404 and KLS 353, or consent. (Cross-listed as KLS 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. (Cross-listed as TECS 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. (Cross-listed as TECS 445)

SPED 446 Seminar in Special Education (3) Study of issues, trends, and research into special education programming and service delivery. Repeatable. Pre: consent.

SPED 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) and FAMR 331 (or concurrent), or consent. (Cross-listed as EDCI 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 FAMR 231 (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: 400 (or concurrent), 404, and 485; or consent.

SPED 462 Assessment, Planning, and Instruction for Students with Severe Disabilities (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 technologies to promote 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. Co-requisite: 400.

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 Baccalaureate Programs (3) 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 PBCSE and SpEd dual prep or PBCSpEd programs; must enroll for two consecutive semesters. A-F only. Pre: 400 (6 crs) and consent.

SPED 491 Student Teaching in Special Education-Post Baccalaureated 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. Restricted to students who are enrolled in either the PBCSE and SpEd dual prep or PBCSpEd programs completing a traditional one-semester student teaching experience. A-F only. Pre: 400 (6 crs) and consent.

SPED 499 Directed Reading/Research (V) Individual reading, research, and/or projects under direct supervision of instructors. Repeatable. Pre: consent of instructor or department chair.

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

SPED 581 (Alpha) Practicum in Special Education (1) For in-service school/community personnel to present new ideas, approaches, instructional methods, materials for teaching exceptional individuals. (B-E) general SPED; (F-G) secondary programming/SPED; (H-I) bilingual/multicultural/special needs; (J-K) severe disabilities; (M-N) early childhood/special needs; (O-P) career/vocational/special needs; (Q-R) computer/special needs; (S-T) arts/special needs; (U-W) computer training/special needs; (X-Y) consultant skills/special needs; (Z) Ho'okoho. Repeatable. CR/NC only. Pre: teaching or related work experience.

SPED 582 (Alpha) Practicum in Special Education (2) For in-service school/community personnel to present new ideas, approaches, instructional methods, materials for teaching exceptional individuals. (B-E) general SPED; (F-G) secondary programming/SPED; (H-I) bilingual/multicultural/special needs; (J-K) severe disabilities; (M-N) early childhood/special needs; (O-P) career/vocational/special needs; (Q-R) computer/special needs; (S-T) arts/special needs; (U-W) computer training/special needs; (X-Y) consultant skills/special needs; (Z) Ho'okoho. Repeatable. CR/NC only. Pre: teaching or related work experience.

SPED 583 (Alpha) Practicum in Special Education (3) For in-service school/community personnel to present new ideas, approaches, instructional methods, materials for teaching exceptional individuals. (B-E) general SPED; (F-G) secondary programming/SPED; (H-I) bilingual/multicultural/special needs; (J-K) severe disabilities; (M-N) early childhood/special needs; (O-P) career/vocational/special needs; (Q-R) computer/special needs; (S-T) arts/special needs; (U-W) computer training/special needs; (X-Y) consultant skills/special needs; (Z) Ho'okoho. Repeatable. CR/NC only. Pre: teaching or related work experience.

SPED 590 Internship, Special Education (6) Supervised field activities involving the programming and instruction of special-needs students within training programs in Hawai'i and the Pacific Basin. Pre: consent.

SPED 600 Foundations of Exceptionality (3) Theoretical, legal and multicultural foundations for assessing, teaching and developing individual service plans across the lifespan for persons with disabilities. Pre: 404 or consent.

SPED 601 (Alpha) Review/Design of SPED Microcomputer Programs (3) Uses of microcomputer in student's areas of specialization. Skills developed in hands-on use of computer in practicum setting; writing specifications for a computer program to be used in a specialty setting. (B) mild/moderate; (C) severe. Pre: one of 480, ETEC 414, or ETEC 442.

SPED 603 Principles of Behavior (3) Principles and laws governing behavior and methods that can be used to accomplish educationally relevant changes in student performance. Emphasis on the conceptual basis for changing behavior and use of technologies for changing behavior in school and community settings. Pre: 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. Pre: consent.

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-mediated instructional strategies, and curricular approaches for working with students with mild/moderate disabilities. A-F only. Pre: 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. Pre: 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. Pre: 461 or consent. Co-requisite: 626

SPED 614 Assessment and Instruction—Severe Disabilities (3) Basic principles of assessment, instruction, and curriculum development; application of formal and informal assessment procedures for goal selection, formulating instructional strategies, and adapting instructional materials to accommodate learning needs of students with severe disabilities. Pre: consent.

SPED 618 Adaptations and Special Procedures—Students/Severe Disabilities (6) Adaptations and special intervention procedures to support the participation of individuals with severe motor, communication, and/or adaptive behavior disabilities in inclusive school and community settings. Includes lab work. Pre: 614 or consent.

SPED 620 Strategies Across Content Area (3) Strategies for teaching math, science, and social sciences to students of all ages with mild/moderate disabilities; selection of appropriate materials, teaching techniques, curriculum development. Pre: 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. Pre: 611 or consent.

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. Pre: 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. Co-requisite: one of 611, 613, 614, or 618. Pre: 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. Pre: consent.

SPED 628 Internship (3) Supervised education/community experiences with special needs populations (MR, LD, SED, SMH); pre-school through postsecondary settings. Completion of SPED core required; must enroll for two consecutive semesters. A-F only. Repeatable one time. Pre: 626 and consent.

SPED 630 Positive Behavioral Support (3) Principles and laws governing human behavior and methods that can be used in educational settings to change behavior. Emphasis on the functions of behavior, experimental techniques for documenting behavior change, and the use of technologies for changing behavior in school and community settings. Pre: 485 or consent.

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 632 Language/Communication Intervention Special Education (3) Current research in normal language learning, assessment, planning, implementation, evaluation of language delayed/disordered children. Procedures for attaining language/functional communication objectives using ongoing routines/activities. 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 disabled pupils with emphasis on accepted procedures for meeting these needs. Pre: one of HPER 353, HPER 354, HPER 463, or consent. (Cross-listed as HPER 634)

SPED 635 Curriculum Design for Preschool Children with Disabilities (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 of instructor.

SPED 640 Seminar on Mild/Moderate Disabilities (3) Study of issues, research, program development in the area of mild/moderate disabilities. Repeatable. Pre: consent.

SPED 641 Seminar on Issues in Special Education (3) Study of issues, research, and program development in special education. Repeatable. Pre: consent.

SPED 642 Seminar on Applied Research/Special Education (3) Study and development of applied research topics in special education. Repeatable. Pre: consent.

SPED 643 Seminar on the Gifted (3) Study of issues, research, and program development for the gifted. Pre: 414 and 415, or consent.

SPED 644 Seminar on Severe/Multiple Disabilities (3) Research, program development trends/issues in the area of severe/multiple disabilities (birth through adulthood). Pre: consent.

SPED 645 Seminar in Early Childhood Special Education (3) Study of issues/trends. Research and program development in early childhood special education. Repeatable. Pre: 631 and 635, or consent.

SPED 646 Advanced Seminar in Special Education (3) Advanced study of issues, trends, research, and curricular considerations in special education; designed for practitioners. Repeatable. 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 653 Seminar in Career/Vocational Special Needs (3) Issues, research, programs, and trends in career/vocational education for special-needs learners. Pre: consent.

SPED 699 Directed Reading/Research (V) Individual reading/research. Pre: consent of instructor and department chair.

SPED 700 Thesis Research (V) Research for master's thesis.

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 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) (1 Lec, 2 1-hr Lab) Introduction to major elements of speech. Activities for students to acquire competence in two-person, small group, and public situations. Designed primarily for nonmajors. **AHL1**

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.

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.

SP 185 Multicultural Communication Skills (3) This course will expose students to practical skills needed for effective intercultural communication. This course will offer guidelines for improvement in diverse cultural settings such as business, education, counseling, and healthcare.

SP 200 Speaking Skills for Prospective Teachers (3) Theory and activities for competence in speaking skills used in classroom; interview, discussion, lecture, etc.

SP 201 Introduction to Speech Communication Theories (3) Introduction to the theoretical perspectives that are the foundations of the speech communication discipline.

SP 231 Performance of Literature (3) Introduction to the study of literature through performance. Practice in rhetorical and literary analysis culminating in solo performance of literary selections for an audience. The nature of performance criticism. **AHL1**

SP 251 Principles of Effective Public Speaking (3) Combined lecture/laboratory course providing extensive practice in preparing and presenting effective public speeches with special emphasis on organization, outlining, audience analysis, analytical reasoning, and delivery skills. **AHL1**

SP 251A Principles of Effective Public Speaking (3) Adaptation of rhetorical theory to particular speakers, audiences, occasions. Extensive practice. **AHL1**

SP 252 Voice, Diction, and Phonetics (3) Speech mechanism, phonetics, and voice production. Techniques to enhance voice and diction for effective speaking.

SP 253 Argumentation and Debate (3) Adapting communication theory to forensic strategies for social action. Practice in formal argument. Pre: one of 151, 201, or 251.

SP 280 Interviewing (3) Principles and practice; training in informational, persuasive, employment, appraisal, and research interviewing. Pre: one of 151, 201, or 251.

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).

SP 321 Speech for Classroom Teachers (3) Analysis of and practice in using major models of speech communication in the classroom. Role of speech in various academic disciplines as needed by teachers. Pre: one of 151, 200, 201, or 251.

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, 201, 231, or 251.

SP 335 Story Theater (3) Techniques and procedures for staging and performing narrative fiction. Pre: one of 151, 201, 231, or 333.

SP 351 Professional Presentations (3) Extends application of public speaking skills to various complex rhetorical situations. Emphasis on persuasion, motivational performance, and criticism of speeches. 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. A-F only. Pre: one of 151, 201, or 251.

SP 353 Public Advocacy of Current Issues (1) Students prepare speeches for and are required to speak to various community audiences on economic and social issues. Repeatable for 3 credit hours total. Pre: 253 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, 201, or 251; or consent.

SP 364 Persuasion (3) Theories, concepts, strategies, and processes of persuasion and social influence in contemporary society. Focus on analyzing, developing, and resisting persuasive messages. Pre: one of 151, 201, or 251. **SS**

SP 370 Verbal Communication (3) Roles of language: perception and assumption in human relationships; relation of language symbols to emotion and attitudes.

SP 380 Family Communication (3) Focuses on the role of interaction patterns (constructive and destructive) in the evolution of family communications. The impact of family dynamics upon these interaction patterns is given equal attention. A-F only. Pre: 381.

SP 381 Interpersonal Relations (3) Interpersonal factors in communication effectiveness. Voice, body, language in personal and work contexts. Practicum experiences. Pre: one of 151, 201, or 251.

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.

SP 386 Culture and Communication: Japan and U.S. (3) Cultural interaction between persons from Japan and U.S.; cultural variables shaping speech events; interpersonal relations.

SP 390 Interviewing (3)

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. Pre: 201 and 302.

SP 431 Advanced Interpretative Reading (3) Problems in selected literary forms; development and arrangement of programs; individual and group performances. Pre: 231 and sophomore literature.

SP 432 Readers Theater (3) Origins and concepts; performing art for the classroom and the public; techniques for the participant and the director; creative projects and performance. Pre: one of 231, 333, 335, or consent.

SP 455 Conflict Resolution (3) Principles and practices; techniques of managing controversy; negotiation, mediation, and arbitration. Pre: one of 151, 201, 251, or 381.

SP 464 Analysis of Public Communication (3) Analysis of communication in public settings; perspectives on the study of argumentative strategy and structure in public messages (debates, political or public service ads). Pre: 364 or consent.

SP 470 Nonverbal Communication (3) Review of concepts, research in nonverbal codes. Cultural variations in body vocal expression. Observing, decoding body messages. Pre: upper division standing.

SP 486 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: 201, 302 (or concurrent), or 381.

