Department of Health Science and Human Ecology

- Accredited as a Didactic Program in Dietetics (DPD) and individualized Supervised-Practiced Pathway (ISPP) Program by the Accreditation Council for Education in Nutrition and Dietetics (ACEND)

Department of Health Science and Human Ecology

Physical Sciences Building, Room 226
(909) 537-5339 Department of Health Science and Human Ecology (http://health.csusb.edu)

Bachelor of Science
- Health Science with concentrations in:
  - Environmental Health Science
  - Health Care Management
  - Public Health Education
  - Nutrition and Food Sciences

Teaching Credential Preparation Program
Health Science

Master of Public Health

Master of Science
- Health Services Administration

Certificate Programs
- Gerontology
- Health Care Management

Audiometrist Certification

Offered through the College of Extended Learning, HSCI 374 leads to a certificate of registration as a school audiometrist issued by the California State Department of Health Services.

The Department of Health Science and Human Ecology provides courses of instruction for personal growth, community service, intellectual stimulation, and professional career opportunities in the public health and environmental fields. The department emphasizes an ecological approach to health and attempts to provide students with the tools necessary to understand factors contributing to the promotion of general health and well-being, and elimination of population health disparities.

The Department of Health Science and Human Ecology offers a Bachelor of Science in Health Science and a Bachelor of Science in Nutrition and Food Sciences. In addition, the department offers a Master of Science in Health Services Administration, and a Master of Public Health. The department also offers certificates in several specialized areas.

A Bachelor of Science in Health Science with a given concentration is appropriate for students preparing to become health professionals, those who want to be health educators or health administrators, or those desiring to work in environmental protection agencies, private businesses, industrial hygiene, and safety. The program also is designed to provide a career ladder opportunity for persons currently engaged in public health and environmental occupations or preparing for graduate work in medicine, public health, allied health, and social or natural sciences.

The department offers a blend of traditional and modern approaches to education and career development in the health science field. It encourages multidisciplinary orientation, community interaction, and a social outlook, and provides appropriate instruction in the health-related areas of science. In their senior year, students intern in community agencies such as health departments, hospitals, industrial plants, environmental improvement agencies, and consumer affairs offices, thus combining theory and practice.

The Environmental Health Science Concentration is the appropriate choice for students who want to become health inspectors (i.e., Registered Environmental Health Specialists), industrial hygienists, or hazardous waste control experts. For those who plan on becoming Registered Environmental Health Specialists, this concentration is approved by the Environmental Specialist Registration Committee of the California Department of Public Health. Students who are certified by the environmental health coordinator will have met the academic and experience requirements for admittance to the State Environmental Health Specialist Registration Examination.

The Public Health Education concentration prepares graduates for professional positions in county health departments and other public health agencies, community-based organizations, health care, tribal health, or international organizations, and for graduate programs in physician assistant, occupational therapy, and other allied health programs.

Pre-professional students of medicine, dentistry, veterinary medicine, or other science-related fields seeking a major in health science should consult with a department advisor.

Students interested in fields such as health or environmental law, clinical chemistry, business, health physics, or any other academic discipline should complete the minimum requirements of the major and select appropriate electives in consultation with a department advisor.

Departmental Honors

A graduating senior will be awarded departmental honors in Health Science after meeting the following requirements:

1. At least a 3.5 grade point average in all courses required for the major taken at California State University, San Bernardino;
2. At least a 3.0 ("B") grade point average overall;
3. An "A-" or better in HSCI 595. Independent Study (at least four units).

Nutrition and Food Sciences

Approved as a Didactic Program in Dietetics by the American Dietetic Association (ADA)

Department of Health Science and Human Ecology

Physical Sciences Building, Room 226
(909) 537-5340 Department of Health Science and Human Ecology (http://health.csusb.edu)
The Bachelor of Science in Nutrition and Food Sciences is appropriate for students preparing for careers dealing with foods, nutrition, or dietetics. After graduation, students are eligible to apply and complete an ACEND accredited internship/supervised-practice programs. After completion of 1,200 hours of supervised-practice, they are eligible to take the registration to become a registered dietitian/nutritionist (RDN). Also, graduates with Verification Statement may take the exam for Diet Technician Registered (DTR) to become Nutrition and Dietetic Technician Registered (NDTR). Graduates may also work as Certified Dietary Manager (CDM), dietary aides, School Nutrition Specialists (SNS), and in many other food- and nutrition-related jobs.

Current Faculty

Monideepa Becerra, Assistant Professor of Health Science and Human Ecology
B.S. 2008, University of California, Riverside
M.P.H. 2011, Loma Linda University
D.P.H. 2014, Loma Linda University

Dorothy C. Chen-Maynard, Associate Professor, Chair
B.S. 1978, University of Southern California
M.S. 1981, California State University, Los Angeles
Ph.D. 1994, University of California, Davis.

Ted Coleman, Professor
B.A. 1979, M.H.Ed. 1980, Brigham Young University
Ph.D. 1983, Purdue University

Marsha Greer, Associate Professor of Health Science and Human Ecology
B.A. 1973, University of Northern Colorado
M.S. 1977, Washington State University
M.U.P. 1990, University of Oregon
Ph.D. 1995, Oregon State University

Nicole Henley, Assistant Professor
B.B.A. 1997, University Of Wisconsin-Whitewater
M.B.A. 2000, University Of Wisconsin-Whitewater
Ph.D. 2007, University of California, Los Angeles

Joe S. Hughes, Assistant Professor
B.A. 1978, George Washington University
M.S. 1985, Ph.D. 1989, Washington State University

Sue Kim, Assistant Professor
Ph.D., 2013, University of California Berkeley

Robert LaChausse, Lecturer
B.A. 1995, M.A. 1998, California State University, San Bernardino

Christopher H. Lindfelt, Associate Professor
B.A. 1989, Lawrence University

Paulchris Okpala, Assistant Professor
B.S. 2005
M.S. 2007
DPH 2010

Robert N. Phalen, Associate Professor
B.A. 1995, California State University, Fullerton
Ph.D. 2006, University of California, Los Angeles

Dimitri Tamalis, Professor, Chair

B.S. 1990, McPherson College
Ph.D. 1997, Kansas State University

Angie Verissimo, Assistant Professor
B.A. 2005, University of Redlands
M.P.H. 2007, Ph.D. 2011, University of California, Los Angeles

Emeriti

Kim R. Clark
Richard Eberst, Professor
Daniel F. Fahey, Professor
Joseph E. Lovett, Professor
Lal S. Mian, Professor
Cynthia Paxton, Professor
Thomas C. Timmreck, Professor

Undergraduate Degrees

Bachelor of Science

• Health Science (http://bulletin.csusb.edu/colleges-schools-departments/natural-sciences/health-science-human-ecology/health-science-bs) with concentrations in:
  ■ Environmental Health Science
  ■ Health Care Management
  ■ Public Health Education

Graduate Degrees


Master of Science

• Health Services Administration (http://bulletin.csusb.edu/colleges-schools-departments/natural-sciences/health-science-human-ecology/health-services-administration-ms)

Certificate Programs

Courses

HSCI 100. Concepts in Health. 2 Units.
Standards and guidelines for coordinated school health programs and comprehensive health education are introduced. Course content is formulated for those planning a career in K-8 education. Does not qualify as a Health Science elective, nor as a clear credential course for post-baccalaureate credential candidates.

HSCI 120. Health and Society: An Ecological Approach. 5 Units.
Prerequisites: satisfactory score on the Entry Level Mathematics examination (GE=B2)
Nature and function of health in society through study of the fundamental concepts of living systems and their implication in the processes of health and illness in the human organism. Major health problems are analyzed to contribute to the students understanding of his or her role as an individual and as a member of the community. Four hours lecture and three hours laboratory.

