224A. Molecular and Developmental Neurobiology (2)
Lecture/discussion—2 hours. Prerequisite: consent of instructor. Key issues in developmental and molecular neurobiology. Discussion emphasis on critical evaluation of the experiments and methods described in research papers. Readings from seminal primary research papers, reviews, and book chapters. Reading materials will be distributed one week in advance. II. Cheng, Diaz

224B. Molecular and Developmental Neurobiology (2)
Lecture/discussion—2 hours. Prerequisite: course 224A or consent of instructor. Continuation of course 224A. Key issues in developmental and molecular neurobiology, focusing on developmental topics. Discussion emphasis on critical evaluation of experiments and methods described in associated literature. II. Cheng, Diaz

225. Translational Research in the Neurobiology of Disease (2)
Lecture—1 hour, discussion—1 hour. Prerequisite: Past or concurrent enrollment in Neuroscience courses 221, 222, 223, or permission of instructor; restricted to current graduate student enrollment or permission of instructor. This course will provide an overview of modern psychiatric and neurological disorders from both the clinical and fundamental science perspectives. Offered in alternate years. II. McAllister

226. Molecular and Developmental Neurobiology (4)
Lecture/discussion—4 hours. Prerequisite: consent of instructor. Introduction to molecular and developmental neurobiology. Topics range from neurotization to development of sensory systems and include modern molecular methods and their application in development and translational neuroscience. II. III. McAllister

243. Topics in Cellular and Behavioral Neurobiology (1)
Discussion—1 hour, seminar—1 hour. Prerequisite: consent of instructor. An advanced examination of several current problems in neurobiology. Topics will vary in different years; may be repeated for credit. (S/U grading only.) I. III. Ishida

247. Topics in Functional Neurogenomics (2)
Lecture—1 hour, discussion—1 hour. Prerequisite: graduate standing or consent of instructor. The theory, methods and principles of functional neurogenomics with emphasis on the relationship to molecular mechanisms involved in development and disease of the nervous system. (Same course as Neuroscience, Physiology, and Behavior 247.) II. Choudhry

250. Biology of Neuroglia (2)
Lecture/discussion—1.5 hours. Prerequisite: consent of instructor. The properties and functions of nonneuronal cells in the mammalian central nervous system with relevance to neuronal development, physiology and injury response. Offered in alternate years. (Same course as Cell Biology and Human Anatomy 250.) (S/U grading only.) III.

261A. Topics in Vision: Eyes and Retinal Mechanisms (2)
Lecture/discussion—2 hours. Prerequisite: graduate standing. Neuroscience, Physiology, and Behavior 100 or 112 or the equivalent. Structure and function of the visual system, with emphasis on the eye and retina, including optics, anatomy, transduction, retinal synapses, adaptation, and parallel processing. (Same course as Neuroscience, Physiology, and Behavior 261A and Molecular, Cellular, and Integrative Physiology 261C.) (S/U grading only.) Offered in alternate years. II. Britten

261B. Topics in Vision: Psychophysics, Computational Models (2)
Lecture/discussion—2 hours. Prerequisite: consent of instructor, course 261A recommended. Functions of the central visual pathways and their underlying mechanisms. Recent research on aspects of anatomy, biochemistry, electrophysiology, psychophysics, development, and genetics of the visual system. (Same course as Neuroscience, Physiology, and Behavior 261C and Molecular, Cellular, and Integrative Physiology 261C.) (S/U grading only.) Offered in alternate years. III. Werner

267. Computational Neurobiology (5)
Lecture—4 hours; lecture/laboratory—3 hours. Prerequisite: one course in general neuroscience at the level of course 100; one year college-level Calculus at the level of Math 16A, B, C; one year Physics at the level of Physics 7A, B, C; strongly recommended, students from other departments should contact the instructor. Mathematical models and data analysis techniques used to describe computations performed by nervous systems. Lecture topics include single-neuron biophysics, neural coding, network dynamics, memory, plasticity, and learning. Lab topics include programming mathematical models and data analysis techniques in MATLAB. Offered in alternate years. (Same course as Neuroscience, Physiology & Behavior 267) II. I. Goldmann

283. Neurobiological Literature (1)
Seminar—1 hour. Prerequisite: consent of instructor. Critical presentation and analysis of recent journal articles in neurobiology. May be repeated for credit. (S/U grading only.) II. III. (I, II, III)

