

## Natural Hawaiian Health(NHH)

### School of Medicine

**NHH 501 Scientific Basis of Medicine (2)** Introduction to medical science stressing key historical figures and significant events to exemplify the development of scientific methods. Special emphasis on writing skills, health team concept, and culture and contributions of the Pacific. CR/NC only. Pre: admission to Imi Ho'ola Post-Baccalaureate Program.

**NHH 502 Scientific Basis of Medicine (2)** Continuation of 501. CR/NC only. Pre: 501.

**NHH 503 Medical Biology (5)** (2 Lec, 2 Tutorial, 1 3-hr Lab) Foundation in medical sciences, including anatomy, physiology, microbiology, and pharmacology (focus on respiratory, cardiovascular, and urinary systems); develop critical thinking and problem-solving skills. Course includes lectures, problem-based tutorials, and histology and gross anatomy labs. Pre: admission to Imi Ho'ola Post-Baccalaureate Program.

**NHH 504 Medical Biology (5)** (2 Lec, 2 Tutorial, 1 3-hr Lab) Continuation of 503. Pre: 503.

**NHH 505 Medical Biochemistry (4)** Provide background knowledge of chemistry, biochemistry, and molecular biology with emphasis in principles of biochemical processes as well as clinical correlations to medical conditions; develop critical thinking, standardized test taking skills, and problem-solving skills. Pre: admission to Imi Ho'ola Post-Baccalaureate Program.

**NHH 506 Medical Biochemistry (4)** Continuation of 505. Pre: 505.

**NHH 545 Native Hawaiian Health Care (V)** Clinical experience in the Native Hawaiian Health Care System and community health care centers, incorporating both western and traditional Hawaiian medicine. Open to fourth year medical students interested in Native Hawaiian Health Care. Pre: MED 531 or MED 532.

## Natural Resources and Environmental Management (NREM)

### College of Tropical Agriculture and Human Resources

**NREM 203 Applied Calculus for Management, Life Sciences, and Human Resources (3)** (2 Lec, 1 3-hr Lab) Applications of calculus (limits, continuity, derivatives, exponential and logarithmic functions, partials, integrals) to problems in business management, social sciences, and life sciences. The course applies symbolic techniques and quantitative methods in problem solving, utilizes concept of proof as a chain of inferences, and promotes development of reasoning skills and mathematical logic in bridging theory and practice. (Cross-listed as AREC 210) **FS**

**NREM 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 PEPS 210) **DB**

**NREM 220 Agricultural and Resource Economics (3)** Introduction to basic economics concepts, including demand, supply, exchange, market price and market failure. Economic evaluation and policy for the uses of various natural resource endowments, especially in production agriculture, is included. A-F only. **DS**

**NREM 301 Natural Resources Management (3)** Biological and physical science aspects of natural resource management at global, national, local levels. Management of specific resources including soil, water, forests, grasslands, fisheries, wildlife. Multi-resource management issues such as watershed protection, ecosystems, sustainable development. A-F only. Pre: 210, one biological science course, and one chemistry course; or consent. Co-requisite: 301L. Fall only. **DB**

**NREM 301L Natural Resources Management Lab (1)** (1 3-hr Lab) Natural resource management lab and field methodologies including map and aerial photograph interpretation, geographic information systems, water quality, geomorphology, soil and water conservation planning, range assessment, forestry assessment, native Hawaiian ecosystems. A-F only. Pre: 210, one biological science course, and one chemistry course; or consent. Co-requisite: 301. Fall only. **DY**

**NREM 302 Natural Resource and Environmental Policy (3)** Introduction to American government policy in natural resources and environmental protection at federal, Hawaii state and county levels. Policy principles, legal structure, governmental agencies, major statutes and programs, analytical techniques, program assessments. A-F only. Pre: 210 and either 220 or ECON 120 or ECON 130; or consent. Spring only. **DS**

**NREM 304 Fundamentals of Soil Science (4)** (3 Lec, 1 3-hr Lab) Origin, development, properties, management of tropical soils; classification of Hawaiian soils. A-F only. Pre: one of CHEM 151, CHEM 161 or CHEM 171; or consent. Fall only. (Cross-listed as TPSS 304) **DP**

**NREM 310 Statistics in Agriculture and Human Resources (3)** Theory, applications, and presentation of statistical reasoning. Descriptive, probability, and inferential reasoning for one-variable analysis with extensions to multiple variable cases. A-F only.

**NREM 341 Accounting and Financial Analysis (3)** Principles and methods of agricultural accounting. Preparing and interpreting financial statements. Sources and costs of credit, capital budgeting, tax management, estate planning. Repeatable one time. A-F only. Pre: 220 or ECON 130 or consent. (Cross-listed as TPSS 341) **DS**

**NREM 351 Enterprise Management (3)** Overview of financial tools essential for developing new enterprises, analyzing business performance, obtaining bank financing, improving profitability, and reducing risk. Other topics: personnel management, taxation, and business plans. Students will become proficient with Excel. Pre: 220 or ECON 130 or consent. (Cross-listed as TPSS 351) **DS**

**NREM 399 Directed Study (V)** Limited to exceptional undergraduate students qualified to carry on advanced study. Pre: consent.

**NREM 432 Natural Resource Economics (3)** Introduction to the economic theory of optimal management of natural resources and the environment. Property rights, externalities and welfare economics, non-renewable and renewable resource management and regulation, pollution control in theory and practice. Pre: ECON 301 or consent. **DS**

**NREM 458 Project Evaluation and Resource Management (3)** Fundamentals of benefit-cost analysis with extensions to environmental impacts and projects; case studies. Pre: ECON 301 or consent. (Cross-listed as ECON 458) **DS**

**NREM 461 Soil, 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. **DP**

**NREM 463 Irrigation and Water Management (3)** Basic soil-water-plant relationships, irrigation water requirements, irrigation efficiencies, different methods of irrigation, planning, design and management of an irrigation system, fertigation and impact of irrigation on soil and water quality. Pre: 203 (or equivalent) and NREM/TPSS 304 (or equivalent) or consent. (Cross-listed as TPSS 463) (Alt. years)

**NREM 467 Natural Resources Conservation Planning (3)** Combined lecture and hands-on field course on theory and practice of natural resource conservation planning. Includes individual and group projects. Open to upper-division undergraduate and graduate students interested in natural resources management. Pre: BIOL 101 and CHEM 151 or higher. Recommended: at least one upper division course in soils, natural resources, planning, physical geography, or related area; or consent. **DP** (Alt. years)

**NREM 480 Tropical Forestry/Agroforestry (3)** (2 Lec, 1 3-hr Lab) Biophysical and socioeconomic description and analysis of major tropical forestry and agroforestry management systems, including Hawai'i and the Pacific Basin. The role of traditional land use, pressures from regional and global development, and efforts to create sustainable, diverse systems for rural communities will be discussed. Pre: consent. **DB** (Spring Alt. years)

**NREM 491 Topics in Natural Resources and Environmental Management (V)** Study and discussion of significant topics and problems. Offered by visiting faculty and/or for extension programs. Repeatable. A-F only. Pre: consent.

**NREM 492 Internship (4)** Integration and application of academic knowledge and critical skills emphasizing professional development. Placement with an approved cooperating supervisor/employer. Pre: consent. (Cross-listed as TPSS 492)

**NREM 499 Directed Study (V)** Repeatable. Pre: senior standing and consent.

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

**NREM 600 Evaluation of Natural Resource Management (2)** Critical evaluation of natural resource management approaches. Emphasis on the physical, chemical, and biological aspects within an environmental context. Pre: graduate standing or advanced undergraduate standing, and consent.

**NREM 601 Economic Analysis of Natural Resource Management (3)** Lecture/discussion course providing an economic framework for assessing natural resource management projects and policies. Use of case studies to demonstrate applications of the framework in selected subject areas. Once a year. Pre: 220 (or equivalent) or consent.

**NREM 605 Research Skills (2)** Assists the student in developing skills necessary to write a research grant and design a research proposal. NREM majors only. A-F only. Fall only.

**NREM 611 Resource and Environmental Policy (3)** Exploration of institutional and policy dimensions of natural resource development, management, allocation, markets and pricing, focusing on their environmental impacts. Emphasis on policy analysis using case studies and empirical findings. Original paper required. A-F only. Pre: ECON 300 or ECON 301 or consent. Fall only.

**NREM 612 Degradation in Human-Dominated Ecosystems (3)** Historic, present, and projected trends in understanding and managing human-dominated terrestrial ecosystems; predicting, measuring and mitigating degradation especially in terrestrial ecosystems with a focus on small volcanic islands in tropical settings. A-F only. Pre: 301 and 304 (or equivalent). Recommended 461, or consent. Co-requisite: 600 or consent. Fall only.

**NREM 627 Applied Microeconomic Analysis (3)** Economic applications to the agricultural and nonagricultural industries are emphasized. Econometric techniques are used to estimate demand, supply, production and cost functions which are analyzed in terms of economic theory and market information. A-F only. Pre: AREC 626 and ECON 627; or consent. (Cross-listed as AREC 627)

**NREM 631 Sustainable Agriculture Seminar (2)** Critical evaluation of existing and alternative cropping systems from a long-term perspective. Value conflicts and resolution. Pre: graduate standing or advanced undergraduate standing, and consent.

**NREM 637 Resource Economics (3)** Analysis of problems of development and management of natural resources with emphasis on resources in agriculture and role in economic development. Pre: 432, AREC 634, and ECON 608; or consent. (Cross-listed as ECON 637)

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

**NREM 660 Hydrologic Processes in Soils (3)** (2 Lec, 1 3-hr Lab) Hydrologic properties in soils and the processes involved in water infiltration drainage and solute transport. Emphasis on key parameters required for

modeling. Pre: CEE 424 or consent. Fall only. (Cross-listed as CEE 625)

**NREM 662 Watershed Hydrology (3)** Application of basic hydrologic processes and management practices occurring on small islands watersheds. Pre: 203 or equivalent and 304 or equivalent; or consent. Once a year.

**NREM 670 Agrarian Systems Analysis (3)** Comparative analysis of philosophy and process of interdisciplinary and participatory approaches to sustainable development and rural resource management including farming systems research and extension (FSRandE), agroecosystem analysis (AEA), participatory action research (PAR), and rapid rural appraisal (RRA). Repeatable. Pre: consent.

**NREM 671 International Agricultural Systems (2)** Analysis of trends and strategies in international agricultural research and development. International agricultural research centers (IARC), Food and Agriculture Organization (FAO), university networks and consortia, and private voluntary organizations (PVOs). Pre: graduate standing or advanced undergraduate standing, and consent.

**NREM 680 Forest/Agroforest Ecosystem Analysis (3)** Analysis of ecosystem processes in tropical forest systems. Productivity nutrient cycling, biodiversity, trophic interactions and interactions of processes will be examined using recent literature and computer models. Pre: biology/ecology and soils, graduate standing; and consent. Spring only.

**NREM 691 Advanced Topics in Natural Resources and Environmental Management (V)** Study and discussion of significant topics and problems at an advanced level. Offered by visiting or existing faculty as a special course. Repeatable. Pre: graduate standing or consent.

**NREM 699 Directed Research (V)** Repeatable. Pre: graduate standing.

**NREM 701 Research Seminar (1)** Presentation and discussion of student thesis, dissertation, or other current research activities. A-F only. Pre: consent. (Cross-listed as AREC 705)

**NREM 800 Dissertation Research (V)**

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## Natural Sciences (NSCI)

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*College of Natural Sciences*

**NSCI 501 Seminar for Science Teachers (V)** Seminar and discussions of current and significant topics and problems in science where teachers can exchange new and innovative teaching ideas and strategies. Repeatable. Pre: in-service teachers or consent.

**NSCI 502 Chemistry Workshop 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 504 Mathematics Workshop for Teachers (V)** An in-depth study of topics from intermediate and high school mathematics. Restricted to in-service teachers or consent. Repeatable one time. A-F only.

**NSCI 505 Physics Workshop 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 ZOO 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.*

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## Nursing (NURS)

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*School of Nursing and Dental Hygiene*

**NURS 305 Women and Health (3)** Explores current issues in the conceptualization and delivery of health care for women. Pre: one of POLS 110, SOC 100, WS 151, or 202. (Cross-listed as WS 305) **DS**

**NURS 310 Psychosocial Concepts in Health Care (3)** 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. **DB**

**NURS 330 Professional Nursing I (2)** Concepts/theories of health assessment; data collection and analysis used to distinguish between health and deviations in health. Attention to principles of communication and interviewing. Introduction to professional nursing. Pre: admission to the School of Nursing and Dental Hygiene or consent. Co-requisite: 310, 330L.

**NURS 330L Professional Nursing I Lab (2)** Application of assessment skills in dry lab and clinical settings; communication skills, interviewing techniques, and physical examination skills. A-F only. Pre: admission to the School of Nursing and Dental Hygiene or consent. 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 Contemporary Ethical Issues in Health Care (3)** Explore contemporary ethical issues and their legal implications in health care. Focus on decision-making in professional practice and social policy formation. Pre: open to non-nursing majors with consent.

**NURS 341 Alternative Nursing Interventions (3)** Alternative nursing interventions in providing care for individuals, families, and groups. Pre: open to non-nursing majors with consent.

**NURS 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 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 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. Spring only. (Cross-listed as DH 361)

**NURS 370 Adult Health Nursing I (2)**

Examination of human responses to commonly occurring adult health problems across acute and community settings. Pre: 311, 331, and 331L;

or consent. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Co-requisite: 370L.

**NURS 370L Adult Health Nursing I Lab (3)**

Application of the nursing process in the care of clients with commonly occurring adult health problems across acute 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: 371L.

**NURS 371L Psychiatric-Mental Health Nursing Lab (2)**

Application of the nursing process involving human responses to psychiatric and mental illness. Emphasizes self-awareness, therapeutic communication and health-related outcomes. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 331 and 331L; or consent. Co-requisite: 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. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 370, 370L, 371 and 371L.

**NURS 372L Maternal Newborn Nursing Lab (3)**

Application of clinical knowledge to the care of the childbearing client and family across acute and community settings. Emphasis on health promotion and maintenance of the childbearing family. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 370, 370L, 371 and 371L.

**NURS 373 Child Health Nursing (2)**

Emphasis on concepts related to the delivery of holistic, therapeutic nursing care to culturally diverse children and families across community and acute settings. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 370, 370L, 371 and 371L.

**NURS 373L Child Health Nursing Lab (3)**

Application of concepts related to the delivery of holistic, therapeutic nursing care to culturally diverse children and families across community and acute settings. All required courses scheduled within the full-time or decelerated

curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 370, 370L, 371 and 371L.

**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.

**NURS 416 Fundamentals of Ergonomics (3)**

Introduction to ergonomics principles and their application in understanding and prevention of Muscular Skeletal Disorders encountered in the working environment including introduction to legal aspects of ergonomics. Pre: KLS 263 or consent; open to non-nursing majors with consent. (Cross-listed as KLS 416)

**NURS 420 Cooperative Education in Nursing (V)**

A two-semester course with seminar in professional role development in addition to paid work experience in nursing at a local agency. 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 GEOG 420) DB

**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. Co-requisite: 475 or consent.

**NURS 441 Introduction to Nursing Research (3)**

Introduction to the research process and an understanding of the applicability of the scientific approach to nursing. Pre: college-level statistics course. Co-requisite: 471 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 and continuity of care are included. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 372, 372L, 373 and 373L.

**NURS 470L Adult Health Nursing II Lab (3)** Application of the nursing process, concepts of

ethics, and continuity of care in the care of multiple clients and families with complex adult health problems in acute care and the community. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 372, 372L, 373 and 373L.

**NURS 471 Community Health Nursing (2)** Introduction to community health nursing concepts necessary for managing and/or delivering care in homes and various community sites to populations at risk of or in compromised health. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 372, 372L, 373 and 373L or consent.

**NURS 471L Community Health Nursing Lab (3)** Application of community health nursing concepts in managing and/or delivering care in homes and various community sites to populations at risk of or in compromised health. A-F only. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 372, 372L, 373, 373L and FSHN 475 or consent. 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. DB

**NURS 475 Complex Nursing Practice (2)** Examination of continuity of care for clients with complex needs within the health care system. Emphasis on quality and case management. All required courses scheduled within the full-time or decelerated curriculum plan for a given semester must be successfully completed with credit before progressing to the following semester. Pre: 441, 471 and 471L; or consent. Co-requisites: 439 and 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. A-F only. 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-requisite: 439 and 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: 441.

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

**NURS 602 Fundamentals of Health Administration (V)** Fundamental concepts and methods of modern management in health care settings.

**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 605 Health Promotion and Disease Prevention (3)** 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 608 Genetics and Health Care (3)** Addresses the scientific, psycho-social, ethical, cultural, and spiritual issues surrounding genetic disease, genetic testing, and living with an inherited condition. Repeatable one time. Pre: graduate standing or consent.

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

**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 Psychiatric-Mental Health Assessment and Diagnosis (3)** Identification and synthesis of pertinent biopsychosocial and cultural data to complete advanced psychiatric-mental health assessments and diagnoses.

**NURS 612 Advanced Assessment and Clinical Reasoning (2)** Provides a framework for the development of 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. Co-requisite: 612L.

**NURS 612L Advanced Assessment and Clinical Reasoning Lab (1)** Clinical lab and practicum for advanced practice nursing. Emphasis on integration of knowledge, skills and outcome evaluation. A-F only. Co-requisite: 612. Spring only.

**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 616 Psychophysiology of Human Behavior (V)** Survey of the neurophysiology of selected human behaviors and related psychiatric-mental health conditions. Strongly recommended as a prerequisite for psychopharmacology (623). May substitute for PSY 634 with instructor's permission. Pre: consent.

**NURS 620 Methods and Measurement in Nursing Research (3)** Examination of the research process for critical analysis of nursing research relevant to practice. Focus on measurement concepts and methods relevant to patient care outcomes. Pre: 639 (or concurrent) or consent.

**NURS 621 Acute and Episodic Care Management (3)** Diagnosis and management of health and illness with emphasis on clients with common acute/episodic conditions seen in context of family and community. Advanced practice nurse-client relationship, practice roles, and culturally relevant care are included. A-F only.

**NURS 622 Psychiatric-Mental Health Issues and Roles (3)** Exploration of major issues and roles in advanced practice psychiatric-mental health nursing.

**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 625 Advanced Practice Nursing Role (3)** To understand the multiple roles of the Advanced Practice Nurse (APN) and develop the ability to proactively manage the environments in which they practice. A-F only. Spring only.

**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 nurse 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 632 Therapeutic Modalities (3)** Therapeutic modalities used in advanced practice psychiatric-mental health nursing with individuals, families, and groups representing culturally diverse populations.

**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.

**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.

**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 Nursing Care in a Rural Community (V)** Supervised clinical community-based practicum for advanced practice nurses in rural health care. Pre: 621.

**NURS 638 Child and Adolescent Psychiatric-Mental Health (3)** Theory and research in advanced practice psychiatric-mental health nursing of children and adolescents representing culturally diverse populations. Emphasis on growth and development, assessment and diagnosis, and therapeutic modalities. A-F only. Pre: 620 (or concurrent).

**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 640 Chronic Illness Management (3)** Management of chronic illness using selected health care systems in culturally diverse communities. Management includes practice, consultation, education, research, and evaluation. Repeatable one time.

**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 646 Advanced Psychiatric-Mental Health Practicum (V)** Supervised application of theories, research, and skills for advanced practice psychiatric-mental health nursing with individuals, families, and groups representing culturally diverse populations. Includes the program's capstone experience. Repeatable five times. Co-requisite: 611 or 632.

**NURS 647 Family Systems in Health and Illness (3)** Family systems approach to include selected family theories, family research and family centered culturally sensitive clinical assessment and intervention in health and illness situations. Pre: graduate standing or consent.

**NURS 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 one time. Pre: 611, 621 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 one time. 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 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 661 Human Resource Management in Healthcare Agencies (3)** To analyze and critically evaluate basic issues, policies and trends in human resource management as it applies to clinical systems management in health care institutions. A-F only. Pre: consent.

**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.

**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.

**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 interven-

tions; 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: consent. (Cross-listed as PH 710)

**NURS 733 Care of Populations (3)** Focuses on the concept of venerable population-based primary health care. Exemplars of selected populations in community settings are examined with an emphasis on building community competence to address unmet needs.

**NURS 739 Advanced Nursing Science (3)** Provides opportunities to know and practice the process of theory development in nursing and to test concepts, relationships, and models about health behavior in culturally diverse populations.

**NURS 741 Quantitative Methods and Measures (3)** Critical analysis of quantitative research methods used to analyze problems of interest to nursing in culturally diverse populations. Repeatable three times. Pre: 620 or equivalent course and an advanced statistics course; 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: 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 Concept Development and Analysis (3)** First course offering in-depth analysis of specific concepts and theoretical formulations of nursing and other disciplines pertinent to the student's area of research interest. Addresses human responses to health in culturally diverse populations. Pre: 739.

**NURS 767 Culturally Competent Research Methods (3)** Concepts and methods to conduct culturally competent research in the health field. Pre: graduate methods course 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 (3)** Directed research experience providing opportunity to gain mastery of research skills and techniques through participation in faculty research. Repeatable one time. Pre: 741, 742 and 751. Co-requisite: Qualitative and quantitative methods course.

**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 one time. CR/NC only. Pre: BIOM 555.

**OBGN 532 Obstetrics and Gynecology Longitudinal Clerkship (5)** Year-long clerkship in outpatient setting, covering assessment, diagnosis, treatment, and/or management of common gynecologic problems and normal and complicated pregnancies. Emphasis on prevention and health maintenance. Repeatable twice. CR/NC only. Pre: third-year standing, and concurrent registration in 532 courses.

**OBGN 545 (Alpha) Unit VII Electives in OB/GYN (V)** Opportunities for advanced study of selected topics. (B) labor and delivery; (C) outpatient clinic at Queen's; (D) 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 or 532.

**OBGN 599 Directed Reading/Research (3)** Pre: consent.

## **Ocean and Earth Science and Technology (OEST)**

*School of Ocean and Earth Science and Technology*

*The following courses are not part of a specified department's curriculum. These courses are highly interdisciplinary in nature, drawing on faculty expertise from throughout 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 099 International Exchange Study/Research (V)** Study overseas in an approved international exchange or similar program. Repeatable three times. CR/NC only. Pre: consent of academic adviser.

**OEST 101 Natural Hazards (3)** Science of natural hazards: impact on human civilization of events in the lithosphere, atmosphere, biosphere, and hydrosphere (e.g., earthquakes, hurricanes, red tides, and floods), and impact of humans on their exposure to and mitigation of the hazards. **DP**

**OEST 310 Global Environmental Change (3)** Global environmental change problems, such as carbon dioxide and the greenhouse effect, acid rain, chlorofluorocarbons and the ozone layer, global deforestation and effect on climate, etc. Pre: one environmentally oriented science course. (Cross-listed as OCN 310 and MET 310) **DP**

**OEST 310L Global Environmental Change Laboratory (2)** (3-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 242 or MATH 242A, PHYS 170, PHYS 170L, CHEM 161, and CHEM 161L; or consent. Co-requisite: 310 or consent. Fall only. (Cross-listed as MET 310L and OCN 310L) **DY**

**OEST 350 Ethics in Scientific Research (1)** Introduction to issues of ethics in scientific research and scientific misconduct. GG, GES or MET majors only. Spring only.

**OEST 395 Undergraduate Internship (V)** Experiential approach to earth science; students serve as interns to field professionals; responsibilities include supervised field work. Open to undergraduate SOEST majors. Repeatable one time. CR/NC only. Pre: junior/senior 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.

**OEST 740 Marine Biofilms: Ecology and Impact (3)** Intensive description of biofilms, their growth and their impact upon engineered processes in the marine environment. Basic principles of bioadhesion, corrosion, attachment and metamorphosis of larvae (i.e. biofouling), antifouling techniques and modeling of biofilms reactors will be presented. Focus on how biofilms impact research thesis topics will also be emphasized. A–F only. Pre: good standing in any science or engineering graduate program or consent. Fall only.

## **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. **DP**

**ORE 330 Mineral and Energy Resources (3)** Hard material and petroleum origins, exploration and exploitation. Renewable and non-renewable resources distribution. Political and scientific constraints. A–F only. Pre: 202 or OCN 201 or consent. (Cross-listed as OCN 330)

**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: CEE 270 or equivalent. **DP**

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

**ORE 601 Ocean and Resources Engineering Laboratory (3)** Design, construction, and evaluation of an engineering system. Laboratory and field experience and data analysis supplemented with appropriate theory. Pre: 603 and 607; or consent.

**ORE 603 Oceanography for Ocean Engineers (3)** Physical, chemical, biological, and geological ocean environments for ocean engineers. Introduction to ocean dynamical processes and general circulation. Ocean measurement techniques, theory of underwater acoustics. Sonar, swath bathymetry, and tomography applications. Pre: consent.