HSCI 216. Reproductive Health. 2 Units.
Provides an overview of reproductive health issues facing men and women today, including but not limited to: human reproductive anatomy; self-care and medical examinations; commonly occurring reproductive disorders; symptoms and treatment including fertility-related disorders; birth control methods; abortion; threats to health during pregnancy; access to quality health care. Formerly HSCI 335.

HSCI 218. Stress Management. 2 Units.
Examines the history of stress-related research, sources of stress in modern society, the body's response to stress, and recent advances in psycho-neuro-immunology. Also included is the exploration of a variety of stress control techniques applicable to both personal and professional settings. Formerly HSCI 305.

HSCI 225. Introduction to the Dietetic Profession. 1 Unit.
An overview of the dietetic profession and careers in dietetics. Includes historical perspectives of the dietetic profession, professional organizations, ethics, future outlook of the profession, and traditional/nontraditional career options in nutrition and dietetics.

HSCI 244. Introduction to Culinary Arts. 2 Units.
The basics of food preparation and culinary skills; students will learn about shopping, preparation and handling of food, food safety, and selection and use of kitchen equipment and tools. Provides students with basic food preparation and culinary techniques, appropriate for non-majors. One hour lecture and three hours laboratory.

HSCI 245. Introduction to Food Science. 5 Units.
Prerequisites: CHEM 205
Application of scientific principles to the study of food; role of carbohydrates, lipids and proteins in food; principles of food safety. Four hours lecture and three hours laboratory.

HSCI 271. Introduction to Public Health. 4 Units.
An interdisciplinary overview of the public health field infrastructure and unique features and responsibilities of public health, the history and accomplishments of Public Health officials and agencies, various Public Health institutions, and an in-depth examination of the core Public Health disciplines. These include epidemiology of infectious and chronic disease, environmental health, health promotion, global health (including health disparities), health policy, and health services management. Formerly HSCI 371.

HSCI 273. Software Applications in the Health Sciences. 4 Units.
Overview and application of a variety of software applications currently utilized in health science-related programs, including but not limited to assessment, planning, program implementation and management software; statistical packages; regional and national databases; and integrated applications. Formerly HSCI 373. Materials fee required.

HSCI 295A. Special Projects in Health Science. 1 Unit.
Prerequisites: consent of department
Individual investigation, research, study or survey of selected problems.

HSCI 295B. Special Projects in Health Science. 2 Units.
Prerequisites: consent of department
Individual investigation, research, study or survey of selected problems.

HSCI 301. Foundations of Public Health Education. 4 Units.
Examines the profession of public health education in various settings and selected historical, cultural, philosophical, professional, and ethical issues in the practice of health education. Emphasis is placed on leadership, professionalism, career development, professional organizations, and interrelationships among physical, social, and cultural forces in the practice of health promotion and education.

HSCI 303. AIDS and Society. 4 Units.
The HIV/AIDS epidemic continues to threaten the cultural, economic and political stability of affected populations. This course uses HIV/AIDS as an example for exploration of the local, national and world community's historical, current and future social and political response to this and similar health problems.

HSCI 310. Health and Human Sexuality. 4 Units.
Relationship between health and human sexuality with a theme of prevention of disease, disorder and dysfunction through education.

HSCI 311. Organization and Management of Long-Term Care Facilities. 4 Units.
Prerequisites: HSCI 271 and MGMT 302 or PSYC 302, or consent of instructor
Examination of the professional administrative role and managerial concepts in long-term facilities, including nursing homes. Formerly HSCI 511.
HSCI 315. Statistics for the Health Sciences. 4 Units.
Prerequisites: MATH 110
Introduction to the analysis, interpretation, and presentation of data acquired for health sciences and public health. Emphasis will be on application rather than theory. Four hours lecture.

HSCI 322. Air Pollution. 2 Units.
Prerequisites: college-level courses in biology and chemistry
Principles of air quality management, including health implications of polluted air, applicable fundamentals of meteorology, air quality regulations and current concepts in air pollution control technology.

HSCI 324. Radiological Health and Safety. 2 Units.
Prerequisites: college-level courses in biology, chemistry and physics
Ionizing radiation and its effects on health. Methods of identification, evaluation and control are emphasized.

HSCI 332. Health Education in the Elementary School. 4 Units.
Prerequisites: HSCI 120 or consent of instructor
Health education concepts and content applied specifically to grades K-6. Stresses communication and instruction in health education for the teacher/school nurse, emphasizing the uniqueness and personal nature of health; techniques of health education; recognition of health education and other aspects of normal health and diseases/disorders common in children. Conforms with the State Framework for Education in the Health Sciences.

HSCI 342. Nutrition for Your Health. 4 Units.
Application of basic nutrition principles including functions of food and nutrients in health and disease prevention through the life cycle; the impact of food choices and lifestyle on health; discussion of current trends, fads and fallacies in nutrition. May not be counted towards fulfilling requirements in the major or minor in the Nutrition and Food Sciences program.

HSCI 344. International Perspectives on Nutrition. 4 Units.
Study and comparison of the incidence and causes of malnutrition in developing and industrialized nations. Discussion of political, economic, ecological, and cultural factors influencing malnutrition.

HSCI 345. Advanced Food Science. 5 Units.
Prerequisites: CHEM 206 or equivalent and HSCI 245
Study of food processing technology including thermal processing, dehydration, heat removal, and osmotic preservation. Food product development and sensory evaluation of food. Fours hours lecture and three hours laboratory.

HSCI 350. Principles of Nutritition. 4 Units.
Prerequisites: CHEM 207, or a one-term GOB (General, Organic, Biochemistry) course, BIOL 223 and BIOL 224, or consent of instructor
Physiological and chemical roles of carbohydrates, lipids, proteins, vitamins, minerals, and water in the human body. Understanding of nutrition standards and relationship between foods and nutrients. Factors affecting absorption, utilization, and the need for nutrients.

HSCI 352. Principles of Environmental Health. 4 Units.
Prerequisites: college-level course in biology
Introduction to the effects of the physical, chemical, and biological environments and their impacts on human health and well-being. Emphasis is placed on the principles of assessment, evaluation, and control of environmental risks related to public health. Discussion topics include air, water, and solid waste pollution plus food protection, radiation, hazardous wastes, and environmental impacts.

HSCI 354. Solid Waste Management. 2 Units.
Prerequisites: HSCI 352, college-level coursework in biology and chemistry, or consent of instructor
Principles of solid waste management from generation and collection to disposal. Includes evaluation of methods of waste disposal, and discussion of relevant legislation. The contribution of solid waste to air, water and soil pollution.

HSCI 356. Housing and Institutions. 2 Units.
Basic health principles and environmental quality considerations associated with housing and institutions (for example, health care, educational, penal). Relationship of housing quality to physical, socio-economic and ethnic factors and their influence on health.

HSCI 358. Water Quality and Pollution. 4 Units.
Prerequisites: HSCI 352, college-level coursework in biology and chemistry, or consent of instructor
Major sources and control of water pollution. Includes discussion of water legislation, wastewater treatment, quality control criteria for safe drinking water and their impact on aquatic life.

HSCI 359. Global Health. 4 Units.
Explores the main principles of global health within the social, cultural, geographic, environmental, political, and economic contexts that determine population-level health and illness, including factors that account for variations in and patterns of health outcomes. Topics include health policies, programs, health systems, identifying and interpreting current data sources, diseases, and interventions.

HSCI 360. Medical Care Organizations. 4 Units.
Prerequisites: HSCI 271 or consent of instructor
Analysis of the organization of health and medical care services, resources, facilities, financial aspects, and other related topics. Formerly HSCI 415.

HSCI 361. Principles of Accident Prevention. 2 Units.
Ecological and medical aspects of accident prevention in residential, work, educational, medical and recreational environments. Legal aspects and governmental organizations involved in accident prevention.