284. Development of Sensory Systems (1)
Seminar—1 hour. Prerequisite: consent of instructor. Presentation and discussion of recent literature on the development of sensory systems. May be repeated for credit. (S/U grading only.) II. III. Cheng

285. Literature in Visual Neuroscience (2)
Seminar—2 hours. Critical presentation and discussion of current research in visual neuroscience. (Same course as Neuroscience, Physiology, and Behavior 285.) May be repeated for credit if topic differs. (S/U grading only.) II. III. (I, II, III) Usrey, Britten

287A. Topics in Theoretical Neuroscience (2)
Seminar—2 hours. Prerequisite: consent of instructor. In-depth exploration of topics in theoretical neuroscience. Topics vary each year. Fall quarter [287A]; foundational material from books and review articles. Spring quarter [287B]; continuation of year’s topic through readings of seminal articles from the primary literature. May be repeated for credit. (Same course as Neuroscience, Physiology & Behavior 287A.) (S/U grading only.) II. Ditterich, Goldmann

287B. Topics in Theoretical Neuroscience (2)
Seminar—2 hours. Prerequisite: consent of instructor. In-depth exploration of topics in theoretical neuroscience. Topics vary each year. Fall quarter [287A]; foundational material from books and review articles. Spring quarter [287B]; continuation of year’s topic through readings of seminal articles from the primary literature. May be repeated for credit. (Same course as Neuroscience, Physiology & Behavior 287B.) (S/U grading only.) II. III. Ditterich, Goldmann

289. Topics in Molecular and Developmental Neurobiology (2)
Seminar—2 hours. Analysis and discussion of seminal and recent research papers in molecular and developmental neurobiology. Different topics will be covered each quarter. In the past topics have included, “Synaptic vesicle dynamics,” “Neuronal polarity,” and “Glutamate receptors.” May be repeated ten times for credit when topic differs. (S/U grading only.) II. III. (I, II, III)

290C. Research Conference in Neurobiology (1)
Discussion—1 hour. Prerequisite: graduate standing in Neuroscience or consent of instructor; course 299 (concurrently). Presentation and discussion of faculty and graduate student research in neurobiology. May be repeated for credit. (S/U grading only.) II. III. (I, II, III)

292. Cortical Plasticity and Perception (2)
Lecture/discussion—2 hours. Prerequisite: Neurobiology, Physiology, and Behavior 100 or 112 or equivalent or consent of instructor. Examination of research articles on cortical plasticity and changes in perception. Examples drawn from studies of the somatosensory, visual, auditory, and motor cortex. (Same course as Neuroscience, Physiology, and Behavior 292.) Offered in alternate years. (S/U grading only.) II. III. (I, II, III)

298. Group Study (1-5)
(S/U grading only.)

299. Research (1-12)
(S/U grading only.)

Neurology

See Medicine, School of, on page 396.

Neurosurgery

See Medicine, School of, on page 396.

Nursing, School of, Betty Irene Moore

Heather M. Young, Ph.D., R.N., F.A.A.N.; Associate Vice Chancellor for Nursing, UC Davis, and Dean, Betty Irene Moore School of Nursing. Deborah Ward, Ph.D., R.N., F.A.A.N., Associate Dean for Academics and Clinical Professor; Jill G. Joseph, M.D., Ph.D., M.P.H.; Associate Dean for Research and Professor; Heather M. Young, Ph.D., R.N., F.A.A.N.; Associate Vice Chancellor for Nursing, UC Davis, and Dean, Betty Irene Moore School of Nursing. Deborah Ward, Ph.D., R.N., F.A.A.N., Associate Dean for Academics and Clinical Professor; Jill G. Joseph, M.D., Ph.D., M.P.H.; Associate Dean for Research and Professor; 4610 X St., Suite 4202. Sacramento, CA 95817 916-734-2145 http://nursing.ucdavis.edu

Mission Statement
The Betty Irene Moore School of Nursing at UC Davis cultivates academic excellence through
impressive, interprofessional and interdisciplinary education and research in partnership with the community. Faculty, staff and students discover and disseminate knowledge to advance health, improve quality of care and shape policy.

