SCHOOL OF BIOLOGICAL AND POPULATION HEALTH SCIENCES

The School of Biological and Population Health Sciences comprises the fields of kinesiology, nutrition, and the public health disciplines of biostatistics, epidemiology, global health, and environmental and occupational health. These disciplinary approaches link individual biology and behavior to population and environmental health to better understand how environmental and behavioral factors, including food and nutrition, physical activity, water, pollution, carcinogens, biohazards, etc., influence the development and progression of a biological disease. Applying the quantitative methods of epidemiology and biostatistics allows a better understanding of the causes of population-level disease as well as methods of intervention and prevention.

The School of Biological and Population Health Sciences houses the undergraduate degrees in Kinesiology, and Nutrition. Nationally recognized programs prepare students for careers as athletic trainers, dietitians, medical and allied health science professionals, teachers in physical education, nutritionists, researchers, personal trainers, and fitness and nutrition professionals. The majors and their options are described below.

The Bachelor of Science degree in Public Health is offered through the School of Social and Behavioral Health Sciences (http://health.oregonstate.edu/sbhs).

The School of Biological and Population Health Sciences houses the Masters in Public Health (http://health.oregonstate.edu/degrees/graduate/public-health/mph) (MPH) options of biostatistics, epidemiology, global health, and environmental and occupational health. Environmental and Occupational Health is also an area of concentration within the Public Health doctoral program (http://health.oregonstate.edu/degrees/graduate/public-health/phd-program).

Master’s and doctoral degrees are available in Nutrition (http://health.oregonstate.edu/degrees/graduate/nutrition) and Kinesiology (http://health.oregonstate.edu/degrees/graduate/kinesiology).

Undergraduate Majors
Kinesiology Major and Option
The Kinesiology major prepares students for careers in physical activity and fitness/wellness such as organizing, directing or managing physical fitness programs; personal trainer; fitness instructor; exercise physiologist; strength and fitness coach; and fitness entrepreneur. The degree can also serve as preparation for applications to a master’s level physical education teacher education program, medical school, a professional program in the allied health professions (e.g. physical or occupational therapy, nursing, physician assistant) or other graduate education. Students interested in entry into professional schools of physical or occupational therapy, nursing, medical school, or physicians’ assistant should take the Pre-Therapy and Allied Health option of the Kinesiology major, which has entry standards that must be met after completion of 90 credits.

Pre-Therapy and Allied Health Option
Students who choose this option prepare for admission into medical school or a professional training program in the allied health professions.

Graduates become physical therapists, occupational therapists, physicians, physician assistants, or nurses.

Nutrition Major and Options
Dietetics Option
Dietitians provide guidance to the public regarding nutrition, diet and their relationship to disease. The Dietetics option at OSU is accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND) of the Academy of Nutrition and Dietetics and prepares students to become Registered Dietitians (RD). This option provides the course work and preparation to enter a supervised dietetic internship, pass the Registered Dietitian Exam and become a leader in the profession. Graduates from OSU’s program consistently exceed the national average for placement into accredited dietetic internships and for passing the RD Exam the first time.

Nutrition and Foodservice Systems Option
This option prepares graduates for professional careers directing foodservice operations that focus on serving healthy menu options and using local ingredients. Foodservice opportunities exist in both non-commercial operations including schools, universities, and healthcare, as well as others in the retail environment; all are striving to meet the consumer demand for healthier food options. This program integrates course work taken at OSU and the Culinary Arts program at Linn-Benton Community College.

Nutrition and Health Sciences Option
This option is designed for students who want to focus on the scientific basis of nutrition for careers in medicine and the health sciences or in nutrition science research. Tracks within the option allow students to specifically focus and prepare for careers in medicine and the allied health sciences or for academia and/or health-related research. Professionals trained in nutrition science have many career options due to the growth and aging of our population, the focus on prevention of obesity and other chronic diseases, and a growing emphasis on health, nutrition, and wellness.

Undergraduate Studies
Preparation
Entering first-year and undergraduate transfer students should prepare to enter the College of Public Health and Human Sciences with a strong foundation in the sciences, balanced with good writing and critical thinking skills. Students transferring from other institutions are best prepared for the college curriculum if they have taken chemistry or biology or both.

Admission
Any student who has met the admission requirements of Oregon State University may be admitted to a nutrition or exercise and sport science program of study. To transfer from another OSU college or school, the student must have the approval of the head advisor of the College of Public Health and Human Sciences.

Physical Activity Courses
The Physical Activity Course (PAC) Program is an elective, academic-credit program designed to provide OSU students with the opportunity to learn and engage in a wide variety of physical activities with the goal of promoting health and lifelong participation in physical activity. Students may take any number of PAC credits, but only 11 credits may be counted toward graduation. Successful completion of any PAC credits will satisfy the one-credit laboratory requirement of the fitness category of the
baccalaureate core. Courses may be repeated for credit and a grade. There is a PAC fee for each class, and some courses have additional fees. All fees are listed in the online Schedule of Classes. Student accounts are billed upon registration. Refunds of the PAC fee are automatic upon dropping or withdrawing from the course and follow university policies as listed in the OSU General Catalog. Some additional fees are refunded through the PAC Office (Langton 123). Social dance classes are listed with a men’s and a women’s section in order help balance the number of students in the traditional lead-and-follow roles within the same class.

**Undergraduate Programs**

**Majors**
  - **Option**
    - Pre-therapy and Allied Health
- Pre-Nutrition (http://catalog.oregonstate.edu/college-departments/public-health-human-sciences/school-biological-population-health-sciences/pre-nutrition)
- **Options**
  - Pre-Dietetics
  - Dietetics
  - Nutrition and Health Sciences
  - Nutrition and Foodservice Systems

**Minors**

*(Please check with the Office of Academic Advising and Student Support in 106 Women's Building for minor requirements.)*

**Graduate Programs**

**Majors**
- Kinesiology (http://catalog.oregonstate.edu/college-departments/public-health-human-sciences/school-biological-population-health-sciences/kinesiology-ms-phd-mais)
- **Graduate Option**
  - Adapted Physical Activity
  - Master of Adapted Physical Education (MAPE) (http://catalog.oregonstate.edu/college-departments/public-health-human-sciences/school-biological-population-health-sciences/mape)


**Graduate Programs**

**Minors**
- Epidemiology (http://catalog.oregonstate.edu/college-departments/public-health-human-sciences/school-biological-population-health-sciences/epidemiology-graduate-minor)

**For Student Advising Inquiries:** Student Services, 541-737-8900

**Faculty**

**Professors** Brandt, Bray, Cardinal, Chi, Ho, Jump, Khanna, Traber, Turner, Yun

**Associate Professors** Branscum, V. Bovbjerg, Carozza, Case, Cluskey, Crowell, Ebbeck, Gunter, M. Hoffman, Hannigan-Downs, Hord, Houseman, Iwaniec, John, Kile, Molitor, Pavol, Pollard (OSU-Cascades), Smiley, Smit, Veltri, S. Wong

**Assistant Professors** Bae, Bethel, M. Bovbjerg, Dallas, Garcia, Grutzmacher, Horner, Hystad, Johnson, Kim, Kincl, Logan, MacDonald, Newsom, Norcross, Oden, Robinson, Schuna, Takata, Tomayko, Wegis, Woekel, Wegis

**Senior Instructors** Dark, Hoisington, Penry, Polizzi, Rudolph, Skoog, Su

**Instructors** Ahern, Beamer, Carr, Chavez, Dodge-Vera, Fitch, Halverson, Hatfield, Hyde, Johnson, Kirk, Lyford, Maille, Marchant, Ostby, Roberson, Russell, Schrumpf, Silberstein, Steele, Streit, Todd, Witzke (OSU-Cascades)

**Associate Professor (Senior Research)** Harper

**Research Associates** Kaiser, C. Wong

**Faculty Research Assistant** Olson

**Professional Faculty** Armington, Bump, Gayler, Ibarra, Mills, Quinn, Renfro, Swanger, Tobey

**Public Health**

**H 100. INTRODUCTION TO PUBLIC HEALTH. (4 Credits)**

A basic overview of public health. Uses a mix of lectures, guest speakers, classroom activities and homework to help students understand the role of public health in eliminating health disparities, understanding epidemics, and setting policy.

**Equivalent to:** H 100H
H 100H. INTRODUCTION TO PUBLIC HEALTH. (4 Credits)
A basic overview of public health. Uses a mix of lectures, guest speakers, classroom activities and homework to help students understand the role of public health in eliminating health disparities, understanding epidemics, and setting policy.
Attributes: HNRS – Honors Course Designator
Equivalent to: H 100

H 199. SPECIAL STUDIES. (1-16 Credits)
PREREQ: Departmental approval required.
This course is repeatable for 16 credits.

H 206. PROJECTS. (1-16 Credits)
This course is repeatable for 16 credits.

H 210. *INTRODUCTION TO THE HEALTH CARE SYSTEM. (3 Credits)
Provides tools to understand and critically assess the health care delivery system, its components, and the challenges created by its structure. The health care system will be considered from the perspective of several main players [e.g., patients, hospitals, doctors, health plans]. (Bacc Core Course)
Attributes: CPSI – Core, Pers, Soc Proc & Inst

H 220. INTRODUCTION TO HEALTH DATA ANALYSIS. (3 Credits)
Introduction to the application of biostatistics and probability to the health sciences. Topics include quantitative analysis and inference, statistical methods in the biosciences, and quantitative study to evaluate and control health problems.

H 225. *SOCIAL AND INDIVIDUAL HEALTH DETERMINANTS. (4 Credits)
Overview of the macro (social/system/environmental) and micro (individual) contributors to premature disease, disability and population health. Selected behavioral theories supporting health risks and strategies for the prevention of premature disease/disability and the promotion of health. (Bacc Core Course)
Attributes: CPSI – Core, Pers, Soc Proc & Inst

H 250. INTRODUCTION TO HEALTH CARE MANAGEMENT. (3 Credits)
Participants will learn key principles, practices and personalities of health care management. The content is broadly applicable to health care enterprises of every kind: public health organizations, physician practices and clinics, hospitals and health systems, agencies and service organizations, for-profit firms, not-for-profit enterprises, etc.
Prerequisites: H 210 (may be taken concurrently) with C- or better

H 309. PRACTICUM IN HEALTH CARE SERVICES. (3-6 Credits)
Supervised work experience in a health care service setting or health-related agency or program. Weekly progress reports and post-experience summary report and evaluation will be expected. Preplanned with instructor approval. Open to health care administration majors. Graded P/N.
This course is repeatable for 12 credits.

H 310. HEALTH FIELD EXPERIENCES. (3-6 Credits)
Introductory field experience in a health or health-related worksite.
Graded P/N.
Prerequisites: H 210 with C- or better
This course is repeatable for 12 credits.

H 312. *HIV/AIDS AND STIS IN MODERN SOCIETY. (3 Credits)
Fundamental principles relating to etiology, nature, prevention, and control of AIDS and other sexually transmitted diseases in contemporary society; emphasis on social, psychological, legal, economic, and ethical issues surrounding these diseases. (Bacc Core Course)
Attributes: CSSI – Core, Synth, Global Issues

H 319. INTRODUCTION TO HEALTH POLICY. (3 Credits)
Describe the policy development process, including problem conceptualization, agenda setting, role of interest groups and public opinion, analysis of alternatives and selection of policy alternative.
Prerequisites: H 210 with C- or better and PS 201 [C-]

H 320. INTRODUCTION TO HUMAN DISEASE. (3 Credits)
Fundamental principles relating to etiology, nature, prevention, and control of communicable and noncommunicable diseases in human populations. Special emphasis on disease prevention and health promotion in the high risk diseases of modern, industrialized society.

H 333. *GLOBAL PUBLIC HEALTH. (3 Credits)
Introduction to the field of global health, its history, methods, and key principle; understanding global health inequities through case studies; overview of major global health prevention programs. (Bacc Core Course)
Attributes: CPSI – Core, Pers, Soc Proc & Inst

H 344. FOUNDATIONS OF ENVIRONMENTAL HEALTH. (3 Credits)
Introductory course examining environmentally-linked disease, and health effects associated with toxic substances, food quality, pesticides, air, water, and noise pollution, and solid/hazardous wastes.

H 349. PEER HELPER SKILLS DEVELOPMENT. (3 Credits)
Prepares the student for an active role as a peer helper in alcohol and drug abuse prevention and health education. Course work will include: drug, alcohol, addiction and other related health issues, basic listening and communication skills, conflict resolution, crisis recognition and referral. A major component will be affective learning situations designed to promote self-awareness and personal growth.

H 364. DRUGS, SOCIETY AND HUMAN BEHAVIOR. (3 Credits)
Drug use and abuse; theories of addiction; basic principles of drug action regarding the use of sedative and stimulative compounds; alcohol; opiates; hallucinogens; designer drugs; cocaine; and over-the-counter products. Particular emphasis on the role of the individual’s value orientation, decision-making, and self-responsibility in treatment and educational approaches to prevention.
Prerequisites: PSY 201 with C- or better or PSY 202 with C- or better
Equivalent to: H 364H

H 364H. DRUGS, SOCIETY AND HUMAN BEHAVIOR. (3 Credits)
Drug use and abuse; theories of addiction; basic principles of drug action regarding the use of sedative and stimulative compounds; alcohol; opiates; hallucinogens; designer drugs; cocaine; and over-the-counter products. Particular emphasis on the role of the individual’s value orientation.
Attributes: HNRS – Honors Course Designator
Prerequisites: PSY 201 with C- or better or PSY 202 with C- or better
Equivalent to: H 364

H 385. SAFETY AND HEALTH STANDARDS AND LAWS. (3 Credits)
Emphasis on the Occupational Safety and Health Act; study includes the scope and duties under the act, enforcement, and adjudication procedures and OSHA litigation; components of Oregon-OSHA.

H 399. SPECIAL TOPICS. (1-16 Credits)
Equivalent to: H 399H
This course is repeatable for 16 credits.

H 399H. SPECIAL TOPICS. (1-16 Credits)
Equivalent to: H 399
This course is repeatable for 16 credits.

H 401. RESEARCH AND SCHOLARSHIP. (1-16 Credits)
This course is repeatable for 16 credits.
H 402. INDEPENDENT STUDY. (1-16 Credits)
This course is repeatable for 16 credits.

H 403. THESIS. (1-16 Credits)
This course is repeatable for 16 credits.

H 405. READING AND CONFERENCE. (1-16 Credits)
This course is repeatable for 16 credits.

H 406. PROJECTS. (1-16 Credits)
This course is repeatable for 16 credits.

H 407. SEMINAR. (2 Credits)
Seminar to prepare students for their internship in public health. Focus is on professionalism, leadership skills, identifying strengths, and transitioning from college to graduate school or the working world.
Equivalent to: H 407H

H 407H. SEMINAR. (2 Credits)
Seminar to prepare students for their internship in public health. Focus is on professionalism, leadership skills, identifying strengths, and transitioning from college to graduate school or the working world.
Attributes: HNRS – Honors Course Designator
Equivalent to: H 407

H 408. WORKSHOP. (1-16 Credits)
PREREQ: Departmental approval required.
This course is repeatable for 16 credits.

H 409. PRACTICUM. (1-6 Credits)
Supervised work experience in a public health or health care administration setting. Open to majors in public health. Graded P/N.
This course is repeatable for 16 credits.

H 410. INTERNSHIP. (1-12 Credits)
Directed field experience with participation in a community, worksite, or health agency program. Experience is individually arranged to meet student needs. Graded P/N.
Prerequisites: H 407 with C- or better.

H 410. INTERNSHIP. (1-12 Credits)
Directed field experience with participation in a community, worksite, or health agency program. Experience is individually arranged to meet student needs. Graded P/N.
Prerequisites: H 407 with C- or better and H 320 [C-]

H 418. PUBLIC HEALTH ETHICS AND ISSUES. (3 Credits)
Current ethical issues in public health, including gender and ethnicity in employment, pharmaceutical controls, product liability, advertising, and export of high technology.
H 421. MENTAL HEALTH. (3 Credits)
Examination of social, governmental, legal and individual mental health issues. Brief overview of some major mental disorders.
Prerequisites: H 225 with C- or better and H 320 [C-]

H 422. HEALTH, AGING AND CONTROL OF CHRONIC DISEASES. (4 Credits)
Epidemiology of the major chronic diseases, risk factors, potential methods of prevention/intervention, ethical issues, and efficacy of current methods of prevention and control. Emphasis on adult populations and public health services, policies, and programs at the local, state, and federal levels designed to promote healthy aging.
H 425. FOUNDATIONS OF EPIDEMIOLOGY. (3 Credits)
Measures of disease frequency; measures of effect; association and causation; sources of inaccuracy; experimental and observational study designs. Lec/rec.
Prerequisites: H 220 with C- or better or ST 201 with C- or better or ST 314 with C- or better or ST 351 with C- or better

H 431. HEALTH CARE MARKETING. (3 Credits)
Principles, elements and methods of marketing health care services. Role of the consumer, governing body, administration and medical staff as well as impact of professional ethics.