HSCI 364. Drug and Alcohol Use and Abuse. 4 Units.
Analysis of factors influencing human use or abuse of drugs, alcohol and other substances and their effects on the health and well-being of the individual, family and society.
HSCI 365. Nutrition Throughout the Life Cycle. 4 Units.
Prerequisites: HSCI 350
Nutritional needs through the life cycle. Factors that affect cultural, ethnic and religious food preferences in individuals and groups.

HSCI 367. Human Disease Mechanisms. 4 Units.
Prerequisites: either BIOL 223 and BIOL 224 or BIOL 200, BIOL 201, and BIOL 202
Ecological and medical aspects of human disease and the body’s response to the disease process and the effects on normal function.

HSCI 370. Health Behavior. 4 Units.
Theoretical foundation for the development, analysis, and interpretation of individual and community influences on decisions which impact health status. Strategies for health behavior modification. Formerly HSCI 470.

HSCI 378. Peer Education Training in Health Science. 4 Units.
Content and methods related to peer education in Health Science. Small group process, techniques in health counseling, accessing resources and referrals and the development of presentation skills will be emphasized.

HSCI 379. Peer Education Supervision in Health Science. 2 Units.
Prerequisites: HSCI 378
Ongoing supervision for those students previously trained as peer educators in health science who are currently providing services to the CSUSB Peer Education Program. May be repeated once for credit. Graded credit/no credit.

HSCI 380. Toxicology. 4 Units.
Prerequisites: college-level biology and chemistry courses
Principles of chemical toxicity and relationship to public health, including principles, intoxication, disease, dose-response measurement, mechanisms of action and principles of antidotal therapy. Specific toxicologic studies as related to various food, drug, consumer, industrial and environmental problems. Studies of various classes of chemical intoxicants.

HSCI 381. Occupational Safety. 4 Units.
Principles of industrial safety, including general principles; accident control; industrial, mechanical, electrical, chemical and flammability hazards; fire and explosion protection; accident investigation; industrial safety inspections; record keeping; safety training and emergency planning; methods of industrial safety management as a unifying theme.

HSCI 382. Nutrition for Health, Fitness and Sports. 4 Units.
Addresses nutrition needs of active people and athletes. Topics include, but not limited to macro and micro nutrient requirements for fitness and sport, popular nutrition supplements and ergogenic aids. (Offered as HSCI 382 and KINE 382. Students may not receive credit for both.) Four hours lecture. Recommended: BIOL 224.

HSCI 384. Nutrition Assessment and Research Methodology. 4 Units.
Prerequisites: HSCI 315, HSCI 350 and HSCI 365 or consent of instructor
Integration and application of experimental designs and methods employed in nutritional science research. Students will gain an understanding of interactions among nutrients and metabolic functions through data collection and analysis. Students will perform experiments and participate in discussions of nutritional assessment methods involving anthropometric, dietary, clinical, and biochemical tests. Three hours lecture and three hours laboratory.

HSCI 385. Food and Culture: Traditions and Trends. 4 Units.
Prerequisites: HSCI 244 or consent of instructor
Understanding of relationships among cultural, religious and geographical locations to food consumed by people around the world. Comparison of differences and similarities in types of food and cuisines. Exploration of factors that affect types of food consumed and their effects on nutrition and health status. Three hours lecture and three hours laboratory.

HSCI 399A. Community Service Project. 1 Unit.
Prerequisites: consent of department
Credit for performing academically related tasks in such agencies as governmental, social service and educational institutions. May be repeated for a total of six units. No more than six units of credit for Community Service Project courses may be applied toward degree requirements. Graded credit/no credit.

HSCI 399B. Community Service Project. 2 Units.
Prerequisites: consent of department
Credit for performing academically related tasks in such agencies as governmental, social service and educational institutions. May be repeated for a total of six units. No more than six units of credit for Community Service Project courses may be applied toward degree requirements. Graded credit/no credit.

HSCI 401. Advanced Environmental Health. 5 Units.
Prerequisites: HSCI 352, college-level course work in biology, chemistry and physics is recommended or consent of instructor
An integrated view of the factors that contribute to illness, injury, or death, and that affect the health status of individuals and populations. Topics include epidemiology, demographics and statistics on health status, determinants of health and illness, behavioral aspects of health and preventive care. Environmental health laws and regulations as well as compliance with current regulations are emphasized. The laboratory emphasizes methods of measuring and evaluating environmental health risks as well as field experience. Topics include: environments within buildings, food sanitation, water sanitation and control, solid and hazardous waste and control, air pollution and control, community noise and control. Four hours lecture and three hours laboratory. Formerly HSCI 353.
HSCI 402. Principles of Occupational Health. 5 Units.
Prerequisites: HSCI 352 or consent of instructor. College-level course work in chemistry and physics is recommended.
Principles of occupational health risks including anticipation, recognition, evaluation, and control. Influence of workplace risks on human health and their relationship to occupational medicine. Study of occupational health laws and regulations as well as methods of compliance with current regulations. Laboratory and field experience in topics that include: toxic and hazardous chemicals, airborne chemicals, materials of biological origin, noise, and electromagnetic radiation. Four hours lecture and three hours of laboratory per week. Formerly HSCI 353.

HSCI 403. Vector-borne Disease Control. 5 Units.
Prerequisites: HSCI 352, college-level coursework in biology and chemistry, or consent of instructor.
Identification and control of insect and other vectors of diseases. Discussion of major topics in vector ecology including natural and chemical control methods and their impact on health and environmental quality. Four hours lecture and three hours laboratory. Formerly HSCI 458.

HSCI 404. Womens Health Issues. 4 Units.
Examination of programs, policies, and services that affect the health of girls and women across the lifespan. Emphasis on social, political, economic, environmental, personal, and behavioral factors associated with women’s health.

HSCI 405. Health Issues of Men. 4 Units.
Exploration of men’s health issues from an ecologic perspective; e.g., physical, mental, social, intellectual, financial, spiritual, sexual, and other related dimensions. Emphasis is on balance as well as intersections of biological sex, gender concerns, racial considerations, and other diverse factors; personal responsibility for maintaining and promoting health; self-care and access to appropriate healthcare.

HSCI 421. Community Mental Health. 4 Units.
Mental health care delivery system with emphasis on a community approach to prevailing problems and issues. Methods of evaluating community and school mental health education programs; survey of available resources.

HSCI 422. Health Planning. 4 Units.
Prerequisites: HSCI 271 or consent of instructor.
Health planning systems and procedures.

HSCI 423. Health and Wellness of Older Adults. 4 Units.
The physiological, sociological and psychological aspects of the aging process. Disease prevention and health promotion concepts related to the quality of life of older adults.

HSCI 424. Health Facilities Planning. 4 Units.
Activities in health care facilities planning, for example, architectural, engineering, contractual, environmental and other regulatory aspects. Facility planning processes, environmental forces, administrative coordination and historical development.

HSCI 425. Hearing Conservation and Noise Measurement. 2 Units.
Principles of audiology and noise measurements and their application to environmental and industrial hearing conservation programs.

HSCI 426. School Health Administration and Planning. 4 Units.
Philosophical framework and history of the school health education program, including organization, funding, administration, and legal aspects. Emphasis on the roles of health teachers and school nurses within the context of a coordinated school health program, including parent-community advisory groups. Formerly HSCI 334 and 434.

HSCI 427. School Health Education. 4 Units.
Prerequisites: HSCI 120 or consent of instructor.
Health education concepts and content applied specifically to grades 7-12. Stresses instruction in health education for the teacher/school nurse, within the context of a coordinated school health system; teaching strategies and their adaptation to special populations; the identification and assessment of instructional resources; alignment with state and federal standards for health education. Formerly HSCI 333.

HSCI 435. Health and Human Development. 4 Units.
Issues regarding the health and well-being of children and adolescents will be emphasized including physical, cognitive, emotional, and social development from an applied perspective.