Nursing Science and Health Care Leadership Graduate Degree Program

Hosted by the Betty Irene Moore School of Nursing at UC Davis, the Nursing Science and Health Care Leadership Graduate Degree Programs prepare nurse leaders, nurses, nurse practitioners, researchers and faculty in a unique interdisciplinary and interprofessional environment. The full-time, academic, doctoral program prepares graduates as modern health care, health policy and nurse faculty/researchers at the university level. The master’s-degree Physician Assistant Studies program prepares graduates to deliver care as physician assistants. Graduates of the professional master’s-degree leadership programs are prepared for health care leadership roles in a variety of organizations and as nurse faculty at the community college and prelicensure education levels. Graduates of the master’s-degree Nurse Practitioner Program are prepared to deliver care as nurse practitioners.

Faculty

The UC Davis Nursing Science and Health Care Leadership Graduate Group includes a wide cross-section of disciplines with faculty from the Betty Irene Moore School of Nursing as well as UC Davis Health System and other UC Davis schools, colleges and departments. Within the graduate group faculty are experts in nursing, medicine, health informatics, nutrition, biostatistics, public health and other fields. For a complete list of faculty, see http://nursing.ucdavis.edu/

Courses in Nursing (NRS)

Doctoral and master’s-degree leadership core courses are listed below.

Current course listings for the master’s-degree physician assistant and master’s-degree nurse practitioner programs are listed at the School of Nursing website. For more information, see http://nursing.ucdavis.edu/.

Core Courses. For a current listing of courses offered through the School of Nursing, please see http://nursing.ucdavis.edu/.

Graduate

201. Health Status and Care Systems (4)
Lecture/discussion—3 hours; laboratory/discussion; project. Prerequisite: current enrollment in the Nursing Science and Health Care Leadership graduate program or consent of instructor. Comparative health care delivery systems and current health issues globally, nationally, regionally. Theoretical perspectives on social, political, economic determinants of health. Health-care systems examined, linked to data, and evaluated in communities. Aging, rural, ethnic minority populations highlight. —I, II, III.

202. Implementation Science (4)
Lecture/discussion—4 hours. Prerequisite: current enrollment in the Nursing Science and Health Care Leadership Graduate Program and consent of instructor. Change processes in health care from political, historic, economic and sociopolitical frameworks. Historical and current examples of transformative change in the health-care system. Skills for system transformation through health policy, practice, research and education are emphasized. —II, III.

203. Leadership in Health Care (4)
Lecture/discussion—3 hours; fieldwork. Prerequisite: current enrollment in the Nursing Science and Health Care Leadership graduate program or consent of instructor. Critical examination of leadership from a variety of theoretical and philosophical perspectives and focuses on specific challenges in health care and leadership at various levels, e.g., patient, organizational, and policy levels. —I, II, III.

204. Research Skills for Nursing Science and Health Care Leadership (4)
Lecture/discussion—3 hours; laboratory/discussion—1 hour. Prerequisite: current enrollment in the Nursing Science and Health Care Leadership graduate program or consent of instructor. Foundation for analyzing research, health, and systems data to answer clinical, systematic, or policy questions. Use and examine multiple sources of data and information as a basis for planned change and transformation in health care. —II.

205. Research Design in Nursing and Health Care (4)
Lecture/discussion—4 hours. Prerequisite: current enrollment in the Nursing Science and Health Care Leadership Graduate program or consent of instructor. Major types of research designs, research methods, and qualitative research design and their application to nursing and health-care research. Implications of choosing alternative research designs and critical analysis of philosophical underpinnings. —II, III.

206. Community Connections (2-5)
Prerequisite: current enrollment in the Nursing Science and Health Care Leadership Graduate program or consent of instructor. Open to NSHLS MS students only. Community-based learning and experiences including community participation, assessment, data collection and analysis, as well as transformative projects, community health improvement projects, collaborative leadership practice, all with the guidance of community members and Nursing faculty. May be repeated for credit. —I, II, III.

210Y. Applied Health Informatics (4)
Lecture/discussion—1 hour; web virtual lecture—3 hours. Open to current student in NSHLS graduate program or consent of instructor. Within the theoretical and conceptual framework of the Foundation of Knowledge model, this course integrates nursing science, information science, computer science and cognitive science to acquire, process, generate and disseminate knowledge. —I, II, III.

290. Master’s Seminar (2)
Discussion—2 hours. Prerequisite: current enrollment in the Nursing Science and Health Care Leadership Graduate program or consent of instructor. Open to NSHLS MS students only or by consent of course instructor. May be repeated 10 times for credit. —I, II, III, IV.