H 432. ECONOMIC ISSUES IN HEALTH AND MEDICAL CARE. (3 Credits)
Application of economic principles to the health care field: the demand for medical care and insurance, health care suppliers, health care markets.
Prerequisites: (ECON 201 with C- or better or ECON 201H with C- or better) and H 210 [C-]

H 434. HEALTH CARE LAW AND REGULATION. (3 Credits)
Legal aspects of health care delivery; tort law and its applications; professional liability and liability insurance; laws relative to health care institutions, cost controls, antitrust and access. (Writing Intensive Course)
Attributes: CWIC – Core, Skills, WIC
Prerequisites: H 210 with C or better and H 250 [C-] and WR 222 [C-]

H 436. ADVANCED TOPICS IN HEALTH CARE MANAGEMENT. (3 Credits)
Covers how health services are governed and organized; how health care organizations assess and adapt to change; constraints/opportunities in shaping organizational performance; leadership; strategic decision-making and the use of evidence-based management in health care.
Prerequisites: H 210 with C- or better and H 250 [C-]

H 445. OCCUPATIONAL HEALTH. (3 Credits)
Current and historical topics in the area of occupational health, with particular emphasis on the types of materials that produce human health effects; clinical and epidemiologic data used to assess the public health importance of occupational pollutants and to evaluate control strategies. (Bacc Core Course)
Attributes: CSST – Core, Synthesis, Science/Technology/Society

H 448. PUBLIC HEALTH TOXICOLOGY. (3 Credits)
Introduction to the concepts and principles of toxicology as they apply to environmental and occupational health.
Prerequisites: H 344 with C- or better

H 449. MASS MEDIA AND HEALTH. (3 Credits)
Designed to examine the effects of mass media on population health, from the negative impact of advertising of cigarettes, alcohol and junk food, to the (hopefully) positive impact of public-health campaigns.
Prerequisites: H 225 with C- or better and H 320 [C-]

H 457. FINANCIAL MANAGEMENT OF HEALTH CARE ORGANIZATIONS. (3 Credits)
Utilization of standard financial tools needed to manage the capital resources of health care organizations. Includes funding capital projects, product costing, budgeting methods, capital formation and investment strategies.
Prerequisites: BA 215 with C- or better and H 210 [C-] and H 250 [C-]

H 458. REIMBURSEMENT MECHANISMS. (3 Credits)
Introduces and analyzes the different types of healthcare reimbursement methodologies used in the U.S. health care system.
Prerequisites: H 210 with C- or better

H 461. SEXUALITY: A HEALTH SCIENCE PERSPECTIVE. (3 Credits)
Exploration of the meaning of sexuality from a variety of contemporary health science perspectives; aspects of sex and sexuality fundamental to total health; issues central to the health educator role examined.

H 465. PUBLIC HEALTH AND WOMEN: SOCIAL AND POLICY ISSUES. (3 Credits)
Public health approach to the identification of women’s health needs in the United States and in other countries as it relates to the intersection of race, ethnicity, social class, sexual orientation, age, and ability. (Bacc Core Course)
Attributes: CPDP – Core, Perspective, Difference/Power/Discrimination
H 467. LONG-TERM CARE ALTERNATIVES. (3 Credits)
Overview of the long-term care alternatives. Comparisons of nursing homes with community based facilities; adult day care centers, respite to hospice facilities, social HMOs and other services; cost, quality of life and practicality are addressed.

H 468. FINANCING AND ADMINISTRATION OF LONG-TERM CARE. (3 Credits)
Examines the financing and administration of long term care. Emphasis is on a system-wide overview and specific application to nursing facility management.

H 474. PUBLIC HEALTH AND VIOLENCE IN SOCIETY. (3 Credits)
Examination of violence as a major public health issue. Historical, social, environmental, economic, behavioral and psychological aspects of assaults, spousal abuse, rape and sexual assault, child abuse, child sexual abuse, suicide, the effects of the media on violence, drug abuse and violence, and related public health problems in contemporary American society. Emphasis on health and the efficacy of current efforts aimed at ameliorating these problems and potential for alternative public health models for prevention and intervention.

H 476. PLANNING AND EVALUATING HEALTH PROMOTION PROGRAMS. (4 Credits)
A systematic approach to planning, implementing and evaluating health promotion programs in a variety of health related settings. Students will be writing a series of drafts to effectively develop a health promotion program plan. (Writing Intensive Course)
Attributes: CWIC – Core, Skills, WIC
Prerequisites: H 225 with C- or better and H 320 [C-]

H 477. DIETARY INTERVENTIONS FOR PUBLIC HEALTH. (3 Credits)
A public health perspective on the practice of population-based dietary intervention. Examination of relevant theories, research, and practice that pertain to health promoters/educators.
Prerequisites: NUTR 225 with C- or better

H 480. UNDERGRADUATE EOH SEMINAR. (1 Credit)
Explores current topics in environmental health and safety. EOH faculty will discuss their current research interests; EOH graduate student speakers will share their environmental health and safety internship experiences. Documentaries will be viewed to introduce topics of discussion. Features will be discussions relating directly to ongoing, current environmental/occupational health crises, both in the United States and around the world. Graded P/N.
This course is repeatable for 2 credits.

H 489. EMERGENCY AND DISASTER MANAGEMENT. (3 Credits)
Study of preparedness, response, recovery and business resumption strategies, activities and applications needed to effectively deal with emergency and disaster incidents.

H 491. SELECTED TOPICS. (1-3 Credits)
Recent changes and advances in public health and health care administration and their application to special fields of study. Topics vary from term to term and year to year.
Equivalent to: H 491H
This course is repeatable for 6 credits.

H 491H. SPECIAL TOPICS. (1-3 Credits)
Recent changes and advances in public health and health care administration and their application to special fields of study. Topics vary from term to term and year to year.
Attributes: HNRS – Honors Course Designator
Equivalent to: H 491
This course is repeatable for 6 credits.

H 494. APPLIED ERGONOMICS. (3 Credits)
Principles of occupational ergonomics for managing optimal worker performance and well-being.

H 495. DESIGN FOR ENVIRONMENT, SAFETY, AND HEALTH. (3 Credits)
Systematic consideration of environmental, safety, and health concerns at the earliest possible stage in the lifecycle design engineering of products, technologies, and manufacturing processes.

H 501. RESEARCH AND SCHOLARSHIP. (1-16 Credits)
This course is repeatable for 16 credits.

H 503. THESIS. (1-16 Credits)
This course is repeatable for 999 credits.

H 505. READING AND CONFERENCE. (1-16 Credits)
This course is repeatable for 16 credits.

H 506. PROJECTS. (1-16 Credits)
This course is repeatable for 16 credits.

H 507. SEMINAR. (1-16 Credits)
Section 1. Internship (1). Graded P/N.
This course is repeatable for 16 credits.

H 508. WORKSHOP. (1-16 Credits)
This course is repeatable for 16 credits.

H 509. PRACTICUM. (1-16 Credits)
Supervised work experience in a public health or health care administration setting. Open to majors in public health. Graded P/N.
This course is repeatable for 16 credits.

H 510. INTERNISHIP. (1-16 Credits)
Directed field experience with participation in a community, worksite, or health agency program. Experience is individually arranged to meet student needs. Graded P/N.
This course is repeatable for 16 credits.

H 511. COMMUNITY, CULTURE, AND GLOBAL HEALTH. (3 Credits)
Overview of health issues across cultures, ethnic groups, and regional/national boundaries from a critical and interdisciplinary perspective. Special emphasis on understanding social and behavioral factors that influence health in underserved communities/groups, especially ethnic/racial minorities, women, children, and migrants.

H 512. INTRODUCTION TO ENVIRONMENTAL AND OCCUPATIONAL HEALTH SCIENCES. (3 Credits)
Introduction to environmental and occupational health. Hazards affecting human health are examined in the context of current social, political and regulatory pressures.

H 513. INTEGRATED APPROACH TO PUBLIC HEALTH. (12 Credits)
An integrated approach to introduce students to the core knowledge and methods used in public health, including evidence-based approaches to public health, public health and health care systems, planning and management to promote health, and policy in public health.

H 514. ENVIRONMENT, SAFETY AND HEALTH SEMINAR. (1 Credit)
One-credit graduate seminar on current topics of interest and importance to the environmental health and occupational safety field. Critical reading of research publications, discussion of controversial issues facing ESH professionals, and/or presentation of current ESH research.
This course is repeatable for 3 credits.
H 515. RESEARCH METHODS IN SOCIAL AND BEHAVIORAL HEALTH SCIENCES. (3 Credits)
Provides an introduction to quantitative research methods and design. Topics include definition of research problems and questions, hypothesis generation, research design, sampling, variable definition and measurement, data collection, and ethical considerations. Also provides a brief introduction to qualitative and mixed methods.

H 516. RESEARCH METHODS IN GLOBAL HEALTH. (3 Credits)
Overview of research methods used to understand health, illness, health care, and health-seeking behavior in international settings. Special emphasis on the use of qualitative and mixed methods in international health research.

H 518. PUBLIC HEALTH ETHICS AND ISSUES. (3 Credits)
Current ethical issues in public health, including gender and ethnicity in employment, pharmaceutical controls, product liability, advertising, and export of high technology.

H 519. DISPLACEMENT, MIGRATION, AND GLOBAL HEALTH. (3 Credits)
Critical examination of displaced/migrant populations with an emphasis on health disparities and social determinants. Understanding intersections of humanitarianism, migration, vulnerability, and displacement from a global health perspective.

H 520. HEALTH DISPARITIES. (3 Credits)
Health disparities based on race/ethnicity, culture, social class, and rural/urban residence, among others; strategies to reduce disparities, promote health, and prevent disease in diverse populations.

H 521. MENTAL HEALTH. (3 Credits)
Focus upon mental health policy development, in relation to federal and state government services and regulations, implementation of services.

H 522. HEALTH, AGING AND CONTROL OF CHRONIC DISEASES. (4 Credits)
Epidemiology of the major chronic diseases, risk factors, potential methods of prevention/intervention, ethical issues, and efficacy of current methods of prevention and control. Emphasis on adult populations and public health services, policies, and programs at the local, state, and federal levels designed to promote healthy aging.

H 523. FOUNDATIONS OF PUBLIC HEALTH. (4 Credits)
Fundamental principles, concepts and tools used in public health to promote the health of populations. Using a combination of case study method, lecture and discussion, students will develop a broad understanding of public health and recognition of how discipline-specializations address the social, behavioral and environmental determinants of public health.

H 524. INTRODUCTION TO BIOSTATISTICS. (4 Credits)
Quantitative analysis and interpretation of health data including probability distributions, estimation of effects, and hypothesis tests such as Chi-square, one-way ANOVA, and simple linear regression.

H 525. EPIDEMIOLOGICAL METHODS I. (3 Credits)
Introduction to the concepts and methods of epidemiology. Topics include measures of population health, screening, study design, measures of association, and interpretation of epidemiological data.
Prerequisites: H 513 with B- or better or H 535 with B- or better

H 526. EPIDEMIOLOGIC METHODS II. (3 Credits)
Concepts and methods of epidemiological analysis; standardization; stratified analysis; confounding and its control; planning and conducting epidemiologic research; role of multivariate analysis in epidemiologic research.
Prerequisites: H 524 with B- or better and H 525 [B-]

H 527. CRITICAL ASSESSMENT OF INTERNATIONAL HEALTH PROGRAMS. (3 Credits)
Introduces the critical evaluation framework of assessing international health development programs, based on self-determination and community ownership principles. The framework of assessment method includes three levels: upstream evaluation, midstream evaluation, and downstream evaluation.

H 528. GLOBAL HEALTH ISSUES. (3 Credits)
Examines major issues in health developments of global significance, their causes and impacts on international health, and methods and strategies to address them.

H 529. INTERNATIONAL HEALTH. (3 Credits)
Overview of the epidemiological, economic, political, sociological, and cultural factors that impact on international health. Special emphasis on the methods of prevention/intervention utilized in coping with health problems on an international level.

H 530. HEALTH POLICY ANALYSIS AND POLITICS. (3 Credits)
Examination of current health policy issues affecting health care programs, services, and organization as well as the role of politics in public health and health policy. Exploration of processes by which health policy proposals are generated, promoted, defeated, modified and implemented.
Prerequisites: H 533 with B- or better or HHS 514 with B- or better

H 532. ECONOMIC ISSUES IN HEALTH AND MEDICAL CARE. (3 Credits)
Application of economics principles to the health care field: the demand for medical care and insurance, health care suppliers, health care markets.

H 533. HEALTH SYSTEMS ORGANIZATION. (3 Credits)
Examines the nature of health and health care services and reviews the role of government and the free market on health services. Alternative ways of organizing, financing, and delivery of health care services are explored.

H 534. HEALTH CARE LAW AND REGULATION. (3 Credits)
Legal aspects of health care delivery; tort law and its applications; professional liability and liability insurance; laws relative to health care institutions, cost controls, antitrust and access.

H 535. INTERPRETING EPIDEMIOLOGIC EVIDENCE. (3 Credits)
Intended for students in the human sciences and allied health fields. Introduces basic epidemiology concepts. Topics will include measures of disease frequency, assessing population health, causal logic, quantifying associations between exposures and health outcomes, epidemiologic study design, and threats to study validity (random error, bias, confounding). Examples focus on application of epidemiological methods to a variety of health-related fields.

H 536. HEALTHCARE ORGANIZATION LEADERSHIP THEORY AND BEHAVIOR. (3 Credits)
Overview of organization theory and behavior in health care organizations. Emphasis is on developing an understanding of the factors and forces that influence the structures, behaviors, and operations of health care delivery organizations. This understanding will be developed through consideration of organizations, their environments, and the roles of individuals working in management.
Prerequisites: H 513 with B- or better or HHS 514 with B- or better
H 537. INJURY EPIDEMIOLOGY. (3 Credits)
An overview of the distribution and determinants of injuries, methodological issues specific to injury epidemiology, and approaches to injury control.
Prerequisites: H 513 with B- or better or H 525 with B- or better or H 535 with B- or better or HHS 513 with B- or better

H 538. PUBLIC AND PRIVATE HEALTH INSURANCE. (3 Credits)
Introduction to the principles and practices of public or social and commercial health insurance, and their financial reimbursement mechanisms.

H 540. WATER AND HUMAN HEALTH. (3 Credits)
Critically examine the complex relationship between water quality, human activities, and population health.

H 541. AIR QUALITY AND HUMAN HEALTH. (3 Credits)
Examination of the major sources of air pollution, its impact on ecosystems and climate change, and population health. Will also discuss technologies and introduce regulations that are used to control air pollutants.

H 542. ENVIRONMENTAL AND OCCUPATIONAL HEALTH RISK ASSESSMENT. (3 Credits)
Understand concepts, principles and practices in modern environmental and occupational risk analysis and how they are utilized to make evidence-based decisions by regulatory agencies.

H 543. EXPOSURE SCIENCE I. (4 Credits)
Overview of the concepts, principles and practices in modern environmental and occupational exposure assessment. Exposure Science I provides a broad introduction to environmental and occupational exposure assessment methods, while Exposure Science II focuses on sampling and measurement methods.

H 544. ENVIRONMENTAL AND OCCUPATIONAL EPIDEMIOLOGY. (3 Credits)
Examines exposure assessment methodology and epidemiological study designs that are commonly used in environmental and occupational health science in order to characterize the impact of environmental and occupational exposures on population health.
Prerequisites: H 525 with C or better

H 545. OCCUPATIONAL HEALTH. (3 Credits)
A broad overview of occupational health including recognizing and preventing risks from toxic chemical, radiation and physical hazards in the workplace.

H 546. PHYSICAL AGENTS AND HUMAN HEALTH. (3 Credits)
Focus on physical agents (heat, noise, vibration, radiation) and health risks associated with these agents. It covers the range and sources of exposure to physical agents, methods of characterizing these exposures, effects on human health, and the regulations/standards that set limits for physical agents. Lec/lab.