**ORE 607 Water Wave Mechanics (3)** Governing equations in free surface flow,

deterministic and probabilistic wave theories, wave transformation, wave-induced coastal currents, tides, ocean engineering operational sea state, and design wave criteria. Pre: consent.

**ORE 608 Probability and Statistics for Ocean Engineers (3)** Probability and statistical analysis including distributions, multiple regression and correlation, autocovariance, cross-spectra, and practical applications in ocean engineering. Pre: 607 or consent.

**ORE 609 Hydrodynamics of Fluid-Body Interaction (3)** 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 or consent.

**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 620 Marine Bioprocess Engineering (3)** Mass and energy balances in marine bioproducts processing, primary and secondary metabolism products of marine organisms, biokinetics, stoichiometry and energetics in cell growth, metabolism engineering and yield improvement, properties and markets of marine bioproducts. Pre: consent.

**ORE 621 Bioreactor Design (3)** Application of hydrodynamics, thermodynamics, gas exchange rates, physics of light, and microbial kinetics to the design of bioreactors. Emphasis placed on marine bioproducts and integration with product separation and processing systems. Pre: consent.

**ORE 630 Structural Analysis in Ocean Engineering (3)** Structural and finite element analyses and design of ocean structures to withstand hydrostatic and hydrodynamic loading of the sea. Considerations include material type, safety factor, stress concentration, and fatigue. Pre: consent. Co-requisite: 411.

**ORE 631 Structural Design of Ships (3)** Owner's requirements, design criteria, and characteristics of ships and offshore structures. Conceptual and preliminary design procedures, hull strength, computer-aided design. Applications made to submersibles, cargo ships, and/or offshore platforms. Pre: 630 or consent. Fall only.

**ORE 641 Environmental Fluid Dynamics (3)** Fluid dynamics for coastal and estuarine environments. Turbulent mixing processes in homogeneous and stratified fluids. Buoyancy driven flows, internal hydraulics, topographic effects and estuarine circulation. Spill and pollutant dispersal. Pre: 603 or consent.

**ORE 642 Marine Environmental Remediation (3)** Thermodynamics, chemistry and measurements of marine pollutants, biodegradation and biotransformation of pollutants, symbiosis and mass transfer in biofilms, bioremediation of oil spills, hazardous sediments, algae control, regulations on marine environment. Pre: consent.

**ORE 661 Coastal and Harbor Engineering (3)** Planning and design of seawalls, groins, jetties, breakwaters, and layout of ports. Design requirements for harbor entrances and channels. Littoral drift and sedimentation problems. Navigation and mooring requirements. Pre: 607 or consent.

**ORE 664 Nearshore Processes and Sediment Transport (3)** Sediment transport by waves and currents in coastal areas and its effect on morphological processes. Effect of man-made structures on littoral drift and shoreline. Pre: 607 or consent.

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

**ORE 678 Marine Mineral Resources Engineering (3)** Activities in marine minerals development are examined in a multidisciplinary systems approach involving engineering, Earth and environmental sciences and economics. Pre: consent.

**ORE 695 Plan B Master's Project (3)** Independent study for students working on a Plan B Master's project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. Pre: Master's candidacy in ORE.

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

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

**ORE 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 (Alpha) Capstone Design Project (3)** Major design experience based on knowledge and skills acquired in earlier coursework and incorporating realistic constraints that include economic, environmental, ethical, social, and liability considerations. Emphasis is placed on teamwork and consultant-client relationship. (B) coastal engineering; (C) offshore engineering; (D) ocean resources engineering. Pre: 411, 601, 603, and 607; or consent.

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

**ORE 792 Seminar in Ocean and Resources Engineering (1)** Attendance at 15 approved seminars is required along with submission of notes.

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

## Oceanography (OCN)

*School of Ocean and Earth Science and Technology*

**OCN 100 Global Environmental Science Seminar (1)** Seminar course to introduce new GES majors to the research interests of GES faculty and the research facilities available within SOEST. Restricted to GES majors. CR/NC only. Fall only.

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

**OCN 201L Science of the Sea Laboratory (1)** Experiments, computer exercises and field trips demonstrating the geological, physical, chemical and biological principles of earth and ocean sciences. A-F only. Co-requisite: 201. **DY**

**OCN 310 Global Environmental Change (3)** Global environmental change problems such as carbon dioxide and the greenhouse effect, acid rain, chlorofluorocarbons and the ozone layer, global deforestation and the effect on climate, etc. Pre: one environmentally oriented science course. (Cross-listed as OEST 310 and MET 310) **DP**

**OCN 310L Global Environmental Change Laboratory (2)** (3-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 242 or MATH 242A, PHYS 170, PHYS 170L, CHEM 161, and CHEM 161L; or consent. Co-requisite: 310 or consent. Fall only. (Cross-listed as MET 310L and OEST 310L) **DY**

**OCN 312 Geomathematics (3)** Mathematical methods of geologic and geophysical science. Emphasis on application to earth-science problems using linear algebra, vector calculus, ordinary differential equations, and numerical solutions. Pre: MATH 242 or 242A 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: any course 200 or above in philosophy or a natural science; or 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. **DP**

**OCN 330 Mineral and Energy Resources of the Sea (3)** Hard mineral and petroleum origins, exploration, and exploitation. Renewable and non-renewable resources distribution. Political and scientific constraints. (Cross-listed as ORE 330) Pre: 201, ORE 202 or consent. **DP**

**OCN 331 Living Resources of the Sea (3)** Marine fisheries, aquaculture, and law of the sea. Principles of management of renewable resources. Political and scientific constraints and limitations. Pre: 201. **DB**

**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: 310, 310L, and MATH 244; or consent. **DP**

**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 and capstone course. A-F only. Pre: 201, 310/310L, BIOL 172/172L, CHEM 162/162L, GG 101/101L, MATH 241, MATH 243 & 252A, MATH 373 (or ECON 321), MET 200, MET 310/310L, OEST 310/310L, PHYS 170/170L, and PHYS 272/272L; or consent. Fall only. **DP**

**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 162; or consent. **DP**

**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) **DP**

**OCN 444 Plate Tectonics (3)** (2 Lec, 1 3-hr Lab) Quantitative geometrical analysis techniques of plate tectonics theory; instantaneous and finite rotation poles; triple-junction analysis; plate boundary stresses. Pre: GG 200 or consent. (Alt. years)

**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) **DB**

**OCN 470 Air Pollution (3)** (2 Lec, 1 3-hr Lab) A survey of the physical and chemical aspects of air pollution and climate at global and local scales; responses to threats to our atmospheric environment. Lecture, lab and field trips. GES majors. A-F only. Pre: 310, CHEM 162, MET 200, PHYS 272 or consent. Spring only. (Cross-listed as MET 470) **DP**

**OCN 480 Dynamics of Marine Ecosystems: Biological-Physical Interactions in the Oceans (3)** Combined lecture and discussion course examining biological and physical interactions in the oceans and their impacts on the functioning of marine ecosystems. GES majors only. A-F only. Pre: 201, 201L, 310, 310L, and PHYS 272, PHYS 272L or consent. (Alt. years)

**OCN 490 Communication of Research Results (2)** Lecture/discussion to provide instruction and experience in oral and written presentation of scientific results and material. Registration limited to GES majors in their final semester. A-F only. Pre: consent.

**OCN 499 Undergraduate Thesis (V)** 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 one time. 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.

**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 629 Molecular Microbial Ecology and Biotechnology (3)** Fundamental principles for studying microbial ecology and microbial biotechnology; emphasis on molecular methodology for exploration of ecological and biotechnological interests of microbes in marine natural habitats; developing skills for critical review of research papers and research project in marine microbial ecology and biotechnology. A-F only. Pre: 403 and MICR 130 or 351; or consent. Fall 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 Biogeochemical Methods in Oceanography (3)** (1 Lec, 2 3-hr Lab) Current methods of analysis used in the ocean sciences, both in the field and in the laboratory. An ongoing field trip provides students with hands-on training in sample collection and processing. The latter is followed by laboratory analyses of the collected samples throughout the remainder of the semester. Pre: BIOL 171, CHEM 151, GG 101 or equivalent.

**OCN 635 Isotopic Marine Geochemistry (3)** Application of stable and unstable isotope tracers in studying geochemical processes and their rates in the sea. Pre: CHEM 162, and MATH 241 or MATH 251A.

**OCN 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 one time. Pre: BS in environmentally related science or one year of chemistry, physics, and calculus. (Cross-listed as GG 638)

**OCN 640 Observational Physical Oceanography (3)** Application of the scientific method; physical regimes in the ocean; ocean processes and observational strategies; resolution, sampling, array design and observing systems; models and data assimilation; major field programs; operational oceanography and climate prediction. Pre: 620 and consent.

**OCN 641 Origin of Sedimentary Rocks (3)** (2 Lec, 1 3-hr Lab) Environment of deposition and subsequent diagenesis of modern and ancient sediments. Petrogenesis of siliciclastic, carbonate and orthochemical rocks. Sedimentology, sedimentary petrography and geochemistry. Repeatable. Pre: consent. (Cross-listed as GG 641)

**OCN 642 Elemental Composition Changes (3)** Changes in the chemical composition of meteorites, bulk Earth, Earth's mantle and crust, sedimentary rocks, hydrosphere and biosphere, and underlying principles. Pre: 623 or GG 325; or consent. (Cross-listed as GG 642)

**OCN 643 Topics in Marine Geochemistry (3)** Seminar on a broad topic; discussion and critique of research papers. Repeatable one time. Pre: 623 or consent.

**OCN 644 Sedimentary Geochemistry (3)** Geochemical thermodynamics and kinetics and their use in interpreting the origin of sediments, sedimentary rocks, and natural waters over a range of pressure-temperature conditions. Pre: CHEM 171, MATH 242, PHYS 152; or 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 or MATH 253A.

**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.

**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 403 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 Nino/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 one time. Pre: consent. (Cross-listed as GG 672)

**OCN 674 Paleoceanography (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.

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## OEST

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*See Ocean and Earth Science and Technology*

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## Pacific Islands Studies (PACS)

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*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: 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 371) **DL**

**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) **DH**

**PACS 491 The Contemporary Pacific (3)** Examination of critical issues in the contemporary Pacific. **DS**

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

**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) **DS**

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

**PACS 601 Learning Oceania (3)** Graduate seminar. Introduction to the nature and origins of Pacific Studies as an organized field of study. Epistemological, conceptual, political and ethical issues facing students of the region today. To be taken concurrently with PACS 602.

**PACS 602 Re/Presenting Oceania: Pacific and American Perspectives (3)** Graduate seminar. Critical analysis of the way physical, social and cultural aspects of Oceania have been represented in scholarly and popular media. To be taken concurrently with PACS 601.

**PACS 603 Researching Oceania: Creative and Conventional Methods of Inquiry (3)** Graduate seminar. Literacy, theory and method in the creation of a Master's research project. Pre: 601 and 602.

**PACS 640 Women in Oceania (3)** This course will look at feminist theory, ethnography, culture, activism and globalization in the context of writing, research and film on or by Women in Oceania. Pre: Consent.

**PACS 690 Graduate Seminar: Change in the Pacific (3)** Interrelationship of change in selected Pacific Islands regions, institutions, and processes. Repeatable. Pre: consent.

**PACS 695 Master's Portfolio Project (V)** Independent study for students working on MA portfolio projects. A grade of satisfactory (S) is assigned when the project is satisfactorily completed. Repeatable one time. Pre: graduate standing in PACS.

**PACS 699 Directed Reading and Research (V)**

**PACS 700 Thesis Research (V)**

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## Pali (PALI)

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*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.

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## Pathology (PATH)

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*School of Medicine*

**PATH 470 Immunopathology Seminar (1)** Autoimmune diseases and transplantation immunity. Pre: consent.

**PATH 499 Directed Research (V)** Pathology of aging, nutrition, alcoholism, and immunology. Open to selected undergraduate students. 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.

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**Peace Studies (PACE)**


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*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. **DS**

**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. **DH**

**PACE 315 Personal Peace: Stories of Hope (3)**

Interviewing, writing, and publishing stories of those who have overcome great difficulties to find personal peace. Pre: grade of B or better in ENG 100 or consent. **DH**

**PACE 340 Negotiation (3)**

Negotiation theory, negotiation skills and application of negotiation in conflict prevention, conflict management and conflict resolution. Pre: any Social Science 100 or 200 level course or consent. **DH**

**PACE 345 Aggression, War, and Peace (3)**

Biocultural, evolutionary, and cross-cultural perspectives on the conditions, patterns, and processes of violence, war, nonviolence, and peace. Pre: ANTH 200 or consent. (Cross-listed as ANTH 345) **DS**

**PACE 373 Nonviolent Political Alternatives (3)**

Exploration of scientific and cultural resources for nonviolent alternatives in politics. Pre: Any 100- or 200-level POLS course; or consent. (Cross-listed as POLS 396) **DS**

**PACE 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. **DS**

**PACE 399 Directed Reading (V)**

Directed reading in peace and conflict resolution. Repeatable three times. Pre: Consent.

**PACE 410 History of Peace Movements (3)**

Examination of two centuries of 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. **DH**

**PACE 412 Gandhi, King and Nonviolence (3)**

Life and thought of Mahatma Gandhi and Martin Luther King, Jr. Pre: any Social Science 100 or 200 level course or consent. **DH**

**PACE 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. **DS**

**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. **DS**

**PACE 485 Topics in Peace and Conflict Resolution (3)**

Recent issues, practices in peace and conflict resolution. Repeatable one time. Pre: 210 or consent. **DS**

**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.

**PACE 650 Dispute Resolution System Design (3)**

Conflict prevention, management and resolution in the workplace. Design and implementation of effective systems integrating ADR and recent advances in dispute resolution methodology to government, health, nonprofit, educational, private sector and other institutions. Pre: 447 or 652 or MGT 660 or PLAN 627; or consent.

**PACE 652 Conflict Management for Educators (3)**

Conflict resolution theory and practice for administrators, faculty and staff in educational organizations. K-12, community colleges and universities. Application and theory of negotiation, mediation, facilitation and hybrid ADR processes. Pre: EDEA 601 or EDEA 650 or consent.

**PACE 655 Facilitation and Advanced Mediation (3)**

Third-party methodology for theory and practice of facilitation and advanced mediation. Alternative dispute resolution (ADR). Contemporary practice issues for facilitators and mediators working in various diverse fields. Pre: 447 or consent.

**PACE 695 Conflict Resolution Practicum (3)**

Practice in conflict resolution skills. Open to

candidates for Certificate in Conflict Resolution. Repeatable one time. A-F only. Pre: 447, LAW 508, MGT 660, PLAN 627, POLS 633, PUBA 661, or SOC 715.

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**Pediatrics (PED)**


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*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.

**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.

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**PH**


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*See Public Health*

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**Pharmacology (PHRM)**


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*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. **DB**

**PHRM 203 General Pharmacology (3)**

Similar to 201 but wider in scope of drugs discussed. Intended for undergraduates in the health sciences and related fields. Pre: mammalian physiology. **DB**

**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. **DH**

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

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

**PHIL 103 Introduction to Philosophy: Environmental Philosophy (3)** A critical examination of environmental issues; analyzing the nature of the human being, the nature of nature, and the relationship of the human being to nature. **DH**

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

**PHIL 111 Introduction to Inductive Logic (3)** Introduction to the theory of arguments based on probabilities and to the theory of decision-making in the context of uncertainty. A-F only. **FS**

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

**PHIL 212 From Ancient to Modern Philosophy (3)** Introduction to the history of philosophy based on translations of texts originally written in post-classical Latin or Arabic. **DH**

**PHIL 213 Modern Philosophy (3)** Introduction to the history of philosophy based on texts or translations of "modern" works, that is works originally written in a modern European language. **DH**

**PHIL 300 Business Ethics (3)** Case studies and critical analyses of ethical issues in business. Readings from business, philosophy, law, etc. Pre: any course 100 or above in PHIL or BUS or BLAW; or consent. **DH**

**PHIL 301 Ethical Theory (3)** Problems and methods in theory of moral conduct and decision. Pre: any course 101 or above in PHIL or above 100 in POLS or SOC; or consent. **DH**

**PHIL 302 Political Philosophy (3)** Problems and methods in modern theories of the state. Comparison of anarchism, liberalism, and Marxism. Pre: any course 101 or above in PHIL or above 100 in POLS or SOC; or consent. **DH**

**PHIL 303 Social Philosophy (3)** Problems and methods in examination of contemporary American life, values, and institutions in light of traditional philosophical problems of freedom, justice, authority, equality. Pre: any course 101 or above in PHIL or above 100 in POLS or SOC; or consent. **DH**

**PHIL 304 Metaphysics (3)** Problems and methods arising from attempts to understand rationally what is, what appears to be, and what is not. Pre: any course 100 or above in PHIL or consent. **DH**

**PHIL 305 Philosophy of Religion (3)** Problems and methods. Nature of religious experience, alternatives to theism, existence of god, relation between faith and reason, nature of religious language. Pre: any course 100 or above in PHIL or REL; or consent. **DH**

**PHIL 306 Philosophy of Art (3)** Problems and methods in aesthetic valuation and in appreciation, creation, and criticism of artworks. Pre: any course 100 or above in philosophy, architecture, art, literature, or music; or consent. **DH**

**PHIL 307 Theory of Knowledge (3)** Problems and methods in epistemology. Nature of knowledge, its varieties, possibilities, and limitations. Pre: any course 100 or above in philosophy or 200 or above in a natural or social science; or consent. **DH**

**PHIL 308 Philosophy of Science (3)** Problems and methods. Domains of inquiry, methods of validation, and attendant moral concerns. Pre: any course 100 or above in philosophy or 200 or above in a natural science; or consent. **DH**

**PHIL 310 Ethics in Health Care (3)** Ethical issues in application and organization of biomedical resources; professional responsibility, confidentiality, euthanasia, experimentation on human subjects, etc. Pre: any course 100 or above in philosophy, a biological science, medicine, or nursing; or consent. **DH**

**PHIL 311 Philosophy and Aesthetics of Film (3)** Aesthetics and ontology of film and video, based on readings in the philosophy of film and the viewing of a number of films per semester. Pre: one course in philosophy or theater, drama or film; or consent.

**PHIL 313 Philosophy and Evolution (3)** Explores the ethical and epistemological implications of the theory of evolution. Pre: one course in biology or philosophy; or consent. (alt. years)

**PHIL 314 Critical Thinking: Pre-Medicine (3)** Scientific and social perspectives on the nature of disease and their impact on medical practice. Exploration of these topics through reading, writing and critical inquiry. Pre: one of 100, 101, 102, 103, 110, 211, 212, or 213; or any two BIOL, CHEM or PHYS courses; 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: any course 200 or above in philosophy or a natural science; or 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: any course 100 or above in philosophy or a natural or social science; or consent. **DH**

**PHIL 317 Critical Thinking: Pre-Law (3)** Introduction to concepts and techniques for evaluating arguments with special emphasis on their application both to questions of law and to issues in jurisprudence. Pre: any course 100 or above in PHIL or POLS or SOC; or consent. **DH**

**PHIL 318 Philosophy of Law (3)** Historical and contemporary issues in law and legal theory. Law and morality; legal responsibility, justice, rights, punishment, judicial reasoning. Pre: any course 101 or above in PHIL or above 100 in BLAW or POLS or SOC; or consent. **DH**

**PHIL 319 Ethical Issues in the Law (3)** Exploration of ethical issues that have come before (mainly U.S.) courts, including but not confined to, medical and criminal justice ethics. Repeatable one time. A-F only. Pre: 101 or a course numbered 200 or above in PHIL, HIST, ENG or a social science; or consent.

**PHIL 320 American Philosophy (3)** Survey of major philosophers and schools in development of American thought up to modern times. Pre: any course 100 or above in PHIL or consent. **DH**

**PHIL 330 Islamic Philosophy (3)** Survey of major philosophers and schools: Kindi, Razi,

Avicenna, Ghazali, Ibn Tufayl, Averroes, etc. Pre: any course 100 or above in PHIL or ARAB; or consent. **DH**

**PHIL 340 Africana Philosophy (3)** Survey of important thinkers and schools in Africana thought. Repeatable one time. Pre: any course 100 or above in PHIL or consent.

**PHIL 350 Indian Philosophy (3)** Survey of major orthodox and heterodox systems: Vedas, Upanishads, Bhagavadgita, Vedanta, Jainism, Buddhism. Pre: any course 100 or above in PHIL or PALI or SNSK; or consent. **DH**

**PHIL 360 Buddhist Philosophy (3)** Survey of central thinkers and schools. Pre: any course 100 or above in PHIL, CHN, JPN, PALI, SNSK, or TIB; or consent. **DH**

**PHIL 370 Chinese Philosophy (3)** Survey of important schools and thinkers in classical Chinese traditions: Confucianism, Taoism, Mohism, Legalism. Pre: any course 100 or above in PHIL or CHN; or consent. **DH**

**PHIL 380 Japanese Philosophy (3)** Survey of central thinkers and schools from ancient to modern. Pre: any course 100 or above in PHIL or JPN; or consent. **DH**

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

**PHIL 400 Introduction to Analytical Philosophy (3)** Major themes in logical atomism, logical positivism, and linguistic analysis. Readings from G. E. Moore to present. Pre: any course 100 or above in PHIL or consent. **DH**

**PHIL 401 Introduction to Existential Philosophy (3)** Major themes from contemporary investigations into meaning of human existence. Readings from Kierkegaard to Sartre. Pre: any course 200 or above in PHIL or consent. **DH**

**PHIL 402 Introduction to Phenomenology (3)** Methods of analyzing the structures of experience, as developed by Husserl, Heidegger, Merleau-Ponty, Sartre, etc. Pre: any course 200 or above in PHIL or consent. **DH**

**PHIL 406 Introduction to Zen (Ch'an) Buddhist Philosophy (3)** Development and philosophical significance of basic precepts, explored through translations of Chinese and Japanese sources. Pre: any course 200 or above in PHIL or CHN or JPN; or consent. **DH**

**PHIL 414 (Alpha) Western Movements and Periods (3)** (B) Greek; (C) late antiquity; (D) medieval; (E) continental rationalism; (F) British empiricism; (G) German idealism; (H) 19th century; (I) 20th century. Pre: any course 200 or above in PHIL or consent. **DH**

**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: any course 200 or above in PHIL or HIST; or consent. **DH**

**PHIL 417 Philosophy in Literature (3)** Philosophical themes in the literary mode in world literature. Pre: any course 200 or above in PHIL or the literature of any language; or consent. **DL**

**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: any course 200 or above in PHIL or WS; or consent. (Cross-listed as WS 419) **DH**

**PHIL 422 Philosophical Psychology (3)** Classical and modern theories of mind and action; various analyses of motivation, intention, rationality, self-deception. Pre: any course 200 or above in PHIL or PSY; or consent. **DH**

**PHIL 436 Philosophy of Language (3)** Contemporary theories in semantics and syntax; problems of meaning, reference, speech acts, etc. Pre: any course 200 or above in PHIL or LING; or consent. **DH**

**PHIL 438 Gender and Environmental Philosophy (3)** Interdisciplinary approach to women's perspectives and roles on ecological and environmental issues; critical analysis of eco-feminism as a social and political movement; cross-cultural comparison of women's roles in human ecology. Pre: any course 200 or above in PHIL or a natural science or WS; or consent. (Cross-listed as WS 438) **DH**

**PHIL 445 Symbolic Logic (3)** Intermediate-level course on techniques; propositional calculus and first-order predicate calculus. Pre: 110 or any course 200 or above in ICS or MATH. **DH**

**PHIL 449 Philosophical Topics (3)** Concentration on a topic of current philosophical concern. Repeatable one time with consent. Pre: declared major or minor in philosophy or consent. **DH**

**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: any course 200 or above in PHIL or EDUC; or consent.

**PHIL 493 Teaching Philosophy (6)** For philosophy students who, under supervision, will be facilitating philosophical inquiries in the pre-college classroom. Repeatable one time. Pre: 492 or consent.

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

**PHIL 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 one time with consent. Pre: graduate standing or consent; 303 recommended.

**PHIL 611 Studies in Ethics (3)** Key issues in ethical and metaethical theory. Repeatable one time 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 one time 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 one time 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 one time with consent. Pre: graduate standing or consent. Recommended: 304.

**PHIL 615 Studies in Philosophy of Religion (3)** Key issues in theory of religious experience, language, reasoning. Pre: graduate standing or consent. Recommended: 305.

**PHIL 616 Studies in Aesthetics (3)** Key issues in contemporary aesthetics, against background of traditional Western and Eastern theories. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 306.

**PHIL 617 Studies in Epistemology (3)** Key issues in theory of knowledge. Nature of truth. *A priori* knowledge, problems of induction, perception, and knowledge of material world. Repeatable one time 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 one time 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 one time with consent. Pre: graduate standing or consent. Recommended: 370.

**PHIL 671 Neo-Confucianism (3)** Logic, epistemology, metaphysics, and ethics of major Chinese Neo-Confucian philosophers, 11th–16th century. Repeatable one time with consent. Pre: graduate standing or consent. Recommended: 370.