SP 490 The Helping Relationship (3) Theory and application of personal and interpersonal elements affecting communication of human-service professionals. Supervised practice, video lab. Pre: one of 151, 201, or 251. (Cross-listed as PSY 477)

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) Course is designed to 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.

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. 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 602 Research Methods in Speech (3) Design and analysis of quantitative research in speech. Focus on measurement issues, research design, descriptive and inferential statistics. Pre: one of 302, ECON 321 (or concurrent), PSY 210, 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. Pre: consent.

SP 621 Approaches to Instructional Communication (3) Speech communication theories and models in instructional environment; emphasis on development training in educational settings. Pre: 601, 602 (or concurrent), or consent.

SP 622 Researching Relational Communication (3) Methodological and analytical demands of research on relational and nonverbal communication. Focus on repeated measures, multivariate analysis, longitudinal analysis, and reliability and validity issues. Pre: 602 or consent.

SP 643 Rhetorical Criticism (3) Methods of rhetorical criticism; comparison of different critical approaches to rhetoric; critical analysis of local and contemporary speeches. Pre: 601, 602 (or concurrent), or consent.

SP 652 Group Decision-Making (3) Theory, concepts, research, and application of small group interaction and decision-making. Pre: 601, 602 (or concurrent), and 352; or consent.

SP 654 Persuasion and Social Influence (3) Cross-situational attempts to persuade and induce resistance to persuasion; theories of persuasion and resistance; assessment of attitudes and measurement of change. Pre: 601, 602 (or concurrent), and 364; or consent.

SP 660 Rhetoric in Organizations (3) Overview of theory and research in organizational rhetoric. Integrates organizational rhetoric with larger field of organizational studies. Synthesizes findings into critical issues for future research. Pre: graduate standing in the College of Business Administration or consent.

SP 673 Message Processing (3) Theories of human message processing. Effects of verbal and nonverbal codes, channels, and message forms on encoding and decoding. Pre: 601 and 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 683 Issues in Message Processing (3) Contemporary research in verbal and nonverbal message processing. Repeatable. Pre: 602 (or concurrent) or consent.

SP 699 Directed Research (V)

SP 700 Thesis Research (V)

SP 764 Seminar in Persuasion and Influence (3) Contemporary research in persuasion and influence. Repeatable. Pre: 654 (or concurrent) or consent.

SP 781 Seminar in Relational Communication (3) Contemporary research in interpersonal relations. Repeatable. 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. Pre: 654, 673, 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. Pre: 654, 673, or 681; or consent.

Speech Pathology and Audiology (SPA)

School of Medicine

Junior standing or consent is prerequisite to all 300-level courses except as noted.

SPA 300 Introduction to Speech-Language Pathology (3) Survey of field of speech-language pathology. Pre: consent.

SPA 301 Introduction to Audiology (3) Basic concepts; acoustics and psychoacoustics; anatomy and physiology; measurement of hearing. Pre: consent.

SPA 302 Introduction to Clinical Intervention (3) Guided application of theory to intervention introduces scientific, legal, professional, and multicultural basis for practice; specifies learning principles, interviewing, programming, and service delivery models. Includes supervised observations. A-F only. Pre: 300 and consent.

SPA 303 Testing of Hearing (3) Screening and testing procedures; conventional and special tests of hearing; interpretation of results. Pre: 301 and consent.

SPA 320 Anatomy/Physiology and Neuroanatomy of Speech and Language (4) Structure and function of the respiratory, phonatory, and articulatory systems related to speech production; neurological development and physiology related to speech and language. Pre: 300 (or concurrent); or consent.

SPA 321 Acoustics and Psychoacoustics—Speech and Hearing (3) Acoustic and psychoacoustic aspects of speech and hearing. Pre: consent.

SPA 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.

SPA 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.

SPA 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, and consent.

SPA 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.

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

SPA 420 Clinical Instrumentation (3) The use of electronic instrumentation in the clinic as an aid in the diagnosis and treatment of clinical problems. Pre: 321 and consent.

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

SPA 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.

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

SPA 600 Research Methods (3) Research methods applicable to the field of speech-language pathology and audiology; analysis and reporting of data. Required of all SPA graduate students. Pre: EDEP 429 or PSY 311, and consent.

SPA 602 Assessment of Child Language Disorders (3) Study of methods, test, and instruments employed in the diagnosis of language disorders in children. Co-requisite: 616. Pre: consent.

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

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

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

SPA 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.

SPA 613 Language Development for Children with Hearing Deficiencies (3) Language acquisition by hard-of-hearing and deaf children; methods of stimulating growth. Pre: 415 and consent.

SPA 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. Pre: 412 and consent.

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

SPA 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.

SPA 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.

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

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

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

SPA 700 Thesis Research (V) Pre: consent.

SPA 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.

SPA 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.

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

SPA 705 Central Auditory Dysfunction: Testing and Remediation (3) Study of disorders and dysfunctions of the central auditory system. Emphasis on normal system and diagnosis and on evaluation of lesions and non-site-specific disorders. Pre: 603 and consent.

SPA 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: consent.

SPA 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. Pre: 602 for (B); 603 for (C).

SPA 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. Pre: 412 and consent.

SPA 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. Pre: 421 or 423, 603, and consent.

SPA 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. Pre: 602, 716, and consent.

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

SPA 723 Seminar in Audiology—Rehabilitative Procedures (3) Procedures and philosophies presented in recent literature dealing with rehabilitative phases of audiology. Pre: 415 and consent.

SPA 724 Advanced Practicum in Speech Pathology III (3) Clinical practice in diagnostic and therapeutic procedure with various types of speech and language problems in different clinical settings. Repeatable. Pre: 412, 602, and consent.

SPA 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. Pre: 421, 603, and consent.

Surgery (SURG)

School of Medicine

SURG 531 Surgery Clerkship I, II (10) A 7-week clinical experience in an acute care hospital which teaches the diagnosis, treatment, and operative care of diseases treated by general surgeons. Repeatable once. CR/NC only. Pre: BIOM 555 and third-year standing.

SURG 532 Surgery Longitudinal Clerkship—Outpatient (5) Part of a year-long surgical clerkship, this half is based in an ambulatory setting. One half day per week is spent in a surgery clinic with emphasis on continuity of care and on surgical evaluation skills and decision making. Repeatable once. CR/NC only. Pre: BIOM 555. Co-requisite: FPCH 532, MED 532, OBN 532, PED 532, and PSTY 532.

SURG 533 Surgery Longitudinal Clerkship—Inpatient (5) Part of a year-long surgical clerkship, this component is based in the hospital setting. Four weeks are spent on an inpatient service learning evaluation, diagnosis. Repeatable once. CR/NC only. Pre: BIOM 555. Co-requisite: MED 533, OBN 533, and PSTY 533.

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 general surgery, surgical specialties, and radiology. (B) urology; (C) ophthalmology; (D) otolaryngology; (E) plastic surgery; (F) neurosurgery; (G) orthopaedics; (H) anesthesia; (I) surgical intensive care; (J) subinternship—general surgery; (K) subinternship—pediatric surgery; (M) radiology-diagnostic; (N) radiology-oncology; (O) emergency medicine; (P) unit 7 electives in surgery; (Q) subinternship—cardiovascular surgery; (R) surgical research. Repeatable one time for (B), (C), (D), (E), (F), (G), (H), (I), (J), (K), (M), (N), (O), (P), and (Q). CR/NC only. Pre: 531 or 532 for (B), (C), (D), (E), (F), (G), (H), (I), (J), (K), (M), (N), (O), (P), and (Q); consent for (R).

SURG 599 Directed Reading/Research (V) Pre: consent of department chair.

SW

See *Social Work*

Tahitian (TAHT)

College of Languages, Linguistics and Literature

TAHT 101 Elementary Tahitian (4) Listening, speaking, reading, writing. Structural points introduced inductively. Meets five hours weekly; daily lab work. **HSL**

TAHT 102 Elementary Tahitian (4) Continuation of 101. **HSL**

TAHT 201 Intermediate Tahitian (4) Continuation of 102. Meets five hours weekly; daily lab work. Pre: 102 or equivalent. **HSL**

TAHT 202 Intermediate Tahitian (4) Continuation of 201. **HSL**

TAHT 301 Third-Level Tahitian (3) Continuation of 202. Conversation, advanced reading, composition. Pre: 202 or equivalent.

TAHT 302 Third-Level Tahitian (3) Continuation of 301.

TAHT 358 Third-Level Tahitian Abroad (3) Full-time formal instruction at the French University of the Pacific in Tahiti. Third-year level in Tahitian language and culture. Pre: 202 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 French University of the Pacific 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.

Teacher Education and Curriculum Studies (TECS)

College of Education

TECS 312 (Alpha) Foundations in Curriculum and Instruction (3) Objectives and organization of school curriculum; methods, materials, and evaluation in instruction. Weekly observation and participation in classroom. (C) elementary education; (D) secondary education. Co-requisite: 317 for (C) only; 316 for (D) only.

TECS 313 Literacy and Literature I (3) Teaching strategies based on current theories of language will be modeled within an integrated whole language curriculum appropriate for multicultural classrooms. Repeatable. Co-requisite: 317.

TECS 314 Literacy and Literature II (3) Teaching strategies based on current theories of language will be modeled within an integrated whole language curriculum appropriate for multicultural classrooms. Pre: 313. Co-requisite: 317.

TECS 315 Field Experience (1) Supervised field experience in schools. Minimum of 4 hours per week in conjunction with professional education courses. Repeatable. CR/NC only.

TECS 316 Field Experience (2) Supervised field experience in schools. Minimum of 8 hours per week in conjunction with professional education courses. Repeatable. CR/NC only.

TECS 317 Field Experience (3) Supervised field experience in schools. Minimum of 12 hours per week in conjunction with professional education courses. Repeatable. CR/NC only.

TECS 318 Physical Education, Elementary (3) Experience in using various methodologies and techniques, planning units and lessons, selecting resources for elementary physical education. Practical laboratory experience. Pre: KLS 333.

TECS 319 Children's Literature (2) Acquaintance with wide range of children's books; criteria for evaluation literature; using literature in the classroom.

TECS 322 Social Studies, Elementary (3) Purposes, methods, materials, and evaluation in teaching social studies, particular emphasis on developing children's knowledge, skills, self-

concept, citizenship, inquiry/thinking, and values. Co-requisite: 317.

TECS 323 Science, Elementary (3) Science education in elementary school; methods and materials; laboratory activities selected from new science curricula. Co-requisite: 317.

TECS 324 Mathematics, Elementary (3) Inquiry-based approach to concepts and algorithms of whole numbers and introduction to geometry/measurement. Laboratory experiences on appropriate manipulatives. Pre: MATH 100 or consent. Co-requisite: 317.

TECS 325 Mathematics, Elementary II (3) Inquiry-based approach to concepts and algorithms of fractions, decimals, graphing, and probability and statistics. Laboratory experiences on appropriate manipulatives. Pre: 324 or consent.

TECS 326 Creative Art, Elementary (3) Scope and organization of art in elementary school curriculum, creative use of art media through laboratory experiences.

TECS 329 Creative Expression in Elementary Education (2) Development of communication skills through creative dramatics, rhythmic movement, related arts.

TECS 330 Language Arts, Secondary (3) Teaching techniques and curriculum design in speaking, reading, writing, and other areas of secondary language arts. Pre: 312D. Co-requisite: 316.

TECS 332 Social Studies, Secondary (3) Introduction to teaching methods, instructional materials, and curriculum organization for secondary social studies. Pre: 312D. Co-requisite: 316.

TECS 333 Science, Secondary (3) Purposes and procedures; development of scientific attitude; review of major generalizations of biological and physical sciences. Pre: 312D. Co-requisite: 316.