H 547. GIS AND PUBLIC HEALTH. (4 Credits)
Applications of geographic information systems (GIS) to public health are reviewed, including mapping, spatial analysis methods, estimating access, and exposure assessment. This course is geared toward individuals involved in public health who have no (or introductory level) knowledge of GIS. Lec/lab.

H 548. PUBLIC HEALTH TOXICOLOGY. (3 Credits)
Introduction to the concepts and principles of toxicology as they apply to environmental and occupational health.

H 549. MASS MEDIA AND HEALTH. (3 Credits)
Examines the effects of mass media on population health, from the negative impact of advertising of cigarettes, alcohol and junk food, to the (hopefully) positive impact of public health campaigns.
Prerequisites: H 571 with C or better

H 550. SOCIAL EPIDEMIOLOGY. (3 Credits)
Explores the social determinants of health at the population level. Primary focus is on introduction to methods specific to social epidemiology, but will also provide an overview of current understanding of the empirical associations between social factors and health.
Prerequisites: H 525 with B or better

H 551. APPLIED EPIDEMIOLOGICAL ANALYSIS OF SECONDARY DATA. (3 Credits)
Practical experience performing a hypothesis-driven epidemiological analysis utilizing secondary surveillance or other appropriate data set, writing an analytical plan, appropriate programming for the analysis (using STATA or SAS), understanding the analysis output, preparing tables, and interpreting results.
Prerequisites: H 526 with B- or better and H 560 [B-] and H 580 [B-]

H 552. DISASTER EPIDEMIOLOGY. (3 Credits)
Describe the impact of natural and manmade disasters on human health, understand epidemiologic methods specific to disasters, and apply fundamental epidemiologic methods to identify and characterize disaster-related adverse health outcomes.
Prerequisites: H 513 with B- or better or H 525 with B- or better or H 535 with B- or better or HHS 514 with B- or better

H 554. EPIDEMIOLOGY OF AGING. (3 Credits)
An overview of the core principles of the epidemiology of aging is provided. There will be an emphasis on health and disease processes in older adults. Students will learn essential study design and analytic issues that may arise in studies of aging.
Prerequisites: H 513 with B- or better or H 525 with B- or better or H SS 514 with B- or better

H 555. CANCER EPIDEMIOLOGY. (3 Credits)
Introduction to basic concepts and methodology in cancer epidemiology.
Prerequisites: H 513 with B- or better or HHS 514 with B- or better or H 525 with B- or better or H 535 with B- or better

H 556. STRATEGIC MANAGEMENT OF HEALTH SERVICE ORGANIZATIONS. (3 Credits)
Theories and methodologies of long-range planning and strategic management in health care organizations.

H 557. FINANCIAL MANAGEMENT OF HEALTH CARE ORGANIZATIONS. (3 Credits)
Utilization of standard financial tools needed to manage the capital resources of health care organizations. Includes funding capital projects, product costing, budgeting methods, capital formation and investment strategies.

H 558. REIMBURSEMENT MECHANISMS. (3 Credits)
Techniques used in cost-effectiveness analysis. Examples are drawn from the public health and health economics literature.

H 560. PUBLIC HEALTH SURVEILLANCE. (3 Credits)
An introduction to public health surveillance systems (national and international) for chronic and infectious diseases. Utility of existing surveillance systems for secondary epidemiological data analysis.
Prerequisites: H 524 with B- or better and H 525 [B-]
H 562. INFECTIOUS DISEASE EPIDEMIOLOGY. (3 Credits)
Understand epidemiologic methods specific to infectious diseases, apply
fundamental epidemiologic methods to infectious disease questions,
and describe the broad trends in global infectious disease burden. The
application methods and principles will be explored through lectures,
discussions, assignments and writing projects.
Prerequisites: H 513 with B- or better or H 525 with B- or better or H 535
with B- or better or H 514 with B- or better
H 563. PHYSICAL ACTIVITY EPIDEMIOLOGY. (3 Credits)
Physical activity epidemiology will focus on current research,
controversial issues, and methodological problems in the epidemiology of
physical activity, exercise, and health.
Prerequisites: H 513 with B- or better or HHS 514 with B- or better or
H 525 with B- or better or H 535 with B- or better
H 564. COMPUTING TOOLS AND HEALTH DATA ANALYSIS. (3 Credits)
Modern computational biostatistics for analyzing health data,
emphasizing important technologies and methods for data processing
and understanding of how they work. Topics will evolve over time as new
procedures are developed.
Prerequisites: (H 524 with C or better or HDFS 530 with C or better)
H 565. PUBLIC HEALTH AND WOMEN: SOCIAL AND POLICY ISSUES. (3
Credits)
Public health approach to the identification of women’s health needs in
the United States and in other countries as it relates to the intersection of
race, ethnicity, social class, sexual orientation, age, and ability.
Equivalent to: BA 565
H 566. DATA MINING IN PUBLIC HEALTH. (3 Credits)
An introduction to high-dimensional data analysis and data mining
techniques used as an information technology tool to extract previously
unknown and potentially useful information from large databases in
biology, medicine, and public health.
H 567. LONG-TERM CARE ALTERNATIVES. (3 Credits)
Overview of the long-term care alternatives. Comparisons of nursing
homes with community based facilities; adult day care centers, respite
to hospice facilities, social HMOs and other services; cost, quality of life and
practicability are addressed.
H 568. FINANCING AND ADMINISTRATION OF LONG-TERM CARE. (3
Credits)
Examines the financing and administration of long term care. Emphasis
is on a system-wide overview and specific application to nursing facility
management.
H 569. MATERNAL AND CHILD HEALTH. (3 Credits)
Women’s reproductive health and health of children stressing causation,
management, and prevention of public health problems. Epidemiological
analysis of morbidity and mortality in children and women of childbirth
age; impact of social, political and economic influences on the health
of women and children; comparison of issues and problems of
industrialized versus developing nations. Consideration of health issues
of interest to the many diverse racial and ethnic groups of women and
children in the U.S. as well as the global village.
H 571. PRINCIPLES OF HEALTH BEHAVIOR. (3 Credits)
Theoretical approaches to behavior change in health promotion/
education research and practice; factors influencing health behaviors,
ethical behavior change issues, behavioral interventions for special
populations.
H 572. COMMUNITY ORGANIZATION FOR HEALTH PROMOTION AND
EDUCATION. (3 Credits)
History, theory, and practice of community organizing for health
advocacy; focus on group processes, use of media, leadership, coalitions,
grass roots methods and social change.
H 573. INTRODUCTION TO MULTILEVEL/HIERARCHICAL MODELS. (3
Credits)
Introduction to the theory and application of hierarchical models to
problems in epidemiology and public health. Hierarchical models will be
dealt with using both frequentist and Bayesian frameworks.
H 575. EVALUATION OF HEALTH PROMOTION AND EDUCATION
PROGRAMS. (3 Credits)
Provides theoretical and practical bases for program evaluation.
develops basic skills in a variety of approaches to evaluation, including
techniques that are particularly suitable for evaluating health promotion,
community health improvement, and related health and social services
programs. Course learning is synthesized through designing an
evaluation framework and methodology for a relevant program.
Prerequisites: H 513 with B- or better or H 515 with B- or better or
HHS 514 with B- or better
H 576. PROGRAM PLANNING/PROPOSAL WRITING IN HEALTH/HUMAN
SERVICES. (4 Credits)
Planning and preparing of proposals for program initiation, financing,
delivery and evaluation in health-related settings; emphasis on funding
sources, community, individual, and organizational support.
H 578. INTRODUCTION TO MOLECULAR EPIDEMIOLOGY I. (3 Credits)
A survey of and introduction to the methods and issues arising in
genetics and molecular epidemiology, including key biostatistical
methods, study designs, and technologies used in the conduct of these
studies. Students will gain experience conducting critical reviews of
research papers with respect to study design and biostatistical analysis.
Prerequisites: (H 524 with C or better and H 526 [C])
H 580. LINEAR REGRESSION AND ANALYSIS OF TIME TO EVENT DATA. (4
Credits)
Multiple linear regression analysis for measurement data and survival
analysis methods for time to event health data, including modes of
inference, diagnostics, model selection, and reporting conclusions. Lec/
lab.
Prerequisites: (H 524 with C or better or HDFS 530 with C or better)
H 581. GENERALIZED LINEAR MODELS AND CATEGORICAL DATA
ANALYSIS. (4 Credits)
Biostatistical methods focusing on binary and count data will provide
a foundation for understanding and implementing generalized linear
regression and categorical data models that are commonly used to
analyze epidemiological and public health data from cohort, case-control,
and clinical trial study designs. Lec/lab.
H 582. ANALYSIS OF CORRELATED HEALTH DATA. (3 Credits)
Biostatistical methods for clustered, repeated measures, and longitudinal
correlated health data, with an introduction to applications of linear and
generalized linear mixed models and generalized estimating equations.
Prerequisites: H 581 with C or better
H 583. ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY
MANAGEMENT. (4 Credits)
Studies the design and management principles and practices in the
environment, safety and health field.
H 584. ANALYSIS OF INTERVENTION STUDIES AND CLINICAL TRIALS. (3 Credits)
Principles of data analysis from intervention studies and clinical trials, including professional graphical and tabular presentation, reproducibility and reliability of measurements, and controlling the Type I error rate when analyzing multiple endpoints. Basic principles of designing experiments are also covered including blocking, stratification, interaction, and control of variability.
Prerequisites: (H 524 with C or better or HDFS 530 with C or better)

H 585. ENVIRONMENT, SAFETY AND HEALTH POLICY AND LAW. (3 Credits)
Survey of the environment, safety and health policy and law in the United States. Furnishes the basic knowledge and general understanding about policy and law-related issues important to all environmental health and safety professionals.

H 586. BAYESIAN BIOSTATISTICS IN PUBLIC HEALTH. (3 Credits)
An examination of methods for designing and implementing Bayesian analysis to address scientific questions through hands-on experience with health data. This survey course also covers proper interpretation and communication of results from practical Bayesian methods for biostatistics data analysis, with illustrations of the utility of Bayesian ideas in public health.
Prerequisites: H 581 with C or better

H 587. TIME TO EVENT ANALYSIS OF HEALTH DATA. (3 Credits)
Biostatistical models and methods for survival analysis of time to event data that are routinely encountered in biomedical and health research.
Prerequisites: (H 524 with C or better or HDFS 530 with C or better)

H 588. APPLIED OCCUPATIONAL SAFETY AND HEALTH. (3 Credits)
The management and technical aspects of a workplace safety and health program are identified and assessed. Students completing the course receive a 30-hour OSHA General Industry card.

H 589. EMERGENCY AND DISASTER MANAGEMENT. (3 Credits)
Study of preparedness, response, recovery and business resumption strategies, activities and applications needed to effectively deal with emergency and disaster incidents.

H 590. OCCUPATIONAL ERGONOMICS AND BIOMECHANICS. (3 Credits)
Examines the advanced theories, applications, and contemporary topics of occupational ergonomics and biomechanics. Topics include muscle physiology, work-related musculoskeletal disorders, assessing biomechanical exposure in the workplace, various material handling assessment tools, 3-Dimensional Static Strength Prediction Program, human vibrations, and implementing ergonomic interventions.

H 591. SELECTED TOPICS. (1-3 Credits)
Recent changes and advances in public health and health care administration and their application to special fields of study. Topics vary from term to term and year to year.
This course is repeatable for 9 credits.

H 592. SPATIAL EPIDEMIOLOGY. (3 Credits)
An introduction to methods in spatial epidemiology is provided, including spatial exploration of health data, quantifying spatial patterns and clusters, spatial exposure assessment, and explaining patterns and associations.
Prerequisites: H 547 with C or better and H 581 [C]

H 593. REPRODUCTIVE EPIDEMIOLOGY. (3 Credits)
Focuses on current research, controversial issues, and methodological problems in the epidemiology of reproductive health.
Prerequisites: H 513 with B- or better or HHS 514 with B- or better or H 525 with B- or better or H 535 with B- or better

H 594. APPLIED ERGONOMICS. (3 Credits)
Principles of occupational ergonomics for managing optimal worker performance and well-being.

H 595. DESIGN FOR ENVIRONMENT, SAFETY, AND HEALTH. (3 Credits)
Systematic consideration of environmental, safety, and health concerns at the earliest possible stage in the lifecycle design engineering of products, technologies, and manufacturing processes.

H 596. HEALTHCARE EPIDEMIOLOGY. (3 Credits)
Focus on current research, controversial issues, and methodological problems in the epidemiology of healthcare. Topics include institutional infection control, medical errors, screening and diagnostic testing, cost-effectiveness, and others related to the delivery and assessment of healthcare, with a focus on the US healthcare system specifically.
Prerequisites: H 513 with B- or better or H 525 with B- or better or H 535 with B- or better or HHS 514 with B- or better

H 597. METHODS IN FOODBORNE DISEASE OUTBREAK INVESTIGATION. (3 Credits)
Focuses on the practical basis for developing and implementing methods for foodborne disease outbreak detection, investigation and control, using recent outbreaks to highlight underlying principles. Biological characteristics of major foodborne disease pathogens, clinical features of the illnesses its causes and epidemiologic presentations of foodborne outbreaks will be reviewed. The implications of these characteristics will be discussed in a problem solving, interactive format that examines theory and practice in the context of recent outbreaks. Strategies to promote timely decision-making will be emphasized.
Prerequisites: H 513 with B- or better or H 525 with B- or better or H 535 with B- or better or HHS 514 with B- or better

H 598. HEALTH POLICY ANALYSIS METHODS. (3 Credits)
Analysis of public policies affecting health care programs, services and organizations and the impact of those programs on citizens. Health services research methods, including data sources for health policy research and health policy literature.
Prerequisites: H 513 with B- or better and H 533 [B-]

H 599. SPECIAL TOPICS. (1-16 Credits)
This course is repeatable for 24 credits.

H 601. RESEARCH AND SCHOLARSHIP. (1-16 Credits)
PREREQ: Departmental approval required.
This course is repeatable for 16 credits.

H 603. THESIS. (1-16 Credits)
This course is repeatable for 999 credits.

H 605. READING AND CONFERENCE. (1-16 Credits)
This course is repeatable for 16 credits.

H 606. PROJECTS. (1-16 Credits)
This course is repeatable for 16 credits.

H 607. SEMINAR. (1-16 Credits)
This course is repeatable for 16 credits.

H 608. WORKSHOP. (1-16 Credits)
This course is repeatable for 16 credits.

H 610. INTERNSHIP. (1-16 Credits)
This course is repeatable for 16 credits.
**H 612. DOCTORAL SEMINAR IN PUBLIC HEALTH: RESEARCH AND PRACTICE. (1 Credit)**
Contemporary research and professional issues specific to the discipline of public health. Includes responsible conduct of research, writing for publication, professional development and leadership, and faculty research in public health.
*This course is repeatable for 9 credits.*

**H 613. INDEPENDENT RESEARCH PROJECT. (1-9 Credits)**
Independent research project for PhD students, including research design, execution or research, and the formal presentation of findings in written form. Student will develop an original research topic based on knowledge and review of the literature in a public health-relevant area of inquiry. Graded P/N.
*This course is repeatable for 9 credits.*

**H 614. RESEARCH MANUSCRIPT. (4 Credits)**
PhD students write a manuscript to submit to a peer-reviewed journal as part of the course requirements. Graded P/N.

**H 615. ADVANCED EVALUATION AND RESEARCH DESIGN. (3 Credits)**
Provides an in-depth examination of advanced research designs and methods for establishing causal statements about the efficacy, effectiveness and generalizability of public health and social service interventions designed to alter public health and social risk or protective factors.

**H 620. ADVANCED TOPICS IN GLOBAL HEALTH INTERVENTION AND PRACTICE. (3 Credits)**
Examines the processes and tools involved in planning and evaluating culturally competent health and human service prevention and intervention programs in the global context. Special considerations in program decision-making in the global context (community engagement, cultural competence, sustainability, feasibility, political/ethical issues) will be explored. Provides a key forum for doctoral students to share ongoing developments in their research and practice drawing from fieldwork as well as attended conferences and meetings.

**H 622. GLOBAL HEALTH SYSTEMS, POLICY AND POLITICS. (3 Credits)**
Focuses on learning to identify key stakeholders in the politics of global health, and to be able to describe political and policy processes involved in negotiating global health decisions. Employment of theories and evidence from both the global North and South to explain political processes affecting public health practice and programs.

**H 626. GLOBAL HEALTH SYSTEM FINANCE AND STRENGTHENING. (3 Credits)**
Introduces an analytical framework of health system finance strengthening for global health, from local community to national level and international level. Develops the analytical skill and knowledge for examining the source and mechanism of financing health systems and identify, mobilize, organize, and manage domestic and global health resources. Provides training to examine equity and efficiency of financial burden in a health system, and the strategies to strengthen it.