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

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

**PHIL 700 Thesis Research (V)** Repeatable up to 6 credits. Pre: Master's Plan A candidate 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 one time 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 745 Seminar in African Philosophy (3)** Major philosophical problems in Africana thought, including problems in African American philosophy, African philosophy, and post-colonial African philosophy. 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 one time 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 one time 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 one time 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 one time 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 800 Dissertation Research (V)**

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## PHRM

See *Pharmacology*

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## 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 non-science majors. **DP**

**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). **DY**

**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. **DP**

**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). **DY**

**PHYS 151 College Physics (3)** Non-calculus physics. Mechanics, wave motion, heat. Pre: MATH 140 or knowledge of trigonometry. **DP**

**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). **DY**

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

**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). **DY**

**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 MATH 252A (or concurrent). MATH 216 may be substituted with consent. **DP**

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

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

**PHYS 190 Earth and Cosmos (4)** Combined lecture and laboratory course presenting basic principles of astronomy, physics, chemistry, and meteorology. Suitable for non-science majors. **DP DY**

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

**PHYS 272A Honors General Physics II (3)** Electricity and magnetism. A-F only. Pre: 151/151L or 170/170L and MATH 242 or MATH 252 or MATH 252A. MATH 216 may be substituted with consent. Co-requisite: 272L.

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

**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 243A or MATH 253 (or concurrent); or consent. **DP**

**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). **DY**

**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 253A (or concurrent); or consent. **DP**

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

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

**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 253A (or concurrent); or consent. **DP**

**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 253A and MATH 311, or consent. Recommended: upper division mathematics course. **DP**

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

**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). **DP**

**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. **DP**

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

**PHYS 460 Physical Optics (3)** Fundamentals of classical physical optics emphasizing linear systems theory, including optical fields in matter, polarization phenomena, temporal coherence, interference and diffraction (Fourier optics). Specialized applications include Gaussian beams, laser resonators, pulse propagation, and nonlinear optics. Pre: 350 and 400 (or concurrent), or EE 371 and EE 315 (or concurrent), or consent. **DP** (Cross-listed as EE 470)

**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. **DP**

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

**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. **DY**

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

**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. **DY**

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

**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 Physics Workshop 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: 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 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)** Contemporary advanced applications in optics including nonlinear optics and optical parametric oscillators, atomic lasers and laser systems, and free-electron 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.

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## 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. **DB**

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

**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. **DB**

**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. **DY**

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

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

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

**PHYL 301L Human Anatomy and Physiology Lab (1)** Laboratory study of human anatomy and physiology by means of models, histology slides, experiments, and demonstrations. Co-requisite: 301. **DY**

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

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

**PHYL 401 Human Physiology: Organ Systems (4)** Basic function of the major organ systems in man. Covers cardiovascular, respiratory, renal, acid-base, and gastrointestinal physiology. Pre: 302 or equivalent with consent. **DB**

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

**PHYL 403 Environmental Physiology (3)** Animal (including human) responses to environmental challenges such as heat, cold, altitude, diving, physical work, etc. Human adaptation in a comparative context. Pre: 302, or 401, or ZOOLOG 430; or consent. **DB**

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

**PHYL 405 Applied Muscle Physiology (3)** Science and technology of strength training. Anatomy, kinesiology, physics, and physiology applied to development of muscular strength and mass. Pre: 302; or consent. **DB**

**PHYL 450 Physiological Anthropology (3)** Study of ecological factors in human variation. Human population and its biological and cultural responses to the environment. Pre: ANTH 215 or consent. (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. **DB**

**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) case specific patho-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: 302, or 401. (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, gastrointestinal, 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. Pre: 302; 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 Diseases (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 616 Physiology of Thermoregulation (3)** Physiological and behavioral mechanisms by which animals and man regulate body temperature, 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 ZOOLOG 642)

**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 ZOOLOG 712)

**PHYL 800 Dissertation Research (V)**

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## PLAN

*See Urban and Regional Planning*

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## Plant and Environmental Protection Sciences (PEPS)

*College of Tropical Agriculture and Human Resources*

**PEPS 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 NREM 210) **DB**

**PEPS 250 The World of Insects (3)** Biology/ecology of insects with emphasis on relationships to plants, animals, and especially people in Hawai'i and the tropics. Open to nonmajors. A-F only. Spring only. **DB**

**PEPS 310 Environment and Agriculture (3)** Overview of environmental issues and impacts associated with agriculture, specifically pest management issues, and options for environmentally responsible management and amelioration of these impacts. Pre: 210 or consent. Fall only.

**PEPS 350 Invasive Pest Species (3)**

Ecological, economic and sociological impacts of invasive pest species on tropical ecosystems; characteristics of invasive species and nature of vulnerable habitats; management of invasive species or eradication options; impacts on evolution, biological diversity and ecological stability. Open to nonmajors. Pre: 210, 250, or consent. Fall only. **DB**

**PEPS 363 General Entomology (3)** Biology, ecology, habits, structure of Hawai'i's insects/arthropods. Classification to family level. A-F only. Pre: BOT 101, ZOO 101, or consent. **DB**

**PEPS 363L General Entomology Laboratory (1)** Laboratory in the biology and classification to family level of Hawai'i's insects and arthropods. A-F only. Pre: 363 (or concurrent) or consent. **DY**

**PEPS 371 Genetics: Theory to Application**

(3) Fundamentals of genetic theory using biotechnological procedures in insect and plant pathogen control and plant and animal breeding as practical applications. Repeatable one time. A-F only. Pre: BIOL 172 and CHEM 162, or consent. (Cross-listed as TPSS 371)

**PEPS 402 Principles of Biochemistry (4)**

Molecular basis of living processes in bacteria, plants, and animals; emphasis on metabolism of carbohydrates, lipids, proteins, and nucleic acids. Pre: BIOL 275, BIOL 275L, and CHEM 273; or consent. (Cross-listed as BIOL 402 and MBBE 402) **DB**

**PEPS 402L Principles of Biochemistry Lab**

(2) (1 Lec, 1 3-hr Lab) Principle techniques of biochemical laboratory. A-F only. Pre: 402 (or concurrent), BIOL 402 (or concurrent), MBBE 402 (or concurrent). (Cross-listed as MBBE 402L) **DY**

**PEPS 403 Molecular Biosensors (3)**

(Lec-Lab) Molecular methods for detection of pathogenic bacteria and potentially hazardous chemicals in air, water, soil and plant materials. Impacts of invasive microbial species on human health and welfare. Repeatable one time. A-F only. Pre: MICR 351 or consent. Recommended: 350. Fall only. (Cross-listed as MBBE 403)

**PEPS 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: 210 or BOT 101 or MICR 130; or consent. Fall only. **DB**

**PEPS 412 Environmental Biochemistry (3)**

Biochemical and chemical principles of occurrence, distribution, biotic and abiotic conversion, fate, and impact of synthetic and natural molecules in the environment. Important pollutants will be used as case studies to illustrate the principles. A-F only. Pre: CHEM 152 or CHEM 272 and CHEM 162 or 171; or consent. Spring only. (Cross-listed as MBBE 412)

**PEPS 421 Foundations of Pest Management**

(4) (3 Lec, 1 3-hr Lab) Principles and concepts of insect pest management using biological, ecological, cultural, behavioral, legislative, microbial and chemical methods. A-F only. Pre: 363 and CHEM 152; or consent. Spring only. **DB**

**PEPS 422 Biocontrol of Invasive Species (3)**

Biological control of arthropods, weeds, plant pathogens, and vertebrates. Pre: 363 or consent. **DB**

**PEPS 451 Environmental Law (3)**

Policies, regulations, acts, and laws that govern our interaction with the environment are explored. Analysis of the legal system's impact on the movement of invasive pests, control of agricultural and urban pests, agribusiness and property rights, endangered species protection and private land ownership rights, water resource management, and pollution effects.

**PEPS 463 Urban Pest Management (3)**

(2 Lec, 1 3-hr Lab) Lecture-lab course on biology, ecology, and management of pest organisms associated with people, structures and the urban environment. Emphasis on household/structural insect pests. Pre: 363 or consent. (Alt. years: spring) **DB**

**PEPS 481 Weed Science (3)**

(2 Lec, 1 3-hr Lab) Weed classification, identification, adaptations for weediness; principles of weed control; properties, uses, and action of herbicides. Lab: pesticide application equipment and techniques, no-till farming, greenhouse and field experiments. Pre: CHEM 152 and TPSS 200, or consent. (Cross-listed as TPSS 481) **DB**

**PEPS 486 Insect-Microbe Interactions (3)**

Multi-disciplinary treatment of medical entomology, plant vector entomology, insect pathology and symbiosis. Topics are addressed on evolutionary, ecological and molecular levels. Pre: BIOL 103, BIOL 172, or MICR 130; or consent.

**PEPS 491 Topics in Plant & Environmental Protection (V)**

Study and discussion of significant topics and problems. May be offered by visiting faculty, extension faculty or research faculty. Repeatable two times.

**PEPS 495 PEPs Capstone (4)**

Integration and application of academic knowledge and critical skills emphasizing professional development, Directed Research, field studies, employment with cooperating businesses, government or schools are all options. A-F only. Pre: consent.

**PEPS 499 Directed Research (V)**

Conduct original research in environmental protection sciences. Limited to qualified undergraduate students. Repeatable two times. CR/NC only.

**PEPS 612 Plant Epidemiology and Disease Management (2)**

Principles of epidemiology as a basis for disease management. Pre: 405, NREM 310, or consent.

**PEPS 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.

**PEPS 616 Plant Nematology (3)**

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

**PEPS 630 Plant Virology (4)**

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

**PEPS 641 Insect Physiology (4)**

(3 Lec, 1 3-hr Lab) Study of the principal physiological and biochemical functions in insects, with emphasis on hormonal interactions. Pre: 402 and 402L or consent.

**PEPS 646 Plant-Bacterial Interactions (3)**

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

**PEPS 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.

**PEPS 660 Research Seminars (1)** Research seminars in entomology, plant pathology, weed science and environmental protection. Repeatable. Pre: graduate standing or consent.

**PEPS 661 Medical and Veterinary Entomology (3)**

(2 Lec, 1 3-hr Lab) Vector control; insects and other arthropods in relation to human and animal diseases. Pre: 363 or consent. (Cross-listed as PH 682)

**PEPS 662 Systematics and Phylogenetics (3)**

(2 Lec, 1 3-hr Lab) Classification and study of diversity among insects and other life forms. Use of morphological and molecular characters to reconstruct evolutionary histories. A-F only. Pre: graduate standing in a biological science or consent. **DB**

**PEPS 664 Immature Insects (3)**

(2 Lec, 1 3-hr Lab) Identification, structure, biology, literature, economic significance, emphasis on holometabola. Pre: 462 or consent.

**PEPS 671 Insect Ecology (3)**

(2 Lec, 1 3-hr Lab) Insects as living units in an environment of physical and biotic factors. Pre: 374, or consent.

**PEPS 672 Acarology (3)**

(2 Lec, 1 3-hr Lab) Taxonomy, biology, ecology of mites. Emphasis on medically and agriculturally important species. Pre: 462 or consent. (Cross-listed as ZOO 672)

**PEPS 675 Biological Control of Pests (3)**

(2 Lec, 1 3-hr Lab) Fundamental concepts. Critical study of major biological control projects. Pre: 421 and 462, or consent. Recommended: ZOO 631 or 632.

**PEPS 681 Pesticide Toxicology (3)**

Principles of toxicology; chemical and biochemical mechanisms of pesticide toxicity. A-F only. Pre: 402 or BIOC 441; CHEM 272; or consent. Fall only. (Cross-listed ENBI 681)

**PEPS 686 Insect Transmission of Plant Pathogens (3)**

(2 Lec, 1 3-hr Lab) A multidisciplinary treatment of insect transmission of plant pathogens. Insect-plant and cellular insect-pathogen interactions and management strategies are emphasized.

**PEPS 690 Foundations in PEPs (1)**

Seminars on foundations of current research in entomology, plant pathology and environmental protections. Repeatable. A-F only. Spring only.

**PEPS 691 Special Topics (V)**

Study and discussion of significant topics and problems in plant and environmental protection sciences at an advanced level. Offered by visiting or existing faculty as a special course. Repeatable. Pre: graduate standing or consent.

**PEPS 695 Plan B Master's Project (3)**

Independent study for students working on a Plan B Master's project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. A-F only. Pre: graduate standing in entomology or tropical plant pathology.



**PEPS 699 Directed Research (V)** Directed research, critical reviews in environmental protection sciences, entomology, or plant pathology. CR/NC only.

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

**PEPS 799 Proposal/Defense Seminar (1)** Thesis/dissertation proposal and defense seminars. Repeatable one time. CR/NC only. Pre: Graduate standing or consent.

**PEPS 800 Dissertation Research (V)** Research for doctoral dissertation.

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### Plant Pathology (PPTH)

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See *Plant and Environmental Protection Sciences*

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### Polish (POLH)

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*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

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### Political Science (POLS)

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*College of Social Sciences*

*Either a 100 level or 200 level course is a prerequisite to all 300 level courses except with the consent of the instructor*

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

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

**POLS 130 Introduction to American Politics (3)** American political processes and institutions, as seen through alternative interpretations. Emphasis on opportunities and limitations for practical political participation. DS

**POLS 170 Politics and Public Policy (3)** Perspectives on the role of government in guiding economies and civil societies with particular emphasis on the recent United States. DS

**POLS 171 Introduction to Political Futures (3)** Introduction to political future studies. Using science fact and fiction, shows how past and present images of the future influence people's actions. DS

**POLS 190 Media and Politics (3)** Influences and effects of media on politics. Setting public agendas, interpreting events, manipulating the

political process, political learning through popular culture. DS

**POLS 201 Problems of War and Peace (3)** Introduction to the problems individuals and political communities currently face with respect to war, peace, and international conflict. Includes questions of human nature, economy, morality, nuclear deterrence, arms control and disarmament, and alternatives to war. DS

**POLS 241 Political Design and Futuristics (3)** Possible social and political alternatives for the future. Conditions likely if present trends continue, formulation of visions of better futures, means for their achievement. DS

**POLS 271 Race and Politics (3)** Racial inequality in the United States; mechanisms of institutional racism in employment, education, criminal justice, electoral politics. DS

**POLS 301 Hawai'i Politics I (3)** Introduction to study of institutions, processes, and issues. Pre: any 100 level POLS course or consent. DS

**POLS 302 Hawai'i Politics II (3)** Application of theoretical modes and techniques to institutions, processes, and issues that characterize politics in Hawai'i. Pre: any 100 level POLS course or consent. DS

**POLS 303 (Alpha) Topics in Hawai'i Politics (3)** Intensive examination of particular institutions, processes, and issues. (B) the military in Hawai'i; (C) political thought in Hawaiian. Taught in Hawaiian; (D) alternative politics in Hawai'i. Pre: HAW 302 (or concurrent) for (C) only, and any 100 level POLS course or consent for all. ((C) Cross-listed as HAW 428) DS

**POLS 304 Indigenous Politics (3)** Conceptualizing politics from the perspective of indigenous epistemologies, philosophies, language, and social and political movement. Pre: any 100 level POLS course or consent.

**POLS 305 Global Politics/Comparative (3)** Introduction to global politics with emphasis on concepts and theories developed from a comparative politics perspective. Pre: any 100 level POLS course or consent. DS

**POLS 306 Comparative Politics of Developing Countries (3)** Political, economic, and social development in the Third World. Repeatable one time. Pre: any 100- or 200-level POLS course, or consent. DS

**POLS 307 (Alpha) Topics in Comparative Politics: Country/Regional (3)** Political, social, and economic processes in specific countries/regions. (B) Southeast Asia; (C) Pacific Islands; (D) Communism in Asia; (F) Middle East; (G) Philippines; (H) Japan; (I) Europe; (J) India; (R) Russia. Repeatable one time. Pre: any 100- or 200-level POLS course, or consent. DS

**POLS 308 Contemporary Chinese Politics (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. A-F only. Pre: ASAN 310 or ASAN 312 or SOC 356 or consent. (Cross-listed as ASAN 484). DS

**POLS 315 Global Politics/International Relations (3)** Introduction to global politics with emphasis on concepts and theories

developed from an international relations perspective. Pre: any 100 level POLS course or consent. DS

**POLS 316 International Relations (3)** Decision-making behavior of international actors; strategies of peacemaking. Pre: any 100 level POLS course or consent. DS

**POLS 317 International Law (3)** Nature and function of international law in international politics. Pre: any 100 level POLS course or consent. DS

**POLS 318 Current Issues in International Law, Organization, and Culture (3)** Principles, norms, cases, and their interaction with culture and organization in international politics. Pre: any 100 level POLS course or consent. DS

**POLS 319 International Organization (3)** International relations of governmental and nongovernmental organizations. Pre: any 100 level POLS course or consent. DS

**POLS 321 International Migration (3)** Political-cultural economy of international migration: post-colonial populations, refugees, and immigrants. Pre: any 100 level POLS course or consent.

**POLS 322 American Foreign Policy (3)** Purposes, methods, strengths, obstacles, prospects; factors affecting American foreign policy; impact abroad and at home. Pre: any 100 level POLS course or consent. DS

**POLS 323 International Relations Lab (1)** Pre: any 100 level POLS course or consent. Co-requisite: 315 or 319. DS

**POLS 333 Advanced Topics in Global Politics (3)** Studies of political development in the context of increasingly integrated and globalized political economies. Repeatable one time. Pre: any 100 level POLS course or consent.

**POLS 335 Political Philosophy and Theory (3)** Theories, approaches, concepts, and issues developed or raised in history of western political philosophy and thought. Pre: any 100- or 200-level POLS course, or consent. DS

**POLS 336 Non-Western Political Theory (3)** Survey of major historical schools and/or contemporary directions in non-western political thought. A-F only. Pre: any 100- or 200-level POLS course, or consent. DS

**POLS 337 American Political Theory (3)** Origins and development of American political thought. Pre: any 100 level POLS course or consent. DS

**POLS 338 (Alpha) Topics in Political Theory (3)** Significant works, historical continuities, themes, and issues in political theory. (B) classical political philosophy; (F) revolution and utopia; (G) contemporary political theory; (I) Marxist philosophy. Pre: any 100- or 200- level POLS course; or consent. DS

**POLS 339 Feminist Theory (3)** Contemporary debates in feminist theory concerning gender, race, and class; subjectivity and representation; gender and colonialism; bodies, sexualities and "nature." Pre: any 300 level POLS or WS course; or consent. (Cross-listed as WS 439) DS

**POLS 341 The Politics of Media (3)** Study of the political manipulation of aural and verbal

images. Exercises to increase media literacy. Pre: any 100 level POLS course; or consent. **DS**

**POLS 342 Political Design and Futuristics**

(3) Alternative future social and political possibilities; design of means of realization of desirable futures. Pre: any 100 level POLS course or consent. **DS**

**POLS 343 The Politics of Film** (3) Political, philosophical, and artistic dimensions of film; cross-cultural film genres; representational practices in films. Pre: any 100 level POLS course or consent. **DS**

**POLS 344 Na Politika ma ka Nuhou Hawai'i - Politics in Hawaiian Language Media** (3)

Study of Hawaiian news media with emphasis on political content. Taught in Hawaiian. Pre: HAW 302 (or concurrent) and one of POLS 110, 120, 130, 170, or 171; or consent. (Cross-listed as HAW 445) **DH**

**POLS 346 (Alpha) Topics in Comparative Political Process** (3) (B) peasant politics; (E) health and environment. **DS**

**POLS 366 Advanced Topics in Theory, Media, and Method** (3) Studies in political theory, media, and methods that analyze their interrelations in a globalized world. Pre: any 100- or 200-level POLS course, or consent.

**POLS 367 Disability Politics** (3) Introduction to the history and politics of U.S. disability law and activism. An analysis of disability politics as the result of the interaction between disability movement activism and the development of policy and law. A-F only. Pre: 110. Fall only.

**POLS 372 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: any 100 level POLS course or POLS 339 or WS 360 or WS 361 or WS 439; or consent. (Cross-listed as AMST 438 and WS 462) **DS**

**POLS 373 American Politics (Elections)** (3) Examination of voters and voting processes (participation, apathy, socialization, symbolic process, media, etc.); ideologies and belief systems. Pre: any 100 level POLS course or consent. **DS**

**POLS 374 Law, Politics and Society** (3) Relationships between law, politics, and society will be explored. Emphasis is placed on several dimensions of legality: legal "indeterminacy" and some of the many things that law does for us and to us; law's response to violence; the connections between law and social change; access to the law and its sociological dimensions; how/why law fails and what happens when it does. A-F only. Pre: either a 100- or 200-level POLS or SOC course, or junior standing. (Cross-listed as SOC 374) **DS**

**POLS 375 Public Law and Judicial Behavior** (3) Analysis of law, legalism, legal ideology, and legality; constitutions and constitutionalism; the political context of legal stability and change; institutional structure and function of dispute-resolution agencies. Pre: any 100 level POLS course or consent. **DS**

**POLS 376 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. Pre: any 100- or 200-level POLS course, or consent. **DS**

**POLS 377 Current Controversies in Public Law and Judicial Behavior** (3) Current issues; recent research findings; practical research undertaken by student. Pre: any 100 level POLS course or consent. **DS**

**POLS 378 (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. Pre: any 100 level POLS course or consent. **DS**

**POLS 379 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. Pre: any 100 level POLS course or consent. **DS**

**POLS 381 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: any 100- or 200-level POLS course, or consent. **DS**

**POLS 382 Political Leadership** (3) Exploration of concepts and theories of political leadership, partly through biography, as preparation for public service or advanced scholarly inquiry. Pre: any 100 level POLS course or consent. **DS**

**POLS 383 Politics and Public Policy II** (3) Overview of the policy-making process in various political arenas (families, cities, nations, etc.); emphasis on conceptual and empirical analysis. Pre: any 100 level POLS course; or consent. **DS**

**POLS 384 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: any 100 level POLS course (or concurrent), WS 151 (or concurrent), or WS 362 (or concurrent); or consent. (Cross-listed as WS 384) **DS**

**POLS 385 American Politics** (3) Institutions (parties, interest groups, legislatures, executives, local government); policies (national defense, poverty, energy, etc.), politics (symbolism, inequality, race, and gender). **DS**

**POLS 387 Racism and Sexism** (3) Racial and sexual discrimination and efforts to combat them. Pre: any 100- or 200-level POLS course, or consent. **DS**

**POLS 389 (Alpha) Topics in Politics and Public Policy** (3) Topics in public policy and administration. (D) ocean politics; (F) politics of health; (I) political economy. Pre: any 100 level POLS course or consent. **DS**

**POLS 390 Political Inquiry and Analysis** (3) Introductory survey and analysis of methods used in empirical research, policy analysis, and social criticism. **DS**

**POLS 393 Advanced Topics in Law, Policy, and Society** (3) Studies integrating concerns of public law, public policy, public administration, and social movements. Pre: any 100- or 200-level POLS course; or consent.

**POLS 394 Democracy in Organizations** (3) Theory and practice of democratic organizations:

women's and feminist organizations; co-ops, communes, and collectives; indigenous people's organizations; workplace democracy and social change. Pre: any 100- or 200-level POLS course or 390 (or concurrent) or WS 151; or consent. (Cross-listed as WS 353) **DS**

**POLS 396 Nonviolent Political Alternatives** (3) Exploration of scientific and cultural resources for nonviolent alternatives in politics. Pre: any 100- or 200-level POLS course; or consent. (Cross-listed as PACE 373) **DS**

**POLS 399 Directed Reading and Research** (V) Pre: consent.

**POLS 401 Teaching Political Science** (6) Practicum for majors who lead, under supervision, a freshman seminar section of 110 or serve as undergraduate teaching assistants. Repeatable one time. Pre: 390 (or concurrent), senior standing, and consent.

**POLS 402 Legislative Internship** (V) Field placement at the Hawai'i Legislature integrated with academic study of political institutions and practices. A-F only. Pre: consent. Recommended: 390. Spring only. **DS**

**POLS 403 Community Internship** (V) Field placement integrated with academic study of political institutions and community organizations. Repeatable one time. Pre: consent. Recommended: 390. **DS**

**POLS 404 Senior Thesis** (6) Independent research and thesis writing with supervision of senior adviser. Pre: 390 (or concurrent) and consent.

**POLS 406 Senior Seminar in Political Science** (3) Discussion of issues and questions of concern to graduating seniors in political science, including substantial research project. Pre: 390 (or concurrent) or senior standing or consent. **DS**

**POLS 436 Gender, Justice and Law** (3) 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. A-F only. (Cross-listed as AMST 436 and WS 436) **DS**

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

**POLS 600 Scope and Methods of Political Science** (3) Main concepts delineating boundaries of discipline; approaches to knowledge employed by political scientists; empirical and normative theory; problems in theory-building; validity and reliability in research design; philosophy of science applied to political science.