291. Doctoral Seminar (2)
Discussion—2 hours. Prerequisite: current enrollment in the Nursing Science and Health Care Leadership Graduate program or consent of instructor. Focus on the theory, research and knowledge relevant to one of two fields of emphasis: population health or health systems. May be repeated 10 times for credit. —I, II, III.

291D. Doctoral Seminar (2)
Discussion—2 hours. Prerequisite: current enrollment in the Nursing Science and Health Care Leadership Graduate program or consent of instructor. Focus on the theory, research and knowledge relevant to one of two fields of emphasis: population health or health systems. Emphasis placed on reading, critique and synthesis of classic and cutting-edge research in nursing and health care. May be repeated 10 times for credit. —I, II, III.

292. Special Topics in Nursing Science and Health Care Leadership (1-4)
Lecture/discussion—1-4 hours. Prerequisite: current enrollment in the Nursing Science and Health Care Leadership Graduate program or consent of instructor. In-depth study of topics in Nursing Science and Health Care Leadership, selected from: policy and politics in health care, health-care disparities, current issues in health care, approaches to the conduct of science, or other related areas, with year to year variation. May be repeated for credit. Offered irregularly. —I, II, III.

298V. Online Special Topics in Nursing Science and Health Care Leadership (1-4)
Web virtual lecture—1-4 hours; web electronic discussion—1-4 hours. Prerequisite: current enrollment in the Nursing Science and Health Care Leadership Graduate program or consent of instructor. In-depth study of topics in Nursing Science and Health Care Leadership, selected from: policy and politics in health care, health-care disparities, current issues in health care, approaches to the conduct of science, or other related areas, with year to year variation. May be repeated for credit. Offered irregularly. —I, II, III.

299. Research and Writing (1-12)
Extensive writing or discussion—3-36 hours. Prerequisite: consent of instructor. Students in the Nursing Science and Health Care Leadership Graduate program are required to conduct research and writing under the supervision of a faculty member. May be repeated for credit. (S/U grading only.) —I, II, III, IV.

299D. Dissertation Research and Writing (1-12)
Extensive writing or discussion—3-36 hours. Prerequisite: consent of instructor. Students in the Nursing Science and Health Care Leadership Graduate program conduct dissertation research and writing under the supervision of a faculty member. May be repeated for credit. (S/U grading only.) —I, II, III, IV.

Professional

301. Methods for Teaching Nursing and Health Sciences: Use of Simulation (4)
Lecture/discussion—4 hours. Prerequisite: current enrollment in the Nursing Science and Health Care Leadership Graduate program or consent of instructor. Best practices in simulation that integrate simulation in educational programs conduct research and writing under the supervision of a faculty member. May be repeated for credit. (S/U grading only.) —I, II, III, IV.

302. Methods for Teaching Nursing and Health Sciences: Curriculum and Instruction (4)
Lecture/discussion—4 hours. Prerequisite: current enrollment in the Nursing Science and Health Care Leadership Graduate program or consent of instructor. Best practices in simulation that integrate simulation in educational programs conduct research and writing under the supervision of a faculty member. May be repeated for credit. (S/U grading only.) —I, II, III, IV.

303. Methods for Teaching Nursing and Health Sciences: Assessment/Evaluation of Learning (4)
Lecture/discussion—4 hours. Prerequisite: current enrollment in the Nursing Science and Health Care Leadership Graduate program or consent of instructor. Application of approaches, processes, and tools for assessing adult learning, especially those that assess the student’s ability to apply knowledge/skills in practical situations. Other topics include: design of performance evaluation tasks, instructional rubrics, use of portfolios, grading, and reporting. Offered in alternate years. —III.

400. Basic Clinical Skills (1-4)
Lecture/laboratory—1-4 hours. Open to Graduate Students in the Nursing Science and Health Care Leadership Graduate Degree programs, or by consent of instructor. Instruction and practice of the fundamental clinical skills necessary for patient care comprise this course with a primary focus on principles of effective communication in establishing the therapeutic provider-patient relationship. —I, II, III, IV.

Quarter Offered: I—Fall, II—Winter, III—Spring, IV—Summer; 2015-2016 offering in parentheses

Pre-Fall 2011 General Education (GE): AHNC–Arts and Humanities; SCI–Science and Engineering; SS–Social Sciences; DL–Domestic Diversity; WRT–Writing Experience

410A. Advanced Clinical Skills (1-4)
Lecture/laboratory—1.4 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/specialized content related specified systems.—I, II, III, IV. (I, II, III, IV.)