**H 630. QUANTITATIVE HEALTH POLICY RESEARCH METHODS I. (4 Credits)**
Contemporary doctoral-level quantitative health policy/services research methods emphasizing linear regression models, data sources for health policy research, and health policy research literature.
*Prerequisites:* H 524 with B- or better

**H 632. APPLIED HEALTH ECONOMICS. (4 Credits)**
Advanced doctoral-level quantitative health policy/services research methods emphasizing causal inference when potential endogeneity is present.
*Prerequisites:* H 630 with B- or better

**H 635. COST EFFECTIVENESS ANALYSIS IN HEALTH AND MEDICAL CARE. (3 Credits)**
The primary objective of this course is to introduce students to cost-effectiveness studies in health and medical care. Covers the core concepts of CEA, quality adjusted life years, cost calculations, and decision rules.

**H 638. PUBLIC AND PRIVATE HEALTH INSURANCE. (3 Credits)**
Introduction to the principles and practices of public or social and commercial health insurance, their finance mechanisms, and theoretical foundation behind the selection of certain system of health insurance and finance method.
*Prerequisites:* H 533 with C or better

**H 639. COMMUNITY-BASED PARTICIPATORY RESEARCH. (4 Credits)**
Focuses on initiating and conducting research in partnership with communities. Includes in-depth examination of community-based participatory research (CBPR) elements, principles, theories, and approaches; how researchers can successfully partner with communities; and research with minority and/or underprivileged communities; with examples from environmental health, gerontology, and health promotion.

**H 642. ENVIRONMENTAL AND REGULATORY RISK ASSESSMENT. (3 Credits)**
Understand concepts, principles and practices in modern risk analysis and how they are utilized to make evidence-based decisions in public health. Focus will be on real world examples of risk assessment by environmental and occupational regulatory agencies.

**H 650. REPORTING RESULTS: WRITING FOR EPIDEMIOLOGY. (3 Credits)**
Applied experience writing a scientific paper to disseminate results, including deciding on authorship, preparing a lay summary, revising and responding to peer review, and serving as a reviewer.
*Prerequisites:* H 526 with B- or better and H 551 [B+] and H 580 [B-]

**H 651. ADVANCED EPIDEMIOLOGICAL METHODS. (4 Credits)**
Covers advanced topics in epidemiology. Course expands on many of the same topics as H 526, and explores them in greater breadth and depth. Topics include causal theory, measures of disease and association, confounding, selection bias, predictive models, directed acyclic graphs, effect modification, mediation, indirect and direct effects, study design, and other contemporary topics.
*Prerequisites:* H 526 with B- or better and H 580 [B-]

**H 652. CAUSAL INFERENCE IN EPIDEMIOLOGY. (3 Credits)**
Discussion of the theoretical framework of causal statistics and the development of modern methods including propensity scores and marginal structural models. Focus is on the inverse probability of treatment weighting; discussion of other estimation methods will be included. Additional topics may include longitudinal causal models, causal mediation, instrumental variables, and other contemporary topics. Applied examples will be used for illustration.
*Prerequisites:* H 651 with B- or better

**H 659. QUANTITATIVE HEALTH POLICY RESEARCH METHODS II. (4 Credits)**
Advanced doctoral-level quantitative health policy/services research methods emphasizing health care utilization, expenditures, and outcomes data.
*Prerequisites:* H 630 with B- or better
H 662. ADVANCED METHODS IN INFECTIOUS DISEASE EPIDEMIOLOGY. (3 Credits)
Covers advanced methods and principles for infectious disease research, including framing infectious disease issues into testable hypotheses, designing epidemiologic studies using appropriate sampling strategies, and identifying strengths and weaknesses of various epidemiologic research methods.
Prerequisites: H 526 with B- or better and H 562 [B-]

H 671. ADVANCED THEORIES OF HEALTH BEHAVIOR. (3 Credits)
Provides an in-depth examination of major theories of health behavior (both health compromising and health enhancing).

H 672. ADVANCED QUALITATIVE METHODS IN HEALTH BEHAVIOR. (3 Credits)
Provides an in-depth examination of the use of qualitative methods in health behavior research and practice.

H 673. MEASUREMENT OF HEALTH BEHAVIOR CONCEPTS. (4 Credits)
Provides in-depth study and field work for graduate students in public health and related fields of the methods used in the conceptualization, development, and evaluation of quantitative measures of health behavior and related concepts.

H 675. DEVELOPMENT OF HEALTH BEHAVIOR INTERVENTIONS. (3 Credits)
Examines the application of social/behavioral theories in health promotion interventions and in conducting intervention research in diverse populations. The course will focus on program development, on implementation strategies, and on translation into practice.

H 676. ADVANCED TOPICS IN HEALTH PROMOTION AND HEALTH BEHAVIOR. (3 Credits)
Examines topics of relevance to health promotion and health behavior. Specific topics include current issues and emerging research findings, with a focus on social and behavior science perspectives, analysis of public health problems, and application of principles and practices of health promotion and health behavior.
This course is repeatable for 6 credits.

H 681. ADVANCED TOPICS IN ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY. (3 Credits)
Advanced topics in the environment, safety and health discipline. Content varies with each offering.

H 682. ENVIRONMENTAL AND OCCUPATIONAL HEALTH AND SAFETY: MOVING FROM RESEARCH TO PRACTICE. (3 Credits)
An examination of research transfer models that can be adapted and implemented to environmental and occupational settings. Case studies and content will vary with each course offering.

H 683. ADVANCED RESEARCH METHODS IN ENVIRONMENTAL AND OCCUPATIONAL HEALTH. (3 Credits)
Covers advanced methods for environmental and occupational health research, including framing environmental and occupational health issues into testable hypotheses, designing appropriate studies, and identifying strengths and weaknesses of different research methods.

H 685. RACE, CLASS, CULTURE AND AGING. (4 Credits)
Examines the diversity among the older population in health status, health beliefs/behaviors, and health care, and explores the interaction of culture and structure as determinants of their life chances. The empirical literature used in the course is drawn from the experiences of aging of African-American, Latino, and Asian-Pacific Islander elderly. Taught spring term even years. CROSSLISTED as HDFS 685.
Equivalent to: HDFS 685

H 699. SPECIAL STUDIES. (1-16 Credits)
This course is repeatable for 16 credits.

Health and Human Sciences
HHS 231. *LIFETIME FITNESS FOR HEALTH. (2 Credits)
Provides up-to-date and relevant health and wellness information; practical strategies to implement positive behavior change in physical activity, nutrition, and stress management throughout college and the lifespan. (Bacc Core Course)
Attributes: CSFT – Core, Skills, Fitness
Equivalent to: HHS 231H

HHS 231H. *LIFETIME FITNESS FOR HEALTH. (2 Credits)
Provides up-to-date and relevant health and wellness information; practical strategies to implement positive behavior change in physical activity, nutrition, and stress management throughout college and the lifespan. (Bacc Core Course)
Attributes: CSFT – Core, Skills, Fitness; HNRS – Honors Course Designator
Equivalent to: HHS 231

HHS 241. *LIFETIME FITNESS. (1 Credit)
Assessment, evaluation and practice of physical fitness and health behaviors leading to the development of a personal fitness program. (Bacc Core Course)
Attributes: CSFT – Core, Skills, Fitness

HHS 513. INTEGRATED APPROACH TO PUBLIC HEALTH I. (6 Credits)
An integrated approach to introduce students to the core knowledge and methods used in public health, including evidence-based approaches to public health, public health and health care systems, planning and management to promote health, and policy in public health. This course is the first of a two-part course sequence.

HHS 514. INTEGRATED APPROACH TO PUBLIC HEALTH II. (6 Credits)
An integrated approach to introduce students to the core knowledge and methods used in public health, including: evidence-based approaches to public health; public health and health care systems; planning and management to promote health; and policy in public health. This course is the second of a two part course sequence.
Prerequisites: HHS 513 with B- or better

HHS 517. CASE STUDIES IN PUBLIC HEALTH PRACTICE. (3 Credits)
Case-based learning to illustrate the complexity of public health issues and to demonstrate the need for integrated approaches for developing and implementing successful strategies in public health practice. Students will apply a wide range of knowledge and skills essential to public health practice that relate to outbreak investigation, policy analysis, regulatory decision-making, ethics, program development, program evaluation, research synthesis, screening programs, working with stakeholders, health risk communication, and disaster preparedness.
Prerequisites: H 513 with B- or better or HHS 514 with B- or better

HHS 526. LINEAR REGRESSION IN PUBLIC HEALTH. (2 Credits)
Biostatistical tools for scientific applications in public health using linear regression analysis. Confounding, effect modification, variable selection, assessing model fit, observational studies, and exploratory data analysis. Emphasis on the use of statistical packages for analyzing public health data.
Prerequisites: H 524 with B- or better
This course is repeatable for 4 credits.
HHS 527. LOGISTIC REGRESSION IN PUBLIC HEALTH. (2 Credits)
Biostatistical tools for scientific applications in public health using logistic regression analysis. Confounding, effect modification, variable selection, assessing model fit, exploratory data analysis, and observational studies. Emphasis on the use of statistical packages for analyzing public health data.
Prerequisites: H 524 with B- or better

HHS 537. EVIDENCE-BASED LEADERSHIP IN PUBLIC HEALTH. (3 Credits)
Examines how collaboration differs from working together, and offers opportunities to develop skills for successful and effective group functioning. Students will be challenged to examine personal strengths (and the strengths of others) as they relate to leadership and followership. Explores evidence-based management – identifying and using organizational and scientific data in decision making.
Prerequisites: H 536 with B- or better

HHS 550. COMMUNICATING FOR PUBLIC HEALTH POLICY IMPACT. (3 Credits)
Successful public health professionals communicate clearly and in compelling ways with non-scientific audiences. In this hands-on course, the theory and practice of effective public health communication will be explored, with a focus on advancing a public health policy. Through a selected public health policy topic, students will develop and enhance skills in planning and implementing impactful public health communications, including message development, data visualization, media interviewing, engaging through social media and presenting to policy makers. Professionals in the field, including those in legislative and media roles, will share examples of effective communication and provide constructive feedback on students' work.

HHS 578. EVIDENCE-BASED PUBLIC HEALTH I. (3 Credits)
Evidence-based public health is the process of integrating science-based interventions with community preferences to improve the health of populations. This is the first in a two-course series and provides theoretical and practical bases to identify, implement and evaluate evidence-based research (i.e. programs, surveillance, policies). Students will develop skills to select and adapt evidence-based public health programming for a specific community and/or population.
Prerequisites: H 513 with B- or better or HHS 514 with B- or better

HHS 579. EVIDENCE-BASED PUBLIC HEALTH II. (3 Credits)
Evidence-based public health is the process of integrating science-based interventions with community preferences to improve the health of populations. This is the second in a two-course series. This course applies science and adaptation frameworks learned in the first course to the development of a program plan. This course provides instruction and application of program planning and program evaluation frameworks. Course learning is synthesized through the development of a grant proposal for adapted public-health program plus evaluation plan.
Prerequisites: HHS 575 with B- or better and HHS 578 [B-] [B-]

HHS 584. SURVEILLANCE AND FIELD EPIDEMIOLOGY FOR PUBLIC HEALTH. (3 Credits)
A review of public health surveillance systems, and the continuum of communicable disease surveillance into field epidemiology and other responses to identified events.
Prerequisites: H 524 with B- or better or HHS 514 with B- or better

HHS 590. PUBLIC HEALTH LAW. (2 Credits)
Explores the use of law and policy tools to promote access to health and healthy living conditions. Examines the legal powers and duties of government at the federal, state, and local levels to ensure the conditions required for people to be healthy. Discussion of individual rights as limitations on the power of the government to act in furtherance of public health goals.
Prerequisites: H 513 with B- or better or HHS 514 with B- or better

HHS 597. GLOBAL HEALTH SYSTEMS. (3 Credits)
Explores key components of global health systems, using case studies of institutions, processes, and health outcomes.

**Kinesiology**

KIN 131. INTRODUCTION TO KINESIOLOGY. (1 Credit)
Overview of the field; career opportunities in exercise and sport science and other professions dealing with the discipline of human movement; orientation to support services. Graded P/N.

KIN 132. INTRODUCTION TO THE ALLIED HEALTH PROFESSIONS. (1 Credit)
Overview of allied health professions including physical and occupational therapy, physician assistant, nursing, athletic training and others. Discuss job responsibilities, employment opportunities and educational requirements.

KIN 160. INTRODUCTION TO INJURY MANAGEMENT FOR THE PHYSICALLY ACTIVE. (3 Credits)
Introduction to management of physical activity-related injury for the non-healthcare provider (e.g., coaches, physical educators and fitness professionals).

KIN 194. PROFESSIONAL ACTIVITIES. (1-2 Credits)
Basic movement skills, basic rhythms, track and field.

KIN 199. SPECIAL TOPICS. (1-16 Credits)
This course is repeatable for 16 credits.

KIN 206. PROJECTS. (1-16 Credits)
This course is repeatable for 16 credits.

KIN 230. INTRODUCTION TO ADVENTURE PROGRAMS. (3 Credits)
Foundation course for leadership opportunities in the Adventure Leadership Institute (ALI). Provides overview of history, theoretical foundations, and utilization of adventure programs in education, recreation, and therapy.

KIN 231. HUMAN GROUP DYNAMICS. (3 Credits)
Provides students with the fundamental concepts and theories essential for understanding dynamics that occur in groups in recreation, leisure, and everyday settings.

KIN 232. BACKCOUNTRY LEADERSHIP. (3 Credits)
Prepares students to be leaders in outdoor settings by building the practical and logistical skills needed in the effective delivery of courses and/or trips. Covers the teaching skills and essentials for trip leaders in the wilderness, including trip planning, logistics, risk management, and group interaction in the backcountry.
Prerequisites: (EXSS 230 with C or better or KIN 230 with C or better) and PAC 301 [C] and PAC 303 [C] and PAC 329 [C]
KIN 233. TEACHING TECHNIQUES FOR OUTDOOR ACTIVITIES. (3 Credits)
Gateway course for students pursuing the Level Three Adventure Leadership Certificate. Emphasizes teaching outdoor activities at a professional level. Students work individually with the course instructor to develop, plan and implement an activity course (land or water based) for the Adventure Leadership Institute.
Prerequisites: EXSS 232 with C or better or KIN 232 with C or better

KIN 299. SPECIAL TOPICS. (1-3 Credits)
This course is repeatable for 24 credits.

KIN 301. RESEARCH AND SCHOLARSHIP. (1-16 Credits)
This course is repeatable for 16 credits.

KIN 305. READING AND CONFERENCE. (1-16 Credits)
This course is repeatable for 16 credits.

KIN 306. PROJECTS. (1-16 Credits)
This course is repeatable for 36 credits.

KIN 307. SEMINAR. (1-3 Credits)
Section 2: Seminar Pre-Internship (1 credit).
This course is repeatable for 36 credits.

KIN 311. MOTOR BEHAVIOR. (4 Credits)
Underlying mechanisms and factors affecting movement function, skill acquisition, and changes in movement behavior across the lifespan.
Prerequisites: BI 232 with C- or better or BI 332 with C- or better

KIN 312. *SOCIOCULTURAL DIMENSIONS OF PHYSICAL ACTIVITY. (3 Credits)
Physical activity in contemporary society. Relationships with the social processes; interrelationships between physical activity and cultural institutions. (Bacc Core Course)
Attributes: CPSI – Core, Pers, Soc Proc & Inst; CPWC – Core, Pers, West Culture

KIN 314. INTRODUCTION TO ADAPTED PHYSICAL ACTIVITY. (3 Credits)
Overview of cognitive, neuromuscular, sensory and orthopedic disabilities; understanding accessible physical activity programs for individuals with disabilities.