HSCI 436. Human Resources Management in Health Care. 4 Units.
Principles of effective human resource management in the medical care setting. Issues involving wage and hour laws, state and federal regulations of the work place, recruitment and retention of staff, training, compensation and benefits, professional credentialing, licensure, and continuing education. Formerly a topic under HSCI 452.

HSCI 437. Information Systems as Applied to Ambulatory Care/Group Practice Management. 4 Units.
Prerequisites: HSCI 120 or consent of instructor.
Information system needs of medical group/ambulatory care organizations including the selection of software and hardware for an integrated information system. Solve problems related to the integration of clinical and financial data, understand the development of electronic medical records, patient scheduling systems, disease state management and HIPPA regulations. Previously offered as a topic under HSCI 452.

HSCI 438. Financial Management in Health Care. 4 Units.
Prerequisites: ACCT 211 or consent of instructor.
Financial requirements in medical care settings, including the selection of software and hardware for an integrated information system. Solve problems related to the integration of clinical and financial data, understand the development of electronic medical records, patient scheduling systems, disease state management, and HIPAA regulations. Previously offered as a topic under HSCI 452.
HSCI 440. Family Health Issues for Educators. 4 Units.
Factors which influence the overall health status of today's adolescents, their families and communities, including fitness, nutrition, substance abuse, suicide, stress and sexuality issues. The role of the secondary classroom teacher within the school health services and referral system is emphasized. Course conforms with the State Framework for Education in the Health Sciences for middle school and high school teacher candidates. May not be taken for elective credit in school health or community health concentrations.

HSCI 441. Nutritional Biochemistry and Metabolism. 4 Units.
Prerequisites: HSCI 365 and 384, or consent of instructor
Study of metabolic roles of macro- and micronutrients in the body using an integrated approach to explore the roles of nutrients in biochemical, physiological, and metabolic functions. Includes effects of metabolic diseases on physiological and biochemical functions of the body. Formerly HSCI 351.

HSCI 442. Advanced Human Nutrition. 4 Units.
Prerequisites: HSCI 441 or consent of instructor
Nutritional biochemistry and relevant topics in nutrition and dietetics. Emphasis on integration, interpretation, and application of nutrition research. Formerly HSCI 383 and HSCI 447.

HSCI 443. Medical Nutrition Therapy I. 4 Units.
Prerequisites: HSCI 441, or consent of instructor
Development of skills and knowledge necessary for nutrition and dietary intervention in disease processes. Special emphasis on interrelationships between pathophysiology of disease processes and the dietary modifications required to recover from the disease condition and/or to improve the quality of life. Formerly HSCI 368.

HSCI 444. Medical Nutrition Therapy II. 4 Units.
Prerequisites: HSCI 442 and 443, or consent of instructor
Continuation of Medical Nutrition Therapy I. Further development and skills and knowledge necessary for nutrition and dietary intervention in disease processes. Special emphasis on interrelationships between pathophysiology of disease processes and dietary modifications that are part of the treatment of disease/disability and/or to improve the quality of life. Formerly HSCI 369. Three hours lecture and three hours activity.

HSCI 445. Community Nutrition. 4 Units.
Prerequisites: HSCI 273, 442, and 443, or consent of instructor
The role of public and private agencies in nutrition programs. Application of nutrition principles to the improvement of the health status of individuals and groups in the community. Emphasis on program development, evaluation of community programs and educational methods.

HSCI 446. Senior Seminar in Dietetic Education. 1 Unit.
Prerequisites: HSCI 225 and senior standing in the Nutrition and Food Science program
Current and future trends in dietetic education, dietetic internship programs, and application processes.

HSCI 451. Principles of Epidemiology. 4 Units.
Distribution and dynamics of human health problems; principles and procedures used to determine circumstances under which disease occurs or health prevails. The broadened scope of epidemiology is examined through case studies and community health approach.

HSCI 452. Special Topics in Health Science and Human Ecology. 4 Units.
Prerequisites: consent of instructor
Examination of selected topics of current interest in health science. May be repeated for credit as topics change.

HSCI 455. Health Policy and Law. 4 Units.
Health policy, law, and regulations and their impact on public health, including health care. Considers the role of the legal system in resolving public health and health care issues through the legislature, the courts, and administrative agencies. Formerly HSCI 355.

HSCI 460. Strategic Planning and Marketing in the Health Care System. 4 Units.
Strategy-oriented management planning process, basic approaches and methodologies employed in strategic planning and health care marketing; economic and political forces which give form and shape to the health care marketplace.

HSCI 465. Foodservice Production and Procurement. 5 Units.
Prerequisites: HSCI 345 and 350, or consent of instructor
Principles and procedures of menu planning, quantity food production, production scheduling, recipe adaptation, equipment operation, sanitation and formula costing. Principles of procurement including purchasing, selection, storage of equipment and quantity foods. Three hours lecture and six hours laboratory.

HSCI 467. Foodservice Systems Management. 4 Units.
Prerequisites: HSCI 465 and either MGMT 302 or PSYC 302, or consent of instructor
Distribution and management of resources in food service management: personnel, facilities, materials, time and money.

HSCI 468. Research Methodology in Health Science. 4 Units.
Prerequisites: HSCI 315, MATH 262 or MATH 305; or consent of instructor
Entry-level research methods and application to contemporary health problems. Health data analysis and development of skills for determining appropriate analytical techniques and procedures. Materials fee required. Formerly HSCI 498 and HSCI 598.

HSCI 471. Health Program Planning and Implementation. 4 Units.
Critically examines models and processes for the identification of population-based public health needs, development of programs to meet those needs, and plans for implementation of public health interventions. The course integrates several knowledge and skill areas, including research methods, epidemiology, biostatistics, proposal writing, budget planning, and project management. Includes an overview of effective public health interventions using the socio-ecologic framework (individual/behavioral, environmental/social/community, and policy) as a foundation to explore various levels of interventions.
HSCI 472. Program Evaluation. 4 Units.
Prerequisites: prior or concurrent enrollment in HSCI 468 and 471 or consent of instructor
Theory of and practice in a variety of program evaluation strategies in the school, community agency, and/or health care settings.

HSCI 473. Strategies and Methods in Health Education. 4 Units.
Application of a wide-range of strategies and methods for promoting health in various community health education practice settings including community organizations and agencies, clinical settings, and schools. Formerly HSCI 302.

HSCI 474. Advanced Audiometry. 4 Units.
Prerequisites: HSCI 374 or 425 or equivalent
Hearing tests, their objectives and uses for diagnostic and rehabilitative purposes. Techniques for administering auditory tests and the interpretation of their results emphasizing pure-tone audiometry.

HSCI 477. Environmental Health Engineering. 4 Units.
Prerequisites: HSCI 120 and 352
Methods used in designing systems which mitigate environmental contamination of air, soil, and water. Topics include stream re-aeration, kinetics of biological degradation, soil mechanics, adsorption and other principles related to environmental media protection and renovation.

HSCI 478. Environmental Health Management. 4 Units.
Prerequisites: HSCI 120
Methods of management for promoting optimum environmental health, emphasizing land use planning, environmental impact reporting, facility planning and risk assessment.

HSCI 480. Health Services Administration. 4 Units.
Introduction to management theory and practice as they apply to the management of health services programs. Emphasis is placed on the planning, analysis, organizing, staffing, directing, and evaluation functions necessary to the management of health service organizations. Budgeting functions and processes are discussed as they relate to health services management. Formerly HSCI 490.

HSCI 489. Pre-Field Experience. 2 Units.
Prerequisites: senior standing; all 100- and 200-level courses completed; grade of “C” or better in all upper division courses in the major
Prepares students for a practical, professional-level field experience through class discussion and assignments, interaction with guest preceptors, preparing a portfolio, satisfying requirements of the field placement, and completing necessary coursework to identify and establish a field experience project.