TECS 334 Mathematics, Secondary (3) Purposes and procedures; development of basic mathematical concepts. Pre: 312D and MATH 311, MATH 351, or MATH 352. Co-requisite: 316.

TECS 335 Foreign Languages, Secondary (3) Methods, techniques, and materials; aims, procedures, tests; motivation, infusion of cultures in foreign language in secondary schools. Pre: 312D. Co-requisite: 316.

TECS 336 Art, Secondary (3) Purposes and procedures; the arts in relating to other curriculum areas. Pre: 312D. Co-requisite: 316.

TECS 338 Secondary Career Guidance (3) Teaching methods, materials, and curriculum design in secondary career guidance. Pre: 312D and basic or professional secondary teaching certificate or BEd and 12 credit hours in teaching concentration including EDCG 402 and EDCG 613. Co-requisite: 316.

TECS 339 Speech-Communication, Secondary (3) Objectives, materials, procedures for teaching speech-communication; speech modification, development; selected speech activities. Pre: 312D. Co-requisite: 316.

TECS 343 Personal and Social K-6 Health Skills (3) Experiences for elementary classroom teachers in creating interactive learning opportunities to teach personal and social responsibility for health through integration with other subject areas

of school curriculum. Focus on National and Hawai'i Health Education Standards. A-F only.

TECS 344 Methods and Techniques in Health Education (3) Methods and techniques in teaching health education in secondary schools; student-oriented and teacher-centered methods; common problems in secondary health teaching. Skills, curriculum designs, and their implications for methods and techniques. Pre: 312D and KLS 202, or consent. Co-requisite: 316.

TECS 346 Methods of Instruction, Industrial/Agricultural Education (3) Techniques of individual and group instruction in laboratory and related classes, evaluation of various methods. Pre: 312D. Co-requisite: 316.

TECS 347 Management of Industrial/Agricultural Facilities (3) Organization of instruction; handling supplies; maintaining equipment and tools; purchasing materials; keeping records; making inventories. Pre: 312D. Co-requisite: 316.

TECS 348 Teaching Business and Office Education (3) Theory and methods of teaching business and office education courses. Pre: 312D, ACC 201, ACC 202, and ICS 160. Co-requisite: 316.

TECS 349 Teaching Marketing and Distribution (3) Theory and methods of teaching marketing and distribution courses. Pre: 312D, MKT 300, MKT 315, MKT 341, or MKT 351. Co-requisite: 316.

TECS 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. Pre: 312C (or concurrent) and MUS 108.

TECS 354 Music Education: Elementary (2) Required for K–6 music specialists. Scope and nature of music in children's lives; planning, teaching, learning, and evaluating music in elementary curriculum. Not open to those with credit in 353. Pre: 312C (or concurrent), MUS 150, and MUS 286; or consent.

TECS 355 Music: Secondary Instrumental (2) Objectives, materials, procedures of instrumental music in secondary school. Pre: 312D (or concurrent), MUS 151–152, MUS 153–154, MUS 155–156, MUS 326 (or concurrent), and MUS 354; or consent.

TECS 356 Music: Secondary Vocal/General (2) Objectives, materials, procedures of general and choral music in secondary school. Pre: 312D (or concurrent), MUS 121B, and MUS 150; or consent.

TECS 360 Introduction to Multicultural Education (2) Concepts and methods to develop sensitivity and awareness of cultural influences on behavior as these relate to the schooling process. Field experience is an integral part of course. (Cross-listed as EDEF 360)

TECS 371 Home Economics Education (3) Curriculum design. Current educational philosophies and practices in home economics education. Teaching materials and techniques.

TECS 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.

TECS 390 (Alpha) Student Teaching (V) Full-time supervised experience in school. (C) elementary; (D) secondary; (E) community college; (S) elementary/secondary regular education (for dual certification majors only). Pre: requirements for registration listed under "student teaching." Co-requisite: 391. Repeatable. CR/NC only.

TECS 391 (Alpha) Seminar for Student Teaching (V) Seminar relating current educational theories with experience in student teaching. (C) elementary; (D) secondary; (E) community college; (S) elementary/secondary regular education (for dual certification majors only). Pre: requirements for registration listed under "student teaching." Co-requisite: 390. Repeatable. CR/NC only.

TECS 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. Pre: extensive teaching experience; requirements listed under "student teaching"; approval of review committee; consent. Co-requisite: 391.

TECS 399 Directed Reading (V) Individual reading or research. Pre: senior standing, major with a minimum cumulative GPA of 2.7 or a minimum GPA in education of 3.0, and consent.

TECS 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.

TECS 415 Early Childhood: Foundations and Curriculum (3) Two-course sequence of theory, methods, and materials for teaching young children (2½ to 5 years). Emphasizes foundations, observation skills, and the design of learning environment. Pre: 312C.

TECS 415L Early Childhood: Foundations and Curriculum Lab (3) Direct experience with children in early childhood settings in order to apply concepts from 415 and develop skills in observation, teaching, and classroom management. Co-requisite: 415.

TECS 416 Early Childhood: Foundations and Curriculum (3) Continuation of 415: focuses on appropriate curriculum for young children. Pre: 415.

TECS 416L Early Childhood: Foundations and Curriculum Lab (3) Continuation of 415L. Co-requisite: 416.

TECS 417 Developmentally Appropriate Practice: Ages 3–8 (3) How to plan developmentally appropriate programs for young children, including the design of the learning environment; integrated, thematic planning; child guidance; assessment; and parent involvement. Pre: 312C.

TECS 420 Supervision of Student Teaching (3) Principles and methods; role of supervisor; human resources supervision in student teaching. Open to teachers interested in preservice teacher education. Pre: three years teaching experience and consent.

TECS 425 Working with Parents (3) Knowledge and skills for relating effectively with families on behalf of the child; context in which families and schools interact; communication, problem solving, and increasing parental competence in settings for both normal and handicapped children. Pre:

FAMR 341 or consent. (Cross-listed as FAMR 425 and SPED 425)

TECS 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.

TECS 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.

TECS 431 Collaborative Learning 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.

TECS 432 Adolescent Literature and Literacy (3) Selection and interpretation of young adult literature, including multicultural literature 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. Pre: 312D (or concurrent) or consent.

TECS 433 Interdisciplinary Science Curriculum (3) Fundamental science concepts from the viewpoints of physical, biological, and Earth sciences; integrative processes and conceptual schemes; methods, tools, and models of different disciplines. Pre: introductory courses in various sciences.

TECS 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. Pre: consent.

TECS 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 Hawai'i.

TECS 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.

TECS 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.

TECS 441 Hawaiian Studies, Methods (3) Examination of issues in Hawaiian and U.S. views of education and their application to the teaching of Hawaiian studies. Field experience required. A-F only. Pre: 312C, 312D, or consent. Co-requisite for BEd students: 317.

TECS 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. (Cross-listed as SPED 444)

TECS 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. (Cross-listed as SPED 445)

TECS 450 Lab Methods and Materials in Science (3) Selecting and using lab methods and materials, demonstrations and simulations, open-ended experimentation, inquiry and discovery, task analysis, measurement tools and techniques, activities from various curricula, opportunity for individualized goals and projects. Pre: 323, 333, teaching experience, or consent.

TECS 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)

TECS 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 junior standing, or consent. (Cross-listed as EDEF 453 and WS 453)

TECS 457 Asian and Pacific Music in Education (2) Musical concepts in songs, dances, and instrumental music of Asia, Hawai'i, and other Pacific Islands, appropriate for K-12. Pre: 353, 354, or 355 and 356. (Cross-listed as MUS 457)

TECS 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.

TECS 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.

TECS 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: 324 or 334, and teaching experience in mathematics; or consent.

TECS 495 Difficulties in Learning Mathematics (3) Identification, analysis, and remediation of difficulties in learning mathematics. Pre: 324 or 334.

TECS 499 Directed Activity (V) Individual work supervised by instructor. May consist of reading, research, teaching, and/or projects. Pre: consent of division director.

TECS 550 Newspaper in the Classroom (2)

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. Pre: teaching experience.

TECS 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. Pre: teaching experience.

TECS 586 (Alpha) Practicum in Curriculum Development: Occupational Development (3) For in-service teachers to upgrade subject matter and develop teaching methods and materials for instruction. CR/NC only. Repeatable. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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. CR/NC only. Pre: teaching experience.

TECS 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.

TECS 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.

TECS 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.

TECS 618 Early Childhood Education: Advanced Topics (3) Analysis and practical application of selected early childhood education program and/or instructional materials. Restricted to majors. Repeatable. Pre: TECS 415 and 416, or consent.

TECS 622 (Alpha) School Curriculum (3) Development and improvement of curriculum. (B) early childhood; (C) elementary; (D) middle school; (E) secondary; (F) community college. Pre: TECS 312 or equivalent, and teaching experience; for (F) only: EDEA 657, EDEF 657, or community college teaching experience; and consent.

TECS 623 Elementary Science Curriculum (3) Application of recent developments in science, curriculum construction, and learning theory to elementary school. Science content and methodology stressed. Pre: teaching experience.

TECS 624 Elementary Mathematics Curriculum (3) Analysis of research relating to teaching and learning arithmetic, application of research findings to classroom procedures. Appraisal of recent curricular trends; critical examination of

assumptions underlying proposed changes. Pre: TECS 324 and teaching experience.

TECS 625 Elementary 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: TECS 322 or equivalent, or social studies teaching experience.

TECS 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.

TECS 628 Function of Play in Early Childhood Education (3) Review of research and theory illuminating the nature, purposes, and meanings of play as a critical aspect of early childhood education. Restricted to majors. Pre: TECS 415 and 416, or consent.

TECS 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)

TECS 631 Content Area: Language and Learning (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. Pre: student teaching or teaching experience.

TECS 632 Qualitative Research Methods (3) Methods of qualitative research in education or related social science from an interdisciplinary framework.

TECS 637 Art in Secondary Education (3) Principles of and problems in teaching art in secondary school; current approaches in teaching art. Pre: consent.

TECS 639 Business and Marketing Education Curriculum (3) Theory, philosophy, objectives, and development of business and marketing education curriculum. Pre: TECS 390D or consent.

TECS 640 (Alpha) Seminar in Teaching Field (3) Study in trends, research, and problems of implementation in teaching field. (B) business and marketing education; (C) English; (F) home economics; (G) 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: 390D or consent; for (O) only: KLS 390, KLS 391, KLS 643, and teaching experience; or consent.

TECS 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: TECS 335, teaching experience, and consent.

TECS 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. Pre: consent.

TECS 643 Public School Curriculum for Physical Education (3) Detailed examination of contents of adequate curriculum for physical education in public schools, K–12. Pre: KLS 343, TECS 390, and TECS 391; or consent. (Cross-listed as KLS 643)

TECS 646 Reading Difficulties (3) Causes, prevention, and correction. Evaluation and remedial practices useful to classroom teacher. Pre: course in teaching reading and teaching experience.

TECS 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.

TECS 647 Clinical Procedures in Reading (3) Diagnosis; methods and materials for improvement of an individual's reading ability. Repeatable. Pre: 646, consent, and teaching experience.

TECS 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.

TECS 653 Geometry in the Schools (3) School geometry, K–12. Curricula and techniques; trends and issues; theory and research. Pre: TECS 324 or TECS 334, and TECS 494; or consent.

TECS 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: MUS 353 or MUS 354, teaching experience, and graduate standing. (Cross-listed as MUS 655)

TECS 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 once. (B) early childhood; (C) elementary; (D) middle-level; (E) secondary. Pre: teaching experience, 622, or consent.

TECS 677 Curriculum Design in Early Childhood Education (3) Designed to help classroom teacher understand sources and principles of curriculum in early childhood education and to provide experience in evaluating, selecting, and developing appropriate curriculum for young children.

TECS 699 Directed Reading and/or Research (V) Individual reading and/or research. Pre: written consent.

TECS 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.