KIN 321. BIOMECHANICS OF HUMAN MOVEMENT. (4 Credits)
Integration of the physical laws and anatomical structures governing human movement; qualitative analytical processes emphasized.
Prerequisites: BI 231 with C- or better and BI 241 [C-] or BI 331 [C+] and BI 341 [C+] or BI 341 [C+] and (MTH 112 [C+] or MTH 251 [C])

KIN 324. EXERCISE PHYSIOLOGY. (4 Credits)
Physiological effects of acute and chronic exercise; factors affecting human performance; exercise training principles.
Prerequisites: BI 231 with C- or better or BI 333 with C- or better and BI 231 [C+] or BI 331 [C+] and (BI 231 [C-] or BI 231 [C-] or BI 231H [C]) and (CH 122 [C+] or CH 232 [C+] or CH 232 [C+] or CH 232H [C+] or CH 123 [C+] or CH 233 [C+] or CH 233H [C+] or CH 234 [C+] or CH 130 [C-])

KIN 325. FITNESS ASSESSMENT AND EXERCISE PRESCRIPTION. (3 Credits)
Introduction to lab- and field-based physical fitness assessments and the skills needed to design safe and effective exercise programs for apparently healthy adults. Lec/lab.
Prerequisites: KIN 324 with C- or better or EXSS 324 with C- or better

KIN 333. KINESIOLOGY PRACTICUM. (2 Credits)
Field experience in kinesiology under professional supervision.

KIN 334. KINESIOLOGY PRACTICUM. (2 Credits)
Field experience in kinesiology under professional supervision.
Prerequisites: KIN 333 with C- or better

KIN 335. KINESIOLOGY PRACTICUM. (2 Credits)
Field experience in kinesiology under professional supervision.

KIN 341. NUTRITION FOR EXERCISE. (3 Credits)
Review of the interrelationship between nutrition and exercise, including macronutrient, micronutrient and fluid needs for active individuals.
CROSSLISTED as NUTR 341.
Prerequisites: (KIN 324 with C- or better or EXSS 324 with C- or better) and NUTR 240 [C-]
Equivalent to: NUTR 341

KIN 343. PRE-THERAPY/ALLIED HEALTH SEMINAR. (1 Credit)
Provides knowledge in professional school preparation and current issues related to the allied health professions.
Prerequisites: KIN 132 with C or better and BI 231 [C] and BI 232 [C] and BI 233 [C] and BI 241 [C] and BI 242 [C] and BI 243 [C]

KIN 344. PRE-THERAPY/ALLIED HEALTH PRACTICUM. (2 Credits)
Clinical field experiences under the supervision of a licensed professional in the allied health or related setting enhanced with classroom discussion.
Prerequisites: KIN 132 with C or better and BI 231 [C] and BI 232 [C] and BI 233 [C] and BI 241 [C] and BI 242 [C] and BI 243 [C]
Corequisites: KIN 343

KIN 345. ALLIED HEALTH PRACTICUM. (1-2 Credits)
Field experience under professional supervision in an allied health or related setting. Includes arranged consultations with the instructor to discuss current issues related to the allied health professions.
This course is repeatable for 2 credits.

KIN 353. PHYSICAL EDUCATION TEACHER EDUCATION PRACTICUM. (2 Credits)
Supervised K-12 physical education field experience with seminars. May include one instructor-approved coaching experience in school setting.

KIN 354. PHYSICAL EDUCATION TEACHER EDUCATION PRACTICUM. (2 Credits)
Supervised K-12 physical education field experience with seminars. May include one instructor-approved coaching experience in school setting.

KIN 355. PHYSICAL EDUCATION TEACHER EDUCATION PRACTICUM. (2 Credits)
Supervised K-12 physical education field experience with seminars. May include one instructor-approved coaching experience in school setting.

KIN 360. INJURY MANAGEMENT FOR THE PHYSICALLY ACTIVE. (3 Credits)
Introduction to management of physical activity-related injury for the non-healthcare provider (e.g., coaches, physical educators and fitness professionals) and pre-professional.

KIN 370. PSYCHOLOGY OF SPORT AND PHYSICAL ACTIVITY. (3 Credits)
Interaction between psychological variables and human motor performance.

KIN 380. THERAPEUTIC MODALITIES. (4 Credits)
Indications, contraindication, techniques, and effects of various physical agents used in the care and treatment of musculoskeletal injuries and diseases.

KIN 385. THERAPEUTIC EXERCISE. (4 Credits)
Principles and techniques of therapeutic exercise; rehabilitative activities and programs for musculoskeletal injuries, conditions, and diseases. Lec/lab.
Prerequisites: KIN 321 with C- or better or EXSS 321 with C- or better
KIN 394. PROFESSIONAL ACTIVITIES: RESISTANCE TRAINING PROGRAM DESIGN. (3 Credits)

Presents the conceptual basis for optimizing resistance training program designs, exercise routines for all ages and fitness levels, correct exercise technique. Lec/lab.

Prerequisites: KIN 324 with C- or better and KIN 325 [C-]

KIN 395. PROFESSIONAL ACTIVITIES: GROUP FITNESS. (3 Credits)

Application of biomechanical, physiological, psychological and safety principles for the development of group exercise classes in a variety of modes and settings. Lec/lab.

Prerequisites: (KIN 324 with C- or better or EXSS 324 with C-) and (KIN 325 [C-] or EXSS 325 [C-])

KIN 396. PROFESSIONAL ACTIVITIES: AQUATICS. (3 Credits)

Aquatic overview; emphasis on underlying hydrodynamic principles; includes safety, survival, stroke mechanics, aquatic exercise, training, games. Lec/lab/activity.

KIN 399. SPECIAL TOPICS. (1-3 Credits)

Equivalent to: KIN 399H

This course is repeatable for 18 credits.

KIN 399H. SPECIAL TOPICS. (1-3 Credits)

Attributes: HNRS – Honors Course Designator

Equivalent to: KIN 399

This course is repeatable for 18 credits.

KIN 401. RESEARCH AND SCHOLARSHIP. (1-16 Credits)

This course is repeatable for 16 credits.

KIN 403. THESIS. (1-16 Credits)

This course is repeatable for 16 credits.

KIN 405. READING AND CONFERENCE. (1-16 Credits)

This course is repeatable for 16 credits.

KIN 406. PROJECTS. (1-16 Credits)

This course is repeatable for 16 credits.

KIN 407. SEMINAR. (1-16 Credits)

This course is repeatable for 16 credits.

KIN 408. WORKSHOP. (1-16 Credits)

This course is repeatable for 16 credits.

KIN 409. PRACTICUM. (1-16 Credits)

This course is repeatable for 16 credits.

KIN 410. INTERNSHIP. (1-15 Credits)

Planned experiences at selected cooperating agencies, companies or institutions; supervised by university and program personnel; supplementary conference, reports and appraisal required. This course is repeatable for 20 credits.

KIN 422. FACILITATING PHYSICAL ACTIVITY FOR CHILDREN AND YOUTH. (3 Credits)

Students learn skills for facilitating physical activity programs for children and youth in a variety of settings, including information on the benefits of physical activity, program design, implementation and management techniques.

Prerequisites: KIN 311 with C- or better or EXSS 311 with C- or better

KIN 423. QUALITATIVE MOVEMENT ANALYSIS. (3 Credits)

Develop observational skills to perform systematic qualitative analyses of selected physical activity performances and other human movements.

Prerequisites: (KIN 311 with C- or better or EXSS 311 with C- or better) and (KIN 321 [C-] or EXSS 321 [C-])

KIN 425. ANATOMICAL KINESIOLOGY. (4 Credits)

Anatomical aspects of human movement; actions of bones and muscles in motor activities. Application of physical principles to factors governing anatomical function in health and injury.

Prerequisites: EXSS 321 with C- or better or KIN 321 with C- or better

KIN 432. PHYSICAL ACTIVITY ASSESSMENT. (3 Credits)

Assessment of physical activity using subjective and objective measurement methods with focus on applications for individuals, communities, and special populations.

KIN 433. APPLIED MUSCLE PHYSIOLOGY. (3 Credits)

Skeletal muscle structure, function, and metabolism; applications to muscle fatigue, exercise training, inactivity, and aging.

Prerequisites: KIN 324 with C- or better or EXSS 324 with C- or better

KIN 435. PHYSICAL ACTIVITY PROMOTION. (3 Credits)

Application of behavioral science and public health research to the promotion of physical activity in individuals, groups and communities.

Prerequisites: KIN 370 with C- or better

KIN 437. PHYSICAL ACTIVITY, AGING, AND CHRONIC DISEASE. (4 Credits)

Addresses the consequences of primary and secondary aging from an individual and public health perspective. Physiological changes associated with aging and chronic disease, functional assessment of older adults, and exercise prescription for older adults with and without chronic exercise will be emphasized.

Prerequisites: (KIN 324 with C- or better or EXSS 324 with C- or better) and (KIN 325 [C-] or EXSS 325 [C-])

KIN 444. ADVANCED ADAPTED PHYSICAL ACTIVITY. (3 Credits)

Discuss various disability models and perspectives; reinforce determinants of physical activity; design and implement different physical activity programs and curricula for individuals with disabilities. Lec/lab.

Prerequisites: (KIN 314 with C- or better or EXSS 314 with C- or better)

KIN 474. EXERCISE PHYSIOLOGY LAB METHODS. (3 Credits)

Practical experience and projects in exercise physiology lab methods, including measurement of submaximal and maximal oxygen consumption body composition, anaerobic power, and electrocardiography.

Prerequisites: (KIN 324 with C- or better or EXSS 324 with C- or better) and (KIN 325 [C-] or EXSS 325 [C-])

KIN 475. *POWER AND PRIVILEGE IN SPORT. (3 Credits)

Issues of power and privilege in sport including race, gender, sexual orientation, disability and aggression and the consequences of long held society norms and stereotypes. (Bacc Core Course)

Attributes: CPDP – Core, Perspective, Difference/Power/Discrimination

Prerequisites: (KIN 312 with C- or better or EXSS 312 with C- or better)

KIN 481. *ANALYSIS OF CRITICAL ISSUES IN KINESIOLOGY. (3 Credits)

Reading and interpreting current research, and using writing as a tool for learning on a critical issue in kinesiology. (Writing Intensive Course)

Attributes: CWIC – Core, Skills, WIC

Equivalent to: KIN 381
KIN 483. TISSUE INJURY AND REPAIR. (3 Credits)
Mechanics of tissue injury and the body's response and repair following injury of bone, muscle, tendon, ligament, cartilage and nervous system tissue.
Prerequisites: (BI 231 with C- or better or BI 331 with C- or better) and (BI 241 [C-] or BI 341 [C-]) and (BI 232 [C-] or BI 332 [C-]) and (BI 242 [C-] or BI 342 [C-]) and (BI 233 [C-] or BI 333 [C-]) and (BI 243 [C-] or BI 343 [C-]) or ((Z 331 [C-] and Z 332 [C-] and Z 333 [C-] and Z 341 [C-] and Z 342 [C-] and Z 343 [C-]))

KIN 490. SCIENTIFIC INQUIRY IN KINESIOLOGY. (4 Credits)
Principles and techniques of organization, administration, interpretation and evaluation of exercise science-related data. Includes human subjects training and certification, research design, and statistical analysis using SPSS and Excel including central tendency, correlation and regression, probability, and inferential statistics (t-tests and ANOVA). Lec/lab.
Prerequisites: KIN 325 with C- or better and MTH 112 [C-]

KIN 499. SELECTED TOPICS. (1-5 Credits)
Impact of human movement development on people, their movement behavior, and environment. Topics vary from term to term and year to year. May be repeated for credit when topics differ.
This course is repeatable for 24 credits.

KIN 501. RESEARCH AND SCHOLARSHIP. (1-16 Credits)
This course is repeatable for 16 credits.

KIN 503. THESIS. (1-16 Credits)
This course is repeatable for 999 credits.

KIN 505. READING AND CONFERENCE. (1-16 Credits)
This course is repeatable for 16 credits.

KIN 506. PROJECTS. (1-16 Credits)
This course is repeatable for 16 credits.

KIN 507. SEMINAR. (1-16 Credits)
Section 1: Seminar (1). Graduate research seminar that emphasizes student oral presentations of current research topics in exercise and sport science. One credit required for all graduate students. Section 2: Current Developments (1). Discussion of contemporary issues in the exercise and sport science literature. Topics vary by term. Two credits required of all doctoral students. Section 9: International Aspects (1). Discussion of international aspects of study in exercise and sport science. Required of all doctoral students. Graded P/N.
This course is repeatable for 16 credits.

KIN 508. WORKSHOP. (1-16 Credits)
This course is repeatable for 16 credits.

KIN 509. PRACTICUM. (1-16 Credits)
This course is repeatable for 35 credits.

KIN 510. INTERNSHIP. (1-16 Credits)
Planned experiences at selected cooperating agencies, companies or institutions; supervised by university and program personnel; supplementary conference, reports and appraisal required.
This course is repeatable for 26 credits.

KIN 511. INTRODUCTION TO ATHLETIC TRAINING. (4 Credits)
Practice domains include injury and illness prevention and wellness protection, clinical evaluation and diagnosis, immediate and emergency care, treatment and rehabilitation, and organizational and professional health and well-being. Lec/lab.

KIN 512. APPLIED MOTOR LEARNING. (3 Credits)
Application of research and theory to the teaching of motor skills with emphasis on development of instructional strategies related to modeling, knowledge of results, practice, and motivational aspects of learning.

KIN 515. MOTOR CONTROL AND MOVEMENT DYSFUNCTION. (3 Credits)
Contemporary motor control theories and their application to the development of instructional and training programs for individuals with movement disorders caused by neurological disease and/or trauma.

KIN 520. ORTHOPEDIC ASSESSMENT OF UPPER EXTREMITY INJURIES. (4 Credits)
Prevention, assessment and management of upper extremity injuries and conditions commonly encountered by the athletic trainer. Lec/lab.
Prerequisites: KIN 511 with C or better

KIN 521. ORTHOPEDIC ASSESSMENT OF LOWER EXTREMITY INJURIES. (4 Credits)
Prevention, assessment and management of lower extremity injuries and conditions commonly encountered by the athletic trainer. Lec/lab.
Prerequisites: KIN 511 with C or better

KIN 522. ORTHOPEDIC ASSESSMENT OF SPINE. (4 Credits)
Prevention, assessment and management of spinal injuries and conditions commonly encountered by the athletic trainer. Lec/lab.
Prerequisites: KIN 520 with C or better and KIN 521 [C]

KIN 523. BIOMECHANICS OF MOTOR ACTIVITIES. (3 Credits)
Kinematic and kinetic analysis of volitional human movement with emphasis on analytical techniques and quantitative problem solving.

KIN 525. BIOMECHANICS OF MUSCULOSKELETAL INJURY. (3 Credits)
Mechanical causes and effects of forces applied to the musculoskeletal system, material properties of human tissues, pathomechanics of injury, and degenerative changes across the lifespan. Not offered every year.

KIN 531. PHYSIOLOGY OF PHYSICAL ACTIVITY AND INACTIVITY. (3 Credits)
Physiologic responses to acute and chronic physical activity and inactivity with emphasis on underlying mechanisms and health outcomes.

KIN 532. PHYSICAL ACTIVITY ASSESSMENT. (3 Credits)
Assessment of physical activity using subjective and objective measurement methods with focus on applications for individuals, communities, and special populations.

KIN 533. ENERGETICS AND BIOCHEMISTRY OF EXERCISE. (3 Credits)
Metabolic and energetic responses to acute and chronic physical activity; emphasis on recent research.

KIN 535. PHYSICAL ACTIVITY PROMOTION. (3 Credits)
Application of behavioral science and public health research to the promotion of physical activity in individuals, groups and communities.

KIN 536. PHYSICAL ACTIVITY IN DIVERSE POPULATIONS. (3 Credits)
Addresses the social, cultural, political, and environmental determinants of physical activity and health among diverse populations. Includes examination of intersecting issues related to race, ethnicity, gender, age, disability, geography, income status, and other societal factors across the lifespan for promoting physical activity through public health strategies.

KIN 544. ADVANCED ADAPTED PHYSICAL ACTIVITY. (3 Credits)
Discuss various disability models and perspectives; reinforce determinants of physical activity; design and implement different physical activity programs and curricula for individuals with disabilities. Lec/lab.

KIN 547. INCLUSION IN PHYSICAL ACTIVITY. (3 Credits)
Effectiveness of physical activity programs provided in inclusive settings. This will include a lifespan/non-categorical approach to program development.
KIN 548. ASSESSMENT AND PROGRAMMING FOR SPECIAL POPULATIONS. (3 Credits)
Use of appropriate assessment procedures for developing effective psychomotor programs for the disabled.

KIN 549. PHYSICAL ACTIVITY FOR PERSONS WITH SEVERE DISABILITIES. (3 Credits)
Plan, develop and implement appropriate physical activity programs, functional program design, assistive technology, instructional strategies, behavior management practices, and data analysis systems that address the needs for psychomotor performance of persons with low incidence disabilities.