HSCI 492A. Field Study I: Action/Research in Human Ecology and Health. 5 Units.
Prerequisites: HSCI 489 or consent of instructor
Individual and team field studies and research in agencies with activities relevant to career goals and interests. Graded credit/no credit. One hour seminar and twelve hours field study per week.

HSCI 492B. Field Study II: Action/Research in Human Ecology and Health. 5 Units.
Prerequisites: HSCI 489 or consent of instructor
Individual and team field studies and research in agencies with activities relevant to career goals and interests. Graded credit/no credit. One hour seminar and twelve hours field study per week.

HSCI 492C. Field Study III: Action/Research in Human Ecology and Health. 5 Units.
Prerequisites: HSCI 489 or consent of instructor
Individual and team field studies and research in agencies with activities relevant to career goals and interests. Graded credit/no credit. One hour seminar and twelve hours field study per week.

HSCI 493. Field Experience Seminar. 1 Unit.
Prerequisites: HSCI 489
Analyzes the field experience, examines trends in the profession, and prepares students for formal presentation of their internship project to department faculty, agency preceptors and other students. Must be taken concurrently with HSCI 495 until completion of field experience. May be repeated for credit.

HSCI 494A. Internship in Health Science. 1 Unit.
Prerequisites: consent of instructor
Internship option for students completing a second area of concentration in health sciences or student teaching experience for school nurses.

HSCI 494B. Internship in Health Science. 2 Units.
Prerequisites: consent of instructor
Internship option for students completing a second area of concentration in health sciences or student teaching experience for school nurses.

HSCI 494C. Internship in Health Science. 3 Units.
Prerequisites: consent of instructor
Internship option for students completing a second area of concentration in health sciences or student teaching experience for school nurses.

HSCI 494D. Internship in Health Science. 4 Units.
Prerequisites: consent of instructor
Internship option for students completing a second area of concentration in health sciences or student teaching experience for school nurses.

HSCI 494E. Internship in Health Science. 5 Units.
Prerequisites: consent of instructor
Internship option for students completing a second area of concentration in health sciences or student teaching experience for school nurses.

HSCI 495. Field Experience. 4 Units.
Prerequisites: HSCI 489; concurrent enrollment in HSCI 493; and signed consent of program advisor
Structured practical pre-professional culminating experience of a minimum 120 hours to be completed in one ten-week quarter in an approved public health agency, community based organization, tribal health site, or health care setting. Meant to be taken at the end of the program by senior level students. Graded credit/no credit.
HSCI 496. Internship in Environmental Health. 4 Units.
Prerequisites: HSCI 352, health science majors with concentration in environmental health science and senior class standing or consent of advisor
Individual studies in environmental health. Students will be placed with public agencies to gain applied and/or research experience. Graded credit/no credit.

HSCI 499A. Directed Reading. 1 Unit.
Prerequisites: a minimum overall grade point average of 3.0 and completion of basic course work in topic area. A written plan of study must be submitted to and approved by the supervising faculty prior to registration in the course
Library/literature research of special topic under the direction of a faculty member. May be repeated for credit, a maximum of eight units may be applied toward graduation. Units from Directed Reading may not be used by student for departmental honors.

HSCI 499B. Directed Reading. 2 Units.
Prerequisites: a minimum overall grade point average of 3.0 and completion of basic course work in topic area. A written plan of study must be submitted to and approved by the supervising faculty prior to registration in the course
Library/literature research of special topic under the direction of a faculty member. May be repeated for credit, a maximum of eight units may be applied toward graduation. Units from Directed Reading may not be used by student for departmental honors.

HSCI 499C. Directed Reading. 3 Units.
Prerequisites: a minimum overall grade point average of 3.0 and completion of basic course work in topic area. A written plan of study must be submitted to and approved by the supervising faculty prior to registration in the course
Library/literature research of special topic under the direction of a faculty member. May be repeated for credit, a maximum of eight units may be applied toward graduation. Units from Directed Reading may not be used by student for departmental honors.

HSCI 499D. Directed Reading. 4 Units.
Prerequisites: a minimum overall grade point average of 3.0 and completion of basic course work in topic area. A written plan of study must be submitted to and approved by the supervising faculty prior to registration in the course
Library/literature research of special topic under the direction of a faculty member. May be repeated for credit, a maximum of eight units may be applied toward graduation. Units from Directed Reading may not be used by student for departmental honors.

HSCI 505. School Nurse Credential Program Orientation. 2 Units.
Prerequisites: admission to the School Nurse Credential Program
Overview of the School Nurse Credential Program including coursework, expectations, timelines and basic skills needed to provide screening for vision, scoliosis, and dental needs. Graded credit/no credit.

HSCI 510. Hospital Administration. 4 Units.
Prerequisites: HSCI 271 and MGMT 302 or PSYC 302, or consent of instructor
Organization and administration of hospital facilities including planning and evaluation of services. Role of the hospital as part of the community. Formerly HSCI 427.

HSCI 512. Clinical Operations of Ambulatory Care/Group Practices. 4 Units.
Prerequisites: HSCI 120 or consent of instructor
The management of physician practices, medical groups, and ambulatory care organizations such as imaging centers, outpatient surgery centers and other outpatient services. Students will develop an understanding of issues and acquire skills in the management of non-acute care organizations owned or substantially controlled by physicians. Previously offered as a topic under HSCI 452.

HSCI 513. Managed Care Systems. 4 Units.
Prerequisites: HSCI 451 and MATH 305 or consent of instructor
Introduction to analysis of health data using statistical procedures, development of skills for determining analytical techniques and procedures for interpretation and presentation of resultant data; examination of sources and evaluation of demographic data and relationships to such topics as fertility, morbidity, mortality, population projection, life tables and migration.

HSCI 525. Health Data Analysis and Demography. 4 Units.
Prerequisites: HSCI 451 and MATH 305 or consent of instructor
Introduction to analysis of health data using statistical procedures, development of skills for determining analytical techniques and procedures for interpretation and presentation of resultant data; examination of sources and evaluation of demographic data and relationships to such topics as fertility, morbidity, mortality, population projection, life tables and migration.

HSCI 530. Food-Borne Illnesses and Their Prevention. 4 Units.
Prerequisites: HSCI 352 or consent of instructor
Food-borne illnesses and food poisoning of microbial and chemical origins, causation and environmental control measures; proper environmental control measures; and proper environmental health conditions involved in storage, transportation and service of foods in order to minimize health dangers. Formerly HSCI 430.

HSCI 531. Bioterrorism. 4 Units.
Prerequisites: college level biology and chemistry or consent of instructor
History, identification, properties and mode of transmission of agents of bioterrorism, including preventive, control and treatment measures against bioterrorism.

HSCI 540. School Health Programs and Practices. 4 Units.
Prerequisites: must be a 2042 or Ryan credential candidate, or consent of instructor
Advanced examination of the teachers role within a coordinated school health program. State and national guidelines are also reviewed.

HSCI 550. Health Aspects of Death and Dying. 4 Units.
Investigation into how the realities of death and loss influence the quality of a person's life and personal health status. The focus is on assisting students and professionals to develop the skills necessary to assist individuals deal with death, loss, grief, bereavement, and mourning in the healthiest ways possible. Formerly a topic under HSCI 452.
HSCI 557. Hazardous Material Control. 4 Units.
Prerequisites: college-level biology and chemistry courses
Major methods for the control of hazardous wastes from generation through disposal, including disease, environmental and legal aspects of hazardous wastes as well as discussion of various disposal techniques. Formerly HSCI 357.

HSCI 558. Management of Water Quality. 4 Units.
Prerequisites: prior or concurrent enrollment in HSCI 358 or consent of instructor
Survey of water quality parameters and pollution control techniques. Includes in-depth discussion on current topics in water legislation, water pollution, and its impact on public health, flood impacts, water conservation options, and drought management.

HSCI 561. Maternal and Child Nutrition. 2 Units.
Significance and role of nutrition during pregnancy, lactation, and childhood including conditions that result from undernutrition.