TECS 737 Foundations in Art Education (3) Advanced study in development and growth of art in secondary education. Pre: student teaching or teaching experience. Recommended: PHIL 420.

TECS 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 consent.

TECS 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 of graduate field chair.

TECS 768 Seminar in Curriculum and Instructional Theories (3) Analysis and critical examination of models and curriculum theory and theories of instruction leading to generation of theories by seminar members. Pre: classified PhD student or consent. Recommended: EDEP 408 and EDEF 673.

TECS 769 Curriculum Evaluation (3) Analysis and critical examination of theoretical positions on curriculum evaluation and of models of the process of curriculum evaluation. Pre: consent. Recommended: EDEA 602, EDEP 408, or EDEP 608.

Textiles and Clothing (TXCL)

College of Tropical Agriculture and Human Resources

TXCL 101 Introduction to Textiles and Clothing (2) Introduction to the field of textiles and clothing. Standards, procedures, competencies, and resources related to career and personal goals.

TXCL 111 Aesthetics of Clothing (3) Concepts in dress and appearance and their application to individuals.

TXCL 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) **SS**

TXCL 201 Fashion Promotion (3) Concepts and procedures in developing a retail fashion image through visual merchandising and display, publicity, special events, and fashion advertising. Careers in fashion promotion.

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

TXCL 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.

TXCL 216 Fashion Design and Sketching (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. Pre: 111 or consent.

TXCL 221 Textile Fundamentals (4) (3 Lec, 1 3-hr Lab) Physical properties, structures, and finishes of textiles used in apparel and home furnishings. Government and agency requirements affecting textiles.

TXCL 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 program. Pre: 215.

TXCL 301 Fashion Theory and Marketing (3) Fashion theories and concepts and their interrelationships with the design, production, and distribution of fashion goods. Pre: either ECON 120, ECON 130, or AREC 220; and consent.

TXCL 310 Costumes of the Western World (3) Chronological study of costumes as related to culture and customs in socio-historical and contemporary contexts. Emphasis on 19th and 20th centuries. Pre: 301, HIST 151, and HIST 152; or consent.

TXCL 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.

TXCL 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.

TXCL 318 Fashion Illustration (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 life drawing.

TXCL 330 Advanced Construction Techniques (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.

TXCL 337 Small Store Fashion Retailing (3) Principles, procedures, and techniques of organizing a small fashion retail enterprise. Application of decision-making inherent in small-store merchandising. Students initiate, develop, implement, and evaluate operations of a small fashion retail store. Pre: 371 and consent.

TXCL 350 Stitchery Design and Application (V) Emphasis on design principles as applied to stitchery using a variety of techniques and raw materials. Processes and problems experienced and critiqued in a group environment. Repeatable. Pre: 205 or consent.

TXCL 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. Pre: ART 101 or consent.

TXCL 371 Fashion Buying and Merchandising (3) Theories in buying and selling fashion and fashion-related merchandise. Types of retail merchandising organizations, analysis of consumer demand, selection of merchandise for resale, resident buying offices, development of a fashion image. Pre: 301 and BUS 312; or consent.

TXCL 372 Case Studies in Merchandising (2) Analysis of fashion merchandising problems, including the weighing of data, disciplined thinking, and arriving at meaningful conclusions. Case study method used. Co-requisite: 371.

TXCL 375 Merchandise Planning and Control (3) Theories, problems, and procedures of financial and assortment planning and control of merchandise inventories. Pre: 371, ACC 201, and

MATH 100 (or equivalent), and TXCL program math competency test.

TXCL 401 Clothing and Society (3) Seminar in sociological, psychological, and economic implications of clothing and adornment for the individual and society. Historic and contemporary perspectives. Pre: 301 and consent.

TXCL 410 Ethnic Costumes of the World (3) Historical development and characteristic features of ethnic costumes as found in various cultures of the world. Repeatable once. Pre: 200 or consent.

TXCL 416 Costumes of East Asia (3) Historical development and characteristic features of traditional and folk costumes and fabrics of China, Mongolia, Korea, Japan, Okinawa, and Vietnam. Relation to customs and culture. Pre: 216, 301, HIST 151, and HIST 152; or consent.

TXCL 418 Costumes of South and Southeast Asia (3) Historical development and characteristic features of traditional costumes and fabrics of India, Nepal, Thailand, Cambodia, Malaysia, Singapore, Philippines; customs and culture. Pre: 216, 301, HIST 151, and HIST 152; or consent.

TXCL 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: 301, 310, 316, 320, 330, and either 416 or 418; or consent.

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

TXCL 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. Pre: consent.

TXCL 471 Textiles and Apparel in International Market (3) Theories, concepts, problems relevant to international trade of textiles and apparel products. Defines scope and challenge of international market with regard to textile and apparel products. Pre: 371 or consent.

TXCL 491 Topics in Textiles and Clothing (V) Study and discussion of special topics, problems. Offered by staff and visiting faculty. Repeatable.

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

TXCL 496 Fashion Field Study (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. Pre: consent.

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

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

Thai (THAI)

College of Languages, Linguistics and Literature

THAI 101 Elementary Thai (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 Elementary Thai (4) Continuation of 101. HSL

THAI 112 Intensive Elementary Thai (10) HSL

THAI 201 Intermediate Thai (4) Continuation of 102. Meets one hour daily, Monday–Friday; three out of five hours devoted to directed drill and practice; daily lab work. Pre: 102 or equivalent. HSL

THAI 202 Intermediate Thai (4) Continuation of 201. HSL

THAI 212 Intensive Intermediate Thai (10) HSL

THAI 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.

THAI 302 Third-Level Thai (3) Continuation of 301. Pre: 301 or equivalent.

THAI 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.

THAI 401 Fourth-Level Thai (3) Continuation of 302/303. Advanced conversation and reading of specialized, scholarly texts. Pre: 302 or 303 or equivalent.

THAI 402 Fourth-Level Thai (3) Continuation of 401. Pre: 401.

THAI 404 Accelerated Fourth-Level Thai (6) Continuation of 303. Meets six hours a week. Advanced conversation and reading of specialized, scholarly texts. Pre: 303.

THAI 451 Structure of Thai (3) Standard language and regional and social variants. Pre: LING 320 and one Southeast Asian language.

THAI 452 Structure of Thai (3) Continuation of 451.

Theater (THEA)

College of Arts and Humanities

THEA 101 Introduction to Drama and Theater (3) (2 Lec, 1 1-hr Lab) Survey of major forms of Western drama; introduction to theatrical production. Choice of lab emphasis: dramatic literature or play production. AHL1

THEA 200 (Alpha) Beginning Theater Practicum (1) Beginning workshop experience in the practical application of theater skills. Repeatable once per alpha. No more than 6 credit hours in total may be earned. One credit hour each may be earned in (B) acting; (C) stagecraft; (D) costume; (E) theater management. Pre: for 200B, audition and performance of role in a Department of Theatre and Dance production; for 200E, theatre majors only.

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. AHL1

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)

THEA 220 Voice and Speech for the Actor (3) Training in voice and speech techniques for clear and resonant projection in performance. Repeatable with consent. Pre: consent.

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 once with consent. AHL1

THEA 222 Acting II: Basic Scene Study (3) Basic character study and understanding of creation of roles through working on scenes from major modern and contemporary plays. Repeatable once with consent. Pre: 221. AHL1

THEA 240 Introduction to Theater Production (3) (3 Lec, 1 3-hr Lab) Workshop introducing basic tools, materials, and skills of technical theater: stagecraft, lighting, costume, makeup, painting, and drafting. Required of all majors. AHL1

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)

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)

THEA 318 Playwriting (3) One-act plays; practice in writing in dramatic form. Pre: grade of B or better in composition or consent. AHL1

THEA 319 Screenplay Writing (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)

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 once with consent. Pre: 222 and consent.

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 once with consent. Pre: 222 and consent.

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: 222 or consent.

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.

THEA 325 Asian Acting for Western Actors (3) Principles of acting based on traditional Asian models. Voice, movement exercises. Pre: 222.

THEA 334 Taiji (T'ai Chi) for Actors I (3) Basic Taijiquan (T'ai Chi Ch'uan) movement training. Repeatable one time. Pre: 221 and 222, or consent. (Cross-listed as DNCE 334)

THEA 343 Stagecraft (3) Workshop in principles and techniques of contemporary stagecraft. Practical production work. Pre: 240. (Alt. years)

THEA 353 Introduction to Scenic Design (3) Workshop introducing the basic principles and techniques of designing scenery for the theater. Pre: 240 or consent.

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.

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.

THEA 357 Stage Makeup Workshop (3) Theory and practice; corrective and three-dimensional makeup, modeling with paint; beards, mustaches. Repeatable one time. Pre: 240 or consent.

THEA 380 Beginning Directing (3) Basic practical course in how to direct a play. Students will direct scenes. Pre: upper division theater majors or consent.

THEA 400 (Alpha) Advanced Theater Practicum (1) Advanced workshop experience in the practical application of theater skills. Repeatable once per alpha. No more than 6 credit hours in total may be earned. One credit hour each may be earned in (B) acting; (C) stagecraft; (D) costume; (E) theater management. Pre: for 400B, audition and performance of role in a Department of Theatre and Dance production; for 400C and 400D consent; for 400E theatre majors only or consent.

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)

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)

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; (D) early to modern American drama; (E) modern European drama. Pre: one of 311, 312, 411, 412, or consent.

THEA 414 Women in Drama and Theater (3) The role of women and their presentation in theater from ancient Greece to the present; focus on sociopolitical status of women. Pre: 311. (Cross-listed as WS 414)

THEA 418 Advanced Playwriting (3) Workshop in experimental writing in dramatic form; full-length plays. Repeatable. Pre: 318.

THEA 420 Intermediate Voice for the Actor (3) Training in proper and dynamic use of the speaking voice for the actor. Repeatable. Pre: 220 or consent.

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 twice with consent. Pre: one of 321, 322, MUS 231B, or consent; and/or audition. (Cross-listed as MUS 421)

THEA 422 Acting VI: Period Styles (3) Presentational acting in comedy and tragedy; emphasis on performance styles in Elizabethan, Restoration, and 18th-century drama. Repeatable once with consent. Pre: 321 and 322, or consent.

THEA 426 South/Southeast Asian Acting Workshop (3) Training in skills and techniques for selected traditional south and southeast Asian theater forms. Emphasis on movement and vocal techniques. Repeatable one time. A-F only. Pre: 222 or consent. (Alt. years)

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 6 credit hours total. Pre: 222 or consent. (Alt. years)

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 6 credit hours total. Pre: 222 or consent. (Alt. years)

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. Pre: one of 222, 318, 380, or consent.

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. Pre: one of 435, DNCE 435, or consent. (Cross-listed as DNCE 433) (Alt. years)

THEA 434 Taiji (T'ai Chi) for Actors II (3) Intermediate-level Taijiquan (T'ai Chi Ch'uan) movement training. Repeatable one time. Pre: one of 334, DNCE 373, or consent. (Cross-listed as DNCE 434)

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 DNCE 221. (Cross-listed as DNCE 435)

THEA 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: one of 435, DNCE 435, or consent. (Cross-listed as DNCE 436)

THEA 437 Period Movement Styles, 1450–1650 (3) Movement styles and social deportment of European societies in the Renaissance and early

Baroque periods. Pre: one of 435, DNCE 435, or one semester of a 100-level dance technique class. (Cross-listed as DNCE 437) (Alt. years)

THEA 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: one of 435, DNCE 435, one semester of a 100-level dance technique class, or consent. (Cross-listed as DNCE 438) (Alt. years)

THEA 439 Musical Theater Dance Forms (3) Theatrical dance forms used in 20th-century musical theater. Pre: one of 421, DNCE 221, DNCE 231, or consent. (Cross-listed as DNCE 439) (Alt. years)

THEA 445 Stage Lighting (3) Workshop in stage lighting with equipment and techniques of the modern theater; emphasis on design process. Pre: 240 and 353.