KIN 550. HEALTH PROMOTION FOR PEOPLE WITH DISABILITIES. (3 Credits)
Discussion will focus on disability and health, theory driving health promotion program development, guidelines for developing a program for individuals with disabilities, and program evaluation.

KIN 551. CURRENT TRENDS AND ISSUES IN PHYSICAL EDUCATION. (4 Credits)
Current trends and issues in physical education, including curriculum development, professional ethics, instructional practices, and physical activity for the school community.

KIN 553. INSTRUCTIONAL ANALYSIS TECHNIQUES I. (3 Credits)
Introduction to techniques of instructional analysis. Provides in-depth information and training in systematic observation techniques, raw data conversion and inter/intraobserver reliability.

KIN 554. INSTRUCTIONAL ANALYSIS TECHNIQUES II. (3 Credits)
Laboratory/seminar experience to accompany student teaching winter and spring terms. Provides continued application of systematic observation techniques throughout the elementary student teaching experience.

KIN 555. SKILL ANALYSIS AND ASSESSMENT IN K-12. (3 Credits)
Develop proficiency in assessing movement skills, execution of sport techniques, and game play performance. Assessment trends and practices utilized in physical education programs are included.

KIN 556. INSTRUCTIONAL SKILLS I. (3 Credits)
Skills of planning, implementing, and evaluating programs of instruction in physical education, grades K-12.

KIN 557. INSTRUCTIONAL SKILLS II. (2 Credits)
Applying and refining skills of planning, implementing, and evaluating programs of instruction in physical education, grades K-12.

KIN 558. PHYSICAL EDUCATION CURRICULUM DESIGN AND ORGANIZATION. (3 Credits)
Curricular programs and variations from kindergarten through grade 12, administrative policies and practices.

KIN 559. THE PHYSICAL EDUCATOR AS A PROFESSIONAL. (1 Credit)
Transitioning to teaching, developing a portfolio, certification, obtaining a position, teacher burnout, professionalism, problems of first-year teachers, developing patterns of behavior that lead to a successful career.

KIN 560. MOTIVATION IN PHYSICAL ACTIVITY. (3 Credits)
A social psychological approach to understanding the role of self-perceptions and cognitions in explaining motivated behavior in sport and exercise settings.

KIN 561. PSYCHOSOCIAL FACTORS IN PHYSICAL ACTIVITY. (3 Credits)
A social psychological approach to understanding the role of social interactions and contextual factors in explaining human behavior in sport and exercise settings.

KIN 562. LIFESPAN SPORT AND EXERCISE PSYCHOLOGY. (3 Credits)
Social-psychological issues across the lifespan in the context of sport and exercise.

KIN 564. PROGRAM CAPSTONE AND SYNTHESIS. (3 Credits)
Capstone course in which teacher candidates will review and update their teaching philosophy; showcase their Physical Education master's portfolio; and develop a plan for professional development.

KIN 565. EMERGENCY MANAGEMENT OF SPORTS TRAUMA. (3 Credits)
Knowledge and skills related to the specialized care required for serious and/or life-threatening acute athletic related injuries and illnesses. Lec/lab.

KIN 566. GENERAL MEDICAL ASSESSMENT. (3 Credits)
Prevention, assessment and management of general medical conditions commonly encountered by the athletic trainer. Lec.

KIN 567. PHARMACOLOGY IN ATHLETIC TRAINING. (3 Credits)
Pharmacology in sports medicine, topics including, but not limited to, the mechanisms and actions of drugs commonly administered and prescribed in sports medicine environments.

KIN 568. ATHLETIC TRAINING PROGRAM MANAGEMENT. (3 Credits)
Administrative aspects of athletic training program management. Including principles of risk management, strategic and operational planning, medical-legal aspects of athletic healthcare, confidentiality and documentation of patient health information, insurance and third-party reimbursement, personnel issues, and current professional issues.

KIN 569. EVIDENCE-BASED PRACTICE. (3 Credits)
Principles and skills underlying the utilization of evidence to enhance clinical practice decision-making. Includes the development of clinical questions, review and appraisal of relevant literature, and utilization of patient-centered outcome measures.

KIN 573. MEASUREMENT IN HUMAN MOVEMENT. (3 Credits)

KIN 575. RESEARCH IN HUMAN MOVEMENT. (3 Credits)
Investigation and evaluation of research methods applicable to human movement study and professional physical education.

KIN 584. THERAPEUTIC MODALITIES. (4 Credits)
Indications, contraindications, techniques, and effects of various physical agents used in the care and treatment of musculoskeletal injuries and conditions commonly encountered by the athletic trainer. Lec/lab.

KIN 585. UPPER EXTREMITY THERAPEUTIC EXERCISE. (4 Credits)
Principles and techniques of therapeutic exercise and manual therapy for the upper extremity, cervical spine, and thoracic spine. Lec/lab.

KIN 586. LOWER EXTREMITY THERAPEUTIC EXERCISE. (4 Credits)
Principles and techniques of therapeutic exercise and manual therapy with a focus on the lower extremity, lumbar spine and ribs.
KIN 599. SPECIAL TOPICS. (1-3 Credits)
Impact of human movement development on people, their movement behavior, and environment. Topics vary from term to term and year to year. May be repeated when topics differ.
This course is repeatable for 99 credits.

KIN 601. RESEARCH AND SCHOLARSHIP. (1-16 Credits)
This course is repeatable for 16 credits.

KIN 603. THESIS. (1-16 Credits)
This course is repeatable for 999 credits.

KIN 605. READING AND CONFERENCE. (1-16 Credits)
This course is repeatable for 16 credits.

KIN 606. PROJECTS. (1-16 Credits)
This course is repeatable for 16 credits.

KIN 607. SEMINAR. (1-16 Credits)
Section 1: Graduate Research (1). Seminar emphasizes student oral presentations of current research topics in exercise and sport science. One credit required of all graduate students. Section 3: Current Developments (1). Discussion of contemporary issues in the exercise and sport science literature. Topics vary by term. Two credits required of all doctoral students. Section 9: International Aspects (1). Discussion of international aspects of study in exercise and sport science. Required of all doctoral students. Graded P/N.
This course is repeatable for 16 credits.

KIN 647. CURRENT TOPICS AND RESEARCH IN ADAPTED PHYSICAL ACTIVITY. (3 Credits)
Current trends and critical research issues in adapted physical activity; focus on international and national trends. Topic will be variable.

KIN 699. SPECIAL TOPICS. (1-16 Credits)
Current issues, trends, and topics in KIN research. May be repeated for credit with different topics.
This course is repeatable for 25 credits.

Nutrition

NUTR 104. ORIENTATION TO THE NUTRITION MAJOR. (1 Credit)
Discuss and explore the academic and professional requirements for successful entry into professional careers in dietetics, foodservice systems management, and human nutrition sciences majors. Identify professional resources, career opportunities, markets and trends in these OSU Nutrition major options. Graded P/N.

NUTR 199. SPECIAL TOPICS. (1-16 Credits)
This course is repeatable for 16 credits.

NUTR 216. *FOOD IN NON-WESTERN CULTURE. (3 Credits)
Cultural determinants influencing food habits of humans. Interrelation of eating patterns and socio-cultural, ecological, psychological and economic factors in cross-cultural settings. Roles of men and women in food provision. Lec/rec. (Bacc Core Course)
Attributes: CPCD – Core, Pers, Cult Diversity

NUTR 225. GENERAL HUMAN NUTRITION. (3 Credits)
The relationship of food, its nutrients and other components to the promotion of health and fitness with emphasis on the young adult. Current health concerns on a national and international level. This course is for non-majors; NES majors and those in the health sciences should take NUTR 240.

NUTR 235. SCIENCE OF FOODS. (5 Credits)
Composition, functional properties, and structure of foods, including modified ingredients. Principles underlying preparation of food products of standard quality. Lec/lab.
Prerequisites: CH 123 with C- or better or CH 223 with C- or better or ((CH 263 with C- or better or CH 263H with C- or better or CH 273 with C- or better) and (CH 233 [C-] or CH 233H [C-]))

NUTR 240. HUMAN NUTRITION. (3 Credits)
An introductory nutrition course for exercise science, nutrition, dietetics, food science, and health science majors who have taken general chemistry. Concepts of nutrient metabolism and utilization, nutrient deficiencies and toxicities and their relationship to disease prevention and treatment.
Prerequisites: (CH 121 with C- or better or CH 224H with C- or better or CH 221 with C- or better or CH 231H with C- or better)

NUTR 241. APPLICATIONS IN HUMAN NUTRITION. (1 Credit)
Application of nutrition theory from NUTR 240 using a dietary project and hands-on recitation activities. A key focus of the course will be on applying nutrition theory. Rec.
Prerequisites: NUTR 240 (may be taken concurrently) with C- or better

NUTR 299. SPECIAL TOPICS. (1-16 Credits)
This course is repeatable for 16 credits.

NUTR 306. PROJECTS. (1-16 Credits)
This course is repeatable for 36 credits.

NUTR 307. SEMINAR. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.

NUTR 311. FOODSERVICE PRODUCTION AND PURCHASING. (4 Credits)
Food production, purchasing, facility and materials management in foodservice operations. Quantity production styles, safety and sanitation, service methods and equipment. Lec/lab/rec.
Prerequisites: NUTR 235 with C- or better

NUTR 312. *ISSUES IN NUTRITION AND HEALTH. (3 Credits)
Impact of nutrition as one component of complex environmental, behavioral, social, and genetic factors significant to health promotion. Apply scientific knowledge to current health issues of changing dietary patterns, technological development in food products and nutrition controversies. Recognize economic and public policy implications. Lec/rec. (Bacc Core Course)
Attributes: CSST – Core, Synthesis, Science/Technology/Society
Prerequisites: NUTR 225 with C- or better or NUTR 240 with C- or better

NUTR 319. PROMOTING FOOD AND NUTRITION. (3 Credits)
Strategies in promoting products, services or ideas; negotiating, advertising, public policy, consumer service, social marketing, market research, trends and strategies. Lec/lab.
Prerequisites: NUTR 240 with C- or better and NUTR 241 [C-]

NUTR 325. NUTRITION THROUGH THE LIFE CYCLE. (3 Credits)
Nutritional needs and concerns in pregnancy and lactation, infancy, childhood, adolescence, adult and later years.
Prerequisites: (NUTR 240 with C- or better or NUTR 225 with C- or better) and NUTR 241 [C-]
NUTR 341. NUTRITION FOR EXERCISE. (3 Credits)
Review the interrelationship between nutrition and exercise, including macronutrient, micronutrient and fluid needs for active individuals.
CROSSLISTED as EXSS 341, KIN 341.
Prerequisites: (KIN 324 with C- or better or EXSS 334 with C- or better) and NUTR 240 [C-]
Equivalent to: EXSS 341, KIN 341
NUTR 399. SPECIAL TOPICS. (1-16 Credits)
This course is repeatable for 16 credits.
NUTR 401. RESEARCH. (1-16 Credits)
This course is repeatable for 16 credits.
NUTR 403. THESIS. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.
NUTR 405. READING AND CONFERENCE. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.
NUTR 406. SPECIAL PROBLEMS; PROJECTS. (1-16 Credits)
This course is repeatable for 16 credits.
NUTR 407. SEMINAR. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.
NUTR 408. WORKSHOP. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.
NUTR 409. PRACTICUM. (1-16 Credits)
This course is repeatable for 16 credits.
NUTR 410. FIELD EXPERIENCE. (1-15 Credits)
Supervised work experience with professional-level responsibilities in community agency or business firm. Supplementary conferences, readings, reports. Supervised by agency/firm and instructor. For advanced students. Applications made and approved term preceding enrollment. Graded P/N.
This course is repeatable for 50 credits.
NUTR 416. *CULTURAL ASPECTS OF FOODS. (3 Credits)
Regional, ethnic, and religious influences on food patterns; worldwide trends in food practices. Laboratory experience with foods from several cultures. Lec/lab. (Writing Intensive Course)
Attributes: CWIC – Core, Skills, WIC
Prerequisites: NUTR 235 with C- or better
NUTR 417. HUMAN NUTRITION SCIENCE. (4 Credits)
Application of biochemistry and physiology to nutrition of the individual.
Prerequisites: BB 350 with C- or better
NUTR 418. HUMAN NUTRITION SCIENCE. (4 Credits)
Application of biochemistry and physiology to nutrition of the individual.
Prerequisites: NUTR 417 with C- or better
NUTR 423. COMMUNITY NUTRITION. (4 Credits)
Meeting nutritional needs in community settings; nutritional status of individuals and groups; programs of public and private agencies and industry; intervention techniques. Roles of community nutritionist.
Prerequisites: NUTR 325 with C- or better
NUTR 430. MEDICAL NUTRITION THERAPY I. (4 Credits)
Principles and practices related to implementation and documentation of the nutrition care process in dietetics. Diet-related conditions are addressed during the three-course sequence using lecture, case studies and assessment recitation sessions. Lec/lab/rec.
Prerequisites: (BB 350 with C- or better or (BB 450 with C- or better and BB 451 [C-]) and (BI 233 [C-] or BI 332 [C-]) and (BI 242 [C-] or BI 342 [C-]) and (BI 233 [C-] or BI 333 [C-]) and (BI 243 [C-] or BI 343 [C-]) and NUTR 417 (may be taken concurrently) [C-] and NUTR 439 [C-]
NUTR 431. MEDICAL NUTRITION THERAPY 2. (4 Credits)
Principles and practices related to implementation and documentation of the nutrition care process in dietetics. Diet-related conditions are addressed during the three-course sequence using lecture, case studies and assessment recitation sessions.
Prerequisites: NUTR 430 with C- or better
NUTR 432. MEDICAL NUTRITION THERAPY 3. (3 Credits)
Principles and practices related to implementation and documentation of the nutrition care process in dietetics. Diet-related conditions are addressed during the three-course sequence using lecture, case studies and assessment recitation sessions.
Prerequisites: NUTR 431 with C- or better
NUTR 439. *COMMUNICATIONS IN DIETETICS. (3 Credits)
Theory and practice in food and nutrition communications in dietetics. Experience in nutritional counseling and interviewing, employee training and nutritional education materials development, public speaking, and media presentation strategies. (Writing Intensive Course)
Attributes: CWIC – Core, Skills, WIC
Prerequisites: NUTR 325 with C- or better
NUTR 446. MANAGING FOOD AND NUTRITION SERVICES. (4 Credits)
Overview of organizational structure, functions of managers in food and nutrition service organizations: human and financial resources, regulatory influences, health care organizations, current issues in operations. Lec/rec.
Prerequisites: NUTR 311 with C- or better
NUTR 447. MANAGEMENT OF FOOD SYSTEMS LABORATORY. (3 Credits)
Application of theory in managing a university food service as part of a student team: planning, production, projecting resource needs, evaluation of outcomes and financial goals.
NUTR 499. SPECIAL TOPICS IN DIETETICS. (2-6 Credits)
Current issues, trends, and topics in nutrition and dietetics. May be repeated for credit when topic varies.
This course is repeatable for 12 credits.
NUTR 501. RESEARCH. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.
NUTR 502. INDEPENDENT STUDY. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.
NUTR 503. THESIS. (1-16 Credits)
Graded P/N.
This course is repeatable for 999 credits.
NUTR 505. READING AND CONFERENCE. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.
NUTR 506. SPECIAL PROBLEMS; PROJECTS. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.
NUTR 507. SEMINAR. (1-16 Credits)
1 credit graded P/N.
This course is repeatable for 16 credits.

NUTR 508. WORKSHOP. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.

NUTR 509. PRACTICUM. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.

NUTR 510. FIELD EXPERIENCE: INTERNSHIP. (1-16 Credits)
Supervised work experience with professional-level responsibilities in community agency or business firm. Supplementary conferences, readings, reports. Supervised by agency/firm and instructor. Limited to students admitted to degree program. Application made and approved in the term preceding enrollment. No more than 6 credits may be applied to a master’s degree program.
This course is repeatable for 6 credits.

NUTR 514. HEALTH BENEFITS OF FUNCT FOODS, NUTRACEUT, DIETARY SUPPLEMEN. (3 Credits)
Functional foods, nutraceuticals and dietary supplements represent a rapidly expanding segment of domestic and international markets. This course will overview the principles and procedures necessary to evaluate and market these products. The chemistry and mechanisms of major nutraceutical ingredient categories and current scientific information supporting their biochemical and physiological efficacy will be addressed. Special dietary products, such as medical, weight control, sport, and herbal supplements, will be addressed. Regulatory aspects of labeling and structure-function claims will be covered. CROSSTLISTED as FST 514.
Equivalent to: FST 514

NUTR 516. CULTURAL ASPECTS OF FOODS. (3 Credits)
Regional, ethnic, and religious influences on food patterns; worldwide trends in food practices. Laboratory experience with foods from several cultures. Lec/lab.