HSCI 562. Issues in International Nutrition. 2 Units.
Incidence of malnutrition in developing and industrialized countries. Focus on the multiple causes of malnutrition around the world, including food production and distribution, politics and economic policies.

HSCI 590. Current Topics in Health Administration and Planning. 2 Units.
Presentation and analysis of a particular issue or topic in health services administration or planning. May be repeated for credit as topics change.

HSCI 595A. Independent Study. 1 Unit.
Prerequisites: a minimum overall grade point average of 3.0, consent of instructor and departmental approval of a written proposal of a project submitted on a standard application filed in advance of the quarter in which the course is to be taken
Research in special topics or projects including literature review for laboratory and/or applied research under the direction of a faculty member. A written report of the end product must be submitted and approved by a committee of faculty. Review of literature alone on a specific topic may not be used for independent study. A total of eight units may apply toward graduation. Graded credit/no credit.

HSCI 595B. Independent Study. 2 Units.
Prerequisites: a minimum overall grade point average of 3.0, consent of instructor and departmental approval of a written proposal of a project submitted on a standard application filed in advance of the quarter in which the course is to be taken
Research in special topics or projects including literature review for laboratory and/or applied research under the direction of a faculty member. A written report of the end product must be submitted and approved by a committee of faculty. Review of literature alone on a specific topic may not be used for independent study. A total of eight units may apply toward graduation. Graded credit/no credit.

HSCI 595C. Independent Study. 3 Units.
Prerequisites: a minimum overall grade point average of 3.0, consent of instructor and departmental approval of a written proposal of a project submitted on a standard application filed in advance of the quarter in which the course is to be taken
Research in special topics or projects including literature review for laboratory and/or applied research under the direction of a faculty member. A written report of the end product must be submitted and approved by a committee of faculty. Review of literature alone on a specific topic may not be used for independent study. A total of eight units may apply toward graduation. Graded credit/no credit.

HSCI 595D. Independent Study. 4 Units.
Prerequisites: a minimum overall grade point average of 3.0, consent of instructor and departmental approval of a written proposal of a project submitted on a standard application filed in advance of the quarter in which the course is to be taken
Research in special topics or projects including literature review for laboratory and/or applied research under the direction of a faculty member. A written report of the end product must be submitted and approved by a committee of faculty. Review of literature alone on a specific topic may not be used for independent study. A total of eight units may apply toward graduation. Graded credit/no credit.

HSCI 600. Seminar in Health and Human Ecology. 4 Units.
Philosophical foundations of health and human ecology. Historical, contemporary and professional perspectives.

HSCI 601. Administration of Health Care Programs. 4 Units.
Economic forces which impact on health and health delivery systems and an assessment of the distribution of financial resources required to sustain these systems. Emphasis on trends in financing health care and the economic influence of reimbursement policies on financial decision-makers. Formerly HSCI 630.

HSCI 602. Management, Organization and Planning. 4 Units.
Organizational, environmental, socio/political, and behavioral aspects of health and health delivery systems. Ecological perspectives related to management and planning of health programs, including strategies to facilitate communication, decision-making, and problem solving and planning and administrative approaches in developing, modifying and sustaining modern health systems.

HSCI 603. Health Economics and Financial Systems. 4 Units.
Micro- and macroeconomic aspects of health services, various payment approaches, third-party reimbursement systems, budgeting and financial analysis, decision-making and planning in health services and organizations. Formerly HSCI 655.

HSCI 604. Theory and Practice of Interventions. 4 Units.
Prerequisites: HSCI 470 or consent of instructor
Review of current theories and practices of effective prevention and intervention programs, including intervention mapping, program planning, and implementation in schools and community settings with youth.
HSCI 501. Social and Behavioral Influences on Public Health. 4 Units.
Prerequisites: consent of instructor
Social and behavioral determinants of health status, and identification and solution of public health problems including preventive care. Formerly HSCI 501.

HSCI 503. Health Care Accounting and Financial Analysis. 4 Units.
Basic concepts, methods, and application of cost and accrual accounting, finance and budgeting techniques and methods applied to health services and health care organizations, with computer application and analysis. (Also offered as ACCT 605. Students may not receive credit for both.) (4 units.

HSCI 605. Health Care Accounting and Financial Analysis. 4 Units.
Basic concepts, methods, and application of cost and accrual accounting, finance and budgeting techniques and methods applied to health services and health care organizations, with computer application and analysis. (Also offered as ACCT 605. Students may not receive credit for both.) (4 units.

HSCI 606. Advanced Program Evaluation. 4 Units.
Prerequisites: HSCI 471; and HSCI 690 or EDUC 663; or consent of instructor
Advanced topics in health and human services program evaluation models, data collection, quantitative, and qualitative methods, data analysis and data interpretation.

HSCI 607. Cross Cultural Aspects of Health. 4 Units.
Prerequisites: consent of instructor
Roles of cultures and their relationships to health status, health practices, and health-seeking behaviors. Influence of culture on research, statistics, and interventions, and provision of health services.

HSCI 608. Health Research Methods. 4 Units.
Prerequisites: consent of applicable MPH or MSHSA program coordinator
Social and behavioral research methods used in Public Health and Health Services Administration, including research design and methodological issues, qualitative and quantitative data collection strategies, and research proposal writing. Practical application of health data.

HSCI 609. Grant Writing for Health Sciences. 4 Units.
Prerequisites: HSCI 612 and HSCI 617 or consent of instructor
Provide an overview of the principles and practice of grantsmanship from a public health and healthcare management perspective. Course will help students develop proficiency in the processes, factors, and required elements of a successful grant, including identifying granting bodies, formulating objectives, appropriate research questions, evaluation methods, budgeting, sustainability plans.

HSCI 610. Social and Behavioral Influences on Public Health. 4 Units.
Social and behavioral determinants of health status, and identification and solution of public health problems including preventive care. Formerly HSCI 501.

HSCI 611. Public Health System Organization and Delivery. 4 Units.
Public health system organization, function, financing and public policy. Includes an examination of the relationship between the public health system and medical care systems. Formerly HSCI 502.

HSCI 612. Public Health Statistics. 4 Units.
Statistical methods commonly used in the collection and analysis of public health data. Includes methods for descriptive data analysis, fundamentals of probability and sampling distributions, methods for statistical inference, and hypothesis tests based on one or two samples, basic concepts of regression, non parametric statistics, and introduction to qualitative data analysis, and the use of statistical software. Hands-on experience, and interpretations of statistical findings of health research data. Formerly HSCI 503.

HSCI 613. Principles of Health Behavior. 4 Units.
Prerequisites: HSCI 607, and classified status or consent of instructor
Application of psychological and behavioral sciences to health promotion and disease prevention strategies. Examination of factors that predispose, enable and reinforce health-related behaviors, including the significance of social support, provider-client interactions, and the media.

HSCI 614. Health Education Practice. 4 Units.
Prerequisites: consent of instructor
Effective public health interventions using the socio-ecologic framework as a foundation to explore various levels of intervention. Practical applications in planning, implementing, and evaluating public health programs. Applying theory in diagnosing the nature of health and social problems, interpreting empirical research results, and planning health education and promotion interventions to improve public health.

HSCI 615. Health Education Program Planning and Evaluation. 4 Units.
Prerequisites: classified status, prior or concurrent enrollment in HSCI 607, 613 and 614 or consent of instructor
Theory and practice of community health programs including strategic planning, community analysis and needs assessment, setting goals and objectives, implementation strategies, program evaluation and grant writing.

HSCI 616. Environmental and Occupational Health. 4 Units.
Sources, routes, media, and health outcomes associated with chemical, physical, and biological agents in the environment; affects on water quality, air quality, food safety, land resources, and disease in community and occupational settings. Includes methods to identify and evaluate hazard sources and framework used to effect hazard control. Public health issues, research designs, factors important to the development of monitoring programs. Current federal legal framework, policies, and practices associated with environmental issues and intended to improve public health. Formerly HSCI 504.