THEA 446 Topics in Costume Construction (3) In-depth exploration of costume production techniques; construction, crafts, and new materials; Western and Asian. Repeatable. Pre: 356 or consent.

THEA 447 Theater Management (3) Business organization, management, and public relations in professional, university, community, and secondary school theaters. Pre: junior standing or consent.

THEA 453 Scenic Design (3) Workshop in advanced techniques and skills of scenic design; model making, rendering, and drafting. Pre: 353 or consent.

THEA 456 Costume Design (3) Advanced techniques and skills in design; intensive work on design problems in plays from various periods. Repeatable. Pre: 356 or consent.

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 ANTH 350, or consent. (Cross-listed as PACS 462)

THEA 464 Drama and Theater of Southeast Asia and India (3) Court, folk, popular traditions, and the manner of their production. Pre: consent.

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: consent.

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.

THEA 474 Theater for Children (3) Theories and principles of formal theater for children. Study of selection, direction, and production of plays. Pre: consent.

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: experience in early childhood education or consent.

THEA 476 Puppetry (3) History and scope of puppetry. Construction and presentation of puppets for adult and child audiences. Repeatable.

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.

THEA 480 Intermediate Directing (3) Workshop; students direct one-act plays. Pre: 380 and consent. (Alt. years)

THEA 490 Experimental Theater Studio (3) Working collectively, students research, write, design, develop, and perform a full-length production. Pre: 6 credits above the 200 level in acting, directing, playwriting, dancing; or consent.

THEA 492 (Alpha) Topics in Drama and Theater (3) (B) Qigong (Ch'i Kung) for actors; (C) Shakespeare in performance. Repeatable once for (B). Pre: 221 and 222, or consent for (B); consent for (C).

THEA 499 Directed Work (V) Individual projects; tutorial. 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 once 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 postmodern plays. Pre: 312 or consent.

THEA 617 Seminar in Theater History (3) Study of such selected topics as theatrical forms, commedia dell'arte, theater architecture, scenes and machines. Repeatable for credit when topic changes. Pre: consent.

THEA 618 Digital Multimedia Tools for Performance Research (3) Dance, Theatre, Music Majors only. A-F only. Repeatable one time. Pre: consent. (Cross-listed as DNCE 618)

THEA 619 Advanced Topics: Playwriting and Dramatic Theory (3) Readings, research, writing, and seminar discussions. Repeatable twice with consent. Pre: 418, 611, and 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. A-F only. Pre: 420 or consent. (Alt. years)

THEA 621 Acting VII: Great Roles (3) Great roles from the Western theater repertoire; focus on the individual actor and performance styles. Repeatable once with consent. Pre: 422 and consent.

THEA 625 Experimental Asian Acting (3) Advanced principles of Asia-based multicultural acting. Integration of traditional Asian movement/vocal technique and Western dramatic text. Repeatable. Pre: 325 or consent. (Alt. years)

THEA 634 Taiji Weapons for Actors (3) Advanced level Taijiquan (T'ai Chi Ch'uan) weapons training. Pre: 334 and 434; or consent.

THEA 640 Problems in Stagecraft and Lighting (3) Special topics in staging and lighting, and in planning and use of various types of modern theaters. Repeatable once with consent. Pre: 343 and 445, or consent.

THEA 653 Problems in Scenic Design (3) Workshop dealing with special topics in scenic design, related skills, and portfolio preparation. Repeatable twice 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. 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. Pre: consent.

THEA 678 (Alpha) Topics in Child Drama (3) Creative movement/drama, puppetry, and theater/dance. (B) production concepts. Repeatable when topics change. Pre: one of 470, 474, 476, 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 once with consent. Pre: 380 and one Asian theater course.

THEA 681 Seminar in Directing (3) Directorial analysis of plays; preparing promptbooks. Pre: 480.

THEA 682 Graduate Workshop in Directing (3) Direction of scenes and major one-act plays. Pre-thesis production. Repeatable once 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.

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 (3) Pedagogy and classroom experience in teaching technique and theory. (Cross-listed as DNCE 691) (Alt. years)

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. 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. Pre: one of 464, 465, 466, or consent.

THEA 778 Issues in Youth Theater/Dance (3) Examination of current issues, problems, and future directions in curriculum theory and design as it applies to theater and dance education. Pre: one of 470, 474, DNCE 490, or consent. (Cross-listed as DNCE 790)

THEA 779 Seminar in Theater/Dance for Children (3) Theories and methods applied in theatrical experiences with and for children: creative movement/drama, puppetry, and theater/dance. Pre: one of 470, 474, 476, or DNCE 390. (Cross-listed as DNCE 692)

THEA 800 Dissertation Research (V)

Tibetan (TIB)

College of Languages, Linguistics and Literature

TIB 181 Elementary Classical Tibetan (3) Introduction to classical Tibetan grammar; reading and analysis of progressively difficult classical texts. Meets three hours weekly.

TIB 182 Elementary Classical Tibetan (3) Continuation of 181.

Travel Industry Management (TIM)

School of Travel Industry Management

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. Includes lectures by industry leaders.

TIM 184 Principles of Food Preparation (3) Scientific principles of food preparation and their application in home and institutions. Nutrient content of foods, food product quality standards,

food selection and menu planning, and food safety and handling.

TIM 200 Internship II (2) 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.

TIM 240 Hospitality Operations (3) Introduction to hospitality operations. Operational departments and logical functions in the operation of various types of hospitality enterprises. Includes: operational practices and techniques; organizational structure, international standards and practice decision-making and policy formulation. A–F only. Pre: 101 or consent.

TIM 242 Managerial Accounting for Travel Industry (3) Principles of managerial accounting applied to travel industry enterprises. Topics include: financial statements, forecasting methods, budgeting, internal controls and accounting ethics. Pre: ACC 201 or consent.

TIM 300 Internship III (2) 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 301 Legal Environment of Travel Industry (3) Origin, development, and principles of common, statutory, constitutional, international, and maritime law relating to hospitality industry. A–F only.

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, ICS 101, and ICS 101L.

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 product, place, promotion, and price for travel institutions. Students may not earn credit for 304 and BUS 312. Pre: 101 and either ECON 120 or ECON 130 or consent.

TIM 305 Financial Management for the Travel Industry (3) Cash flow determination and management strategies for financing hospitality ventures and expansion. Determining the financial viability of proposed and existing operations through traditional and state-of-the-art techniques. Pre: 242 or consent.

TIM 306 Human Resource Management: Travel Industry (3) Principles of human resource management applied to contemporary theories and practices in the travel industry; employee productivity, recruitment, and retention. Pre: 101.

TIM 310 Institutional Purchasing (3) Procurement responsibilities in hospitality management. Emphasis on institutions supplying hospitality operations and legislation which controls standards of industrial supplies and goods. Pre: 184 and 240, or consent.

TIM 311 Restaurant and Club Operations (3) Introduction to restaurant and club operations. Operational techniques in different types of food services in hotels, restaurants, clubs, and institutions. A–F only. Pre: 184.

TIM 312 Quantity Food Production (3) Principles of food and beverage management applied to quantity food production operations; consideration of system components including marketing, menu planning, logistical support, production, and control. Pre: 184. (Cross-listed as FSHN 312)

TIM 316 Special Events Management I (1) Application of special events management concepts. Includes planning, marketing, staffing, producing, and fiscal and quality control. Repeatable once. CR/NC only. Instructor's approval required to enroll.

TIM 317 Special Events Management II (2) Continuation of 316. Repeatable once. CR/NC only. Pre: 316 and instructor's approval to enroll.

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.

TIM 324 Geography of Global Tourism (3) Tourism and the use of land resources, spatial patterns of supply and demand, impacts of tourism development, models of tourist space. Comparison of flows between major world regions. (Alt. years) (Cross-listed as GEOG 324)

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 Agency Management (3) Agency organization and operations; development of retail, wholesale, and group operations; providing services to individuals, tour groups, conventions, incentive groups; special purpose travel. Pre: 101 and either 303 or BUS 315.

TIM 333 Hotel Design, Engineering, and Maintenance (3) Manager's role in architectural design, engineering, and maintenance problems in hotels and resorts, including food service facilities. Pre: 184 or consent.

TIM 334 Hotel and Convention Sales (3) Functions, methods, and problems of hotel, convention, and restaurant sales. Needs of different classifications of properties; market segmentation and the sale of services vs. products. A–F only. Pre: 101.

TIM 350 Principles of Transportation (3) Significance and economic structure of primary modes of transportation. Government promotional and regulatory activities in transportation. Emphasis on managerial issues for transportation carriers serving the United States and Hawai'i.

TIM 351 Principles of Logistics (3) Management of logistics systems: inventory control, warehousing, materials management, physical distribution, transportation. Emphasis on Hawai'i's location and unique problems. Pre: one of 304, 350 or BUS 312.

TIM 353 Air Travel Management (3) Strategic problems—current and future—confronting airport executives; domestic environment in which air

transportation functions; methods of analysis and decision-making employed by U.S. air transportation managers. Pre: 350.

TIM 354 Surface Passenger Transportation Management (3) Management of surface passenger transportation and its relationship to total passenger transportation system. Includes marketing, ownership and financing, operations, regulation and promotion, human resources. Pre: 350.

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, and one of AREC 310, BUS 310, ECON 321, or SOCS 225.

TIM 368 TIM Study Abroad (V) Study abroad instructional experience emphasizing international travel, tourism and hospitality-related topics at equivalent, accredited programs. Course content varies depending on locus of instruction and instructor. Course qualifies as either a TIM or general elective with pre-approval or department. Repeatable. Pre: consent.

TIM 369 (Alpha) Current Topics in Travel Industry Management (3) Current topics in travel industry management. (B) resort development; (C) advanced logistics; (D) transportation and public policy. Pre: 303 or BUS 315; or consent; for (C) only: 351; for (D) only: 350.

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 410 Food Service Systems Management (3) Current types of food service systems and components; managerial methods applied to produce effective systems. Systems approach to food service management, planning, and decision-making. Pre: 311 and senior standing. (Cross-listed as FSHN 410)

TIM 421 Tourism Policy and Planning (3) Formulation of tourism policies and plans. Development of national tourism organizations; relationships between public and private sector. Pre: 101, 304, and senior standing.

TIM 431 Advanced Management and Policy in the Hospitality Industry (3) Complex management problems and issues in the hospitality industry that require policy-making. Policy and decision-making assisted by systems analysis, data processing, and other internal controls. Case study analysis, discussion and written reports. A–F only. Pre: 331 and graduating senior.

TIM 442 International Transportation (3) International air and marine transportation of goods and people; problems on competing with foreign carriers, international public and private ownership, interface with domestic carriers. Pre: 350 and senior standing.

TIM 469 Advanced Topics: Travel Industry Management (3) Advanced topics in hotel management, restaurant/institutional management, tourism or transportation. Repeatable once with consent. Pre: either 240, 311, 350, or 365.

TIM 500 Master's Plan B/C Studies (1) Enrollment for degree completion. Pre: master's Plan B or C candidate with consent.

TIM 602 Strategic Travel Marketing (3) In-depth study of marketing principles and problems related to travel industry organizations. Emphasis on strategic marketing. Research applications, international and domestic marketing of travel industry services. Pre: one of 304, BUS 312, or BUS 615.

TIM 603 Travel Information Systems (3) Applications of information technology to the travel industry from a management perspective. System design and choice; use in decision making; impacts. Trends in database management; reservation networks; Internet application and others. Students may not earn credit for 603 and BUS 651. A-F only. Pre: ICS 101 and ICS 101L, or consent.