**POLS 601 Political Analysis and Theory Building** (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 one time.

**POLS 612 Hawaiian Political Thought: Theory and Method/Na Mana'o Politika Hawai'i (3)** Study of Hawaiian political thought in writing from ca. 1825 to the present, with emphasis on theory and research methods. Pre: 303, HAW 402 and HAW 428; or consent.

**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 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 621 Politics of Indigenous Representation (3)** Politics of indigenous representations in media, literature, and academic scholarship.

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

**POLS 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 642 Indigenous Peoples and Western Imperialism (3)** Historical examination of US and European imperialisms, including national narratives, politics, and impacts upon indigenous peoples in the Americas, Pacific, and Asia. Repeatable one time.

**POLS 645 (Alpha) Politics and Development: Regional (3)** Politics of particular regions; particular development processes. (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 647 American Political Institutions in Comparative Perspective (3)** Consideration of American political institutions and development relative to American philosophical foundations and non-American political forms. Federalism as an expansive device will be emphasized, as will American influence and penetration abroad. A-F only. Pre: graduate standing or consent. Once a year only.

**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 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. (E) current environmental issues: examines one of the seminal concerns of local, state, national, and international governments and NGOs—issues affecting the natural environment, and especially policies to preserve and enhance it. A-F only. Repeatable one time. (F) politics of health. Pre: graduate standing or consent.

**POLS 676 Nonviolent Political Alternatives (3)** Exploration of nonviolent, non-killing 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 684 Contemporary Native Hawaiian Politics (3)** Study of political and social movements, political status, national and cultural identities, and issues of representation of Native Hawaiians.

**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 one time.

**POLS 695 Colloquium (3)** Specialized subjects in political science.

**POLS 696 Graduate Intern Seminar (3)** Seminar for interns in the alternative futures or the indigenous politics options. Repeatable one time. A-F only. Pre: 672 and 673 or consent for the alternative futures option; 682 or consent for the indigenous politics option.

**POLS 699 Directed Reading and Research (V)** Pre: consent.

**POLS 700 Thesis Research (V)**

**POLS 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 703 Writing Politics (3)** Seminar on the politics of writing, grammar, translation, argument, genre, and style with significant content on indigenous issues of oral traditions, alternative modes of writing and argument, and language continuance.

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

**POLS 720 Seminar: Indigenous Theory (3)** Pre-announced topics may include gender and sexuality studies, postcolonial theory, colonial discourse analysis, globalization, historiography; emphasis on indigenous epistemologies and the work of native scholars. Repeatable one time.

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

**POLS 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 777 Decolonial Futures (3)** Topic engages probable and preferable futures of indigenous struggles and resistances. Emphasis placed on the ethics and responsibilities used to move towards those futures.

**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)**

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**Population Studies (PPST)**


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*College of Social Sciences*

**PPST 101 Introduction to Population Studies (3)** Introduces the study of population (demography), human fertility, mortality, and migration. Focus on the U.S., Hawai'i, and the Asia-Pacific region.

**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 (ECON 120, 130, 131; GEOG 151; POLS 110; or SOC 100) or consent. **DS**

**PPST 302 Population in the Pacific Islands (3)** Survey of the characteristics of human populations of the Pacific Islands region. Working of population forces from early settlement to the demographic transitions of the present day. Pre: consent. **DS**

**PPST 401 Forced Migration (3)** Global view of refugee and other forced migration; emphasis on humanitarian assistance. Pre: 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. **DS**

**PPST 412 Analysis in Population and Society (3)** Global and U.S. patterns of population growth; composition and distribution, elementary demographic techniques; development issues and population policy. (Cross-listed as SOC 412) **DS**

**PPST 432 Economics of Population (3)** Determinants and consequences of growth and structure of human populations. Relationships between economic factors and fertility, population growth and economic growth. Pre: ECON 301 (or concurrent). (Cross-listed as ECON 432) **DS**

**PPST 649 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 applica-

tions 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.

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**Portuguese (PORT)**


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*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**

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**PPST**


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*See Population Studies*

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**Prakrit (PRAK)**


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*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.

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**Psychiatry (PSTY)**


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*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.

**PSTY 545 (Alpha) Unit VII Electives in Psychiatry (V)** Senior medical student elective providing advanced instruction on the theory and methods of mental health research as well as supervised participation in an assigned research project in the Department of Psychiatry. (B) adult inpatient PSTY; (C) child PSTY; (D) forensic PSTY; (E) journal editing; (F) community mental health; (G) PSTY aspects of 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; (T) mental health research. CR/NC only. Pre: 531 or 532, and fourth-year standing.

**PSTY 599 Directed Reading/Research (V)** Pre: consent.

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**Psychology (PSY)**


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*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. **DS**

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

**PSY 202 Psychology of Gender (3)** Survey of topics in psychology relevant to gender and its impact on the lives of women and men: socialization of gender, mental health, racial identity, majority-minority status, sexual orientation, life-span issues and violence. A-F only. Pre: 100 or WS 151. (Cross-listed as WS 202) **DS**

**PSY 402 History of Psychology (3)** Origin and development of contemporary points of

view. Pre: 100. Recommended: 9 credit hours in psychology. **DS**

**PSY 403 Seminar on the Psychology of Knowledge (3)** Selected topics in the psychology of knowledge and mind from Western and/or non-Western perspectives. Repeatable in different topics up to 9 credit hours. Pre: 100 and written consent. **DS**

**PSY 407 Practicum in Psychology (V)** Supervised psychological experience in school, clinic, hospital, industry, social welfare, government, etc. Pre: 100 and consent.

**PSY 408 Teaching General Psychology (V)** Supervised experience. Pre: 100, at least 12 additional credit hours in psychology, and written consent. Repeatable one time.

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

**PSY 600 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. **DS**

**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. **DS**

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

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

**PSY 419 Psychometrics: Advanced Topics (3)** In-depth coverage of some area of theory, research, or methodology relevant to individual differences, measurement, or aspects of

psychometrics. Repeatable to 6 credit hours. Pre: 100. **DS**

**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, EDEP 601 or SW 651. (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. Non-linearity and treatment of missing data. Pre: 610, EDEP 601, SW 651 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; or EDEP 603, EDEP 604, and EDEP 605; or SW 653, SW 654, and SW 655. (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, EDEP 601 or SW 651, 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, EDEP 416, or SW 651, 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, EDEP 416, or EDEP 429 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. **DS**

**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. **DS**

**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. **DS**

**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. **DS**

**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. **DS**

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

**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. **DB**

**PSY 331 Behavioral Neuroscience (3)** Coverage of the neural, developmental and mechanistic bases of learning, memory and cognition, motivated and regulatory behavior and mental disorders. A-F only. Pre: 100 and 230. **DB**

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

**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. **DB**

**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. **DS**

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

**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. **DS**

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

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

**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 one time. 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. **DS**

**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. **DS**

**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. **DS**

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

**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. **DS**

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

**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. **DS**

**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 Personal Development (3)** The application of psychology to the understanding, management, and enhancement of one's life. **DS**

**PSY 170A Psychology of Adjustment (3)** Understanding, evaluating, and improving adjustment. Ideas and techniques concerning behavior change and personal growth. A-F only.

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

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

**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. **DS**

**PSY 476 Health Psychology (3)** Psychological principles for understanding and dealing with wellness and illness. Theories and research on stress-related disorders; prevention of stress through lifestyle and healthy behaviors. Pre: 100 or consent. Recommended: 220 or 322. **DS**

**PSY 477 The Helping Relationship (3)** Theory and application of personal and interpersonal elements affecting communication of human-service professionals. Supervised practice, video lab. Pre: one of 151, 251 or 301 and PSY 100. (Cross-listed as SP 490) **DS**

**PSY 478 Teaching Personal Development (6)** Supervised experience in leading a seminar in personal development. Pre: 170 and 12 additional credits in PSY and written consent.

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

**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. **DS**

**PSY 385 Consumer Behavior (3)** Analysis of consumer behavior and motivation; principles of learning, personality, perception, and group influence, with emphasis upon mass communication effects. Pre: BUS 312 or consent. (Cross-listed as MKT 311) **DS**

**PSY 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. **DS**

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

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

**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.

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## 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)** Organized in a series of integrated, cross-disciplinary modules, the course addresses issues people in public service are likely to face. Modules include effective written and oral communication, group processes, political and economic perspectives on public institutions, the use of information resources relevant to public work, critical thinking, legislative process, and the issues of Hawaiian people. A-F only. Fall only.

**PUBA 601 Policy and Organizational Processes (7)** Organized in a series of integrated modules, the course addresses issues people in public service are likely to face. Modules include frameworks for understanding and improving organizations, administrative law and issues of discretion, budget processes, research and analysis relevant to public work, public service ethics, and concern for future generations. A-F only. Pre: 600. Spring only.

**PUBA 612 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: 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: 601.

**PUBA 620 Reforming Public Organizations (3)** Looks at the challenges and opportunities for changing public organizations so that they may be more successful in meeting their public responsibilities and better places for people to

work. The course focus is on the creation of positive images of organization and effective change strategies. A-F only. Fall only.

**PUBA 622 Strategies of Change (3)** Examines different approaches to change; TQM, action research, organizational culture, and leadership. Explores different techniques of organizational diagnosis and explores specific interventions. A-F only. Spring only.

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

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

**PUBA 630 Nonprofit Management (3)** Fundamental aspects of managing a nonprofit organization: overview of the nonprofit sector; mission and scope of nonprofit organizations; organizational structures and functions; resource and volunteer development; major management issues. A-F only Pre: graduate standing or consent.

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

**PUBA 661 Collaboration Between Sectors (3)** Examines theories and practices of multi-sector collaboration (public, private, nonprofit). The use of collaboration as an alternative way of solving public problems. (Cross-listed as PLAN 661)

**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 663 Law, Economics, and Public Administration (3)** Course uses economic thinking to explore U.S. law and the legal system with special application to public institutions. Topics include: underlying rationale of law; elements of property, contract, and tort law; evolution of administrative law, and economic efficiency of the common law system. Course explores economic forces that help shape the law, the effects of legal rules on economic behavior, and the implied role of public institutions. A-F only. Pre: graduate standing or consent. Fall only.

**PUBA 667 Special Topics (3)** Topics of current interest in the field of public service and public administration, taught by regular and visiting faculty. Repeatable for different topics up to 6 credit hours. A-F only. Pre: 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: 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: 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: 709.

## 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 Schedule of Classes/UH Mānoa Registration Homepage 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 500 Master's Plan B/C Studies (1)** Enrollment for degree completion. Pre: master's Plan B or C candidate and consent.

**PH 602 Introduction to Health Services (2)** Overview of the historical, conceptual, ethical and political context for health care delivery. It explores current trends, practices and issues in the delivery of health care services. Repeatable one time.

**PH 623 Social Science and Public Health (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. Pre: 663 and FSHN 487 or equivalent. (Cross-listed as FSHN 631)

**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. Pre: FSHN 185 or consent. (Cross-listed as FSHN 633)

**PH 636 Policies, Programs, and Services on Aging (3)** Course explores policies, programs, and services for older adults. Students learn about the aging network, assess older adults' needs, link older adults to appropriate services in the community, and track legislative bills that address older adults' quality of life. Pre: consent. (Cross-listed as SW 636)

**PH 637 Death and Dying (3)** Lecture-discussion course on the physical, social, cultural, psychological, and spiritual dimensions

of dying, death, and bereavement. Pre: consent. (Cross-listed as SW 637)

**PH 639 Social and Cultural Aspects of Aging (3)** Course provides an overview of aging from the biopsych and social-economic perspectives. Explores common theories of aging. Emphasis on bridging the gap between realm of concepts and theories, and the world of practice. Pre: consent. (Cross-listed as SW 639)

**PH 640 Health and Aging (3)** Biological and physiological changes associated with aging. Social and psychological factors associated with health maintenance. Major threats to health, changing patterns of morbidity and mortality of the aged. Pre: graduate standing or consent. (Cross-listed as SW 696)

**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 Analytic Approaches to MCH (3)** Application of analytic methods to the identification of health problems in children and women of reproductive age. Evidence-based approach in MCH. Repeatable one time.

**PH 649 Needs Assessment and Program Planning (3)** Knowledge and skills acquisition in conducting needs assessment and program planning in public health practice. Pre: consent.

**PH 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 equivalent course in calculus; or consent.

**PH 656 Biostatistics II (3)** Poisson distribution, Fisher's exact test, contrasts in ANOVA, two way ANOVA, multiple linear regression and analysis of covariance, path analysis, logistic regression, method of maximum likelihood, likelihood ratio tests. 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.

**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 660 Current Topics in Social and Behavioral Health Sciences (1)** Critique of published articles in the social and behavioral sciences as they relate to public health. Emphasis on exchange of ideas, alternative approaches; stresses the use of the scientific method to

understand human behavior. Repeatable two times. A-F only.

**PH 661 Epidemiological Study Design Critique (2)** Critique of study design using published public health literature. Emphasis on exchange of ideas, alternative approaches; stresses epidemiology as science of public health. Repeatable. A-F only.

**PH 663 Principles of Epidemiology I (3)** Research methods and evaluation of research in epidemiology. Pre: 655 (or concurrent) or consent.

**PH 664 Principles of Epidemiology II (3)** Study design, epidemiologic methods, and grant proposal writing. Pre: 655.

**PH 665 Infectious Disease Micro I (3)** Pathogenesis, epidemiology, immunobiology of infectious diseases caused by bacterial and fungal pathogens; principles of host-pathogen interactions; public health aspects of infectious diseases. Repeatable one time. A-F only. 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 671 Community and Public Health Practice (2)** Community organization and development applicable to the delivery of health services. Understanding community dynamics, mobilizing community groups for effective health care practice and delivery. Pre: 647 or 737; or consent. (Cross-listed as SW 674)

**PH 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: PEPS 363 or consent. (Cross-listed as PEPS 661)

**PH 696 Continuing Education in Public Health (1)** Seminar course designed to provide practical, community-focused, continuing



education for the practicing public health professional. The application of public health principles to address practical public health problems is stressed. Weekly discussions and reports will cover a variety of relevant public health topics. Repeatable. A-F only.

**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 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: consent. (Previous course in human development recommended)

**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 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 Methods 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 Chronic Disease Epidemiology (2)** This course will cover selected topics in chronic diseases with critical analysis of the current epidemiologic literature. Methodologic issues, contemporary findings and recommendations for future research will be discussed. PH majors only. A-F only. Pre: 663 or consent.

**PH 750 Health Behavior Change (3)** The course will provide an understanding of the relationship between health behaviors and outcomes including psychological, physiological, and quality of life aspects. It will also focus on the major theories of behavior and behavior change. Emphasis will be placed on understanding concepts, principles, explanations, and how these are translated into practical interventions for adoption and maintaining behavior change. Repeatable one time. A-F only. Pre: consent.

**PH 751 Social Epidemiology (3)** This course will examine the epidemiologic study of the social distribution and social determinants of states of health, including the identification of social-environmental exposures and their relation to physical and mental health outcomes. Repeatable one time. A-F only. Pre: consent.

**PH 753 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: 655 or consent.

**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: 655 or consent.

**PH 755 Seminar in Tropical Medicine and Public Health (1)** Weekly discussion and reports on current advances in tropical medicine and public health. Repeatable. (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 Program Evaluation (3)** Presented are principles of and frameworks for program evaluation. Students develop logic models and evaluation plans for a community program, and collect and analyze evaluation data. A-F only. Pre: graduate standing or consent. Spring only. (Cross-listed as SW 765)

**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 Integrative Seminar (V)** Integrative seminar in (G) Gerontology or (M) maternal and child health. A-F only. Pre: consent. ((G) Cross-listed as IS 611)

**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; (S) social and behavioral health sciences; (T) public health science. A-F only for (S). 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; (G) gerontology; (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.

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## Real Estate (RE)

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*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.

**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.

**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.

**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.

## 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, Hinduism, Islam, Judaism, Shinto, Taoism and indigenous traditions of Hawai'i and/or Oceania. FG

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

**REL 200 Understanding the Old Testament (3)** Developing beliefs and practices of Hebrew religion as set forth in the Old Testament. Meaning of its faith for the modern world. DH

**REL 201 Understanding the New Testament (3)** Origin and development of early Christian message as set forth in the New Testament; special attention to Jesus and Paul. DH

**REL 202 Understanding Indian Religions (3)** Historical survey of the teachings and practices of major religious traditions of India. DH

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

**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. DH

**REL 205 Understanding Hawaiian Religion (3)** Major teachings and practices from ancient times to present, their cultural influence; analysis of religious texts; relation to other traditions of Oceania and to Christianity. DH

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

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

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

**REL 300 The Study of Religion (3)** Definitions and functions of religion; methodologies by which it is studied; relationship to other areas of human culture. Pre: 150 or consent. DH

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

**REL 308 Zen (Ch'an) Buddhist Masters (3)** Study of lives, teachings, practices of Zen masters in China, Japan, Korea, and the West. Pre: one of 150, 203, 204, 207; or consent. DH

**REL 333 Cults and New Religions (3)** Study of cults and new religious movements in America, the Pacific, and East Asia; examining types, causes, and functions of these movements. Pre: 150 or consent. DH

**REL 348 Religion, Politics, and Society (3)** Exploration of the diverse approaches and perspectives that American religious groups embrace with respect to some of the more controversial and diverse elements of contemporary American life. Pre: 150, 151, or consent. DH

**REL 351 Christian Ethics in Modern Life (3)** The meaning of Christian faith for the moral life with reference to contemporary moral issues. Pre: 150 or 151, or consent. DH

**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. DH

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

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

**REL 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. DH

**REL 390 Hawaiian Gods: Pele, Kamapua'a (3)** The traditions and practices related to two major indigenous gods will be studied by the interpretation and analysis of primary texts. Pre: 205 or consent. DH

**REL 394 On Death and Dying (3)** Aspects of death and dying; relation to our culture and society, to understanding of each other and of ourselves. Pre: 150 or 151 or consent. DH

**REL 398 Religion and Art (3)** The uses of art in religion are studied with historical examples. Pre: REL 150 or consent.

**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 or 210 or consent. DH

**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) DH

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

**REL 444 Spiritual Ecology (3)** Lectures and seminars provide a cross-cultural survey of the relationships between religions, environment and environmentalism. Pre: ANTH 200 or consent. (Cross-listed as ANTH 444) (Alt. years)

**REL 445 Sacred Places (3)** Lectures and seminars provide a cross-cultural survey of sites which societies recognize as sacred and their cultural, ecological and conservation aspects. Pre: ANTH 200 or consent. (Cross-listed as ANTH 445) (Alt. years)

**REL 452 Sociology of Religion (3)** Seminar on research in sociological aspects of religious sectarianism, historical and current; special reference to Hawai'i. Pre: SOC 300 or consent. (Cross-listed as SOC 455) DS

**REL 475 Seminar on Buddhism (3)** Selected historical, thematic, and textual research topics in Buddhism; topics and geographical focus to be announced each semester. Pre: one of 150, 204, 207; or consent. DH

**REL 476 Taoism in China (3)** Seminar on religious Taoism, its historical development and its role in the present-day context. Pre: 203 or consent. DH

**REL 480 Field Methods in Religion (3)** Introduction to theoretical and methodological approaches to doing fieldwork in the study of religion. Application of these in studying Hawai'i's diverse religious environment. Pre: 300 or consent.

**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. DH

**REL 492 Polynesian Religions (3)** Introduction to field, comparison of several traditions; beliefs and practices from analysis of texts. Historical interactions with Christianity. Pre: 150, 205, courses in Pacific Islands, or consent. DH

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

**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 (V)** Practicum in methods of research, argument, and discourse in scholarly writing

about selected topics in religious studies. Repeatable up to four credits. A-F only. Pre: 600 and restricted to graduate students in Religion only; or consent.

**REL 630 Practicum in Field Research in Religion (3)** Independent field study of an Asian or Polynesian religion at an appropriate academic or religious institution abroad or in 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 Western Religions (3)** Historical, theoretical and methodological issues in the study of Western religious traditions. Repeatable two times. A-F only. Pre: 600 or consent.

**REL 661 (Alpha) Seminar on East Asian Religions (3)** Selected historical, thematic, and textual research topics in East Asian religions and traditions: (B) Chinese religions (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: 650); (C) teaching religion practicum (not repeatable; pre: 600, 650, and 680B).

**REL 695 Topics in Religious Studies (3)** Topics in the study of religion with special emphasis on theoretic approaches and concerns. Specific topics to be preannounced. Repeatable one time. Pre: 600 or consent. (Alt. years)

**REL 699 Directed Reading and Research (V)**

**REL 700 Thesis Research (V)** Pre: consent of thesis chair.

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## Reproductive Biology (REPR)

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*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).

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## Russian (RUS)

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*College of Languages, Linguistics and Literature*

*All courses are conducted in Russian except 107 and 108.*

**RUS 101 Elementary Russian (3)** Conversation, reading, writing, grammar. **HSL**

**RUS 102 Elementary Russian (3)** Continuation of 101. Pre: 101 or consent. **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 (3)** Reading, conversation, grammar, composition. Pre: 102 or consent. **HSL**

**RUS 202 Intermediate Russian (4)** Continuation of 201. Pre: 201 or consent. **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. **DL**

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

**RUS 360 Intensive Third-Level Russian Abroad (V)** Intensive course of formal instruction on the third-year level in Russian language and culture in Russia. Pre: 202 or 260.

**RUS 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. **DL**

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

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

**RUS 451 Topics in 19th- and 20th-Century Russian Literature (3)** Focus upon the selected writings of one major Russian writer of the 19th century (e.g., Pushkin, Gogol, Lermontov, Dostoevsky, or Tolstoy) or 20th century (e.g., Bely, Blok, Bulgakov, Chekhov, Pasternak, Sholokhov, or Solzhenitsyn). Repeatable. Pre: 312, LLEA 351, or consent. **DL**

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

**RUS 460 Intensive Fourth-Level Russian Abroad (V)** Intensive advanced courses of formal instruction on the fourth-year level in Russian language and culture in Russia. Pre: 360 or equivalent.

**RUS 495 Seminar (3)** Literary or linguistic topics, movements, genres, or their representatives. Repeatable. 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.

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## Samoan (SAM)

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*College of Languages, Linguistics and Literature*

**SAM 101 Elementary Samoan (4)** Listening, speaking, reading, writing skills. Structural points introduced inductively. History and culture. Meets four hours weekly; daily lab work. **HSL**

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

**SAM 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 four hours weekly, three of four 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. **DL**

**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. **DL**

**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. **DL**

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

**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. **DL**

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## Sanskrit (SNSK)

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*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.

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## Second Language Studies (SLS)

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*College of Languages, Linguistics and Literature*

*Courses below 380 are not applicable toward the MA in English as a second language.*

**SLS 302 Second Language Learning (3)** Theoretical foundations for the learning and teaching of second/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. **DS**

**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. **DS**

**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. **DH**

**SLS 480 (Alpha) Topics in Second Language Studies (3)** Variable topics in special areas of second language studies: (E) second language learning (Pre: 302 or consent); (N) second language analysis (Pre: 302 or consent); (P) second language pedagogy (Pre: 303 or consent); (R) second language research (Pre: 302 or consent); (U) second language use (Pre: 302 or consent). Not applicable toward graduate degrees offered within SLS except by departmental consent. Repeatable one time if different alpha.

**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 403.

**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, or consent.

**SLS 675 Second Language Interpretative Qualitative Research (3)** Philosophical and theoretical aspects of second language interpreta-

tive 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. Pre: 650 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; graduate 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.

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## 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. **DS**

**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. **DS**

**SOCS 496 Social Studies for Teachers (3)** Integrates social sciences and history into a coherent framework for teaching middle and secondary school social studies courses on Hawai'i, the U.S., and the world. Repeatable one time. Pre: HIST 151 and 152; or consent. **DS**

**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.

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## 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. Pre: 325. **DS**

**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. **DS**

**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. **DS**

**SW 380 Topics in Social Welfare (V)** An examination of current trends in the field of social welfare. **DS**

**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. **DS**

**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. **DS**

**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 636 Policies, Programs and Services on Aging (3)** Course explores policies, programs, and services for older adults. Students learn about the aging network, assess older adults' needs, link older adults to appropriate services in the community, and track legislative bills that address older adults' quality of life. Pre: graduate standing or consent. (Cross-listed as PH 636)

**SW 637 Death and Dying (3)** Lecture-discussion course on the physical, social,

cultural, psychological and spiritual dimensions of dying, death and bereavement. Pre: graduate standing or consent.

**SW 639 Social and Cultural Aspects of Aging (3)** An overview of aging from the biopsychosocial, socio-economic and cultural perspectives. Explores common theories of aging. Emphasis on bridging the gap between the realm of concepts and theories, and the world of practice in gerontology. Pre: graduate standing or consent. (Cross-listed as PH 639)

**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. (Cross-listed as EDEP 601 and PSY 610)

**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: one of 640 or 651, PSY 610, EDEP 601, or EDEP 429. (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: one of 651, EDEP 601 or PSY 610. (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: one of 651, EDEP 601, or PSY 610, 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: one of 651, EDEP 601, or PSY 610, 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, PSY 412, EDEP 416, EDEP 601, or SW 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.