HSCI 617. Epidemiology. 4 Units.
Prerequisites: HSCI 610, HSCI 611, and HSCI 612
Examination of epidemiologic concepts in relation to specific public health issues. Disease investigation techniques, causal factors, case histories, and related biostatistics are examined, including implications for public health policy and intervention. Formerly HSCI 506.

HSCI 620. Advanced Topics in Epidemiological Methodology. 4 Units.
Prerequisites: HSCI 451 and 690
Concepts and methodologies of contemporary epidemiology and their relationship to managing and planning health and environmental systems.

HSCI 621. Individual and Small Group Interventions in Health Promotion. 4 Units.
Prerequisites: HSCI 604 or consent of instructor
Theories and strategies of individual and group intervention in behaviors related to premature morbidity and mortality. Includes assessment, intervention, planning and follow-up, referral skills for the health education/health promotion specialist. Formerly HSCI 560.
HSCI 622. Health Education Curriculum and Instruction. 4 Units.
Prerequisites: completion of HSCI 432 and 433
Health education curriculum development and implementation, including the parent-community advisory process, curriculum selection and alignment with state standards, course design, student grading and assignments, units of study and lesson plans, lesson presentations, and course evaluation methods. Formerly HSCI 591.

HSCI 623. Health Teaching Practicum. 4 Units.
Prerequisites: HSCI 622
Classroom-based practice in teaching methods and materials used in secondary health education, including planning, class management and student evaluation. One hour lecture and six hours laboratory. Formerly HSCI 592.

HSCI 632. Health Policy and Decision-Making. 2 Units.
Prerequisites: HSCI 271 and 600
Issues and problems in the area of health administration. Emphasis on quality assurance, legal aspects, policy development and decision-making as related to health care planning operations.

HSCI 635. Communication and Human Relations in Health Services. 4 Units.
Techniques for effective written and oral communication at the interpersonal and organizational levels. Particular emphasis is placed upon enhancing human relations skills in health services settings.

HSCI 640. Administration of Health Education Programs. 4 Units.
Prerequisites: classified status, prior or concurrent enrollment in HSCI 615 or consent of instructor
Current developments in health education related to management and planning of health promotion programs, including strategies to facilitate communication, decision-making and problem solving.

HSCI 645. Information and Technology Systems Management in Health Services. 4 Units.
Prerequisites: consent of instructor
Information systems, networks, and computer software systems, used in health services setting.

HSCI 650. Administration of Environmental Management Programs. 4 Units.
Prerequisites: HSCI 352 and 600
Analysis of local, state and national environmental and occupational health programs including program planning and evaluation. Comparative study of international environmental management problems, styles and techniques.

HSCI 651. Air Quality Management. 4 Units.
Prerequisites: classified graduate status and HSCI 617 or consent of instructor
Advanced concepts of air pollution and analysis of relationship among sources, meteorology, health effects, monitoring sampling and emission control systems. Laws and regulations with interpretation and application to the industry.

HSCI 652. Industrial Hygiene. 4 Units.
Prerequisites: classified graduate status and HSCI 617 or consent of instructor
Principles and practices applied in industrial hygiene with regulations applicable to recognition, evaluation and control of work place hazards including risk assessment, advanced techniques and instrumentation used in the solution of work place hazards.

HSCI 653. Health Law and Medical Ethics. 4 Units.
Legal and ethical issues and practices related to health care delivery and health services administration. Ethical administrative behavior, standard of care, tort law and professional liability, negligence and liability law, contracts, lawsuits and civil liability process, corporate law and liability, antitrust, case law and related health law issues are covered.

HSCI 654. Applied Vector Control. 4 Units.
Prerequisites: classified graduate status and HSCI 617 or consent of instructor
Principles and practices used in vector control programs, including advances in chemical and non-chemical control methods, environmental dynamics and impacts of pesticides on public health and environmental quality, pesticide resistance in target species, pesticide legislation and program funding.

HSCI 659. Research Methods in Environmental Health Science. 4 Units.
Prerequisites: HSCI 612 or consent of instructor
Research methods and application to contemporary environmental health problems. Data analysis and development of skills for determining appropriate analytical techniques and procedures.

HSCI 660A. Advanced Topics in Health Science and Human Ecology. 2 Units.
Analysis of current literature, practices, procedures and issues in health science and human ecology at local, state, national and international levels. May be repeated for credit as topics change.

HSCI 660C. Advanced Topics in Health Science and Human Ecology. 3 Units.
Analysis of current literature, practices, procedures and issues in health science and human ecology at local, state, national and international levels. May be repeated for credit as topics change.

HSCI 660D. Advanced Topics in Health Science and Human Ecology. 4 Units.
Analysis of current literature, practices, procedures and issues in health science and human ecology at local, state, national and international levels. May be repeated for credit as topics change.

HSCI 661. General Nutrition. 4 Units.
Prerequisites: classified graduate standing and prior or concurrent enrollment in HSCI 617 or consent of instructor
Application of the principles of physiology to the study of nutrition emphasizing nutrient functions, nutrient requirements and impact of diet on health and disease, including both macronutrients and micronutrients.
HSCI 663. Principles of Public Health Nutrition. 4 Units.
Prerequisites: classified graduate standing in one of the departments graduate programs, HSCI 661, or consent of instructor
Major nutrition-related diseases and their prevention, including effects of public policy on health status.

HSCI 664. Nutrition in Health and Disease. 4 Units.
Prerequisites: classified graduate standing in one of the departments graduate programs, prior or concurrent enrollment in HSCI 617 and 661, or consent of instructor
Descriptive epidemiology of several major chronic diseases, especially type-2 diabetes, cardiovascular disease, cancer, and AIDS. Focus on understanding the role, strengths, and limitations of nutritional epidemiology in researching the etiology of these diseases, and of public health nutrition as one avenue of response.

HSCI 665. Strategic Planning and Evaluation. 4 Units.
Community analysis including generating goals and objectives to implement effective community interventions. Logic models and program evaluation methodologies will be utilized to set parameters and to assure delivery of appropriate health services programs and outcomes. Organizational strategy evaluation, formulation, tactics, and development.

HSCI 667. Nutritional Assessment. 4 Units.
Prerequisites: classified standing in the departments graduate program, prior or concurrent enrollment in HSCI 506 and 661 or consent of instructor
Assessment of nutritional status of both individuals and populations for purposes of etiologic research and disease prevention and control. Use of biochemical, anthropometric, and questionnaire methods for assessment of diet, body composition, physical activity, and biochemical characteristics. Emphasis on methods appropriate for measurement of any exposure in epidemiological or population studies.

HSCI 670A. Directed Readings. 1 Unit.
Prerequisites: graduate standing and consent of graduate coordinator
Directed independent study of classic and contemporary writings in a defined area combined with scheduled individual and small group conferences with supervising faculty member. May be repeated for credit.

HSCI 670B. Directed Readings. 2 Units.
Prerequisites: graduate standing and consent of graduate coordinator
Directed independent study of classic and contemporary writings in a defined area combined with scheduled individual and small group conferences with supervising faculty member. May be repeated for credit.

HSCI 670C. Directed Readings. 3 Units.
Prerequisites: graduate standing and consent of graduate coordinator
Directed independent study of classic and contemporary writings in a defined area combined with scheduled individual and small group conferences with supervising faculty member. May be repeated for credit.

HSCI 670D. Directed Readings. 4 Units.
Prerequisites: graduate standing and consent of graduate coordinator
Directed independent study of classic and contemporary writings in a defined area combined with scheduled individual and small group conferences with supervising faculty member. May be repeated for credit.