TIM 604 Managerial Accounting for Travel Industry (3) Advanced study of management accounting within travel industry: responsibility accounting, pricing decisions, concepts and application of central systems, financial planning, price level impacts, performance evaluation. Pre: ACC 202 or BUS 614.

TIM 605 International Hospitality Management (3) Advanced human relations and operating issues; use of accounting, behavioral, financial, marketing, and informational systems in managing hospitality organizations. Pre: 303 or BUS 315.

TIM 610 Research Seminar (3) Research designs and applications of multivariate analysis techniques in the travel industry. Pre: undergraduate quantitative methods course.

TIM 691 Transportation Systems Management (3) Advanced study of the management of passenger transportation systems in the travel industry. Focus on different forms of transportation as they relate to travel industry management and policy. Pre: 304 or BUS 312; or consent.

TIM 692 Financial Management in Travel Industry (3) Advanced topics in financial management for the travel industry. Application of financial analysis to the unique challenges of the multifaceted travel industry, domestic and international. Pre: 604 and BUS 314.

TIM 693 Advanced Tourism Analysis (3) International trade theory and regional analysis methodologies applied to tourism and service industry, including travel balance account, interregional transactions flow, economic impacts, environmental economics, demand theory and forecasting. Pre: ECON 120 or ECON 130.

TIM 695 Seminar: Travel Industry Management Policy (3) Integration of learning through analysis of comprehensive problems in the travel industry, resolution of policy issues, and practice in tourism planning methods. Pre: 602 and two additional 600-level courses completed; or consent.

TIM 696 Tourism Field Studies (3) Integration of concepts learned in other courses with work experience applied to a selected field study project. Pre: 602 and 610; or consent.

TIM 699 Directed Reading and Research (V) Outline (including research methods, sources, results expected, and means of measurement) prepared by student and approved by supervisor and graduate chair before registration.

TIM 700 Thesis Research (V) Independent supervised research. Formal and oral written presentation of research findings.

Tropical Medicine and Medical Microbiology (TRMD)

School of Medicine

TRMD 431 Medical Parasitology (3) Diagnosis of parasitic diseases by lab methods: outstanding features of life cycles, classification and medical significance of parasites. Pre: MICR 351 or consent. (Cross-listed as MEDT 431)

TRMD 499 Reading and Research (V) Directed reading and research in laboratory; diagnostic aspects of bacterial, parasitic, and viral infections. Pre: consent.

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

TRMD 512 Unit II Concurrent Elective (1) Elective course for first-year medical students. CR/NC only. Pre: BIOM 551 and consent.

TRMD 513 Unit III Concurrent Elective (1) Elective course for first-year medical students. CR/NC only. Pre: BIOM 551 and consent.

TRMD 514 Unit IV Concurrent Elective (1) Elective course for second-year medical students. CR/NC only. Pre: BIOM 551 and consent.

TRMD 515 Unit V Concurrent Elective (1) Elective course 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 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 351 or consent. (Cross-listed as PH 665)

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: MICR 351 and TRMD 604; or consent. (Cross-listed as PH 667)

TRMD 606 Tropical Medicine and Microbiology Lab (3) Laboratory projects in infectious diseases microbiology; practical experience in use of instruments, equipment, and procedures used in public health and diagnostic microbiology, and research on infectious diseases. Pre: 605 and 609 (or concurrent), or consent. (Cross-listed as PH 668)

For key to symbols and abbreviations, see the first page of this section.

TRMD 609 Advances In Medical Immunology (2) Presentations/discussions of current literature concerning recent advances in immunology relevant to disease and to disease processes. Pre: consent. (Alt. years: spring)

TRMD 669 Lab Aspects of Parasitic Diseases (2) Lectures and practical training in lab techniques relating to parasitological diseases with special reference to the Pacific Basin. Pre: consent. (Cross-listed as PH 669)

TRMD 671 Advanced Medical Protozoology (2) Consideration of ultrastructure, physiology, biochemistry, in vitro cultivation, and host-parasite relationship of protozoa of medical importance. Pre: MICR 445 or equivalent, or 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 699 Directed Research (V) Directed research in medical microbiology (bacteriology, parasitology, virology). Pre: consent.

TRMD 700 Thesis Research (V) Research for master's thesis. Approval of department faculty required.

TRMD 705 Special Topics in Tropical Medicine (1) Advanced instruction in frontiers of tropical medicine and public health. Repeatable. (Cross-listed as PH 756)

TRMD 800 Dissertation Research (V) Research for doctoral thesis. Approval of department faculty is required.

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. (Cross-listed as ARCH 341)

PLAN 399 Directed Reading in Planning (V) Independent research on topics in urban and regional planning. Pre: 310.

PLAN 495 Land and Housing Economics (3) Microeconomics explains urban land housing phenomena and analyzes selected land and housing issues relevant to Honolulu. Pre: ECON 301, and ECON 321. (Cross-listed as ECON 495)

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

PLAN 600 Planning Theory and Practice (3)

Planning as an approach to public decision-making and implementation. Pre: consent.

PLAN 601 Planning Methods (3) Basic methods in planning including problem definition, research design, survey research, statistics and computer applications. Repeatable once. Pre: one of ECON 321, GEOG 380, SOC 476, or PSY 210.

PLAN 602 Spatial Planning Theory (3) History and theory of settlement planning and urbanization. Evolution of urban and regional systems. Internal structure and spatial organization of cities. Community planning and design. Repeatable once. Pre: graduate standing and consent.

PLAN 603 Economic Analysis for Urban and Regional Planning (3) Reviews and builds skills in applying basic theories and principles of urban and regional economics in contemporary U.S., Hawai'i and Asia-Pacific. Repeatable. Pre: consent. Fall only. (Cross-listed as GEOG 635)

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 once. Pre: one of ECON 321, GEOG 380, PSY 210, or SOC 476; or consent.

ENVIRONMENTAL PLANNING AND RESOURCE MANAGEMENT

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. Pre: 600 (or concurrent) or consent.

PLAN 615 Housing (3) Housing delivery systems as an aspect of urban and regional planning. Pre: 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. Pre: 600 (or concurrent).

PLAN 617 Urban Public Services (3) Problems in financing urban government and delivering of urban public services: crime control, education, health care, recreation, etc. Pre: microeconomic theory, ECON 301, or graduate standing in economics or urban and regional planning.

PLAN 618 Community Economic Development (3) Community-based economic development approaches and methods explored with an emphasis on low income communities. Repeatable. Recommended: 616. Pre: consent.

PLAN 619 Diversity and Multiculturalism in Planning (3) This 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. The course will examine these controversies and explore theories of governance in a multicultural setting. Pre: 600 or consent.

PLAN 620 Environmental Planning (3) Natural environmental processes and their interaction with social processes; role of planning intervention to

promote viability of social and natural systems. Pre: 600 and 601 (or concurrent).

PLAN 625 Environmental Policies and Programs (3) Principles, strategies, issues, and problems in formulation and implementation. Pre: 620 or consent.

PLAN 626 Energy Planning (3) Energy policy and planning; strategies that shift energy consumption from fossil fuels to renewable resources and sustain human activities with minimal disruption of physical, ecological, and social process. Pre: 605 (or concurrent) or consent.

PLAN 627 Negotiation and Mediation in Planning (3) Applicability and limitations of selected approaches; role of planners; impact on planning. Pre: 600 or consent.

REGIONAL DEVELOPMENT PLANNING

PLAN 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. Pre: 603 or consent. (Cross-listed as GEOG 631 and ASAN 630)

PLAN 632 Planning in Hawai'i and Pacific Islands (3) Urban and regional planning in island settings. Experiences in Hawai'i, Polynesia, Melanesia, and Micronesia. Pre: graduate standing.

PLAN 633 International Political Economy and Urban Policy (3) Urbanization and urban policies in the Asia and Pacific region with focus on the international dimension of national and local spatial restructuring. Pre: 630 or consent. (Cross-listed as GEOG 633)

PLAN 634 Shelter and Services in Asia (3) Examines government and non-government organizations' responses to urban and rural shelter issues and services in Asia. Pre: 630 (or concurrent) or consent.

PLAN 635 East Asian Development: Policy and Planning Issues (3) East Asian industrializing economies: China, Japan, South Korea, Taiwan, Hong Kong, and Singapore. Theoretical review: modernization, dualism, colonialism, dependency, state socialism, transnationalism. Issues: industrialization, human resource, settlement and housing, urbanization, state and society, democratization. Pre: one of 630, 633, ASAN 312, or ASAN 600. (Cross-listed as ASAN 635).

PLAN 636 Culture and Urban Form in Asia (3) Cultural and historical impact on urban form, contention of tradition and modernity in urban space, spatial expression of state and society, perception and utilization of urban design, evolution of urban form in selected Asian capitals. Pre: 310, 600, or ASAN 312. (Cross-listed as ASAN 636 and ARCH 687)

PLAN 637 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 GEOG 637)

PLAN 638 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: 630 or GEOG 353; or consent. (Cross-listed as GEOG 638)

PLAN 639 Planning for Rural Development (3) Rural development theories, policies, and practices in Asia. Covers theories of Agrarian transformation, rural development policies and regional planning. Examines issues of land reform, extension services, non-farm employment, gender, community development, agribusiness, and environment. Pre: 630 or consent. (Cross-listed as GEOG 639 and ASAN 639)

LAND USE AND INFRASTRUCTURE PLANNING

PLAN 640 Land Use Planning (3) Theory and practice; selected modes of land use analysis; growth management strategies. Pre: 600 and 601, or consent. (Cross-listed as ARCH 641)

PLAN 641 Neighborhood and Community Land Use Planning (3) Land use planning for urban neighborhoods and small towns. Theory and practice of neighborhood planning. Neighborhood and community dynamics, reinvestment, and stabilization. Pre: 640 (or concurrent) or consent.

PLAN 642 Planning Urban Infrastructure (3) Capital budgeting, project planning, and financing for large-scale urban infrastructure. Pre: 600, 601, and consent.

PLAN 645 Land Use Policies and Programs (3) Evolution, practices, methods of plan preparation, implementation, and conflict resolution. Analysis of specific guidance mechanisms. Critique of state and county plans and practices. Pre: 640 or consent.

PLAN 646 Urban Forms (3) City spatial organization; principles of neighborhood, town and city design and planning; spatial dimension of buildings and land use. Pre: 640 or consent. (Cross-listed as ARCH 640)

PLAN 648 Urban Transportation Planning (3) Theory and practice of urban transportation planning in developed and developing countries with an emphasis on the U.S., Asia, and Pacific region. Pre: 600 and 605, or consent.

RESEARCH AND PLANNING METHODS

PLAN 650 Research Design Seminar (3) Research design and preparation of thesis proposal. Normally taken after admission to candidacy in MURP. Pre: consent.

PLAN 652 Policy Implementation and Program Evaluation (3) Implementation and evaluation in public policy analysis; philosophical and methodological issues; impact of policies and plans; use of evaluation research in program implementation. Pre: 601 or consent.

PLAN 653 Social Impact Assessment (3) Philosophy and methods; relation to comprehensive planning; application to facility and services projects and policies in Hawai'i. Pre: 600 and 601, or consent.

PLAN 655 Advanced Planning Methods and Models (3) Advanced methods and deterministic and stochastic models used in urban and regional planning. Pre: 601, 605, or consent.

PLAN 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. Pre: AMST 675 or ARCH 628, or consent. (Cross-listed as AMST 676)

PLAN 671 Urban Economic Analysis (3) Microeconomic explanation of urban phenomena and evaluation of government policies; land use, location theory, speculation, housing, environmental pollution, transportation, etc. Pre: 495 or consent.