410B. Advanced Clinical Skills (1-4)
Lecture/laboratory—1.4 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/specialized content related specified systems.—I, II, III, IV. (I, II, III, IV.)

410C. Advanced Clinical Skills (1-4)
Lecture/laboratory—1.4 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/specialized content related specified systems.—I, II, III, IV. (I, II, III, IV.)

410D. Advanced Clinical Skills (1-4)
Lecture/laboratory—1.4 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/specialized content related specified systems.—I, II, III, IV. (I, II, III, IV.)

410E. Advanced Clinical Skills (1-4)
Lecture/laboratory—1.4 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/specialized content related specified systems.—I, II, III, IV. (I, II, III, IV.)

410F. Advanced Clinical Skills (1-4)
Lecture/laboratory—1.4 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Continuation of focus on history taking and physical examination skills with advanced/specialized content related specified systems.—I, II, III, IV. (I, II, III, IV.)

440. Supervised Clinical Hours (1-3)
Clinical Activity—36 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Students are placed in clinical settings and/or clinical simulation laboratories to observe and practice the integration of clinical skills with direct supervision by faculty.—I, II, III, IV. (I, II, III, IV.)

450A. Supervised Clinical Practice—Primary Health Care (1-16)
Clinical activity—48 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Each of the required primary care rotations is a four-week supervised clinical practice experience in primary care, under the supervision of an appropriate community-based primary care provider per accreditation requirements.—I, II, III, IV. (I, II, III, IV.)

450B. Supervised Clinical Practice—Primary Health Care (1-16)
Clinical activity—48 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Each of the required primary care rotations is a four-week supervised clinical practice experience in primary care, under the supervision of an appropriate community-based primary care provider per accreditation requirements.—I, II, III, IV. (I, II, III, IV.)

450C. Supervised Clinical Practice—Primary Health Care (1-16)
Clinical activity—48 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Each of the required primary care rotations is a four-week supervised clinical practice experience in primary care, under the supervision of an appropriate community-based primary care provider per accreditation requirements.—I, II, III, IV. (I, II, III, IV.)

450D. Supervised Clinical Practice—Primary Health Care (1-16)
Clinical activity—48 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Each of the required primary care rotations is a four-week supervised clinical practice experience in primary care, under the supervision of an appropriate community-based primary care provider per accreditation requirements.—I, II, III, IV. (I, II, III, IV.)

450E. Supervised Clinical Practice—Primary Health Care (1-16)
Clinical activity—48 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Each of the required primary care rotations is a four-week supervised clinical practice experience in primary care, under the supervision of an appropriate community-based primary care provider per accreditation requirements.—I, II, III, IV. (I, II, III, IV.)

451. Supervised Clinical Practice—Pediatrics (1-16)
Clinical activity—48 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Four-week clinical rotation under the supervision of an appropriate community-based Pediatric Medicine provider per accreditation requirements.—I, II, III, IV. (I, II, III, IV.)

452. Supervised Clinical Practice—Women’s Health (1-16)
Clinical activity—48 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Four-week clinical rotation under the supervision of an appropriate community-based women’s health and prenatal care provider per accreditation requirements.—I, II, III, IV. (I, II, III, IV.)

453. Supervised Clinical Practice—Mental Health (1-16)
Clinical activity—48 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Four-week clinical rotation under the supervision of an appropriate community-based psychiatric, psychotric/mental health provider per accreditation requirements.—I, II, III, IV. (I, II, III, IV.)

454. Supervised Clinical Practice—Emergency Medicine (1-16)
Clinical activity—48 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Four-week clinical rotation under the supervision of an appropriate Emergency Medicine provider per accreditation requirements.—I, II, III, IV. (I, II, III, IV.)

455. Supervised Clinical Practice—Inpatient Surgery (1-16)
Clinical activity—48 hours. Open to Graduate Students in the Nursing Science and Health-Care Leadership Graduate Degree programs, or by consent of instructor. Four-week clinical rotation under the supervision of an appropriate surgical provider per accreditation requirements.—I, II, III, IV. (I, II, III, IV.)
Nutrition

See Clinical Nutrition, on page 203; Food Service Management, on page 315; Nutrition; Nutritional Biology (A Graduate Group), on page 457; Nutrition Science, on page 458.

Minor Program Requirements:
The Department of Nutrition offers four minor programs open to students majoring in other disciplines who wish to complement their study programs with a concentration in the area of food and nutrition.