NUTR 517. HUMAN NUTRITION SCIENCE. (4 Credits)
Application of biochemistry and physiology to nutrition of the individual.

NUTR 518. HUMAN NUTRITION SCIENCE. (4 Credits)
Application of biochemistry and physiology to nutrition of the individual.
Prerequisites: NUTR 517 with C or better

NUTR 523. COMMUNITY NUTRITION. (4 Credits)
Meeting nutritional needs in community settings; nutritional status of individuals and groups; programs of public and private agencies and industry; intervention techniques. Roles of community nutritionist.

NUTR 530. MEDICAL NUTRITION THERAPY I. (4 Credits)
Principles and practices related to implementation and documentation of the nutrition care process in dietetics. Diet-related conditions are addressed during the three-course sequence using lecture, case studies and assessment recitation sessions. Lec/lab/rec.

NUTR 531. MEDICAL NUTRITION THERAPY 2. (4 Credits)
Principles and practices related to implementation and documentation of the nutrition care process in dietetics. Diet-related conditions are addressed during the three-course sequence using lecture, case studies and assessment recitation sessions.

NUTR 532. MEDICAL NUTRITION THERAPY 3. (3 Credits)
Principles and practices related to implementation and documentation of the nutrition care process in dietetics. Diet-related conditions addressed during the three-course sequence using lecture, case studies and assessment recitation sessions.

NUTR 535. NUTRITION AND EXERCISE: MACRONUTRIENTS AND ENERGY METABOLISM. (3 Credits)
Current research examining the interrelationship of macronutrients and exercise and energy balance will be reviewed, including their roles in health, disease prevention and exercise performance.

NUTR 539. COMMUNICATIONS IN DIETETICS. (3 Credits)
Theory and practice of food and nutrition communications in dietetics. Experience in nutritional counseling and interviewing, employee training and nutritional education materials development, public speaking, and media presentation strategies.

NUTR 546. FOODSERVICE ORGANIZATIONS. (3 Credits)
Overview of organizational structure, functions of managers in foodservice organizations: human resources, regulatory influences, health care organizations, current issues in operations. Lec/rec.

NUTR 550. NUTRITIONAL STATUS. (4 Credits)
Research studies with emphasis on estimation of nutrient intake and assessment of nutritional status, including biochemical, clinical, epidemiological and anthropometric measures. Interpretation of status indicators.

NUTR 599. SPECIAL TOPICS IN NUTRITION. (3-6 Credits)
Current issues, trends, and topics in nutrition and health. May be repeated for credit when topic varies.
This course is repeatable for 18 credits.

NUTR 601. RESEARCH. (1-16 Credits)
This course is repeatable for 16 credits.

NUTR 602. INDEPENDENT STUDY. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.

NUTR 603. THESIS. (1-16 Credits)
Graded P/N.
This course is repeatable for 999 credits.

NUTR 605. READING AND CONFERENCE. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.

NUTR 607. SEMINAR. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.

NUTR 609. PRACTICUM. (1-16 Credits)
This course is repeatable for 16 credits.

NUTR 610. INTERNSHIP. (1-16 Credits)
Graded P/N.
This course is repeatable for 16 credits.

NUTR 617. ADVANCED MACRONUTRIENT METABOLISM. (3 Credits)
Focuses on human macronutrient metabolism. Macronutrient topics include water, carbohydrate, lipid, amino acid/protein, lipid and carbohydrate and energy metabolism. Emphasis is placed on the integration of metabolism at the molecular, biochemical and physiological level. Moreover, the class examines contemporary issues relevant to macronutrient metabolism and human disease. Offered even years in spring term.
NUTR 618. ADVANCED MICRONUTRIENT METABOLISM. (3 Credits)
Focus is on human micronutrient metabolism. Topics include micronutrients (vitamins and minerals), phytochemicals and mammalian metabolism. Emphasis will be placed on the integration of micronutrient/phytochemical metabolism at the molecular, biochemical and physiological level. Moreover, the class examines contemporary issues relevant to micronutrient/phytochemical metabolism and human disease.

NUTR 699. SPECIAL TOPICS IN NUTRITION RESEARCH. (3-16 Credits)
Current issues, trends, and topics in nutrition research. May be repeated for credit when topic varies.

This course is repeatable for 16 credits.

Physical Activity

PAC 100. ADAPTED PHYSICAL ACTIVITY. (1 Credit)
Individual workout for students with permanent or temporary physical disabilities and for students enrolled in another PAC who sustain an injury.

This course is repeatable for 11 credits.

PAC 102. AQUA AEROBICS. (1 Credit)
Fitness class using a variety of movements in shallow and deep water, mostly in a vertical position. Do not need swimming skills.

This course is repeatable for 11 credits.

PAC 103. DEEP WATER FITNESS. (1 Credit)
Fitness class using a variety of movements in a deep water pool, mostly in a vertical position. Should be comfortable in deep water.

This course is repeatable for 11 credits.

PAC 105. CPR-FIRST AID. (1 Credit)
Introduces cardiac and first aid emergency response procedures. Emphasis placed on safe response, chain of survival, quality CPR (adults, children, infants and team responses), use of an AED, medical emergencies, injury emergencies and environmental emergencies. Students successfully completing the American Heart Association certification requirements will be issued a Heartsaver First Aid and BLS (Basic Life Support) for the Healthcare Provider certification at the end of the course.

This course is repeatable for 11 credits.

PAC 106. BEAVER FIT. (1 Credit)
A conditioning class for those of all fitness levels that focuses on mobility, functional movement, and high-intensity interval training as a means to improve cardiovascular fitness, muscular fitness, and flexibility.

This course is repeatable for 11 credits.

PAC 108. STEP AEROBICS. (1 Credit)
Low-impact, high intensity workout adjustable to all fitness levels utilizing adjustable height benches. Strengthening and flexibility exercises included.

This course is repeatable for 11 credits.

PAC 110. INTRODUCTION TO WHITE WATER KAYAKING. (2 Credits)
Students will learn fundamentals of white water kayaking in sheltered water based on the internationally recognized British Canoe (BC) teaching and skills certification system. Emphasis is on activity and basic skills. See class schedule for the location, website, and class schedule specific to the course. This course runs for six class sessions of 3 hours (Fridays), and one mandatory Saturday (5-hour) session. The entire class lasts for six weeks.

This course is repeatable for 11 credits.

PAC 111. INTRODUCTION TO CANOEING. (2 Credits)
Students will learn fundamentals of canoeing in sheltered water based on the internationally recognized British Canoe (BC) teaching and skills certification system. Emphasis is on activity and basic skills. See class schedule for the location, website, and class schedule specific to the course. This course runs for six class sessions of 3 hours (Fridays), and one mandatory Saturday (5-hour) session. The entire class lasts for six weeks.

This course is repeatable for 11 credits.

PAC 112. LEARNING KAYAK ROLLING BASICS. (2 Credits)
Students learn fundamentals of rolling a kayak in an indoor pool-based environment. Emphasis is on activity and basic skills. See class schedule for the location, website, and class schedule specific to the course.

This course is repeatable for 10 credits.

PAC 113. BADMINTON I. (1 Credit)
Singles and doubles skills, practice, rules, strategies and play.

This course is repeatable for 11 credits.

PAC 114. BADMINTON II. (1 Credit)
Intermediate skill development in badminton.

This course is repeatable for 11 credits.

PAC 115. OUTDOOR LIVING SKILLS. (2 Credits)
Educates and introduces students on how to travel safely in the backcountry through proper preparation, risk awareness, Leave No Trace ethics, terrain recognition, navigation, and camp craft. Classroom and field (lab) experience. Includes one mandatory weekend overnight outing. CROSSLISTED as TRAL 115.

Equivalent to: TRAL 115

This course is repeatable for 4 credits.

PAC 116. BASKETBALL I (MEN/WOMEN). (1 Credit)
Fundamental basketball skills, drills, rules, strategies, and practice. Game play appropriate for the skill level.

Equivalent to: PAC 123

This course is repeatable for 11 credits.

PAC 117. BASKETBALL COMPETITIVE. (1 Credit)
Team play, individual and team skills developed and refined, competitive round robin tournaments.

This course is repeatable for 11 credits.

PAC 118. LABORATORY FOR OUTDOOR LIVING SKILLS. (1 Credit)
Practical field application of concepts learned in TRAL 115/PAC 115, Outdoor Living Skills. Field (lab) experience includes one mandatory weekend overnight. Introduces how to travel safely in the backcountry through proper preparation, risk awareness, Leave No Trace ethics, terrain recognition, navigation, and camp craft. CROSSLISTED as TRAL 118.

Corequisites: PAC 115
Equivalent to: TRAL 118

This course is repeatable for 2 credits.

PAC 120. MOUNTAIN BIKING. (1 Credit)
Touring trails in Corvallis area; riding techniques, safety, maintenance, environmental concerns. Required equipment: mountain bike, tire repair kit, helmet.

This course is repeatable for 11 credits.

PAC 121. BILLIARDS. (1 Credit)
Skills, technique, strategy, game knowledge as introduction to billiards (pool), a ‘cue’ sport; rules and gaming for variations of pocket billiards; practice and class tournament play.

This course is repeatable for 11 credits.
PAC 122. BODY SCULPTING. (1 Credit)
Fitness workout set to music using lighter resistance training aids such as dumbbells, resistance tubing, bands, and aerobic steps.
This course is repeatable for 11 credits.

PAC 123. BOWLING I. (1 Credit)
Fundamentals of the game including etiquette, spot bowling, natural hook and straight ball delivery, scoring, handicap computation, spare pickup, and error correction. Additional fee; equipment supplied.
This course is repeatable for 11 credits.

PAC 124. BOWLING II. (1 Credit)
Review and refinement of basic fundamentals of bowling. Emphasis on spot bowling, adjusting for lane conditions, choices in equipment, league play, and mental training.
This course is repeatable for 11 credits.

PAC 126. CARDIO KICKBOXING I. (1 Credit)
High intensity group workout set to motivational music and combining skills and techniques from boxing, kickboxing, and other martial arts.
This course is repeatable for 11 credits.

PAC 129. CARDIO COMBO. (1 Credit)
Combination of aerobic training classes that use music such as Cardio Kickboxing, Body Sculpture, Sports Conditioning, and/or Step Aerobics. Actual curriculum may vary with instructors.
Equivalent to: PAC 106
This course is repeatable for 11 credits.

PAC 130. CONDITIONING. (1 Credit)
Total body approach to fitness, cardiorespiratory conditioning, muscular strength and endurance; flexibility emphasized. May follow a specific training format, e.g., ROTC section follows Army conditioning format.
This course is repeatable for 11 credits.

PAC 131. SNOWBOARD-SKI CONDITIONING. (1 Credit)
Strength, muscular endurance, flexibility, balance, and cardiovascular exercises specific to downhill skiing and snowboarding; designed to help prepare students for participation in these sports.
Equivalent to: PAC 108
This course is repeatable for 11 credits.

PAC 133. DANCE: TAP I. (1 Credit)
Individual and group dance with specialized shoes; basic step technique and vocabulary; warm up exercises progressing into rhythmic combinations performed to music; culminates in full routine to music.
This course is repeatable for 11 credits.

PAC 136. DANCE: BALLET I. (1 Credit)
Introduction to basic ballet technique and aesthetics, terminology, alignment, stretch and strength exercises. No previous dance experience needed. Additional fee for accompanist.
This course is repeatable for 11 credits.

PAC 137. DANCE: BALLET II. (1 Credit)
Review and practice of beginning ballet technique, introduction of more advanced stretches, steps, and combinations. Additional fee for accompanist.
This course is repeatable for 11 credits.

PAC 138. DANCE: BALLET III. (1 Credit)
Intermediate and advanced ballet technique, comprehensive exploration of the discipline. Additional fee for accompanist.
This course is repeatable for 11 credits.

PAC 139. HIP HOP DANCE. (1 Credit)
Aerobic/energetic experience consisting of a warm-up/conditioning and choreographic combinations.
This course is repeatable for 11 credits.

PAC 140. DANCE: JAZZ I. (1 Credit)
Introduction to jazz dance, technique, isolations, and combinations. Different jazz styles are explored. No previous dance experience is necessary.
This course is repeatable for 11 credits.

PAC 141. DANCE: JAZZ II. (1 Credit)
Intermediate jazz technique, isolations and combinations.
This course is repeatable for 11 credits.

PAC 145. DANCE: MODERN I. (1 Credit)
Introduction to modern dance movement fundamentals. Technique, stretch, strength, and alignment are included, as well as an appreciation for movement expression. No previous dance experience needed. Additional fee for accompanist.
This course is repeatable for 11 credits.

PAC 146. DANCE: MODERN II. (1 Credit)
An intermediate level of modern dance technique and movement expression. Additional fee for accompanist.
This course is repeatable for 11 credits.

PAC 148. DANCE: CUBAN SALSA I (MEN/WOMEN). (1 Credit)
Foundations of Cuban Salsa (Casino) as well as Rueda de Casino with focus on musical development and fundamentals of leading and following in partner dance.
This course is repeatable for 11 credits.

PAC 149. DANCE: CUBAN SALSA II. (1 Credit)
Higher concepts of Cuban Salsa (Casino) as well as Rueda de Casino, with focus on musical development and fundamentals of leading and following in partner dance.
This course is repeatable for 11 credits.

PAC 150. CULTURAL WORLD DANCE (MEN/WOMEN). (1 Credit)
Introduction to traditional dance forms from Europe, Israel, North America and Asia, focusing on movement, cultural heritage, history, and diversity.
This course is repeatable for 11 credits.

PAC 151. COUNTRY LINE DANCE. (1 Credit)
Non-partner dance routines in country western style; musical interpretation, footwork, and sequencing of 20 different routines.
This course is repeatable for 11 credits.

PAC 152. DANCE: SALSA I. (1 Credit)
Steps and rhythmic accent of Salsa and Merengue style; fundamentals of leading and following; basic moves and combinations. No prior experience needed.
Equivalent to: PAC 141
This course is repeatable for 11 credits.

PAC 153. DANCE: SALSA II. (1 Credit)
Intermediate moves, rhythmic accents and step combinations of Salsa; development of leading and following. 
Prerequisites: PAC 152 with C- or better
This course is repeatable for 11 credits.

PAC 154. DANCE: COUNTRY WESTERN I (MEN/WOMEN). (1 Credit)
Focus on traditional Country Western Swing patterns. Emphasizes fundamentals of leading and following. Also including introduction to waltz, two-step, cowboy cha-cha and 10-step polka.
This course is repeatable for 11 credits.
PAC 155. DANCE: COUNTRY WESTERN II (MEN/WOMEN). (1 Credit)
Build on CW I with advanced waltz, two-step, and cha-cha patterns; introduces schottishe and East Coast swing.
This course is repeatable for 11 credits.

PAC 156. DANCE: COUNTRY WESTERN III (MEN/WOMEN). (1 Credit)
Advanced two-step patterns and styling with a focus on musical interpretation; development of leading and following.
Prerequisites: PAC 155 with C- or better
This course is repeatable for 11 credits.

PAC 158. DANCE: BEGINNING SWING (MEN/WOMEN). (1 Credit)
Introduction to single time, double time, and triple time (jitterbug) swing; variations for each style, covering most swing music rhythms. Emphasizes fundamentals of leading and following. Men/women.
This course is repeatable for 11 credits.

PAC 159. DANCE: BALLROOM I (MEN/WOMEN). (1 Credit)
Posture and alignment, fundamentals of leading and following, basic steps and variations for waltz, foxtrot, swing, tango, and cha-cha.
This course is repeatable for 11 credits.

PAC 160. DANCE: BALLROOM II (MEN/WOMEN). (1 Credit)
Additional steps and patterns of popular ballroom dances.
Prerequisites: PAC 159 with C- or better
This course is repeatable for 11 credits.

PAC 161. DANCE: BALLROOM III (MEN/WOMEN). (1 Credit)
Styling; additional dances: rhumba, silver fox trot, and Viennese waltz; advanced dance figures for tango and cha-cha.
Prerequisites: PAC 160 with C- or better
This course is repeatable for 11 credits.

PAC 162. DANCE: SWING II (MEN/WOMEN). (1 Credit)
Social dance focusing on Twenties-style Charleston, pure Balboa and Balboa-Swing, and Blues Dance.
This course is repeatable for 11 credits.