PLAN 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 AMST 677)

PLAN 683 Housing and Community Development Practicum (V) Laboratory and field testing of selected topics related to housing design and technology; site development and infrastructure; social, health and economic community development; and housing implementation strategies. Repeatable. Pre: ARCH 680 (or concurrent) or ARCH 681 (or concurrent). (Cross-listed as ARCH 683)

PLAN 684 Community Practicum for Developing Countries (V) Laboratory and field testing of experimental designs for housing sites and community-scale infrastructure; development of social, health, and economic techniques in community settlement and resettlement planning. Pre: 637, ARCH 680, or consent. (Cross-listed as ARCH 684)

PLAN 685 Community Development (3) Social, physical, ecological, and economic problems of communities in the Pacific basin; examination of solutions emphasizing the application of community organization and services, environmental management and appropriate technology to communities. Pre: graduate standing or consent of dean. (Cross-listed as ARCH 680)

PLAN 686 Housing and Community Services in Asia and Pacific (3) Application of analysis and construction technology to problems associated with physical development of suburban and neighborhood communities. Development of design and construction programs. Emphasis on low and intermediate technology solutions. Open to non-majors. Pre: ARCH 680. (Cross-listed as ARCH 681)

PLAN 699 Directed Reading and Research (V) Repeatable. Pre: consent of instructor and department chair.

PLAN 700 Thesis Research (V) Limited to MURP students under Plan A. Pre: consent.

SEMINARS AND PRACTICE

PLAN 740 Seminar in Planning Theory (3) Special topics in theory, history, analysis. Pre: 600 or consent.

PLAN 741 Seminar in Planning Practice (3) Project planning, programming, and similar topics. Pre: 600 and 601, or consent.

PLAN 751 Planning Practicum (6) Team experience in defining and addressing a current planning problem; identification, substantive review, research design, preparation and presentation of analysis. Topic varies. Limited to 10 students. Pre: 600, 601, and consent.

PLAN 752 Directed Project (V) Individual project in analysis, plan preparation and evaluation, and policy/program evaluation. Pre: 600, 601, and consent.

PLAN 754 Urban Design Studio (6) Group experience in defining urban and regional design problems and potentials, developing and evaluating alternatives, formulating strategies for implementation. Pre: 640, ARCH 641, or consent. (Cross-listed as ARCH 703)

PLAN 755 Reflection on Planning (1) Major issues and professional dilemmas in the practice of planning. Pre: professional certificate students only.

Vietnamese (VIET)

College of Languages, Linguistics and Literature

VIET 101 Elementary Vietnamese (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**

VIET 102 Elementary Vietnamese (4) Continuation of 101. **HSL**

VIET 112 Intensive Elementary Vietnamese (10) **HSL**

VIET 201 Intermediate Vietnamese (4) Continuation of 102. After completion, most students should be able to use all major sentence patterns to produce sounds, combinations of sounds, tones, and intonation and have some understanding of Vietnamese culture. Meets one hour daily, Monday–Friday; daily lab work. Pre: 102 or equivalent. **HSL**

VIET 202 Intermediate Vietnamese (4) Continuation of 201. **HSL**

VIET 212 Intensive Intermediate Vietnamese (10) **HSL**

VIET 301 Third-Level Vietnamese (3) Continuation of 202. Emphasis on increased proficiency and cultural understanding through interaction with Vietnamese media, including newspapers, radio, film, etc. Pre: 202 or equivalent.

VIET 302 Third-Level Vietnamese (3) Continuation of 301.

VIET 303 Intensive Third-Level Vietnamese (6)

VIET 369E Study Abroad: Vietnam (3)

VIET 401 Fourth-Level Vietnamese (3) Continuation of 302. Emphasis on cultural understanding through modern literary Vietnamese. Pre: 302 or equivalent.

VIET 402 Fourth-Level Vietnamese (3) Continuation of 401.

VIET 404 Intensive Fourth-Level Vietnamese (6)

VIET 433 Selected Readings in Vietnamese (3) Readings in disciplines selected for student interest and staff availability. Repeatable. Pre: 402 or consent.

VIET 434 Selected Readings in Vietnamese (3) Continuation of 433.

VIET 461 Introduction to Vietnamese Literature (3) Selected readings in major genres; emphasis on analysis. Modern literature. Pre: 402 or consent.

VIET 462 Introduction to Vietnamese Literature (3) Selected readings in major genres; emphasis on analysis. Traditional literature; introduction to demotic script. Pre: 402 or consent.

VIET 699 Directed Reading/Research (V) Repeatable. Pre: consent.

Women's Studies (WS)

College of Social Sciences

WS 151 Introduction to Women's Studies (3) Introduction to feminist interdisciplinary analysis; relationships between women and men and among women in contemporary society; women in diverse backgrounds, social structures, cultures, and nature. **SS**

WS 151A Introduction to Women's Studies (3) Introduction to feminist interdisciplinary analysis; relationships between women and men and among women in contemporary society; women in diverse backgrounds, social structures, cultures, and nature. **SS**

WS 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 TXCL 200) **SS**

WS 202 Psychology of Women (3) Survey of topics in psychology relevant to women's lives: socialization of gender, mental health, violence against women, achievement motivation, lifespan issues, domestic violence. Pre: 151 or PSY 100. (Cross-listed as PSY 202) **SS**

WS 245 Women Writers of World Literature (3) Major women writers of world literature examined in context of female literary tradition. Pre: ENG 100 or consent.

WS 257 Sexual Identity in Literature (3) Selected themes in major works of various types, cultures, periods. Requires a minimum of 3,000 words of writing. Pre: ENG 100. (Cross-listed as ENG 257Y) **AHL3**

WS 275 Women in Art (3) An interdisciplinary survey of the role of women as subject/object in the visual arts, their activity as creators of art and as participants in the art world. Pre: ART 101 and one of 151, PHIL 100, or SOC 100; or consent. (Cross-listed as ART 275)

WS 304 Women, War, and the Military (3) The military as it includes and excludes women as soldiers, nurses, wives, prostitutes, and victims. Women and war economics; feminism, war, and peace. Pre: one of 151, 362, 375, or consent.

WS 305 Women and Health (3) Explores current issues in the conceptualization and delivery of health care for women. Pre: one of 151, 202, POLS 110, or SOC 100. (Cross-listed as NURS 305)

WS 310 U.S. Women's History to 1890s (3) A survey of history of U.S. women and gender relations up to 1890s. Emphasis on women's labor, women's involvement in social movement, development of suffrage movement, women's

literary and popular culture. Pre: 151 (or concurrent) or AMST 201 (or concurrent) or AMST 202 (or concurrent), or consent. (Cross-listed as AMST 315 and HIST 360)

WS 311 U.S. Women's History since 1890s (3) A survey of history of U.S. women and gender relations since 1890s. Emphasis on social reform, suffrage and the New Woman, women's wartime labor, gender and the Cold War, second wave feminism, divisions among women. Pre: 151 (or concurrent) or AMST 201 (or concurrent) or AMST 202 (or concurrent); or consent. (Cross-listed as AMST 316 and HIST 361)

WS 315 Sex and Gender (3) Cross-cultural theories and perceptions of sexual difference; linkage between biology and cultural constructions of gender; relationship of gender ideology to women's status. Pre: ANTH 200 or consent. (Cross-listed as ANTH 315)

WS 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: one of 151, 362, SOC 100, or consent. (Cross-listed as SOC 318)

WS 320 Women and Madness (3) Interdisciplinary critical examination of the relationship between gender and mental health. Psychological research, feminist theory, autobiography, literature, and cinema. Pre: one of 202, 245, PSY 202, or consent.

WS 345 20th-Century Literature by Women (3) Twentieth-century women writers and their works; novels, short stories, poems, autobiographies. Interrelations of gender and literature. Pre: one of 245 or ENG 250–257, or consent.

WS 346 20th-Century Literature by Chinese Women (3) A survey and critical examination of contemporary Chinese women writers from China, Taiwan, and Hong Kong. This course traces a genealogy of women's writing from the early 1920s up until now through novels, poetry, drama, and film. Pre: one of 151, EALL 271, EALL 361, or ENG 250. (Cross-listed as EALL 364) **AHL3**

WS 350 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, menopause, and aging. Pre: one semester of biological sciences. (Cross-listed as BIOL 350) **NSI**

WS 351 Women, Ideas, and Society (3) Status of women in American society today in light of the cultural, historical, and philosophical forces that have produced it. Pre: HIST 151 and HIST 152, or consent.

WS 353 Alternatives to Bureaucracy (3) Theory and practice of non-hierarchical organizations: feminist and women's organizations; co-ops, communes, and collectives; indigenous people's organizations; workplace democracy and social change. Pre: one of 151, POLS 110, POLS 120, or consent. (Cross-listed as POLS 353)

WS 360 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: any

ANTH, SOC, or WS course. (Cross-listed as ES 365) **SS**

WS 361 Third-World Women and Change (3) Feminist comparative study of the position of women in both simple and complex cultures of Asia, Africa, Latin America, and the Middle East; interaction with ecology, culture, and social organization. Pre: any ANTH or SOC course or consent.

WS 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. (Cross-listed as SOC 362) **SS**

WS 365 Women in Business (3) Social and economic factors affecting working women; two-paycheck marriages; work relationships; attitudes toward working women. Pre: one of 151, 351, MGT 301, or consent.

WS 374 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: one of 151, 362, POLS 110, or consent. Prerequisite may be taken concurrently. (Cross-listed as POLS 374)

WS 375 Women and the Media (3) Media portrayal of women and men; role of the media in reproducing gender inequality. Women as producers and consumers of media. Feminist alternatives to mainstream media. Pre: 151 or 362.

WS 377 Women and Genetics in Society (3) Interdisciplinary, cross-cultural study of physiological and behavioral evolution of women, fertility patterns, mating systems, eugenics, genetic counseling, genetic engineering health problems. Pre: one semester biological science or consent.

WS 381 Gender, Sexuality and Literature (3) Basic concepts and representative texts for the study of literary constructions of gender and sexuality. Pre: any two of the following: ENG 250, ENG 251, ENG 252, ENG 253, ENG 254, ENG 255, ENG 256, ENG 257; second may be taken concurrently; or consent. (Cross-listed as ENG 382)

WS 382 Hawai'i's Female Heritage (3) Learning to reclaim the ethnically diverse creative expressions of Hawai'i's women. Pre: any WS or ES course.

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)

WS 399 Directed Reading (V) Pre: consent.

WS 405 Feminist Theory (3) Knowledge, power, and action in contemporary feminist theory. Naming differences among women across cultures. Discussing tensions between articulating women's voice and deconstructing gender. Pre: any 300-level WS or POLS course. (Cross-listed as POLS 305D)

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)

WS 418 Women and Work (3) Gender division of labor nationally and internationally; sex differentials in labor supply, training, wages, working conditions, and unemployment; historical trends and future directions. Pre: any 300-level SOC or WS course. (Cross-listed as SOC 418)

WS 419 Feminist Issues in Philosophy (3) Examination of a number of feminist issues in philosophy within the areas of ethics, aesthetics, philosophy of religion and epistemology/methodology. Pre: PHIL 100, PHIL 101, or any WS course; or consent. (Cross-listed as PHIL 418)

WS 420 Seminar in Feminist Psychology (3) Feminist criticisms of traditional models of women's psychological development. Recent contributions by contemporary theorists. Pre: one of 202, PSY 202, or consent.

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, 377, or BIOL 172, BIOL 350; or consent. (Cross-listed as BIOL 430)

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. Pre: any SOC or WS course. (Cross-listed as SOC 435)

WS 436 Women and the Law (3) Past and present roles of women in American political and legal institutions; common law, judicial decisions, and federal and state legislation affecting women of various socioeconomic groups. Pre: junior standing or consent. (Cross-listed as AMST 436)

WS 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 one of ANTH 150, BIOL 310, PHIL 100, PHIL 101, PHIL 102, PHIL 103, PHIL 316, WS 151, WS 362, or instructor's consent. (Cross-listed as PHIL 438)

WS 443 History of Families (3) How and by whom family has been historically defined. Compare and contrast various family structures in pre- and post-industrial societies. Pre: either 151 or 351 and either HIST 151 or HIST 152.