Note: If the student’s major program requires the same course in biochemistry and physiology, only one of the courses may duplicate credit toward the minor. Each program below lists replacement courses to fulfill the minimum unit requirement.

Community Nutrition ............................... 20
Preparation. Plan in advance to include the required course prerequisites.
Nutrition 111AV and 111B ............................ 5
Nutrition 118, 192 (2 units) ....................... 6
Nutrition 120AAN or 120BN ....................... 4
Neurobiology, Physiology, and Behavior 101 ........................................... 5
Replacement courses; see note above:

Food Service Management ............................. 25
Preparation. Plan in advance to include the required course prerequisites.
Food Science and Technology 100A-100B, 101A-101B ............................ 12
Food Service Management 120, 120L, 122 .............................................. 9
Agricultural and Resource Economics 112 .............................................. 4
Replacement courses; see note above:

Nutrition and Food ....................................... 22
Preparation. Plan in advance to include the required course prerequisites.
Nutrition 111AV and 111B ............................ 5
Nutrition 120AAN or 120BN ....................... 4
Food Science and Technology 100A-100B ............................ 8
Neurobiology, Physiology, and Behavior 101 .............................................. 5
Replacement courses; see note above:

Nutrition Science ......................................... 20
Preparation. Plan in advance to include the required course prerequisites.
Animal Biology 102 and 103, Biological Sciences 102 and 103 and Nutrition 111AV and 111B .............................................. 11-15
Neurobiology, Physiology, and Behavior 101 .............................................. 5
Replacement courses; see note above:
Nutrition 114, 115, 116A-116B, 117, 120AAN or 120BN, 122, 123, 124, 201, 204.

Minor Adviser. 3202 Meyer Hall 530-752-2512
Graduate Study. Programs of study leading to the M.S. and Ph.D. degrees are available in Nutrition. For information on graduate study contact the Nutrition Graduate Group.

Courses in Nutrition (NUT)
Lower Division
10. Discoveries and Concepts in Nutrition (3)
Discussion—1 hour; term paper. Exploration of current applications and controversies in nutrition. Students read scientific journal articles and write summaries, as well as give brief oral presentations. Topics change to reflect current interests and issues. GE credit: SciEng | WE—II, III. (II, III.) Applegate
99. Individual Study for Undergraduates (1-5)
Prerequisite: consent of instructor. (P/np grading only.) GE credit: CE.

Upper Division
104. Environmental & Nutritional Factors in Cellular Regulation and Nutritional Toxins (4)
Lecture—3 hours; discussion—1 hour. Prerequisite: Biological Sciences 101; Biological Sciences 103 or Animal Biology 103. Cellular regulation from nutritional/toxicological perspective. Emphasis: role of biofactors on modulation of signal transduction pathways, roles of specific organelles in organization/ regulation of metabolic transformations, major cofactor functions, principles of pharmacology/toxicology important to understanding nutrient/toxictoic metabolism. (Same course as Environmental Toxicology 104.) GE credit: SciEng | OE, SL, SL—I. (I.) Haj, Oteiza

110. Nutrition and Aging (3)
Lecture—3 hours; prerequisite: course 111AV and Animal Biology 103 or the equivalent. Role of nutrition in the aging process from both an organismal/ cellular perspective, including demographic, theories of aging, nutrition and evolution, nutritional manipulation and life-span extension, and nutrition’s impact on the diseases of aging. GE credit: SciEng | SE—II, III. (II, III.) McDonald

111AV. Introduction to Nutrition and Metabolism (3)
Web lecture—3 hours. Prerequisite: Chemistry 8B, Neurobiology, Physiology, and Behavior 101 or the equivalent. Introduction to metabolism of protein, fat, and carbohydrate, the biological role of vitamins and minerals, nutrient requirements during the life cycle, assessment of dietary intake and nutritional status. Not open for credit to students who have completed course 101. E credit: SciEng | SE—II, III. (II, III.) McDonald

111B. Recommendations and Standards for Human Nutrition (2)
Lecture—2 hours. Prerequisite: Chemistry 8B, Neurobiology, Physiology, and Behavior 101 or the equivalent. Critical analysis of the development of nutritional recommendations for humans. Topics include history of modern recommendations, development of the Recommended Dietary Allowance (RDA) and other food guides; the Dietary Reference Intakes (DRI); administrative structure of regulatory agencies pertinent to nutrition recommendations; introduction to scientific methods used to determine the recommendations; food labeling laws; nutrition