**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 Community and Public Health Practice (2)** Community organization and development applicable to the delivery of health services. Understanding community dynamics, mobilizing community groups for effective health care practice and delivery. Pre: PH 647 or PH 737 or graduate standing; or 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 696 Health and Aging (3)** Biological and physiological changes associated with aging. Social and psychological factors associated with health maintenance. Major threats to health, changing patterns of morbidity and mortality of the aged. Pre: graduate standing. (Cross-listed as PH 640)

**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 752 Qualitative Research: Philosophical, Methodological and Analytic Approaches (3)** Theories and methods of qualitative research; problem formulation, informant selection, study design, data collection and analysis utilizing qualitative approaches. Repeatable 3 times. A-F only. Pre: 640 or 651 or equivalent; departmental approval.

**SW 755 Specialization Integration Seminar (3)** Culminating experience in social welfare doctoral specialization; integration of PhD core and specialization course work. Pre: classified student in PhD in social welfare program or consent.

**SW 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.

**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.

**SW 765 Program Evaluation (3)** Presented are principles of and frameworks for program evaluation. Students develop logic models and evaluation plans for a community program, and

collect and analyze evaluation data. A-F only. Pre: graduate standing or consent. Spring only. (Cross-listed as PH 765)

**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 one time.

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## 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. **DS**

**SOC 214 Introduction to Race and Ethnic Relations (3)** Race and ethnic relations in world perspective; social, economic, and political problems associated with perception, existence, and accommodation of these groups within the wider society. **DS**

**SOC 218 Introduction to Social Problems (3)** Theoretical and substantive survey of the nature and causes of social problems; selected types: poverty, inequality, deviance, etc. **DS**

**SOC 231 Introduction to Juvenile Delinquency (3)** Forms of juvenile deviance; conditions and processes that result in alienation



and deviance of youth. Juvenile corrections as institutionalized societal responses. **DS**

**SOC 251 Introduction to Sociology of the Family (3)** Family patterns, mate selection, parent-child interaction, socialization of roles, legal sanctions, trends in organization, functions. **DS**

**SOC 300 Principles of Sociological Inquiry (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: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**SOC 301 Survey of Urban Sociology (3)** The city in historical and comparative perspectives. Interplay of demographic, economic, and cultural factors in urban growth. Urban process, development, and interdependence. Pre: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**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: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**SOC 313 Survey of Sociology of Work (3)** Work from viewpoint of individuals; meaningfulness versus productivity; how work, economics, and the industrial system affect individual goals. Pre: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**SOC 316 Survey of Social Change (3)** Causes, processes, and effects of social change, using single- and multi-cause models in simple and complex industrialized societies. Pre: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**SOC 318 Women and Social Policy (3)** Social and economic policies affecting women in families, education, social services, government, health care, the economy; public policy implementation and development; policy impact on women. Pre: 100 or any 200-level SOC course or junior standing; or consent. (Cross-listed as WS 318) **DS**

**SOC 321 Survey of Sociological Theory (3)** Major theorists and their influences, from Comte to today. Pre: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**SOC 332 Survey of Sociology Law (3)** Law as a political enforcement of the social order; how it is organized and operates; determinants of effectiveness; ways it adapts to and facilitates changing social conditions. Pre: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**SOC 333 Survey of Criminology (3)** Concepts used in crime, law enforcement, criminal justice, and corrections. Types of criminal behavior; costs and effects of control. Pre: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**SOC 335 Survey of Drugs and Society (3)** Use of mood- and mind-altering drugs in America among adults, youth, and cross-culturally. Illicit drug culture, psychedelics, and perception; social norms and deviant behavior.

Pre: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**SOC 336 Deviant Behavior and Social Control (3)** Interrelations of deviance, criminology, juvenile delinquency, corrections, social control, sociology of law. Key concepts, theories. Pre: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**SOC 341 Survey of Social Psychology (3)** Major principles; social attitudes, theories of conformity and change, person perception and attribution theory, social role, role conflict and role behavior, group structure, and behavior. Pre: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**SOC 352 Survey of Sociology of Education (3)** Formal education as one aspect of socialization. Emphasis on American system; business, military, and religious institutions. Pre: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**SOC 353 Survey of Sociology of Aging (3)** Aging as a social phenomenon, including social impacts of growing elderly population and emerging social patterns among the elderly. Important theoretical perspectives and cross-national research. Pre: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**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. Pre: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**SOC 356 Sociology of China (3)** Social institutions, family, community, education, stratification, government, economy; impact of modernization and revolution on their contemporary transformation. A-F only. Pre: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**SOC 357 Sociology of Japan (3)** Persistence and change in economy, policy, religion, education, family, and other institutions of modern Japan. Pre: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**SOC 358 Sociology of Korea (3)** Social institutions, family, education, religion, cultural values, social classes, economic development, social movements, gender relations, North-South relations, and unification issues. A-F only. Pre: 100 or any 200-level SOC course or junior standing; or consent. **DS**

**SOC 362 Sociology of Gender (3)** Effect of sex and gender roles (both traditional and nontraditional) on attitudes and behavior within the family and educational, economic, and governmental systems. Pre: 100 or any 200-level SOC course or junior standing; or consent. (Cross-listed as WS 362) **DS**

**SOC 374 Law, Politics and Society (3)** Relationships between law, politics, and society will be explored. Emphasis is placed on several dimensions of legality: legal "indeterminacy" and some of the many things that law does for us and to us; law's response to violence; the connections between law and social change; access to the law and its sociological dimensions; how/why law fails and what happens when it does. A-F only. Pre: either a 100- or 200-level SOC or POLS course, or junior standing. (Cross-listed as POLS 374) **DS**

**SOC 401 Analysis in Urban Sociology (3)** Urbanization in developed and developing countries, the rural-urban continuum, structure and process of metropolitan regions, theories of urban location and growth, housing and urban renewal. **DS**

**SOC 411 Analysis in Social Stratification (3)** Approaches to research in social inequality: community studies; historical and cross-cultural analyses of poverty, working class, middle class, power structure, social mobility, etc. **DS**

**SOC 412 Analysis in Population and Society (3)** Global and U.S. patterns of population growth; composition and distribution, elementary demographic techniques; development issues and population policy. (Cross-listed as PPST 412) **DS**

**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. **DS**

**SOC 415 Technology and Society (3)** Nature of technology, social forces that affect its adoption; impact on society; innovation. **DS**

**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. **DS**

**SOC 418 Women and Work (3)** Gender and racial division of labor nationally and internationally; racial and gender differentials in wages, training, working conditions and unemployment; historical trends and future directions. Pre: One 300-level SOC or WS or ES course. (Cross-listed as ES 418 and WS 418) **DS**

**SOC 419 Analysis in Formal Organizations (3)** Schools, hospitals, industries, prisons, and government agencies analyzed in terms of self-actualization, alienation, human relations, communication, leadership, organizational conflicts. **DS**

**SOC 431 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. Pre: junior standing and one of the following: 231, 300, 332, 333, 335 or 336; or consent. **DS**

**SOC 432 Analysis in Corrections (3)** Behavioral assumptions of various correctional practices and modes of organization; current "in-community" approaches. Pre: junior standing and one of the following: 231, 300, 332, 333, 335 or 336; or consent. **DS**

**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. Pre: junior standing and one of the following: 231, 300, 332, 333, 335 or 336; or consent. **DS**

**SOC 435 Women and Crime (3)** Women's relations with the criminal justice system; types of women's offenses; responses to women's

crime; women as victims; women as workers in the criminal justice system. Pre: one 100- or 200-level SOC or WS course. (Cross-listed as WS 435) **DS**

**SOC 441 Social Structure and the Individual (3)** Effects of social institutions on individuals. Role of socioeconomic status, cultural background, family structure, peer group, schools, and occupational roles in socialization. **DS**

**SOC 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) **DS**

**SOC 451 Analysis in Marriage and the Family (3)** Theory and methods of studying social interaction in marriage and the family; examination of marriage, mating, love, and choice. Empirical research emphasizing Hawai'i. **DS**

**SOC 452 Marriage and Family: A Feminist Perspective (3)** Sex-role socialization, 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) **DS**

**SOC 453 Analysis in Sociology of Aging (3)** Social and research issues significant to delivery of long-term care services to the elderly; cost, quality, availability of services, evaluation of programs, role of family, formal and informal care services. Pre: 353. **DS**

**SOC 454 Analysis in Medical Sociology (3)** Application of sociological theories and concepts to medical social situations and behavior; problems of obtaining data for research. **DS**

**SOC 455 Sociology of Religion (3)** Seminar in research on sociological aspects of religious sectarianism; attention to Hawai'i. Pre: 300 or consent. (Cross-listed as REL 452) **DS**

**SOC 456 Racism and Ethnicity in Hawai'i (3)** The historical and contemporary social processes involved in inter-ethnic relations in Hawai'i. Pre: 300 or one Social Science core course; or consent. (Cross-listed as ES 456) **DS**

**SOC 457 Sociology of the Arts (3)** Relation of art to society; role of artist, audience, critic, patron, museum; Western and other societies; attitudes toward new styles. **DS**

**SOC 459 Popular Culture (3)** Popular culture as manifested in film, sports, TV, comics, magazines, etc.; relation to sociological theories and studies. **DS**

**SOC 475 Analysis in Survey Research (3)** Survey research design and analysis, including theory selection instrument construction, sampling techniques, data collection, computerized data analysis, and writing up research reports of the findings. Pre: junior standing and 300, graduate standing or consent. **DS**

**SOC 476 Social Statistics (3)** Common statistical procedures emphasizing univariate and bivariate description; some attention to multivariate techniques and statistical inference, within context of research procedures. Pre: junior standing and 300, graduate standing or consent. **DS**

**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. Pre: junior standing and 300, or graduate standing or consent. **DS**

**SOC 491 Discussion Group Leader—Freshman Seminar (6)** Students lead a freshman seminar section of sociology and meet weekly with instructor for substantive background. Pre: senior standing and consent. **DS**

**SOC 495 (Alpha) Topics in Sociology (3)** Faculty projects normally limited to 10 students. Topics pre-announced each semester. Pre: 300 or consent. **DS**

**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. **DS**

**SOC 499 Directed Reading or Research (V)**

*All graduate courses in the department require classified graduate standing in sociology or consent. Additional prerequisites are specified below.*

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

**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 one time 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 and Health Services (3)** Covers the major paradigms in medical sociology for analyzing social epidemiology, the political economy of health systems, health service organizations, health and wellness behaviors illness perception and help-seeking, doctor-patient interaction, and adaptations to illness. Pre: graduate standing or consent.

**SOC 616 Seminar in Stress and Health (3)** Analysis of current theory and empirical research on relationship of stress and health; sociological, psychological, and community psychiatry models and current issues.

**SOC 631 Seminar in Criminology (3)** Major current theories, history of their development, elaborations of typologies, implications for treatment modalities.

**SOC 632 Criminal Justice System (3)** Examination of the criminal justice system; the exercise of discretion and limits placed upon it. Pre: consent.

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

**SOC 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 one time only. (Cross-listed as PPST 705)

**SOC 706 Cultural Analysis (3)** Contemporary issues in cultural sociology, covering key theoretical perspectives, analytic methods and substantive areas for empirical research. A-F only.

**SOC 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 one time only.

**SOC 715 Seminar in Current Issues in Sociology (3)** Substantive areas that are of current interest and the focus of research, but not addressed in other courses. Repeatable one time.

**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 one time 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 730 Conflict Analysis/Resolution (3)** This is a seminar on the analysis of conflict resolution. Faculty from law, planning, political science and guest practitioners will present multidisciplinary analysis and intervention strategies on contemporary conflicts. A-F only. Pre: graduate standing or consent.

**SOC 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 Development in Asia (3)** Theories and available research methods examined for applicability to developing areas; specific examples from Asia. A-F only. Repeatable one time. Pre: graduate standing or consent.

**SOC 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 one time only. Pre: classified graduate standing or consent.

**SOC 800 Dissertation Research (V)** Research for doctoral dissertation.

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## Soil Science (SOIL)

*College of Tropical Agriculture and Human Resources, Natural Resources and Environmental Management (NREM) or Tropical Plant and Soil Sciences (TPSS)*

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## SP

*See Speech*

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## SPA

*See Speech Pathology and Audiology*

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## Spanish (SPAN)

*College of Languages, Linguistics and Literature*

*All courses are conducted in Spanish.*

**SPAN 101 Elementary Spanish (3)** Conversation, grammar, reading. Pre: consent. **HSL**

**SPAN 102 Elementary Spanish (3)** Conversation, grammar, reading. Pre: consent. **HSL**

**SPAN 103 Intensive Elementary Spanish (6)** Course content of SPAN 101 and 102 covered in one semester. Three two-hour sessions per week plus laboratory practice. **HSL**

**SPAN 105 Accelerated Elementary Spanish (3)** Course content of SPAN 101 and 102

covered in one semester. Three one-hour sessions per week plus laboratory practice. For students with two or three years of prior study of Spanish. Satisfactory placement score required.

**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 202 Intermediate Spanish (3)** Continuation of 201. Pre: 201. **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 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 300 Reading in Spanish (3)** Development of language skills through reading of literary and cultural texts. Pre: 202 or placement exam or consent.

**SPAN 301 Grammar and Composition (3)** Selected grammar review and intensive practice in effective use of the written language. Pre: 202 or consent.

**SPAN 302 Grammar and Composition (3)** Selected grammar review and intensive practice in effective use of the written language. Pre: 301 or consent.

**SPAN 303 Conversation I (3)** Intensive practice in spoken Spanish. Pre: 301 (or concurrent), or consent.

**SPAN 304 Conversation II (3)** Continuation of 303. Pre: 303 or consent.

**SPAN 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: 301 and/or 302, concurrently; or consent.

**SPAN 306 Commercial Spanish (3)** Language as used in business communication; commercial terminology. Pre: 301 or consent.

**SPAN 330 Phonetics and Pronunciation Practice (3)** Analysis of the Spanish phonological system, in contrast with English. Practice in pronunciation; laboratory drill. Pre: 202.

**SPAN 351 Spanish Cultural Perspectives (3)** Survey of the history and cultures of Spain. Pre: 301 or consent. **DH**

**SPAN 352 (Alpha) Latin American Cultural Perspectives (3)** Survey of the history and cultures of Latin America. (B) Pre-Columbian and Colonial periods; (C) Independence, nationhood and current issues. Repeatable for other topics, but not for the same topic. Pre: 301 or consent. **DH**

**SPAN 358 Third-Level Spanish Abroad (3)** Intensive course of full-time formal instruction on the third-year level in Spanish language and culture in a Spanish-speaking country. Pre: 202 or 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: origins to 18th century. Pre: 301 or consent. **DL**

**SPAN 362 Masterworks of Spanish Literature (3)** Reading and discussion of representative works of Spanish literature: 18th century to present. Pre: 301 or consent. **DL**

**SPAN 371 Spanish-American Literature (3)** Reading and discussion of representative works of Spanish-American literature: Colonial period through Romanticism. Pre: 301 or consent. **DL**

**SPAN 372 Spanish-American Literature (3)** Reading and discussion of representative works of Spanish-American literature: Modernism to the present. Pre: 301 or consent. **DL**

**SPAN 399 Directed Reading (V)** Independent study of approved reading with faculty supervision. Repeatable two times. A-F only. Pre: 301 (or concurrent), consent and departmental approval.

**SPAN 400 Spanish in the Media (3)** Develops linguistic proficiency in reading today's media (advertisements, graffiti, government communiqués, newspapers, and other media); cultural and social factors are emphasized. Pre: 301 or 303 or consent.

**SPAN 403 Advanced Composition and Conversation (3)** Advanced practice; emphasis on building active vocabulary. Pre: 302 or consent.

**SPAN 405 Spanish-English Translation (3)** Factors in the art of translation. Practice in translating material from Spanish to English and the reverse. Pre: 305 or consent.

**SPAN 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: 302, 330, and one of 361, 362, 371, or 372; or consent.

**SPAN 458 Fourth-Level Spanish Abroad (3)** Intensive course of full-time formal instruction on the fourth-year level in Spanish linguistics, civilization, culture, and literature in a Spanish-speaking country. Pre: any two of 301, 302, 303, 358, 359; or 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 or 362, or consent. **DL**

**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 or consent. **DL**

**SPAN 478 Hispanic Women's Literature (3)** The feminine experience in Western literary and cultural traditions as seen by women in Spain and Latin America. Pre: one of 361, 362, 371 or 372; or consent. **DL**

**SPAN 480 Hispanic Theater (3)** Study of representative authors and plays from Spain and Latin America. Repeatable one time. Pre: one of 361, 362, 371, or 372; or consent. **DL**

**SPAN 495 (Alpha) Topics in Hispanic Scholarship (3)** Hispanic authors, periods, or themes. (B) literature and society, **DL**; (C) Hispanic poetry, **DL**; (D) literature and film, **DH**. Repeatable for other topics, but not for the same topic. Pre: one of 361, 362, 371, or 372; or consent.

**SPAN 496 Studies in Latin American and Iberian Film (3)** Intensive study of selected topics in Latin American and/or Iberian cinemas; e.g. national or regional cinemas, periods, movements or issues, major filmmakers, film theory and criticism. Repeatable two times. Pre: 361, 362, 371 or 372 or consent. **DH**

**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 one time 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 from the 16th and 17th centuries. (B) theater; (C) prose; (D) poetry; (E) Cervantes. Pre: graduate standing.

**SPAN 669 19th-Century Spanish Realism (3)** Nineteenth-century Spanish realism in the novel. Authors include Galdós, Clarín, Alarcón, Pardo Bazán, Blasco-Ibáñez, Valera. Pre: graduate standing or consent.

**SPAN 670 (Alpha) 20th-Century Spanish Literature (3)** Representative works from 20th-century literature. Genres: poetry, theater, essay, novel. (B) generation of 1898; (C) pre-Civil War; (D) post-Civil War. Pre: graduate standing or consent.

**SPAN 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 Díaz del Castillo. Pre: graduate standing or consent.

**SPAN 682 Spanish-American Poetry (3)** Study of representative poets from all periods: Martí, Darío, Mistral, Guillén, Neruda, Paz, etc. Pre: graduate standing or consent.

**SPAN 683 Spanish-American Short Story and Essay (3)** Study of representative writers from various periods: Sor Juana, Palma, 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.

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## Special Education (SPED)

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### *College of Education*

*SPED 404, 461 or 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 392 Student Teaching in Special Education Modified (V)** Modified student teaching for students from another institution completing student teaching at UH or for students who have prior extensive teaching experience. A-F only. Pre: requirements for registration listed under "Student Teaching," approval of review committee and consent.

**SPED 400 Field Training in Special Education (V)** Students spend from six to nine hours per week in settings appropriate to concurrently enrolled courses; supervision provided by participating teacher and college supervisor. Repeatable two or three times. A-F only. Pre: 404 (or concurrent) or consent. 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 ITE 444)
- SPED 445 Educating Exceptional Students in Regular Classrooms—Secondary (3)** Teaching secondary students with disabilities and those who are gifted/talented. Meeting academic/social needs, classroom management, motivation, peer interaction. Collaboration between special and regular educators. (Cross-listed as ITE 445)
- SPED 446 Seminar in Special Education (3)** Study of issues, trends, and research into special education programming and service delivery. Repeatable. 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 EDCS 451)
- SPED 452 Preschool Children—Special Needs (3)** Examination of application of current research and practices for serving preschool children with special needs. Pre: FAMR 230 (or concurrent); or consent.
- SPED 461 Assessment, Planning, and Instruction for Students with Mild/Moderate Disabilities (3)** Techniques in the assessment, planning, and instructional process appropriate for students with mild/moderate disabilities. Stress on program development to facilitate inclusion of students with disabilities into general education environment. Pre: 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 Baccalaureate 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 602 Special Education Law and Compliance (3)** Examination of the federal, state, and local government roles in special education with special emphasis on case and regulatory law. Focus on understanding special education law necessary in providing services to students with disabilities in a variety of placements. Appropriate for special/general education teachers, administrators, or related service providers. Pre: consent.

**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 606 Language Development for Deaf Children (3)**

General theories of first and second language development applied to development of ASL and English in deaf children. Relationship of theory to educational practice. This course will be taught in ASL and English. Repeatable one time. A-F only. Pre: admission into Deaf Education program or consent. (Alt. years)

**SPED 607 Audiology and Spoken English for Deaf Students (3)**

Developmental principles of audiology and speech (i.e., spoken English) will be used to examine assessment procedures and intervention strategies appropriate to deaf students in a variety of educational placements. Classroom applications will be presented. This course will be taught in ASL and English. Repeatable one time. A-F only. Pre: admission into Deaf Education program or consent. (Alt. years)

**SPED 608 Language Arts for Deaf Students (3)**

Basic concepts related to language, language development and recognition of language-related learning problems of deaf students; strategies for teaching reading and writing to deaf students. Repeatable one time. A-F only. Pre: 461 and 606, or consent. (Alt. years)

**SPED 609 Seminar in Bilingual Deaf Education (3)**

Study of issues, trends and methods in ASL/English bilingual education for deaf students. This course will be taught in ASL and English. Repeatable one time. A-F only. Pre: 606, 607 and 608; or consent. (Alt. years)

**SPED 610 Advanced Assessment and Curriculum Development—Deaf (3)**

Assessment methods and techniques used with deaf students that emphasize the bond between curriculum-based assessment and curriculum-based programming through planning and providing cyclical instruction across content areas based on ongoing diagnostic assessment. This course will be taught in ASL and English. Repeatable one time. A-F only. Pre: 609 or consent. (Alt. years)

**SPED 611 Advanced Methods and Strategies for Students with Mild/Moderate Disabilities (3)**

Techniques for providing effective instruction including: best instructional practice, lesson planning, teacher-directed and student-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 615 Family-Centered Approaches in Deaf Education (1)** This course will prepare teachers to deliver family-centered home-based services to families of deaf children using the SKI-HI model. This course will be taught in ASL and English. Repeatable one time. A-F only. Pre: 606, 607 and 608; or consent. (Alt. years)

**SPED 616 Collaboration—Working with Deaf Students in Inclusive Settings (1)** Collaboration skills for working with general education teachers, specialists, paraprofessionals, families and community members to support the success of deaf students in inclusive settings. This course will be taught in ASL and English. Repeatable one time. A-F only. Pre: 606, 607 and 608; or consent. (Alt. years)

**SPED 617 Transition Strategies for Deaf Students (1)** Collaborative model for facilitating the transition of deaf and hard-of-hearing students to develop appropriate transition plans and effective plans of study. Course will be taught in ASL and English. Repeatable one time. A-F only. Pre: 606, 607 and 608; or consent. (Alt. years)

**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), preschool 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 629 Clinical Practice Special Projects (V)** Development and implementation of a field-based research professional development project under the direction of the student's adviser; limited to students enrolled in the interdisciplinary program. Repeatable 2 times. A-F only. Pre: adviser's approval.

**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: 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 695 Plan B Master's Project (V)** Independent study for students working on a Plan B Master's project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. Pre: graduate standing in Special Education.

**SPED 699 Directed Reading/Research (V)** 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) Provides students with both the knowledge and experience necessary to develop the communication skills necessary to function effectively in today's society. Students will enhance their communication skills in one-on-one situations, public speaking, and small groups. The course is ideal for nonmajors as well as new majors. **DA**

**SP 170 Introduction to Nonverbal Communication (3)** Beginning course on the fundamental components of nonverbal communication. Aspects of body movements, facial expressions, eye behavior, physical appearance, voice, touch, space, smell, time, and environmental features will be examined in a lecture/discussion format. Extensive practice in skills.

**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 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. **DA**

**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. **DA**

**SP 280 Interviewing (3)** Principles and practice; training in informational, persuasive, employment, appraisal, and research interviewing. Pre: one of 151, 170, 181, 185, 251 or 301; or consent.

**SP 301 Introduction to Speech Communication Theories (3)** Introduction to the theoretical perspectives that are the foundations of the speech communication discipline. Pre: one of 151, 170, 181, 185, or 251; or consent.

**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, 170, 181, 185, 200, 251 or 301; or consent.

**SP 333 Storytelling (3)** Aesthetic communication through storytelling for entertainment and education. Oral tradition; analysis of story types; techniques of preparation and presentation; performance. Pre: one of 151, 170, 181, 185, 231, 251 or 301; or consent. **DA**

**SP 335 Story Theater (3)** Techniques and procedures for staging and performing narrative fiction. Pre: one of 151, 170, 181, 185, 231, 251 or 301; or consent. **DA**

**SP 351 Professional Presentations (3)** Extends application of public speaking skills to professional contexts: group sales, press conferences, and corporate annual reports. Emphasis on organization, preparation, and delivery using Microsoft Powerpoint. Pre: 251 or consent.

**SP 352 Group Decision-Making and Leadership (3)** Study of decision-making within the small group. Effects of organization, leadership, membership, and goals on achieving group purposes. Pre: one of 151, 170, 181, 185, 251 or 301; or consent.