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. Pre: SOC 275 or consent. (Cross-listed as SOC 446)

WS 452 Marriage and Family: Feminist Perspective (3) Sex-role socialization, mate selection, motherhood, career-family conflicts. Alternative family structures in U.S. and other countries. Pre: 351, a 200-level SOC, or upper division social science course. (Cross-listed as SOC 452)

WS 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: 151 or junior standing or consent. (Cross-listed as EDEF 453 and TECS 453)

WS 455 Gender, Culture and Science (3)

Seminar/discussion course on how the nature, implementation, and findings of science have both influenced and been influenced by their development within a western, masculine context. Pre: one of 151, 350, BIOL 101, BIOL 103, BIOL 171, or BIOL 350; or consent.

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: one of 360, 361, 405, POLS 305D, or consent. (Cross-listed as AMST 438 and POLS 462)

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 course or ASAN 242, or consent. (Cross-listed as ASAN 463)

WS 481 Women and Film (3) Exploration of film as a philosophical and artistic form in the context of gender, race, and sexuality. Pre: 151 or one of ENG 250–257 or THEA 201 or consent.

WS 482 Women in Japanese Art (3) Issues relating to representations of women in Japanese art. Emphasis on social class and gender roles. Pre: ART 180, any WS course, or consent. (Cross-listed as ART 482)

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 320 and one other 300-level ENG course; or consent. (Cross-listed as ENG 482)

WS 484 Gender Issues in Multimedia and Video (3) Studio/lecture course investigating social, cultural, and gendered representations as informed by contemporary theory and practice. Pre: any WS course or ART 201; or consent. (Cross-listed as ART 404)

WS 491 Woman's Place (3) Historical explanations of woman's proper place and roles in the home, outside, and in the struggle for emancipation. (Cross-listed as HIST 491)

WS 492 Women in Revolt (3) Conditions under which women's protest develops. Women's rights movements in the 19th- and 20th-century U.S.; cross-cultural comparisons. Recommended: 491. (Cross-listed as HIST 492)

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.

WS 610 Faculty Seminar Series (1) Seminar/discussion course to introduce students pursuing the Graduate Certificate to the Woman's Studies faculty and their areas of research, and to initiate students' 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/contemporary status of women in the United States; 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, sex, 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 650 Research in Feminist Studies: Capstone Experience (2) This course will provide Women's Studies graduate certificate students with an opportunity to design, develop and complete a research project culminating in a publishable quality work and a professional quality seminar presentation. A-F only. Pre: classified graduate status and consent.

WS 699 Directed Reading and Research (V) Pre: classified graduate standing and consent of chair.

Zoology (ZOOL)

College of Natural Sciences

ZOOL 101 Principles of Zoology (3) Structure, development, physiology, reproduction, evolution, behavior, and ecology of animals. (Cross-listed as BIOL 103) **NS1**

ZOOL 101L Principles of Zoology Laboratory (1) Laboratory to accompany 101. Pre: 101 (or concurrent). (Cross-listed as BIOL 103L). **NS1**

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. **NS1**

ZOOL 200L Marine Biology Lab (1) (1 3-hr Lab) Laboratory, field trips to accompany 200. Pre: 200 (or concurrent). **NS1**

ZOOL 215 (Alpha) Biological Techniques (2) Techniques and equipment of special use to the biologist. (B) photographic techniques; (C) biological illustration.

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.

ZOOL 306L Ethology Lab (1) (1 3-hr Lab) Application of methods in demonstrations, films, and projects. Pre: 306 (or concurrent).

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.

ZOOL 320L Vertebrate Zoology Lab (2) (2 3-hr Lab) Laboratory to accompany 320. Pre: BIOL 172 and BIOL 172L. Co-requisite: 320.

ZOOL 330 Vertebrate Embryology (3) Developmental anatomy of selected vertebrates at organismic, organ, and tissue levels of organization. Oriented toward pre-professional students. Pre: BIOL 275. Recommended: 320.

ZOOL 330L Vertebrate Embryology Laboratory (2) (2 2-hr Lab) Laboratory to accompany 330. Comparative study of selected stages of amphibian, avian, and mammalian embryos. Pre: BIOL 275. Recommended: 320L. Co-requisite: 330.

ZOOL 340 Parasitology (2) Animal parasites of man, and domestic and wild animals; systematics, comparative morphology, life history, pathology, treatment, control. Pre: BIOL 275.

ZOOL 340L Parasitology Lab (2) (2 3-hr Lab) Laboratory to accompany 340. Pre: 340 (or concurrent) and BIOL 275.

ZOOL 399 Directed Study (V) Pre: written consent.

ZOOL 416 Histology (3) Functional microanatomy of the animal body, emphasizing vertebrates. Oriented toward pre-professional students. Pre: BIOL 275. Recommended: BIOL 406.

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.

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.

ZOOL 420 Developmental Biology (3) Fundamental principles, methods, concepts, and significance of developmental biology, emphasizing experimental methods. Pre: BIOL 275. Recommended: BIOL 406.

ZOOL 420L Developmental Biology Lab (2) (1 3-hr Lab) Analysis of animal development by experimental methods, using local organisms. (Students required to monitor cultures outside regular laboratory hours; one to two hours per week.) Pre: BIOL 275. Recommended: BIOL 406. Co-requisite: 420.

ZOOL 430 Animal Physiology (3) Introduction to function of organs, tissues, and cells, especially in vertebrates. Nerve and muscle physiology, endocrinology, circulation, respiration, excretion, and temperature regulation. Pre: BIOL 275. Co-requisite: 430L.

ZOOL 430L Animal Physiology Lab (2) Laboratory investigation of function of organs, tissues, and cells, especially in vertebrates. Nerve and muscle physiology, circulation, membrane transport, respiration, excretion. Pre: BIOL 275. Co-requisite: 430.

ZOOL 431 Physiology of Cell Membranes (3) (2 Lec, 1 3-hr Lab) Membrane structure, processes in cell volume regulation, cell-to-cell communication, drug and hormone effects, and active transport. Pre: BIOL 172 and ENBI 402 or biochemistry course.

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 ENBI 402 (or concurrent) or BIOC 441 (or concurrent); or consent.

ZOOL 432L Comparative Physiology Lab (2) (1 4-hr Lab) Experiments, projects, and demonstrations in comparative physiology. Pre: 432 (or concurrent) or 430 with consent.

ZOOL 435 Endocrinology (2) Anatomy and physiology of the organs of internal secretion, role of hormones in metabolism and development. Pre: a course in biological sciences.

ZOOL 439 Animal Ecology (3) Principles and theories; examples from current experimental and analytical literature. For students in biological sciences. Pre: BIOL 265 or consent.

ZOOL 439L Animal Ecology Lab (2) (1 4-hr Lab) Introduction to methodology, experience in characterizing populations and communities. Pre: BIOL 265.

ZOOL 441 Revolutions In Biology (3) Major themes in biology as they evolve with time: what is a species, preformation or epigenesis, evolution and extinction, is life more than physics and chemistry. Recommended for senior-level students. Pre: BIOL 172.

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) **NS1**

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.

ZOOL 465 General Ichthyology (3) Biology of fishes; reproduction, physiological processes, functional anatomy, behavior, ecology, distribution, and systematics. Pre: BIOL 265. Co-requisite: 465L.

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.

ZOOL 466 Fisheries Science (3) General characteristics of fisheries; harvesting methods; principles and techniques to derive data and analyze fished populations. Field trips. Pre: some background in fish biology and aquatic ecology or consent.

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.

ZOOL 470 Limnology (2) Biology, physics, chemistry of lakes, streams, estuaries. Pre: BIOL 172 or consent. Co-requisite: 470L.

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)

ZOOL 475 Biology of the Invertebrates (3) Body plans, development, cellular construction, physiological integration, natural history, and ecology of invertebrate animals. Emphasis on marine species, especially local ones. Pre: BIOL 172 and CHEM 161, or consent. Co-requisite: 475L.

ZOOL 475L Biology of the Invertebrates Lab (2) (2 3-hr Lab) Pre: BIOL 172 and CHEM 161, or consent. Co-requisite: 475.

ZOOL 480 Animal Evolution (3) Process of evolution: genetic basis, natural selection, population genetics, speciation, the fossil record. Pre: one of 475, 475L, or 320; and BIOL 265. Recommended: BIOL 275 and BIOL 375.

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.

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 499 Directed Reading or Research (V) 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 604 Comparative Endocrinology (3) Biology of hormonal mechanisms, with emphasis on invertebrates and lower vertebrates. Pre: 435 or consent.

ZOOL 604L Comparative Endocrinology Lab (1) (1 3-hr Lab) Co-requisite: 604.

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).

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.

ZOOL 615 Introduction to Axonology (3) Detailed discussion of basic techniques in quantitative study of excitable membranes including introduction to voltage clamp and patch clamp methods. Pre: 642 or PHYL 606, or consent. (Cross-listed as PHYL 615)

ZOOL 619 Seminar on Science Teaching (1) 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) (2 Lec, 1 3-hr Lab) Principles of ecology of marine biota and environment. Pre: graduate standing in zoology, oceanography, or botany; or consent.

ZOOL 621 Evolutionary Ecology (4) (3 Lec, 1 Discussion) Interaction of evolutionary process with ecological principles. How do ecological interactions evolve? What ecological conditions affect evolutionary pathways? What is the nature and ecology of adaptation? What are the units of natural selection? Pre: 480 or consent. (Alt. years)

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; multiway anova; general linear models; repeated measures and multivariate anova; loglinear analysis and logistic regression. Pre: 631 and MATH 241, or consent.

ZOOL 642 Cellular Neurophysiology (3) Biophysical and membrane mechanisms of conduction, synaptic transmission, and other electrical responses of nerve cells. Pre: one upper division biological science, 5 credit hours of chemistry, MATH 241, or written consent. (Cross-listed as PHYL 642)

ZOOL 642L Neurophysiology Lab (2) (2 5-hr Lab) Use of various extra-cellular and intracellular recording and stimulation techniques and apparatus as applied to semi-isolated neural preparations, mainly from invertebrates. Pre: 642 or PHYL 615 (or concurrent), or consent and either 430 or 432. (Cross-listed as PHYL 642L)

ZOOL 666 Systematic Ichthyology (3) Review of the higher classification of the fishes of the world. Pre: 465.

ZOOL 672 Acarology (3) Taxonomy, biology, ecology of mites. Emphasis on medically and agriculturally important species. Pre: ENTO 462 or consent. (Cross-listed as ENTO 672)

ZOOL 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: 439 or BOT 453; 480 or BOT 462; and CMB 451. (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 (710–719) per year. (B) general zoology; (C) zoology literature; (D) animal behavior; (E) ecology; (F) animal physiology; (G) development biology; (H) marine biology; (I) systematics and evolution. Repeatable. Pre: 491B.

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. Pre: 631 and 632, or consent.

ZOOL 712 Topics in Nerve/Muscle Physiology (V) Advanced treatment of selected topics under current active investigation. Repeatable. Pre: a 600-level course in the area and consent. (Cross-listed as PHYL 712)

ZOOL 714 Topics in Animal Behavior (V) Lecture-discussion of selected topics. Pre: consent.

ZOOL 715 Topics in Invertebrate Zoology (V) Comparative morphology, development, taxonomy, phylogeny.

ZOOL 716 Topics in Fish and Fisheries Biology

(V) Lecture-discussion of various aspects.

ZOOL 718 Topics in Animal Physiology (V)

Selected problems in environmental physiology, electro-physiology, or neurophysiology. Basic concepts and measurements of function at the organismic or cellular level.

ZOOL 719 Topics in Systematics and Evolution

(V) Selected problems of current or historic interest. Pre: 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)