HSCI 670E. Directed Readings. 5 Units.
Prerequisites: consent of advisor
A minimum of 30 hours for each unit of credit will be spent in a guided, structured, practical, educational experience in sites that may include public health offices, community health centers, clinical sites, nonprofit health agencies, worksite health promotion programs, or health care organizations, under the direct supervision of a preceptor at the site and guidance of the department. Letter of approval signed by site preceptor and faculty advisor to be filed in department office prior to beginning the field experience. May be repeated. Graded credit/no credit.

HSCI 675. Health Services Administration Leadership, Team and Quality Development. 4 Units.
Leadership skill development, including interface within public, private, and non-profit health organizations. Collaborative partnerships, issues of diversity in leadership, negotiation, conflict resolution, continuous quality improvement process and management, and attributes of leaders and leadership. Health administration team behaviors, actions, and approaches along with team development are analyzed.

HSCI 689A. Field Experience. 2 Units.
Prerequisites: consent of advisor
A minimum of 30 hours for each unit of credit will be spent in a guided, structured, practical, educational experience in sites that may include public health offices, community health centers, clinical sites, nonprofit health agencies, worksite health promotion programs, or health care organizations, under the direct supervision of a preceptor at the site and guidance of the department. Letter of approval signed by site preceptor and faculty advisor to be filed in department office prior to beginning the field experience. May be repeated. Graded credit/no credit.

HSCI 689B. Field Experience. 3 Units.
Prerequisites: consent of advisor
A minimum of 30 hours for each unit of credit will be spent in a guided, structured, practical, educational experience in sites that may include public health offices, community health centers, clinical sites, nonprofit health agencies, worksite health promotion programs, or health care organizations, under the direct supervision of a preceptor at the site and guidance of the department. Letter of approval signed by site preceptor and faculty advisor to be filed in department office prior to beginning the field experience. May be repeated. Graded credit/no credit.

HSCI 689C. Field Experience. 4 Units.
Prerequisites: consent of advisor
A minimum of 30 hours for each unit of credit will be spent in a guided, structured, practical, educational experience in sites that may include public health offices, community health centers, clinical sites, nonprofit health agencies, worksite health promotion programs, or health care organizations, under the direct supervision of a preceptor at the site and guidance of the department. Letter of approval signed by site preceptor and faculty advisor to be filed in department office prior to beginning the field experience. May be repeated. Graded credit/no credit.

HSCI 689D. Field Experience. 5 Units.
Prerequisites: consent of advisor
A minimum of 30 hours for each unit of credit will be spent in a guided, structured, practical, educational experience in sites that may include public health offices, community health centers, clinical sites, nonprofit health agencies, worksite health promotion programs, or health care organizations, under the direct supervision of a preceptor at the site and guidance of the department. Letter of approval signed by site preceptor and faculty advisor to be filed in department office prior to beginning the field experience. May be repeated. Graded credit/no credit.
HSCI 689F. Field Experience. 6 Units.
Prerequisites: consent of advisor
A minimum of 30 hours for each unit of credit will be spent in a guided, structured, practical, educational experience in sites that may include public health offices, community health centers, clinical sites, nonprofit health agencies, worksite health promotion programs, or health care organizations, under the direct supervision of a preceptor at the site and guidance of the department. Letter of approval signed by site preceptor and faculty advisor to be filed in department office prior to beginning the field experience. May be repeated. Graded credit/no credit.

HSCI 689G. Field Experience. 7 Units.
Prerequisites: consent of advisor
A minimum of 30 hours for each unit of credit will be spent in a guided, structured, practical, educational experience in sites that may include public health offices, community health centers, clinical sites, nonprofit health agencies, worksite health promotion programs, or health care organizations, under the direct supervision of a preceptor at the site and guidance of the department. Letter of approval signed by site preceptor and faculty advisor to be filed in department office prior to beginning the field experience. May be repeated. Graded credit/no credit.

HSCI 689H. Field Experience. 8 Units.
Prerequisites: consent of advisor
A minimum of 30 hours for each unit of credit will be spent in a guided, structured, practical, educational experience in sites that may include public health offices, community health centers, clinical sites, nonprofit health agencies, worksite health promotion programs, or health care organizations, under the direct supervision of a preceptor at the site and guidance of the department. Letter of approval signed by site preceptor and faculty advisor to be filed in department office prior to beginning the field experience. May be repeated. Graded credit/no credit.

HSCI 690. Graduate Research Methodology in Health Science. 5 Units.
Prerequisites: HSCI 315 or consent of instructor
Graduate-level research methods and application to contemporary health problems in health services administration. Health data analysis and development of skills for determining appropriate analytical techniques and procedures. Four hours seminar and three hours data analysis laboratory. Materials fee required. Formerly HSCI 598.

HSCI 695. Capstone Seminar. 4 Units.
Prerequisites: advancement to candidacy, completion of a minimum of 16 units in the students advisement area, and concurrent enrollment in HSCI 696, 699, or 999
Synthesis and integration of knowledge acquired in coursework. Special emphasis on the multidisciplinary analysis of complex public health issues.

HSCI 696. Project. 4 Units.
Prerequisites: completion of HSCI 608, HSCI 612, and at least 24 units of approved coursework; an officially appointed project committee; and advancement to candidacy
Preparation of a project for the master's degree. Includes formal defense or professional presentation. Graded credit/no credit.

HSCI 697. Administrative Residency. 4 Units.
Prerequisites: advancement to candidacy and consent of department
Supervised internship of 400 hours in sites such as hospitals, health plans, HMOs, medical groups, managed care organizations, private or public health services or agencies. Requires a rotation in administrative organization and function. Requires formal written report and presentation. Graded credit/no credit.

HSCI 698A. Continuous Enrollment for Graduate Candidacy Standing. 1 Unit.
Prerequisites: advancement to candidacy and approval of program
Graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

HSCI 698B. Continuous Enrollment for Graduate Candidacy Standing. 2 Units.
Prerequisites: advancement to candidacy and approval of program
Graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

HSCI 698C. Continuous Enrollment for Graduate Candidacy Standing. 3 Units.
Prerequisites: advancement to candidacy and approval of program
Graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.
HSCI 698D. Continuous Enrollment for Graduate Candidacy Standing. 4 Units.
Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

HSCI 698E. Continuous Enrollment for Graduate Candidacy Standing. 5 Units.
Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

HSCI 698F. Continuous Enrollment for Graduate Candidacy Standing. 6 Units.
Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

HSCI 698Z. Continuous Enrollment for Graduate Candidacy Standing. 0 Units.
Prerequisites: advancement to candidacy and approval of program graduate coordinator or, if an interdisciplinary studies major, consent of the Dean of Graduate Studies
Independent study leading to completion of requirements (other than course work) for the master's degree. To retain classified standing in the master's program, a student must enroll in 698 each quarter until the project or thesis is accepted or the comprehensive examination passed. Students who enroll in 698 through the university have full use of all university facilities. See Culminating Experience: Exam, Thesis, or Project in Graduate Degree and Program Requirements section of the Bulletin of Courses. 698 is a variable unit course, see fee schedule in the Financial Information section of the Bulletin of Courses. Earned units are not degree-applicable nor will they qualify for financial aid.

HSCI 699. Thesis. 4 Units.
Prerequisites: completion of HSCI 608, HSCI 612 and at least 24 units of approved coursework; an officially appointed thesis committee; and advancement to candidacy
Preparation of a thesis for the master's degree. Includes formal oral defense. Graded credit/no credit.

HSCI 699B. Thesis II. 4 Units.
Prerequisites: successful completion of HSCI 699A
Research, Writing and Defense. Independent graduate research conducted under the guidance of an advisor in the Department of Health Science and Human Ecology.

HSCI 999. Comprehensive Examination. 0 Units.
Prerequisites: advancement to candidacy, completion of a minimum of 16 units, approval of department, and good academic standing
Assessment of student's ability to integrate the knowledge of the discipline, show critical and independent thinking, and demonstrate mastery of the subject matter. Graded credit/no credit.