**SP 353 Argumentation and Debate (3)** Adapting communication theory to forensic strategies for social action. Practice in formal argument. Pre: one of 151, 170, 181, 185, 251 or 301; or consent.

**SP 361 Leadership Skills (3)** Principles and practices of organizational speech and its relationship to networks, leadership, power, conflict, cultures, and other contemporary views of organizational work, change, and development. Pre: one of 151, 170, 181, 185, 251 or 301; or consent.

**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, 170, 181, 185, 251 or 301; or consent. **DS**

**SP 370 Verbal Communication (3)** Roles of language: perception and assumption in human relationships; relation of language symbols to emotion and attitudes. Pre: upper division standing or consent.

**SP 380 Family Communication (3)** Focuses on the role of interaction patterns (both constructive and destructive) in the evolution of family communications. The impact of family dynamics upon these interaction patterns is given equal attention. Pre: one of 151, 170, 181, 185, 251 or 301; or consent.

**SP 381 Interpersonal Relations (3)** Theory and research on the development, maintenance, and termination of interpersonal relationships. Pre: one of 151, 170, 181, 185, 251 or 301; or consent.

**SP 385 Culture and Communication (3)** Survey of major factors affecting interpersonal communication between members of different cultures. Emphasis upon interaction between U.S. and Asian-Pacific peoples. Pre: one of 151, 170, 181, 185, 251 or 301; or consent. **DS**

**SP 386 Special Topics in Culture and Communication (3)** Contemporary research

and theory on intercultural communication. Pre: one of 151, 170, 181, 185, 251 or 301; or consent. **DS**

**SP 390 Interrogation and Interviewing (3)** Survey of theory and research on the communicative demands of obtaining reliable information from others. Obstacles faced and strategies used by professionals in law enforcement, legal settings, journalism, counseling/therapy, and patient diagnosis. Pre: one of 151, 170, 181, 185, 251 or 301; or consent.

**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: 301 and 302.

**SP 454 Political Communication (3)** Survey of interpersonal and mass communication theories in the political context. Topics may include communication in public opinion processes, elections, debates, political campaigning and advertising. Pre: upper division standing or consent.

**SP 455 Conflict Management (3)** Examination of the theories, assumptions, practices, models, and techniques of managing interpersonal conflicts. Pre: one of 151, 170, 181, 185, 251, 301 or 381.

**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)** Understanding communication beyond the words themselves. Review of theory and research on gestures, facial expressions, touch, personal space, and physical appearance. Pre: 151, 170, 181, 185 or 251; or consent.

**SP 481 Relational Management (3)** Survey and critical discussion of current theory and research in relational management literature. Focus on conversation management, deception, jealousy, privacy, communication of emotions. Pre: 301 or 302 (or concurrent), and 381; or consent.

**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, 251 or 301 and PSY 100. (Cross-listed as PSY 477) **DS**

**SP 493 Teaching Speech (6)** For speech majors who lead, under supervision, a freshman seminar section of speech. Pre: senior standing and consent.

**SP 495 Health Communication (3)** 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: graduate standing 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 660 Business Communication (3)** Analysis of communication issues in business through discussion of verbal/nonverbal messages, interpersonal relationships, conflict, and persuasion. Focus on interviewing, group communication, and public speaking skills. Pre: graduate standing or consent.

**SP 664 Persuasion and Social Influence (3)** Theories of persuasion and resistance to persuasion; assessment of attitudes and measurement of change. Pre: 601 (or concurrent) or 602 (or concurrent) or consent.

**SP 670 Message Processing (3)** Theories of human message processing. Effects of verbal and nonverbal codes, channels, and message forms on encoding and decoding. Pre: 601, 602 (or concurrent), or consent.

**SP 681 Relational Communication (3)** Major models and theories of interpersonal speech communication; research on interpersonal relationships; interaction and functions of human discourse. Pre: 601 (or concurrent) and 602 (or concurrent), or consent.

**SP 699 Directed Research (V)**

**SP 700 Thesis Research (V)**

**SP 702 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 721 Approaches to Instructional Communication (3)** Speech communication theories and models in instructional environment; emphasis on development training in educational settings. Pre: 601 or 602 (or concurrent) or consent.

**SP 752 Group Decision-Making (3)** Theory, concepts, research, and application of small group interaction and decision-making. Pre: 601 or 602 (or concurrent) or consent.

**SP 764 Seminar in Persuasion and Influence (3)** Contemporary research in persuasion and influence. Repeatable. Pre: 664 (or concurrent) or consent.

**SP 770 Issues in Message Processing (3)** Contemporary research in verbal and nonverbal message processing. Repeatable one time. Pre: 601 or 602 (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: 664, 670 or 681; or consent.

**SP 795 Seminar in Health Communication Research (3)** Contemporary interpersonal and/or public communication issues in health communication research. Topics include speech communication functions such as information management, interpersonal influence, relational management, emotional management, social influence. Repeatable. Pre: 664, 670 or 681; or consent.

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## Speech Pathology and Audiology (SPA)

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*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.

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## Surgery (SURG)

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### *School of Medicine*

**SURG 531 Surgery Clerkship I, II (10)** A clinically based, introductory course in general surgery and selected subspecialties. Repeatable one time. CR/NC only. Pre: BIOM 555 and third-year standing.

**SURG 532 Surgery Longitudinal Clerkship (5)** A clinically based, year-long, introductory course in general surgery and selected subspecialties. Outpatient-conducted one day per week for six months in a community-based, ambulatory care facility. Inpatient-conducted for four weeks in an acute-care hospital facility. Repeatable one time. CR/NC only.

**SURG 541 Emergency Medical Care (6)** Clinical experiences in management of medical,

surgical, and psychiatric problems requiring urgent care. Pre: 531 and fourth-year standing.

**SURG 545 (Alpha) Unit VII Electives in Surgery (V)** Advanced clinical experience in: (B) urology; (C) ophthalmology; (D) otolaryngology; (E) plastic surgery; (F) neurosurgery; (G) 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) other surgical specialties; (Q) subinternship—cardiovascular surgery; (R) surgical research; (S) surgical anatomy. Repeatable one time. CR/NC only. Pre: 531 or 532 for all except (M) and consent for (R) and (S).

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## SW

See *Social Work*

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## 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 103 First Year Tahitian (3)** Basic core skills of listening, speaking and grammar of spoken Tahitian in a condensed format. Meets three 50-minute sessions weekly.

**TAHT 104 First Year Tahitian (3)** Basic core skills of listening, speaking and grammar of spoken Tahitian in a condensed format. Meets three 50-minute sessions weekly. Pre: 103 or consent.

**TAHT 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 203 Second Year Tahitian (3)** Intermediate core skills of listening, speaking and knowledge of grammar for spoken Tahitian in a condensed format. Meets three 50-minute sessions weekly. Pre: 104.

**TAHT 204 Second Year Tahitian (3)** Intermediate core skills of listening, speaking and knowledge of grammar for spoken Tahitian in a condensed format. Meets three 50-minute sessions weekly. Pre: 203 or consent.

**TAHT 301 Third-Level Tahitian (3)** Continuation of 202. Conversation, advanced reading, composition. Pre: 202 or 204 or equivalent.

**TAHT 302 Third-Level Tahitian (3)** Continuation of 301.

**TAHT 358 Third-Level Tahitian Abroad (3)** Full-time formal instruction at the University of French Polynesia in Tahiti. Third-year level in Tahitian language and culture. Pre: 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 University of French Polynesia in Tahiti. Fourth-year level in Tahitian language and culture. Pre: 302 and consent.

**TAHT 459 Fourth-Level Tahitian Abroad (3)** Continuation of 458. Pre: 401 or 458; and consent.

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## Teacher Education and Curriculum Studies (TECS)

See *Institute for Teacher Education (ITE) or Curriculum Studies (EDCS)*

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## Textiles and Clothing (TXCL)

See *Apparel Product Design and Merchandising*

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## Thai (THAI)

*College of Languages, Linguistics and Literature*

**THAI 101 Beginning Thai I (4)** Listening, speaking, reading, writing. Structural points introduced inductively. Meets one hour daily, Monday–Friday; four out of five hours devoted to directed drill and practice; daily lab work. **HSL**

**THAI 102 Beginning Thai II (4)** Continuation of 101. Pre: 101 or consent. **HSL**

**THAI 112 Intensive Elementary Thai (10)** **HSL**

**THAI 201 Intermediate Thai I (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 consent. **HSL**

**THAI 202 Intermediate Thai II (4)** Continuation of 201. Pre: 201 or consent. **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 415 Thai Language in the Media (3)** Development of reading and aural comprehension of authentic Thai language used in print and broadcast media through reading Thai newspapers, viewing and listening to Thai television and radio programs. Oral and written reports. Repeatable one time. Pre: 402 or 403 or equivalent.

**THAI 451 Structure of Thai (3)** Standard language and regional and social variants. Pre: LING 320 and one Southeast Asian language. **DH**

**THAI 452 Structure of Thai (3)** Continuation of 451. **DH**

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## Theater (THEA)

*College of Arts and Humanities*

**THEA 101 Introduction to World Drama and Theatre (3)** (2 Lec, 1 1-hr Lab) Performance traditions of Africa, Asia, Australia, Europe, North America, and the Pacific Islands from the 5th century B.C. to the present. Analysis of political, religious, and technological conditions of theatre. Includes practical theatre workshop. **DA**

**THEA 200 (Alpha) Beginning Theater Practicum (1)** Beginning workshop experience in the practical application of theater skills. Repeatable one time 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. **DA**

**THEA 201 Introduction to the Art of the Film (3)** Introduction to the aesthetics of silent and sound movies. Technical subjects analyzed only as they relate to theme and style. **DH**

**THEA 214 Development of the Sound Film (3)** Growth and changes in aesthetics of the sound film from 1929 to present; films by Renoir, Welles, Eisenstein, etc. Pre: 201. (Alt. years) **DH**

**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. **DA**

**THEA 221 Acting I: Introduction to Performance (3)** Concentration on voice, relaxation, body awareness, and freedom from self-consciousness through theater games, improvisations, monologues, and exercises. Emphasis on ensemble work. Repeatable one time with consent. **DA**

**THEA 222 Acting II: Basic Scene Study (3)** Basic character study and understanding of creation of roles through working on scenes from major modern and contemporary plays. Repeatable one time with consent. Pre: 221. **DA**

**THEA 240 Introduction to Theater Production (3)** (3 Lec, 1 3-hr Lab) Survey

class introducing basic tools, materials and skills of Technical Theatre: Production, Rigging, Lighting, Costume, Make-up and Painting. **DA**

**THEA 241 Film/TV Production Process (3)** Entry-level course details three phases of the production process for film and video projects: pre-production, production, and post-production. A-F only. Pre: consent. **DA**

**THEA 311 World Theater I: Myth to Drama (3)** Myth and ritual into drama, 1000 B.C.–1500 A.D. Development of Western and Asian secular drama from sacred and ritual beginnings. Required of all majors. Pre: 101 or consent. (Alt. years) **DL**

**THEA 312 World Theater II: Elite–Popular (3)** Court and marketplace, 1500–1700. Contrast between elitist and popular forms in Western and Asian theater. Required of all majors. Pre: 311 or consent. (Alt. years) **DL**

**THEA 318 Playwriting (3)** One-act plays; practice in writing in dramatic form. Pre: grade of B or better in composition or consent. **DA**

**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) **DA**

**THEA 321 Acting III: Monologue/Audition Techniques (3)** Focus on the individual student; preparation of material from all genres and styles with emphasis on line reading and responsiveness to direction. Repeatable one time with consent. Pre: 222 and consent. **DA**

**THEA 322 Acting IV: Method Acting (3)** Further exploration of character development through exercises and scene study. Class presentation of scenes for criticism and review. Repeatable one time with consent. Pre: 222 and consent. **DA**

**THEA 323 Film/TV Acting (3)** Acting techniques for film and TV production. Students appear in scenes from TV and film scripts. Repeatable one time. Pre: 101 or 221 or COM 201 or consent. **DA**

**THEA 324 Advanced Film/TV Acting (3)** Advanced acting techniques for film and TV production. Taping/filming of scenes and full-length scripts. Repeatable one time. Pre: 323 and consent. **DA**

**THEA 325 Asian Acting for Western Actors (3)** Principles of acting based on traditional Asian models. Voice, movement exercises. Pre: 222. **DA**

**THEA 334 Taiji (T'ai Chi) for Actors I (3)** Basic Taijiquan (T'ai Chi Ch'uan) movement training. Repeatable one time. Pre: 221 and 222, or consent. (Cross-listed as DNCE 334) **DA**

**THEA 341 The Business Side of the Film Industry (3)** Introduction to the business side of Hollywood from inside the executive suite. Students will explore how movies are developed, produced, distributed, and marketed and the relationships between talent, talent agencies, and the studios. Pre: 241 or consent.

**THEA 343 Theatre Production (3)** Workshop in principles and techniques of contemporary technical direction, drafting, scenery construction and rigging. Pre: any course in THEA or DNCE, production experience; or consent.

(consent required for production experience option). (Alt. years) **DA**

**THEA 353 Creative Thinking in Scenic Design (3)** Workshop introducing the basic principles and approaches of scenic design, with emphasis on the creative process. Pre: a course in THEA or DNCE, production experience, or consent. (Consent required for production experience option.) **DA**

**THEA 354 Introduction to Costume Construction (4)** Workshop introducing basic principles and techniques of theatrical costume construction, and a survey of theatrical-related resource materials. **DA**

**THEA 356 Costume for the Stage (3)** Survey of historical costume; workshop in translation of historical styles into theatrical form. Repeatable one time. Pre: 240 or consent. **DA**

**THEA 357 Stage Makeup Workshop (3)** Theory and practice; corrective and three-dimensional makeup, modeling with paint; beards, mustaches. Repeatable one time. Pre: 240 or consent. **DA**

**THEA 380 Beginning Directing (3)** Basic practical course in how to direct a play. Students will direct scenes. Pre: upper division theater majors or consent. **DA**

**THEA 400 (Alpha) Advanced Theater Practicum (1)** Advanced workshop experience in the practical application of theater skills. Repeatable one time 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. **DA**

**THEA 411 World Theater III: Realism (3)** The rise of realism, 1700–1918. Development of romantic and regional forms of drama and theater, and the impact of realism. Required of all majors. Pre: 312 or consent. (Alt. years) **DL**

**THEA 412 World Theater IV: Modern (3)** Pluralism in modern theater, 1918–present. Reactions to realism and current Western and Asian alternative theater forms. Required of all majors. Pre: 411 or consent. (Alt. years) **DL**

**THEA 413 (Alpha) Approaches to Dramatic Texts (3)** Intensive analysis and discussion of dramatic texts from a variety of authors. Understanding trends and variations in dramatic form and content. (B) contemporary British and American drama; (C) political drama in the West; Pre: one of 311, 312, 411, 412, or consent. **DL**

**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) **DH**

**THEA 418 Advanced Playwriting (3)** Workshop in experimental writing in dramatic form; full-length plays. Repeatable. Pre: 318. **DA**

**THEA 420 (Alpha) Intermediate Voice for the Actor (3)** Training in proper and dynamic use of the voice for the actor. (B) Western traditions; (C) Asian traditions. Repeatable two times. Pre: 220 or consent. **DA**

**THEA 421 Acting V: Musical Comedy (3)** Training in skills required to perform in musicals. Students present scenes from musical comedies for criticism and review. Repeatable twice with consent. Pre: one of 321, 322, MUS 231B, or consent; and/or audition. (Cross-listed as MUS 421) **DA**

**THEA 422 Acting VI: Period Styles (3)** Presentational acting in comedy and tragedy; emphasis on performance styles in Elizabethan, Restoration, and 18th-century drama. Repeatable one time with consent. Pre: 321 and 322, or consent. **DA**

**THEA 426 South/Southeast Asian Acting Workshop (3)** Training in skills and techniques for selected traditional south and southeast Asian theater forms. Emphasis on movement and vocal techniques. Repeatable one time. A-F only. Pre: 222 or consent. (Alt. years) **DA**

**THEA 427 Chinese Acting Workshop (V)** Training in skills and techniques for selected traditional Chinese theater forms. Emphasis on movement and vocal technique. Repeatable to 6 credit hours total. Pre: 222 or consent. (Alt. years) **DA**

**THEA 428 Japanese Acting Workshop (V)** Training in skills and techniques for selected traditional Japanese theater forms. Emphasis on movement and vocal technique. Repeatable to 6 credit hours total. Pre: 222 or consent. (Alt. years) **DA**

**THEA 429 Contemporary Performance Practices (3)** Focus on individual training in the skills and techniques of contemporary experimental theater including acting, directing, and self-scripting. Repeatable. Pre: one of 222, 318, 380, or consent. **DA**

**THEA 433 Movement Workshop (V)** Special workshops in movement relating to specific departmental theatrical productions beyond the scope of movement taught in 437 and 438. Repeatable one time. Pre: one of 435, DNCE 435, or consent. (Cross-listed as DNCE 433) (Alt. years) **DA**

**THEA 434 Taiji (T'ai Chi) for Actors II (3)** Intermediate-level Taijiquan (T'ai Chi Ch'uan) movement training. Repeatable one time. Pre: 334 or consent. (Cross-listed as DNCE 434) **DA**

**THEA 435 Movement for Actors (3)** Training actors to discover experientially the sources of movement; to teach skills for analyzing movement for its mechanical, anatomical, spatial, and dynamic content; and then to apply these skills in a role. Pre: 222 or DNCE 221. (Cross-listed as DNCE 435) **DA**

**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) **DA**

**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) **DA**

**THEA 438 Period Movement Styles, 1650–1800 (3)** Movement styles and social deport-

ment 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) **DA**

**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) **DA**

**THEA 445 Lighting Design (3)** Workshop in stage lighting with equipment and techniques of the modern theater; emphasis on design process. Pre: 240 or DNCE 250 or consent. **DA**

**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. **DA**

**THEA 447 Theater Management (3)** Business organization, management, and public relations in professional, university, community, and secondary school theaters. Pre: junior standing or consent. **DA**

**THEA 453 Scenic Design (3)** Workshop in advanced techniques and skills of scenic design; model making, rendering, and drafting. Pre: 353 or consent. **DA**

**THEA 456 Costume Design (3)** Advanced techniques and skills in design; intensive work on design problems in plays from various periods. Repeatable. Pre: 356 or consent. **DA**

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

**THEA 464 Drama and Theater of Southeast Asia and India (3)** Court, folk, popular traditions, and the manner of their production. Pre: consent. **DH**

**THEA 465 Drama and Theater of China (3)** Yuan, southern, spoken drama; Beijing opera and the manner of their production. Pre: consent.

**THEA 466 Drama and Theater of Japan (3)** No, Kyogen, Bunraku, Kabuki, modern drama, and the manner of their production. Pre: 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. **DA**

**THEA 474 Theater for Children (3)** Theories and principles of formal theater for children. Study of selection, direction, and production of plays. Pre: consent. **DA**

**THEA 475 Puppetry for Young Children (3)** Methods of constructing puppets and stages with and for children 3 to 8 years of age. Use of puppets in the creative arts. Fieldwork. Pre: experience in early childhood education or consent. **DA**

**THEA 476 Puppetry (3)** History and scope of puppetry. Construction and presentation of puppets for adult and child audiences. Repeatable. **DA**

**THEA 477 Masks and Giant Puppets (3)** History, construction, and performance techniques for masks and large puppets. For teachers, recreation directors, and others working with students aged 10 to 18 and adults. **DA**

**THEA 480 Intermediate Directing (3)** Workshop; students direct one-act plays. Repeatable with consent. Pre: 380 and consent. (Alt. years) **DA**

**THEA 490 Experimental Theater Studio (3)** Working collectively, students research, write, design, develop, and perform a full-length production. Pre: 6 credits above the 200 level in acting, directing, playwriting, dancing; or consent. **DA**

**THEA 492 (Alpha) Topics in Drama and Theater (3)** (B) Qigong (Ch'i Kung) for actors; (C) Shakespeare in performance. Repeatable one time for (B). Pre: 221 and 222, or consent for (B); consent for (C). **DA**

**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 one time with consent. Pre: 412 or consent. (Alt. years)

**THEA 612 History of Western Theater I (3)** Theater as a cultural and social institution in the West, from ancient Greece to Restoration England. Pre: one of 311, 312, 411, 412, or consent. (Alt. years)

**THEA 613 History of Western Theater II (3)** Theater as a cultural and social institution in the West, from the 18th century to the present. Pre: one of 311, 312, 411, 412, or consent. (Alt. years)

**THEA 615 (Alpha) Topics in Theory and Criticism (3)** (B) performance theory. Pre: 311, 312, 411, and 412; or consent. (Alt. years)

**THEA 616 Script Analysis (3)** Study of dramatic texts in a seminar format; analysis of Western and Asian classical to post-modern plays. Pre: 312 or consent.

**THEA 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 repertory; focus on the individual actor and performance styles. Repeatable one time with consent. Pre: 422 and consent.

**THEA 625 Experimental Asian Acting (3)** Integration of movement, vocal technique, and concepts of traditional Asian genres into the actor's repertory. Exploration of application to contemporary Asian and non-Asian texts. Workshop format. Repeatable one time. Pre: consent.

**THEA 634 Taiji Weapons for Actors (3)** Advanced level Taijiquan (T'ai Chi Ch'uan) weapons training. Pre: 334 and 434; or consent.

**THEA 640 Problems in Theatre Production (3)** Workshop dealing with special topics in technical direction, lighting design, computer-aided drafting, special effects and stage management. Repeatable two times with consent. Pre: 343 or 445 or consent.

**THEA 653 Problems in Scenic Design (3)** Workshop dealing with special topics in scenic design, related skills, and portfolio preparation. Repeatable 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 two times with consent. Pre: 456 or consent.

**THEA 657 Seminar in Design (3)** Research, design, and discussion exploring collaborative design problems and solutions. Pre: 445, 453, 456, and consent.

**THEA 660 Asian Theater Field Research (3)** Goals and methods. Interview, questionnaire, observation, and performance study as research techniques. Practical application by designing a research project. Pre: 600.

**THEA 663 (Alpha) Topics in Asian Theater (3)** Comparative and cross-cultural examination. (B) origins; (C) theories and systems; (D) modern Asian drama. Repeatable. Pre: consent.

**THEA 678 (Alpha) Topics in Youth Theatre/Dance (3)** Creative movement/drama, puppetry, and theater/dance. (B) production concepts. Repeatable when topics change. Pre: one of 470, 474, 475, 476, 477, DNCE 490; or consent.

**THEA 680 Directing Asian Theater (3)** Directing traditional Asian theater pieces and Western plays performed with Asian techniques; development of new performance styles based on Asian examples; directing of scenes and one-act plays. Repeatable one time with consent. Pre: 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 one time with consent. Pre: 681 or consent.

**THEA 683 Workshop in Directing Process (3)** Methods class in theater production for the director. Covers organization and techniques such as rehearsal planning, scheduling, and execution.

**THEA 684 Theatre Governance (3)** Covers the economic and managerial skills for starting a professional and/or non-profit theatre company

or performing arts organization: artistic directorship, board development, non-profit legalities, season planning, fundraising, budgeting, publicity, international activities, etc. Pre: 600 or consent. (Cross-listed as DNCE 684)

**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 Youth Theatre/Dance (3)** Theories and methods applied in theatrical experiences with and for children: creative movement/drama, puppetry, and theater/dance. Pre: one of 470, 474, 475, 476, 477 and DNCE 490. (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.

## Tongan (TONG)

*College of Languages, Linguistics and Literature*

**TONG 101 Beginning Tongan (4)** Listening, speaking, reading, and writing skills. Structural

points introduced inductively. History and culture. Meets four (4) hours weekly. **H, SL**

**TONG 102 Beginning Tongan (4)** Continuation of 101. Pre: 101 or consent. **H, SL**

**TONG 201 Intermediate Tongan (4)** Listening, speaking, reading, and writing skills. History and culture. Meets four (4) hours weekly. Pre: 102 or consent. **H, SL**

**TONG 202 Intermediate Tongan (4)** Continuation of 201. Pre: 201 or consent. **H, SL**

## Translation and Interpretation (TI)

*College of Languages, Linguistics and Literature*

*Students must pass a screening examination in order to enroll in all of the following courses (except 401, 403, and 404). Students may enroll for the (A) translation, (B) interpretation, or (C) translation and interpretation programs.*

**TI 401 Principles of Translation (3)** This course aims to make the student aware of the translation process and the criteria for evaluating translations. It includes readings and discussions of the translation process, terminology research as well as intensive practice in precise writing, paraphrasing, and summarizing. Pre: at least 300-level proficiency in a second language.

**TI 402 Professional Orientation (1)** Survey course. Translation as a profession. Professional history. Professional organizations. Deontological principles underlying working conditions. Contracts. Professional certification and licensing. Repeatable one time. Pre: 401, senior or graduate standing, and pass CITS screening exam. Co-requisite for translation students: 412, 414, 422, and 452. Co-requisite for interpretation students: 432, 442, and 452.

**TI 403 Introduction to Interpretation (3)** This course is designed to develop an awareness of the principles and the current issues involved in interpretation. The theoretical principles, ethics, and underlying techniques will be discussed in reference to conference, court, community, etc., interpreting. Pre: at least 300-level proficiency in a second language.

**TI 405 Principles of Court Interpretation (3)** Introduction to the theoretical principles, ethics, practical techniques, and current issues surrounding the practice and profession of court and other legal interpreting. Repeatable one time only.

**TI 406 Community Interpreting (3)** Basic principles, ethics and skills involved in community interpreting; practical information about the community interpreter's role and profession; practice of various community interpreting situations and techniques. Repeatable one time.

**TI 411 (Alpha) Technical Translation (English) (3)** Language specific course. Basic techniques and procedures used in bilingual translation of nonfiction texts. Emphasis on the stylistic, syntactic, cultural, lexical, and terminological problems. Translation into English only. (G) general skills; (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time. Pre: senior or

graduate standing and pass CITS screening exam. Co-requisite: 401, 413 and 421.

**TI 412 (Alpha) Technical Translation (English) (3)** Translation of nonfiction texts into English. Forms and formats. Emphasis on editing target version and producing camera-ready copy. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time. Pre: 411, senior or graduate standing, and pass CITS screening exam. Co-requisite: 402, 414, and 452.

**TI 413 (Alpha) Translation Skills (Second Language) (3)** Language specific course. Basic techniques and procedures used in bilingual translation of nonfiction texts. Emphasis on the stylistic, syntactic, cultural, lexical, and terminological problems. Translation from English into student's working languages. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time. Pre: senior or graduate standing, and pass CITS screening exam. Co-requisite: 401, 411, 421.

**TI 414 (Alpha) Technical Translation (into Second Language) (3)** Translation of nonfiction texts into English. Forms and formats. Emphasis on editing target version and producing camera-ready copy. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time. Pre: 413, senior or graduate standing, and pass CITS screening exam. Co-requisite: 402, 412, 422, 452.

**TI 421 Research Tools and Technological Aids for Translation (3)** Word processing, graphics, spreadsheet, database management, and communication programs for professional practice. Reference and bibliographic searches. Traditional and nontraditional resources. Repeatable one time. Pre: senior or graduate standing, and pass CITS screening exam. Co-requisite: 401 and 411.

**TI 422 Computer-Assisted Translation (3) (1 Lec, 1 1.5-hr Lab)** The use of computers as aids in the translation process. Basic desktop publishing and technical writing. Computer aids for terminology studies and glossary building. Repeatable one time. Pre: 421, senior or graduate standing, and pass CITS screening exam. Co-requisite: 402, 412, 452.

**TI 432 (Alpha) Consecutive Interpretation (3)** Extensive note-taking and note-reading in a bilingual context. Focuses on the translation of numbers, acronyms, initials, and economic and financial information. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time. Pre: 431, senior or graduate standing, and pass CITS screening exam. Co-requisite: 402, 422, and 452.

**TI 442 (Alpha) Simultaneous Interpretation (3)** Simultaneous interpretation of speeches. Focus on the study of formulaic and frozen language characteristically used in international meetings. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) other. Repeatable one time. Pre: 441, senior or graduate standing, and pass CITS screening exam. Co-requisite: 402, 432, and 452.

**TI 452 (Alpha) Sight Translation (3)** Basic course. Focus on the ability to translate orally information from a written text. Emphasis on improving linguistic (discourse analysis) and communicative (public speaking) skills. (J) Japanese; (K) Korean; (M) Mandarin; (S)

Spanish; (O) other. Repeatable one time. Pre: 451, senior or graduate standing, and pass CITS screening exam. Co-requisite for translation students: 402, 412, 414, and 422. Co-requisite for interpretation students: 402, 432, and 442.

**TI 499 Directed Reading/Studies (V)** Basic course. Focus on the ability to orally translate information from a written text. Emphasis on improving linguistic (discourse analysis) and communicative (public speaking) skills. (J) Japanese; (K) Korean; (M) Mandarin; (S) Spanish; (O) Other. Repeatable one time.

## **Travel Industry Management (TIM)**

### *School of Travel Industry Management*

**TIM 099 International Exchange Programs (V)** UH Mānoa School of Travel Industry Management majors participating in approved international exchange programs. CR/NC only.

**TIM 100 Internship I (2)** Introduction to travel industry. Discussion of job search strategies, TIM internship requirements, career and academic planning. CR/NC only.

**TIM 101 Introduction to Travel Industry Management (3)** Overview of travel industry and related major business components. Analysis of links between hotel, food, transportation, recreation, and other industries comprising tourism.

**TIM 200 Internship II (2)** A minimum of four hundred hours of travel industry experience. Comprehensive report by student and performance evaluation from employer required. CR/NC only. Pre: TIM major, 100, and 101.

**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.

**TIM 300 Internship III (2)** A minimum of four hundred hours of travel industry experience. Position must be different from TIM 200 position and of a more responsible nature or in a different organization. Comprehensive report by student and performance evaluation from employer required. CR/NC only. Pre: TIM major and 200.

**TIM 301 Legal Environment of the Travel Industry (3)** Origin, development, and principles of common, statutory, constitutional, international, and maritime law relating to hospitality industry. A-F only. Pre: 101. Recommended: BLAW 200.

**TIM 302 Information Systems Technology (3)** Computer applications in the travel industry; operation and evaluation of specific travel industry systems and applied business systems. Pre: 101 and ICS 101.

**TIM 303 Management of Service Enterprises (3)** Principles and philosophies of management with special emphasis on those principles and theories that are most relevant to management in service-based industries. Students may not earn credit for 303 and BUS 315. Pre: 101 or consent.

**TIM 304 Principles of Travel Industry Marketing (3)** Concepts, problems, processes of marketing within the travel industry; develop-

ment of marketing strategies including product, place, promotion, and price for travel institutions. Students may not earn credit for 304 and BUS 312. Pre: 101.

**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: 101 and 242 or ACC 202.

**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: 101.

**TIM 311 Club Management (3)** Introduction to club and institutional management, including operations, services, and facilities. A-F only. Pre: 101.

**TIM 313 Food and Beverage Management (3)** Critical and essential aspects of managing food and beverage operations within the hospitality industry. Emphasis on understanding the fundamentals of F & B management, as well as the process from supplier to customer. A-F only. Pre: 101 and departmental approval.

**TIM 314 Hotel Management (3)** Comprehensive understanding of hotel management and functional departments including front office, accounting, housekeeping, food and beverage, marketing, security and safety. Simulation of management trainee programs by hotel chains. Synthesis of concepts, tools and theories of decision-making relevant to hotel operations. A-F only. Pre: 101.

**TIM 315 Quality Food Management (3)** Systems approach to answering public health concerns, reducing sanitation risks, and ensuring satisfaction for guests, staff members and owners. Definition and implementation of sanitation quality, cost control and risk reduction standards in a hospitality operation. A-F only. Pre: 101 and departmental approval.

**TIM 316 Special Events Management I (1)** Application of special events management concepts. Includes planning, marketing, staffing, producing, and fiscal and quality control. Repeatable one time. CR/NC only.

**TIM 317 Special Events Management II (2)** Continuation of 316. Repeatable one time. CR/NC only. Pre: 316.

**TIM 319 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. Requires completion of one related internship. Pre: 315. (Cross-listed as FSHN 312)

**TIM 320 Introduction to Tourism Economics (3)** This course examines tourism from an economic perspective. Topics include: the determinants of consumer demand for leisure

travel, structure of competition among suppliers of tourism services, benefits and costs of tourism development to the host community, government's role in the taxation, subsidy, regulation and protection of the tourism industry, tourism's impact on the environment, and sustainable tourism development. A-F only. Pre: ECON 120 or ECON 130 or ECON 131; or consent. (Cross-listed as ECON 320)

**TIM 321 Sociocultural Issues in Tourism (3)** Positive and negative impacts of tourism on society, social change, culture, residents, developing countries, and environment. Role of social planning. Pre: 101. DS

**TIM 324 Geography of Global Tourism (3)** 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) DS

**TIM 325 Tourism Development: Hawai'i and Asia Pacific (3)** Tourism development in Hawai'i and other Asia Pacific destinations. Analysis of key factors essential to stages of development, travel trends, and structural changes. Pre: 101.

**TIM 327 Travel Distribution Management (3)** History, development, operations, and management of travel distribution organizations including: travel agents, tour operators and wholesalers, specialty channelers, meeting planners, incentive houses, travel associations, and other destination management organizations. Evolution and economics of the distribution of travel products through destination databases and electronic commerce. Pre: 302.

**TIM 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. Recommended: 304.

**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. Pre: 101.

**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: 101.

**TIM 353 Air Travel Management (3)** Management of the U.S. air transportation system with an emphasis on marketing, management functions, operating in a deregulated environment, system components, and passenger transportation; methods of analysis and decision-making employed by air transportation managers. Pre: 101.

**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: 101.

**TIM 365 Economics in Travel Industry (3)** Microeconomic theory of consumer behavior and demand production cost analysis, market structure and pricing in travel companies. Economic impact of tourism. Students may not earn credit for 365 and BUS 313. Pre: either ECON 120 or ECON 130.

**TIM 368 TIM Study Abroad (V)** Study abroad instructional experience emphasizing international travel, tourism and hospitality-related topics at equivalent, accredited programs. 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 (V)** (B) resort development; (C) advanced logistics; (D) transportation and public policy; (E) management by cultural values; (F) travel industry management; (G) hospitality management; (H) hotel management; (I) restaurant management; (J) tourism management; (K) recreation management; (M) leisure management; (N) transportation management; (O) travel industry management education; (P) travel industry management technology; (Q) meetings, incentives, conventions, and exhibition management. Repeatable five times with consent.

**TIM 399 Directed Reading and Research (V)** Reading and research into problems in hotel, restaurant, transportation or tourism sectors of the travel industry. Pre: junior standing or above, a minimum cumulative GPA of 2.5 and consent of dean's office and instructor based upon student's written proposal of content and objectives of course program.

**TIM 400 (Alpha) Internship IV (2)** (B) executive internship; (C) community service internship. Restricted to majors. CR/NC only. Pre: 200 and consent.

**TIM 420 Principles of Sustainable Tourism (3)** A seminar examining the social, environmental, economic factors of sustainable tourism development. Emphasis on methods and processes and the role of stakeholders (government, industry, host community, tourists). Group projects. A-F only. Pre: 101 and departmental approval.

**TIM 421 Tourism and Transportation Policy (3)** Integration of learning and application of strategic management principles to tourism and transportation policy issues and problems. Case study analysis, discussion and written reports. Pre: 304, two emphasis courses and graduating senior.

**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: 304, 314 and senior standing.

**TIM 442 International Transportation Management (3)** International marine transportation of goods; international air transportation of people and goods, international policy governing such transportation; problems of competing with foreign carriers; international private and public ownership; interface with domestic carriers. Pre: senior standing.

**TIM 469 (Alpha) Advanced Topics in Travel Industry Management (V)** (B) tourism planning; (C) advanced travel industry management; (D) advanced hospitality management; (E) advanced hotel management; (F) advanced restaurant management; (G) advanced tourism management; (H) advanced recreation management; (I) advanced leisure management; (J) advanced transportation management; (K) advanced travel industry management education; (L) advanced travel industry management technology; (M) advanced meetings, incentives, conventions, and exhibition management. Repeatable five times with consent.

**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: graduate standing or consent.

**TIM 603 Information Technology, E-Commerce, and Travel Industry (3)** Planning, implementation, management, evaluation, and impact of information and electronic communication technologies, including e-commerce applications in the travel industry. Analysis of new information technology use as an area of research and strategic application. Pre: graduate standing 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: graduate standing or consent.

**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: graduate standing or consent.

**TIM 606 Transportation Systems Management (3)** Advanced study analysis of the management of passenger transportation systems serving the travel industry. Emphasis on topics such as government policy, marketing and management, and the relationships between transportation systems and tourism development. Pre: graduate standing or consent.

**TIM 607 Global Tourism Analysis (3)** International trade theory and regional analysis methodologies applied to tourism and the service industry, including travel balance account, interregional transactions flow, economic impacts, environmental economics, demand theory and forecasting. Pre: graduate standing or consent.

**TIM 610 Research Applications in Travel Industry Management (3)** Analysis of methodologies appropriate for research in travel industry management. Survey of the literature of applied techniques and approaches including exploratory approaches. Familiarization with research design and implementation of development of research proposals. Pre: graduate standing or consent.

**TIM 640 Financial Management for the Travel Industry (3)** Applications of financial analysis to both the domestic and international travel industry. Pre: graduate standing or consent.

**TIM 645 Tourism Field Studies (3)** Integration of concepts and application of knowledge and skills from other courses to a selected field study project. Pre: any two 600-level TIM courses completed and a third concurrent; or consent.

**TIM 694 Plan B Paper (3)** Independent project or paper under faculty supervision in lieu of Plan A, TIM 700 thesis. Requires proposal approved by supervisor and graduate chair prior to registration. A-F only. Pre: three 600-level TIM courses completed or consent.

**TIM 695 Seminar: Travel Industry Management Policy (3)** Integration of learning through analysis of policy issues, trends, and problems in the travel industry. A-F only. Pre: three 600-level TIM courses completed or consent.

**TIM 699 Directed Reading (V)** Independent study of approved, advanced reading with faculty supervision. Requires proposal 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.

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## Tropical Agriculture and Human Resources (TAHR)

*College of Tropical Agriculture and Human Resources*

**TAHR 099 International Exchange Study/Research (V)** Study overseas in an approved international or similar exchange program. CR/NC only. Pre: consent of academic adviser.

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## 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) DB

**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)

**TRMD 607 Neurovirology (1)**  
Seminar course on neuroinvasive viruses giving basics of viruses causing nervous system diseases and discussing recent advances in the research field of neurovirology. Pre: MICR 351 or equivalent; or consent. Fall only.

**TRMD 609 Advances In Medical Immunology (3)**  
Presentations/discussions of current literature concerning recent advances in immunology relevant to disease and to disease processes. Pre: consent. (Alt. years: spring)

**TRMD 653 Bioinformatics for Infectious Diseases (1)**  
Combined lecture/computer lab course on bioinformatic tools used in genomics, including sequence assembly, search algorithms, alignment, phylogenetics, and molecular evolution/epidemiology. Focus will be on infectious disease examples. Open to nonmajors. A-F only. Pre: 604 (or concurrent) and 605 (or concurrent) or consent. Fall only.

**TRMD 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 Parasitology (2)**  
Consideration of ultrastructure, physiology, biochemistry, in-vitro cultivation and host-parasite relationship of parasites of medical importance. A-F only. Pre: consent. (Alt. years: fall)

**TRMD 672 Advanced Medical Virology (2)**  
In-depth study of the major groups of viruses pathogenic for human; virus replication, host range, pathogenesis, immunology, and

epidemiology. Pre: 605 or equivalent, or consent. (Alt. years: fall)

**TRMD 673 Advanced Medical Bacteriology (2)**  
Role of bacteria in infectious diseases, with emphasis on clinical aspects and identification of etiological agents. Pre: 605 or equivalent, or consent.

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

**TRMD 695 Plan B Master's Project (3)**  
Independent study for students working on a Plan B Master's project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. Pre: graduate standing in TRMD.

**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.

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## Tropical Plant and Soil Sciences (TPSS)

*College of Tropical Agriculture and Human Resources*

**TPSS 120 (Alpha) Plants for People (1)**  
The origins: social, cultural, and ceremonial traditions; culture; food and nutritional properties. Processing of a variety of tropical horticultural plants are presented, with tasting sessions and optional field trips. Topics will rotate among (B) beverage crops (eg. coffee, tea, chocolate, kava, fruit juices); (C) herbs, spices, and flavoring (selection of examples to be determined); (D) tropical fruits (assortment offered depends on availability during semester); (E) ornamental plants (flowers, houseplants, popular landscape plants, bonsai, ethnic ornamentals). Does not count towards TPSS major. Pre: consent. **DB**

**TPSS 200 Tropical Crop Science (3)**  
Relation of plants, nutrients, and environment, cultural practices to tropical crop production. Pre: BIOL 172 or BOT 101 or consent. **DB**

**TPSS 300 Tropical Production Systems (4)**  
(3 Lec, 1 3-hr Lab) Comparisons and contrasts of crop management systems, techniques, and technologies in protected and open field production of tropical crops. Pre: 200 or consent. **DB**

**TPSS 304 Fundamentals of Soil Science (4)**  
(3 Lec, 1 3-hr Lab) Origin, development, properties, management of tropical soils; classification of Hawaiian soils. A-F only. Pre: one of CHEM 151, CHEM 161, CHEM 171, or CHEM 181A; or consent. Fall only. (Cross-listed as NREM 304) **DP**

**TPSS 322 Marketing Perishable Products (3)**  
Problems, agencies, functions, costs, prices,

regulations affecting marketing; proposed improvements. Pre: ECON 130, NREM 220 or consent. (Alt. years) (Cross-listed as FSHN 322) **DS**

**TPSS 341 Accounting and Financial Analysis (3)**  
Principles and methods of agricultural accounting. Preparing and interpreting financial statements. Sources and costs of credit, capital budgeting, tax management, estate planning. Repeatable one time. A-F only. Pre: ECON 130 or NREM 220 or consent. (Cross-listed as NREM 341) **DS**

**TPSS 342 Agribusiness Decision-Making (3)**  
Introduction to quantitative decision making methods for effective agribusiness management in resource allocation, scheduling, logistics, risk analysis, inventory and forecasting. Emphasis on problem identification, model formulation and solution, and interpretation and presentation of results. A-F only. Pre: ECON 130 and NREM 220; or consent. (Cross-listed as ECON 429 and MBBE 342) **DS**

**TPSS 350 Tropical Landscape Practices (3)**  
(2 Lec, 1 3-hr Lab) Concepts and techniques of landscape installation and management in the tropics. Pre: 200 and 369; or consent. **DB**

**TPSS 351 Enterprise Management (3)**  
Overview of financial tools essential for developing new enterprises, analyzing business performance, obtaining bank financing, improving profitability, and reducing risk. Other topics: personnel management, taxation, and business plans. Students will become proficient with Excel. Pre: ECON 130, NREM 220 or consent. (Cross-listed as NREM 351) **DS**

**TPSS 364 Horticultural Practices (2)**  
(1 Lec, 1 3-hr Lab) Techniques of culture and management of horticulture crops. Pre: 200 (or concurrent). **DB**

**TPSS 369 Ornamental Plant Materials (3)**  
(2 Lec, 1 3-hr Lab) Identification, origin, use, and cultural requirement of trees, shrubs, vines, and groundcovers used in Hawaiian landscapes. Pre: 200 or consent. **DB**

**TPSS 371 Genetics: Theory to Application (3)**  
Fundamentals of genetic theory using biotechnological procedures in insect and plant pathogen control and plant and animal breeding as practical applications. Repeatable one time. A-F only. Pre: BIOL 172 and CHEM 162, or consent. (Cross-listed as PEPS 371)

**TPSS 401 Vegetable Crop Production (3)**  
(2 Lec, 1 3-hr Lab) Crop biology, requirements, and production techniques for commercial vegetable production in Hawai'i will be stressed. Pre: 300 or consent. **DB**

**TPSS 402 Flower Crop Production (3)**  
Biology and production of cut flowers and blooming potted plants under field and protected cultivation in Hawai'i and globally. Pre: 300 or consent. **DB**

**TPSS 403 Tropical Fruit Production (3)**  
(2 Lec, 1 3-hr Lab) Botanical aspects and horticultural management practices of selected tropical and subtropical fruit crops, with emphasis on small scale commercial production in Hawai'i. Pre: 300 or consent. **DB**

**TPSS 404 Tropical Foliage Production (3)**  
(2 Lec, 1 3-hr Lab) Combined lecture-lab course on foliage crop production in Hawai'i. Crop



biology, requirements and production techniques. Pre: 300 or consent. **DB**

**TPSS 405 Turfgrass Management (3)** (2 Lec, 1 3-hr Lab) Adaptability and selection, establishment, and cultural practices of grasses for various types of turf. Pre: 200 or consent. **DB**

**TPSS 409 Cultural Biogeography (3)** Coevolution of human societies and plants over the last 10,000 years. Foraging, farming and urban societies economies; spread and modification of selected plants; issues of preservation of genetic resources and traditional plant knowledge. The form and function of gardens. Pre: GEOG 101. (Cross-listed as GEOG 409) **DS**

**TPSS 420 Plant Propagation (3)** (2 Lec, 1 3-hr Lab) Theoretical and applied aspects of seed and vegetative propagation technology involving fruits, flowers, vegetables, and landscape plants. Pre: 200 or consent. **DB**

**TPSS 421 Tropical Seed Science (2)** (1 Lec, 1 3-hr Lab) Principles of seed science, seed physiology, seed production, and genetic modification. Hawai'i's seed industry and biotechnology. A-F only. Pre: 200 or consent. **DB**

**TPSS 430 Nursery Management (3)** (2 Lec, 1 3-hr Lab) Management practices in production and operations of commercial nurseries in Hawai'i. Pre: 200 and 364; or consent. **DB**

**TPSS 431 Cropping Systems (3)** Schemes for managing sequences and combinations of crops and crop production activities. Ecosystem and social determinants. Multiple cropping. Analysis of alternative cropping systems. Pre: 200 or consent. **DB**

**TPSS 435 Environmental Soil Chemistry (3)** Study of soil chemical processes such as weathering, adsorption, precipitation, and ion exchange; causes of soil acidity, alkalinity, and salinity; reactions between soils and fertilizers, pesticides, or heavy metals. Management strategies to minimize environmental contamination by nitrate, phosphate, and trace elements such as As, Pb, and Se. A-F only. Pre: 304 or consent. Fall only. **DB**

**TPSS 440 Tissue Culture/Transformation (3)** (2 Lec, 1 3-hr Lab) Application of plant tissue culture for plant scientists; study of the growth and development of plant tissues in culture as influenced by chemical and environmental factors, and the regeneration of plants following plant transformation by biolistics and other molecular approaches. Pre: 420 or consent. Recommended: BOT 410. **DB**

**TPSS 450 Nutrient Mgmt Soils & Plants (4)** (3 Lec, 1 3-hr Lab) Principles and mechanisms governing the availability of plant nutrients in soil and nutrient management for enhanced plant productivity and maintenance for environmental and soil quality. Pre: 304 and CHEM 161, or consent. **DB**

**TPSS 453 Plant Breeding and Genetics (3)** (2 Lec, 1 3-hr Lab) Unique aspects of plant genetics and applications to crop improvement, with emphasis on breeding plants in Hawai'i. Pre: BIOL 375 (or concurrent); or consent. **DB**

**TPSS 460 Soil Plant Environment (3)** (2 Lec, 1 3-hr Lab) Bio-physical processes in the soil-plant-atmosphere continuum that influence crop growth and development. Methods to estimate

the impact of soil and climate on crop performance. Use of crop models to simulate effects of planting date, plant spacing and density, fertilizer rate, rainfall or irrigation, and daily weather on crop yield and farm income. Pre: 304 and either PHYS 151 or PHYS 170; or consent. **DB**

**TPSS 463 Irrigation and Water Management (3)** Basic soil-water-plant relationships, irrigation water requirements, irrigation efficiencies, different methods of irrigation, planning, design and management of an irrigation system, fertigation and impact of irrigation on soil and water quality. Pre: NREM 203 (or equivalent) and NREM/TPSS 304 (or equivalent) or consent. (Cross-listed as NREM 463) (Alt. years)

**TPSS 470 Plant Physiology (3)** Integration of form and function from cellular to whole plant levels in processes from seed germination, through photosynthesis, growth, and morphogenesis, to flowering and senescence. A-F only. Pre: BIOL 171 and CHEM 152; or consent. Co-requisite: 470L. (Cross-listed as BOT 470) **DB**

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

**TPSS 473 Post-Harvest Physiology (3)** Comparative physiological and biochemical processes during growth, maturation, ripening, and senescence in fruits, vegetables, and flowers related to changes in quality and storage life. Tropical commodities emphasized. A-F only. Pre: 200, BIOL 171, or BOT 201; CHEM 152; or consent. **DB**

**TPSS 481 Weed Science (3)** (2 Lec, 1 3-hr Lab) Weed classification, identification, adaptations for weediness; principles of weed control; properties, uses, and action of herbicides. Lab: pesticide application equipment and techniques, no-till farming, greenhouse and field experiments. A-F only. Pre: 200 and CHEM 152, or consent. Fall only. (Cross-listed as PEPS 481) **DB**

**TPSS 491 Experimental Topics (V)** Study and discussion of significant topics, problems. Offered by visiting faculty and/or for extension programs. Repeatable. Pre: consent.

**TPSS 492 Internship (4)** Integration and application of academic knowledge and critical skills emphasizing professional development. Placement with an approved cooperating supervisor/employer. Pre: consent. (Cross-listed as NREM 492)

**TPSS 499 Directed Studies (V)** Supervised individual instruction in field laboratory and library. Repeatable. CR/NC only. Pre: 364 or consent.

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

**TPSS 601 Crop Modeling (3)** (2 Lec, 1 3-hr Lab) Principles of modeling crop growth and development, model types, techniques, simulation. Modeling influence of climate/environment on phenology, growth, development of horticultural crops. Pre: BOT 470 and NREM 310; or consent.

**TPSS 603 Experimental Design (4)** (3 Lec, 1 3-hr Lab) Design of experiments and variance analyses in biological and agricultural research. Pre: NREM 310 or ZOO 631. Recommended: ZOO 632. (Cross-listed as ANSC 603)

**TPSS 604 Advanced Soil Microbiology (4)** (3 Lec, 1 3-hr Lab) Study of biochemical and biogeochemical transformations mediated by soil microorganisms, emphasis on processes important to plant growth productivity and environmental quality. Pre: 304 and MICR 351, or consent.

**TPSS 607 Advanced Food Science I (3)** Advanced topics in chemical and physical characteristics of foods as well as their role in human nutrition. Repeatable one time. A-F only. Pre: graduate student status with undergraduate courses in organic chemistry, microbiology, additional biological science, physics, and biochemistry. Basic knowledge of food science is expected; or consent. Fall only. (Cross-listed as FSHN 607 and MBBE 607)

**TPSS 608 Advanced Food Science II (3)** Advances in sensory quality and evaluation, deterioration of foods and food safety, as well as food processing technology. Repeatable one time. A-F only. Pre: graduate student status with undergraduate courses in organic chemistry, microbiology, additional biological sciences, physics, and biochemistry. Basic knowledge of food science is expected; or consent. Spring only. (Cross-listed as FSHN 608 and MBBE 608)

**TPSS 609 Advanced Food Safety (3)** Real and perceived food hazards, their ethical issues and implications, advanced emerging topics in food safety, and controls, including laws and regulations of food safety issues and public perception of food safety will be discussed. Repeatable one time. A-F only. Pre: graduate student status with undergraduate courses in biochemistry, microbiology, food processing, physics and organic chemistry. Basic food science knowledge is required; or consent. Spring only. (Cross-listed as FSHN 609 and MBBE 609)

**TPSS 610 Nutrition of Tropical Crops (3)** (1 2-hr Lec, 1 3-hr Lab) Mineral nutrition of plants in relation to plant metabolism, mechanisms of ion uptake, long-distance transport of solutes, and interactions at the root-soil interface. Special emphasis on problems associated with tropical crops. Pre: 450 and 470; or consent. (Alt. years)

**TPSS 614 Molecular Genetics of Crops (3)** (2 Lec, 1 3-hr Lab) Applications of molecular genetics to crop improvement. Pre: 453 and MBBE 402; or consent.

**TPSS 615 Quantitative Genetics (3)** Applications of quantitative genetics to crop and animal improvement. Pre: 453 and 603; or consent.

**TPSS 630 Advanced Perishables Marketing (3)** Organization and market analysis encompassing several approaches, including structure, conduct and performance, contestable markets, and transactions costs. Emphasis on efficiency, productivity, vertical coordination, and equity. Focus is on food systems, marketing institutions and research issues. Pre: AREC 634 and ECON 608, or consent.

**TPSS 640 Advanced Soil Chemistry (3)** (2 Lec, 1 3-hr Lab) Physio-chemical processes in

soils and soil solutions, with emphasis on ionic equilibria, mineral stability, organic complexation, and surface sorption of major plant nutrients and heavy metals. A-F only. Pre: 435 and CHEM 351, or consent.

**TPSS 650 Soil Plant Nutrient Relations (4)** (2 Lec, 2 3-hr Lab) Soil-plant interactions, emphasis on characteristics of tropical soils and plants influencing nutrient uptake by plants. Diagnostic methods to identify nutrient deficiencies and element toxicity. Pre: 450 or consent.

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

**TPSS 654 Communications in the Sciences (1)** (3-hr Lec/Lab combination) Laboratory-type course for improving communication abilities in the sciences and engineering. Presentations to lay audiences are emphasized. Hands-on experience in techniques and methods is provided.

**TPSS 664 Orchidology (3)** (2 Lec, 1 3-hr Lab) Classification, culture, cytogenetics, breeding of orchids. Pre: consent. Recommended: 200 and 402.

**TPSS 667 Graduate Seminar (1)** Presentation of research reports; reviews of current literature in plant and soil sciences. Pre: graduate standing or consent.

**TPSS 670 Agrarian Systems Analysis (3)** Comparative analysis of philosophy and process of interdisciplinary and participatory approaches to sustainable development and rural resource management including farming systems research and extension (FSRandE), agroecosystem analysis (AEA), participatory action research (PAR), and rapid rural appraisal (RRA). Repeatable. Pre: consent.

**TPSS 674 Plant Growth and Development (3)** Contemporary literature is used as the basis for understanding the physiology for whole plant growth and development. Aspects covered include vegetative and reproductive development, seed dormancy, senescence, abscission, and relevant biochemical and molecular processes. Pre: 470 and MBBE 402; or consent.

**TPSS 680 Geospatial Analysis of Natural Resource Data (3)** The application of geostatistics to estimate spatial dependence to improve soil and regional sampling; provide insight into underlying soil, geographic, and geologic process, and to provide quantitative scaling up of point measurements to fields, regions, and watersheds. State-space modeling also will be included. A-F only. Pre: GEOG 488, ZOOL 631, or Times Series Analysis course; or consent. (Cross-listed as GEOG 680)

**TPSS 695 Plan B Master's Project (3)** Independent study for students working on a Plan B Master's project. A grade of Satisfactory (S) is assigned when the project is satisfactorily completed. A-F only. Pre: graduate standing in TPSS program.

**TPSS 699 Directed Research (V)** In-depth study of specialized problems. CR/NC only. Pre: consent.

**TPSS 700 Thesis Research (V)** CR/NC only. Pre: consent.

**TPSS 701 Topics in Food Science (1)** Advanced topics in food science and technology, from basic to applied research, including current issues in food science and technology and critical analysis of current research literature. Repeatable one time. A-F only. Pre: graduate standing or consent. Spring only. (Cross-listed as FSHN 701 and MBBE 701)

**TPSS 711 Special Topics (V)** Specialized topics from various areas of plant and soil research such as experimental techniques, growth regulation, morphogenesis, genetics and breeding, culture and nutrition of tropical crops. A-F only. Pre: consent.

**TPSS 800 Dissertation Research (V)** CR/NC only. Pre: consent.

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## Urban and Regional Planning (PLAN)

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*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) DS

**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) DS

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

**PLAN 600 Public Policy and Planning Theory (3)** This course is designed to a) impart a historic and comparative perspective on the evolution of urban and regional planning in public policy; b) explore the spatial and built environment dimensions of society, planning and policy; c) assess the justifications for planning and differing processes of planning in the U.S. and Asia-Pacific with a focus on the role of the planner in policy formulation and implementation. A-F only. Repeatable two times.

**PLAN 601 Planning Methods (3)** Basic methods in planning including problem definition, research design, survey research, statistics and computer applications. Repeatable one time. Pre: one of ECON 321, GEOG 380, SOC 476, or PSY 210.

**PLAN 602 Advanced Planning Theory (3)** Advanced planning theory course for Ph.D. students (others by petition) to prepare for careers in planning education and/or high level professional practice. Covers key contemporary planning policy issues and themes from the perspective of values, explanations of the real world, policy alternatives and implementation. Students must have passed 600 or equivalent (by petition) with a B or better. Repeatable one time. Pre: 600 or consent.

**PLAN 603 Economic Analysis for Urban Planning and Policy (3)** Reviews and builds skills in applying basic theories and principles

of urban and regional economics in contemporary U.S., Hawai'i and Asia-Pacific. Repeatable one time. Pre: consent. (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 one time. Pre: one of ECON 321, GEOG 380, PSY 210, or SOC 476; or consent.

## COMMUNITY PLANNING AND SOCIAL POLICY

**PLAN 610 Community Planning and Social Policy (3)** Social issues and conditions; consequences of social policies experienced by different groups; community social plans and programs organized by various kinds of agencies and organizations. 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 Multiculturalism in Planning and Policy (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.

## ENVIRONMENTAL PLANNING AND RESOURCE MANAGEMENT

**PLAN 620 Environmental Policies and Programs (3)** Survey of the political, institutional, economic and scientific aspects of environmental policies and programs. Repeatable one time. A-F only. Pre: 600 or concurrent; or consent.

**PLAN 625 Environmental Planning (3)** Knowledge and skills needed to prepare environmental plans and impact assessments mandated by national, state and local governments. A-F only. Pre: 620 or concurrent, or consent.

**PLAN 626 Energy Policy and 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. A-F only. Pre: 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.

#### URBAN AND REGIONAL PLANNING IN ASIA AND THE PACIFIC

**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 Globalization 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, 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 ASAN 638 and 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 Policies and Programs (3)** Land use public policy planning in urban and regional settings. Growth management and land use guidance systems. A-F only. Pre: 600 and 601, or consent.

**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 Planning (3)** Issues and methods of urban land use planning practice and plan making. A-F only. Pre: 640 or consent. (Cross-listed as ARCH 641)

**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 Policy and 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. A-F only. Pre: 600 and 601, 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 654 Applied Geographic Information Systems: Public Policy and Spatial Analysis (3)** Use of advanced and specialized spatial methods and models in urban and regional planning. This course uses GIS software and builds upon 601. Skills are useful applied to planning, economic development, and environmental planning and resource management. Repeatable one time. Pre: graduate standing or consent.

**PLAN 655 Advanced Planning Methods and Models (3)** Advanced methods and determinis-

tic and stochastic models used in urban and regional planning. Pre: 601, 605, or consent.

**PLAN 661 Collaboration Between Sectors (3)** Examine theories and practices of multisector collaboration (public, private, nonprofit). The use of collaboration as an alternative way of solving public problems. (Cross-listed as PUBA 661)

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

**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: graduate standing or consent. (Cross-listed as AMST 676)

**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.

**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.

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**Vietnamese (VIET)**


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*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. **DL**

**VIET 434 Selected Readings in Vietnamese (3)** Continuation of 433. **DL**

**VIET 461 Introduction to Vietnamese Literature (3)** Selected readings in major genres; emphasis on analysis. Modern literature. Pre: 402 or consent. **DL**

**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. **DL**

**VIET 699 Directed Reading/Research (V)**  
Repeatable. Pre: consent.

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**Women's Studies (WS)**


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*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. **DS**

**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 APDM 200) **DS**

**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. A–F only. Pre: 151 or PSY 100. (Cross-listed as PSY 202) **DS**

**WS 245 Women Writers of World Literature (3)** Major women writers of world literature examined in context of female literary tradition. Pre: one of ENG 100A, 101, or ELI 100 or consent. **DL**

**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: one of ENG 100A, 101, or ELI 100. (Cross-listed as ENG 257Y) **DL**

**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) **DH**

**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 SOC 362, or consent. **DS**

**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) **DS**

**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, 151A (or concurrent) or AMST 201, AMST 201A (or concurrent) or AMST 202, 202A (or concurrent), or consent. (Cross-listed as AMST 315 and HIST 360) **DH**

**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, 151A (or concurrent) or AMST 201, AMST 201A (or concurrent) or AMST 202, 202A (or concurrent), or consent. (Cross-listed as AMST 316 and HIST 361) **DH**

**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) **DS**

**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, SOC 100, any 200-level SOC course, or junior standing; or consent. (Cross-listed as SOC 318) **DS**

**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. **DS**

**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. **DL**

**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) **DL**

**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) **DB**

**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. **DH**

**WS 353 Democracy in Organizations (3)**

Theory and practice of democratic organizations; women's and feminist organizations; co-ops, communes, and collectives; indigenous people's organizations; workplace democracy and social change. Pre: 151 or any 100-level POLS course or POLS 390 (or concurrent); or consent. (Cross-listed as POLS 394) **DS**

**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) **DS**

**WS 361 Seminar: Women and International Development (3)**

Topics: Women's role, status, work and treatment in the Third World; Economic Development, changing work/family roles, and improvement/deterioration in gender equity across the Third World; global feminization of poverty; efforts to promote gender equity. Open to nonmajors. Pre: a 100 level economics course or any women's studies course; or consent. (Cross-listed as ECON 361) **DS**

**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) **DS**

**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, BUS 315, or consent. **DS**

**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: one of 151, 362, SOC 362. **DS**

**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. **DB**

**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) **DL**

**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. **DH**

**WS 384 Women and Politics (3)**

Women's role in political institutions and processes in the U.S. and other countries; female and male approaches to power; feminist political goals and actions. Pre: 151 (or concurrent) or 362 (or concurrent) or any 100 level POLS course (or concurrent); or consent. (Cross-listed as POLS 384) **DS**

**WS 390 Gender and Race in U.S. Society (3)**

Historical and sociological studies of race and gender in U.S. society; grassroots feminist and

race/ethnic activism in the mainland and Hawai'i. A-F only. Pre: 151, ES 101, or Social Science Cores. (Cross-listed as ES 390) **DS**

**WS 399 Directed Reading (V)** Pre: consent.

**WS 414 Women in Drama and Theater (3)**

The role of women and their representation in the theater from ancient Greece to the present; focus on the socio-political status of women. Pre: THEA 311 or consent. (Cross-listed as THEA 414) **DH**

**WS 418 Women and Work (3)** Gender and racial division of labor nationally and internationally; racial and gender differentials in wages, training, working conditions and unemployment; historical trends and future directions. Pre: One 300-level SOC or WS or ES course. (Cross-listed as ES 418 and SOC 418) **DS**

**WS 419 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: any course 200 or above in WS or PHIL; or consent. (Cross-listed as PHIL 418) **DH**

**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. **DS**

**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) **DB**

**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 WS or SOC course. (Cross-listed as SOC 435) **DS**

**WS 436 Gender, Justice and 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. A-F only. (Cross-listed as AMST 436 and POLS 436) **DS**

**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 course 200 or above in WS or a natural science or PHIL; or consent. (Cross-listed as PHIL 438) **DH**

**WS 439 Feminist Theory (3)**

Contemporary debates in feminist theory concerning gender, race, and class; subjectivity and representation; gender and colonialism; bodies, sexualities and "nature." Pre: any 300 level WS or POLS course; or consent. (Cross-listed as POLS 339) **DS**

**WS 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. **DH**

**WS 445 U.S. Women's Literature and Culture (3)**

Reading of selected works of U.S. women's literature and cultural texts (such as art and film). Emphasis on historical and cultural context and diverse expressions of women's gendered identities. Pre: 151 (or concurrent), AMST 202 (or concurrent), or ENG 250 (or concurrent); or consent. (Cross-listed as AMST 455 and ENG 455) **DL**

**WS 446 Analysis in Rape and Sexual Abuse (3)**

Theories, methodologies, and research findings on rape victimization and treatment; sexual abuse of women and children in Hawai'i. Pre: SOC 275 or consent. (Cross-listed as SOC 446) **DS**

**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) **DS**

**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 EDCS 453 and EDEF 453) **DS**

**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. **DH**

**WS 460 Feminism, Nation and Empire (3)**

Examines U.S. feminist movements in the 19th and 20th century by exploring how U.S. racism, nationalism and imperialism have provided the context from which feminism emerged. A-F only. Pre: 151, 360, or consent.

**WS 462 Asian Women (3)** History, culture, and contemporary reality of Asian women in Asia and the U.S. Includes critical analysis of American feminist methodology and theory. Pre: 360, 361, or 439 or any 100 level POLS course or POLS 339; or consent. (Cross-listed as AMST 438 and POLS 372) **DS**

**WS 463 Gender Issues in Asian Society (3)**

Construction of gender identities in contemporary Asia. How these interface with other aspects of social difference and inequality (e.g. with class, religion, ethnicity). Pre: any WS course or ASAN 242, or consent. (Cross-listed as ASAN 463) **DS**

**WS 481 Women and Film (3)**

Exploration of film as a philosophical and artistic form in the context of gender, race, and sexuality. Pre: 151 or one of ENG 250–257 or THEA 201 or consent. **DH**

**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 175, ART 176 or any WS course; or consent. (Cross-listed as ART 482) **DH**

**WS 483 Studies in Literature and Sexuality and Gender (3)**

Intensive study of selected problems and issues in the construction and

representation of sexuality and gender in specific genres, social and cultural contexts, thematic or figurative clusters. Repeatable one time. Pre: ENG 320 and one other 300-level ENG course; or consent. (Cross-listed as ENG 482) **DL**

**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) **DA**

**WS 492 Women and Revolution (3)** Conditions under which women's activism and participation in protest and revolutionary movements developed in the 19th- and 20th-centuries. Cross-cultural comparisons. (Cross-listed as HIST 492) **DH**

**WS 495 Selected Topics (3)** Problems and issues for reading and research: feminist theory, criticism, affirmative action, etc. Pre: any WS course in appropriate area. **DS**

**WS 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.

**WS 753 (Alpha) Research Seminar in Chinese Literature (3)** Study of authors, a genre, a period, or a problem. (M) modern; (T) traditional. A-F only for (M). Pre: 613, 615, 650, or CHN 611; or consent for (M); CHN 612, CHN 613, or consent for (T). (Cross-listed as CHN 753 (Alpha))

## 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) **DB**

**ZOOL 101L Principles of Zoology Laboratory (1)** Laboratory to accompany 101. Pre: 101 (or concurrent). (Cross-listed as BIOL 103L). **DY**

**ZOOL 200 Marine Biology (2)** Biology and ecology of marine plants and animals; coral reefs, the deep sea, rocky shores, marine mammals, fisheries, aquaculture, pollution, and conservation of marine resources. **DB**

**ZOOL 200L Marine Biology Lab (1)** (1 3-hr Lab) Laboratory, field trips to accompany 200. Pre: 200 (or concurrent). **DY**

**ZOOL 306 Ethology (2)** Introduction to animal and human ethology and sociobiology; emphasis on social and interspecific behavior, its causes and adaptive significance. Lab optional. Pre: 101 and 101L. **DB**

**ZOOL 306L Ethology Lab (1)** (1 3-hr Lab) Application of methods in demonstrations, films, and projects. Pre: 306 (or concurrent). **DY**

**ZOOL 320 Vertebrate Zoology (3)** Introduction to the evolution and systematics of vertebrates, with emphasis on comparative morphology, physiology, and ecology. Pre: BIOL 265. Co-requisite: 320L. **DB**

**ZOOL 320L Vertebrate Zoology Lab (2)** (2 3-hr Lab) Laboratory to accompany 320. Pre: BIOL 172 and BIOL 172L. Co-requisite: 320. **DY**

**ZOOL 340 Parasitology (2)** Animal parasites of man, and domestic and wild animals; systematics, comparative morphology, life history, pathology, treatment, control. Pre: BIOL 275. **DB**

**ZOOL 340L Parasitology Lab (2)** (2 3-hr Lab) Laboratory to accompany 340. Pre: 340 (or concurrent) and BIOL 275. **DY**

**ZOOL 399 Directed Study (V)** Pre: written consent.

**ZOOL 410 Corals and Coral Reefs (3)** A course in the biogeography, evolution, ecology, and physiology of corals and coral reefs, and the application of this information to the management of coral reefs. Emphasis will be placed on processes such as dispersal, the evolution and operation of mutualisms, calcification, reproduction, and the maintenance of diversity. Pre: BIOL 265. Spring only.

**ZOOL 416 Histology (3)** Functional microanatomy of the animal body, emphasizing vertebrates. Oriented toward pre-professional students. Pre: BIOL 275. Recommended: BIOL 406. **DB**

**ZOOL 416L Histology Lab (2)** (2 2-hr Lab) Light microscopic study of animal tissues, especially vertebrates. Primarily for pre-professional students. Pre: BIOL 275. Recommended: BIOL 406. Co-requisite: 416. **DY**

**ZOOL 417 Microtechnique (3)** (2 Lec, 2 3-hr Lab) Preparation of animal tissues and organs for

microscopic examination; introduction to cytochemical and histochemical techniques. Pre: BIOL 275 or consent. **DB**

**ZOOL 420 Developmental Biology (3)** Fundamental principles, methods, concepts, and significance of developmental biology, emphasizing experimental methods. Pre: BIOL 275. Recommended: BIOL 406. **DB**

**ZOOL 420L Developmental Biology Lab (2)** (2 3-hr Labs) Analysis of animal development by experimental methods, using local organisms. Pre: BIOL 275 or consent. Recommended: BIOL 406. Co-requisite: 420. **DY**

**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. **DB**

**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. **DY**

**ZOOL 432 Comparative Physiology (3)** Physical-chemical cellular mechanisms underlying function of organ systems; general principles inferable from study of adaptation to diverse environments. Pre: BIOL 171 and 172, and ENBI 402 (or concurrent) or BIOC 441 (or concurrent); or consent. **DB**

**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. **DB**

**ZOOL 439 Animal Ecology (3)** Principles and theories; examples from current experimental and analytical literature. For students in biological sciences. Pre: BIOL 265 and MATH 215; or consent. **DB**

**ZOOL 439L Animal Ecology Lab (2)** (1 4-hr Lab) Introduction to methodology, experience in characterizing populations and communities. Pre: BIOL 265. **DY**

**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. **DB**

**ZOOL 442 Introduction to Neuroscience (3)** Nerve cells, their signalling capabilities and the developmental organization of nervous systems, both invertebrate and vertebrate, for sensory reception, integration, behavioral command and learning; insights from on-going research using molecular, genetic, biophysical, and imaging methods. Pre: BIOL 275 or consent. Fall only.

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

**ZOOL 460 Avian Biology (3)** Broad coverage of the morphology, physiology, ecology, behavior, and evolution of birds, emphasizing the relation of birds to general theory in biology. Pre: BIOL 265. **DB**

**ZOOL 465 General Ichthyology (3)** Biology of fishes; reproduction, physiological processes, functional anatomy, behavior, ecology, distribution, and systematics. Pre: BIOL 265. Co-requisite: 465L. **DB**

**ZOOL 465L General Ichthyology Lab (1)** (2 2-hr Lab) Overview of the major orders and families of fishes of the world; introduction to local Hawaiian fishes; coverage of basic fish anatomy; introduction to field and laboratory techniques in fish research. Pre: BIOL 265. Co-requisite: 465. **DY**

**ZOOL 466 Fisheries Science (3)** General characteristics of fisheries; harvesting methods; principles and techniques to derive data and analyze fished populations. Field trips. Pre: some background in fish biology and aquatic ecology or consent. **DB**

**ZOOL 467 Ecology of Fishes (3)** Reproduction, early life history, age and growth, feeding, niche specificity, competitive interactions, communities, and evolutionary mechanisms. Pre: 465 or consent. **DB**

**ZOOL 470 Limnology (2)** Biology, physics, chemistry of lakes, streams, estuaries. Pre: BIOL 172 or consent. Co-requisite: 470L. **DB**

**ZOOL 470L Limnology Lab (1)** (1 3-hr Lab) Experimental and descriptive field projects on the biology, chemistry, hydrology, and physics of lakes, streams, and estuaries. Pre: BIOL 172 or consent. Co-requisite: 470. (Alt. years) **DY**

**ZOOL 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. **DB**

**ZOOL 475L Biology of the Invertebrates Lab (2)** (2 3-hr Lab) Pre: BIOL 172 and CHEM 161, or consent. Co-requisite: 475. **DY**

**ZOOL 480 Animal Evolution (3)** Process of evolution: genetic basis, natural selection, population genetics, speciation, the fossil record. Pre: one of 475, 475L, or 320; and BIOL 265. Recommended: BIOL 275 and BIOL 375. **DB**

**ZOOL 485 Biogeography (3)** Distribution of plants and animals and processes that cause, maintain, and modify them. Approach is synthetic and dynamic. Pre: BIOL 172. **DB**

**ZOOL 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 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 608 Fish Behavior and Sensory Biology (2)** Lectures, readings and presentations on sensory systems and behavior of fishes. A-F only. Pre: upper division course in fish biology, animal behavior, physiology or consent. Co-requisite: 608L.

**ZOOL 608L Fish Behavior and Sensory Biology (1)** (1 3-hr Lab) Laboratory study of fish sensory systems and behavior. A-F only. Pre: upper division course in fish biology, animal behavior, physiology or consent. Co-requisite: 608.

**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 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 652 Population Biology (3)** Theory and applications of population biology; behavior of population models, as revealed by analytical methods and computer simulation; application to population problems such as endangered species; discussion of classical and current

literature in population biology. Pre: an upper-level ecology course and MATH 215, MATH 241, or MATH 251A; or consent. (Cross-listed as BOT 652)

**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 PEPS 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 five times.

**ZOOL 699 Directed Research (V)** Directed research and reading in various fields of zoology.

**ZOOL 700 Thesis Research (V)**

**ZOOL 710 Topics in Biometry (V)** Selected advanced topics in experimental design or data analysis for biologists. Repeatable. 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)**