PAC 163. DANCE: LATIN I. (1 Credit)
Latin dances including cha-cha, mambo, salsa, rhumba, merengue, bolero, salsa, and paso doble. Emphasis on proper styling and technical execution of each dance; effective leading and following techniques.
Prerequisites: PAC 159 with C- or better
This course is repeatable for 11 credits.

PAC 165. DANCE: WEST COAST SWING (MEN/WOMEN). (1 Credit)
Focus on style, technique and many different step patterns of the west coast swing dance.
Prerequisites: PAC 154 with C- or better or PAC 159 with C- or better
This course is repeatable for 11 credits.

PAC 166. BALLROOM 2 STEP, HUSTLE (MEN/WOMEN). (1 Credit)
Smooth, romantic social dance that is neither ballroom, Latin, nor swing but a rhythm dance identified as club-style, danced to contemporary ballad-like music. Hustle is fast-paced, swing-related dance to disco beat. Class encompasses intermediate step patterns, technique and styling, stationary, traveling patterns.
Prerequisites: PAC 160 with C- or better
Equivalent to: PAC 178
This course is repeatable for 11 credits.

PAC 167. DANCE: LINDY HOP. (1 Credit)
Ballroom dance style based on original eight-count swing dance evolved in Harlem ballrooms during the late 1920s; styling emphasized.
Prerequisites: PAC 158 with C- or better or PAC 159 with C- or better
Equivalent to: PAC 179
This course is repeatable for 11 credits.

PAC 168. DANCE: LINDY HOP II (MEN/WOMEN). (1 Credit)
Intermediate patterns, syncopations, play techniques, and styling with a focus on musical interpretation in the Lindy Hop style; development of leading and following.
Prerequisites: PAC 167 with C- or better
This course is repeatable for 11 credits.

PAC 169. COOL SHOES, BALLROOM PERFORMANCE (MEN/WOMEN). (2 Credits)
Students learn and perform ballroom dance routines on a intermediate level. This course is a full year commitment ending with a dance concert in the spring.
This course is repeatable for 12 credits.

PAC 170. DANCE: WEST COAST SWING II (MEN/WOMEN). (1 Credit)
Intermediate patterns, syncopations, play techniques, and styling with a focus on musical interpretation; development of leading and following.
Prerequisites: PAC 165 with C- or better
This course is repeatable for 11 credits.

PAC 171. DANCE: NEW SHOES. (1 Credit)
Introduces students to formation ballroom dancing at a beginning level. Dances learned over the course of this term will be determined by the instructor at the beginning of the term.
Prerequisites: PAC 159 with D- or better
This course is repeatable for 11 credits.

PAC 172. ROCK SITE MANAGEMENT. (2 Credits)
Students will be introduced to a variety of basic skills, gear and systems that will allow them to safely manage and participate in a single pitch rock climbing environment. This class will present students with various technical skills that will serve as a foundation for future land-based outdoor disciplines. Students will be introduced to gear, such as software (ropes, webbing, harnesses) and hardware (carabiners, friction devices); skills, such as knots, belaying, rappelling; and systems such as anchors, raises, lowers. CROSSLISTED as TRAL 172.
Equivalent to: TRAL 172

PAC 174. FLAG FOOTBALL. (1 Credit)
Skill instruction and practice; drills; strategies, game play of America football; emphasis on teamwork and sportsmanship in a competitive but non-threatening or stressful environment.
This course is repeatable for 11 credits.

PAC 178. FLY FISHING I. (1 Credit)
Casting and fishing techniques, lure making, equipment selection, terminology, and regulation for fishing in Oregon’s marine environment.
This course is repeatable for 11 credits.

PAC 179. FLY FISHING II. (1 Credit)
Advanced fly casting and fly fishing techniques for trout, fly-tying, equipment selection, basic aquatic organism identification, terminology, and regulations for fishing in Oregon’s freshwater environment.
Equivalent to: PAC 167
This course is repeatable for 11 credits.

PAC 180. STEELHEAD FISHING. (1 Credit)
Casting and fishing techniques, lure making, equipment selection, terminology, and regulations for fishing in Oregon’s marine environment for steelhead.
This course is repeatable for 11 credits.

PAC 182. DISC GOLF I. (1 Credit)
Techniques for throwing discs; equipment, knowledge, etiquette, and rules associated with playing a disc golf course; experience playing practice and official disc golf courses.
This course is repeatable for 11 credits.
PAC 184. GOLF I. (1 Credit)
Basic fundamental principles in all phases of golf; rules, terminology, etiquette, safety and scoring. Equipment provided.
This course is repeatable for 11 credits.

PAC 185. GOLF II. (1 Credit)
Individual practice and course play; skill refinement as continuation of Golf I. Equipment available. Course play expected, additional fee.
This course is repeatable for 11 credits.

PAC 186. GOLF III. (1 Credit)
Advanced skills, knowledge involved in competitive play. Course play expected, additional fee.
This course is repeatable for 11 credits.

PAC 187. PICKLEBALL. (1 Credit)
Fast-paced, self-officiated net game with similarities to tennis, badminton, table tennis, and racquetball. Course covers rules, strategies, technique, preparation for play, and includes extensive active practice and play; played with two, three, or four people.
This course is repeatable for 11 credits.

PAC 188. GYMNASTICS. (1 Credit)
Fundamental techniques on vault, bars, beam, and floor.
This course is repeatable for 11 credits.

PAC 189. GYMNASTICS II. (1 Credit)
Build upon previous gymnastics experiences or classes; floor exercise, uneven parallel bars, vault, mini-trampoline and beam apparatus are available.
This course is repeatable for 11 credits.

PAC 190. KARATE. (1 Credit)
Instruction in traditional Japanese karate basic striking and blocking techniques, kata (forms), philosophy, conditioning, and etiquette. Self-defense applications are also emphasized.
This course is repeatable for 11 credits.

PAC 191. JUDO I. (1 Credit)
Skill instruction in landing, throwing and grappling for this style of martial arts; etiquette for practice and competition; basic knowledge of vocabulary, rules and scoring.
This course is repeatable for 11 credits.

PAC 192. JUDO II. (1 Credit)
Intermediate skill instruction in landing, throwing, pins, chokes in Kodokan Judo style; principles of Seiryoku-Zenyou and Jita-Kyoei designed to help individuals become better members of society through training body and mind; instruction for competition knowledge and skills. Judo etiquette for practice and competition expected.
This course is repeatable for 11 credits.

PAC 193. PILATES. (1 Credit)
Non-impact, invigorating approach to physical conditioning and mind/body awareness; helps develop core body strength, improve posture and balance, and increase muscle endurance, tone, flexibility.
Equivalent to: ANS 194
This course is repeatable for 11 credits.

PAC 194. PILATES II. (1 Credit)
Progression of Joseph Pilates mat exercises; emphasis on intermediate and advanced levels; application of Pilates’ principles to new exercises; use of props; application of principles to daily living.
This course is repeatable for 11 credits.

PAC 195. PICKLEBALL. (1 Credit)
Experimental or new classes.
This course is repeatable for 11 credits.

PAC 201. RELAXATION. (1 Credit)
Introduction to techniques that promote relaxation of the nervous system. These may include, but are not limited to: meditation, imagery, yoga postures, and self-massage. Students will be encouraged to reflect on how life choices influence their nervous system.
This course is repeatable for 11 credits.

PAC 202. MEDITATION. (1 Credit)
Examine the application of building simple awareness, how to manage thoughts in productive and compassionate ways, and how to transfer these skills into healthy relationships. Explore strategies for managing mental and physical difficulties including anxiety, pain, and overall stress through experiential learning and personal sharing of experiences.
This course is repeatable for 11 credits.

PAC 203. RELAXATION. (1 Credit)
Nonviolent self-defense. Develop self-confidence and skills for assault situations. Conditioning and practical skills. Men and women, all levels.
This course is repeatable for 11 credits.

PAC 204. RUGBY, TOUCH. (1 Credit)
Basic skills of open field rugby; emphasis on ball handling and attacking strategy; rules and history; game play.
This course is repeatable for 11 credits.

PAC 205. ROWING, CREW I (MEN/WOMEN). (1 Credit)
Introduction to the sport of rowing; designed for the novice (beginner). Includes basic technique and terminology, related water safety, and development of strength, endurance, and flexibility.
This course is repeatable for 11 credits.

PAC 206. ROWING, CREW II (MEN/WOMEN). (1 Credit)
Advanced, racer. Special fee covers bus transportation, lessons, and lifts. Additional fee for rentals.
This course is repeatable for 11 credits.

PAC 207. SELF DEFENSE. (1 Credit)
Additional fee covers bus transportation, lessons, and lifts. Rental of equipment is not included.
This course is repeatable for 11 credits.

PAC 208. TELEMARK SKIING. (1 Credit)
Winter sport that is a cross between cross country and downhill skiing. Requires telemark equipment where the heel is unattached. Class accommodates all levels and practices on the downhill slopes.
Additional fee covers bus transportation, lessons, and lift ticket. Rental of equipment is included.
This course is repeatable for 11 credits.

PAC 209. DOWNHILL SKIING. (1 Credit)
Travel to area facilities, 1 1/2 hour lesson followed by open practice, students grouped according to skill level: beginner, intermediate, advanced. Special fee covers bus transportation, lessons, and lifts.
This course is repeatable for 11 credits.

PAC 210. SNOWBOARDING. (1 Credit)
Special fee covers bus transportation, lessons, and lifts. Additional fee for rentals.
This course is repeatable for 11 credits.
PAC 229. SOCCER I. (1 Credit)
Basic skills of controlling the ball; conditioning; lead-up games; team play.
This course is repeatable for 11 credits.

PAC 230. SOCCER II. (1 Credit)
Review of basic skills of offense and defense in controlled game play; concepts of team position and play, pressure and attack.
This course is repeatable for 11 credits.

PAC 231. SOCCER III. (1 Credit)
High level soccer skills; team play and transition concepts; set plays and alignments for both offense and defense.
This course is repeatable for 11 credits.

PAC 233. SOCCER: INDOOR. (1 Credit)
Skill instruction and development; strategies and rules for indoor play; game play in indoor gymnasium.
This course is repeatable for 11 credits.

PAC 236. SOFTBALL, WHIFFLEBALL. (1 Credit)
Skills, rules, strategies, practice, and game play of the popular outdoor slow pitch game. Modified softball with whiffleball when play is indoors.
Equivalent to: PAC 262
This course is repeatable for 11 credits.

PAC 242. SCUBA: OPEN WATER. (2 Credits)
Lecture includes physiology, water environment, equipment, and techniques for fundamental SCUBA diving. Laboratory includes practice in techniques, skills, and equipment usage; sessions held in pool and open water. Successful completion leads to PADI certification. Additional fee covers most equipment, texts, certification, and open water dive trip.
This course is repeatable for 11 credits.

PAC 243. SCUBA: ADVANCED OPEN WATER. (1 Credit)
Classroom lecture and laboratory in hypothermics, natural navigation, dive physiology, compass navigation, night and limited visibility procedures, boat diving, search and salvage techniques, deep diving procedures, health for diving, and an introduction to dive rescue.
Successful completion of this course can lead to PADI certification. Additional fee.
This course is repeatable for 11 credits.

PAC 244. SCUBA: RESCUE DIVER. (1 Credit)
Techniques, skills, knowledge, and practice in self-rescue and rescue of others in underwater emergencies; may lead to PADI certification; lecture and pool laboratory; open water dive required. Additional fee.
This course is repeatable for 11 credits.

PAC 245. SCUBA SPECIAL TOPICS. (1 Credit)
Specialized courses requiring previous certification in SCUBA. Check the current schedule of classes for more information and prerequisites. Possible classes: altitude diver, night diver, search and recovery, deep diver, underwater navigation, equipment specialist. Additional fee.
This course is repeatable for 11 credits.

PAC 246. DIVEMASTER TRAINING. (2 Credits)
Enter level PADI certification course for preparation to instruct SCUBA; lecture, lab, open water experience; must take two consecutive terms. Additional fee: $160 per term.
This course is repeatable for 11 credits.

PAC 247. SURFING. (1 Credit)
Knowledge and fundamental skills of this aquatic sport including history, terminology, safety precautions, the ocean environment, and equipment.
Additional fee.
Equivalent to: PAC 286
This course is repeatable for 11 credits.

PAC 248. SWIM: NON-SWIMMER. (1 Credit)
Skills for self-rescue; fundamental skills in swimming and safety.
Designed for people with a fear of water. Recommended S/U grading.
This course is repeatable for 11 credits.

PAC 249. LIFEGUARD TRAINING. (1 Credit)
Trains participants in the skills required to become a lifeguard. Emphasis on professional behavior, water rescues, safe response, quality CPR (adults, children, infants, and team responses), use of an AED and first aid. Students successfully completing the American Red Cross certification requirements will be issued a lifeguard certification at the end of the course.
This course is repeatable for 11 credits.

PAC 250. SWIM I. (1 Credit)
Swimming concepts, survival and breathing techniques, front crawl and elementary backstroke as minimum instruction.
This course is repeatable for 11 credits.

PAC 252. SWIM II. (1 Credit)
Fitness swimming, swimming strokes and skills.
This course is repeatable for 11 credits.

PAC 253. SWIM TRAINING WORKOUT. (1 Credit)
Competitive skills and strokes; emphasis on training.
This course is repeatable for 11 credits.

PAC 254. COMPETITIVE SWIMMING. (1 Credit)
Prepares students for competitive swimming and emphasizes lifetime aquatic fitness; interval swim workouts designed for speed and endurance; instruction on legal techniques of strokes and turns; culminates in intra-class swim meet; 2,000-3,000 yards/day.
This course is repeatable for 11 credits.

PAC 256. TAIJI, TAI CHI I. (1 Credit)
Introduction to ancient Chinese ‘internal martial art’ based upon concepts of Yin and Yang; detailed slow and relaxed form movements provide benefits to body, mind, and spirit.
This course is repeatable for 11 credits.

PAC 257. TAIJI, TAI CHI II. (1 Credit)
Continuation of study of the Yang-style Taiji form; more in-depth exploration of underlying principles and push-hands exercises.
This course is repeatable for 11 credits.

PAC 260. TENNIS I. (1 Credit)
Introduction to fundamental strokes, singles and doubles play, scoring, and basic concepts in tennis.
This course is repeatable for 11 credits.

PAC 261. TENNIS II. (1 Credit)
Review and refinement of fundamental strokes; volley, lob, return of serve; introduction to singles and doubles strategy.
This course is repeatable for 11 credits.

PAC 262. TEAM HANDBALL/(MEN/WOMEN). (1 Credit)
Fast-paced indoor court game that combines skills and strategies similar to water polo, basketball, soccer and hockey; rules, regulations, strategies, and skills introduced and practiced; requires teamwork, cooperation, and court strategy.
This course is repeatable for 11 credits.
PAC 265. Tumbling I. (1 Credit)
Technical instruction, progressions, and practice in basic, intermediate, and advanced tumbling skills; emphasis on safety and fitness concepts; floor and mini-trampoline skills; no apparatus instruction.
This course is repeatable for 11 credits.

PAC 266. Tumbling II. (1 Credit)
Technical instruction, progressions, safety, and practice building upon skills taught in PAC 265, Tumbling I.
This course is repeatable for 11 credits.

PAC 267. Triathlon Training. (2 Credits)
Training in swimming, running, and bicycling to prepare for triathlon participation. Strategies, transitioning technique, and weight training information; training plan formation; event planning; culminates in class or community event.
This course is repeatable for 11 credits.

PAC 268. Weight Training. (1 Credit)
Prerequisites: Intermediate level of weight training in free and fixed weights.
This course is repeatable for 11 credits.

PAC 269. Weight Training II. (1 Credit)
Advanced information, skills, practice, and application; experimental and competitive play.
Equivalent to: PAC 268
This course is repeatable for 11 credits.

PAC 270. Yoga I. (1 Credit)
Prerequisites: PAC 269 with C+ or better
This course is repeatable for 11 credits.

PAC 271. Ultimate Frisbee. (1 Credit)
Fundamentals for the beginning and intermediate player; individual skill development, rules, game play, and strategy.
This course is repeatable for 11 credits.

PAC 272. Volleyball I. (1 Credit)
Fundamental volleyball skills, drills, rules, strategies, and practice. Game play appropriate for skill level.
This course is repeatable for 11 credits.

PAC 273. Volleyball II. (1 Credit)
Fundamental skills and knowledge refined; intermediate skills developed, competitive play.
This course is repeatable for 11 credits.

PAC 274. Volleyball III. (1 Credit)
Skill refinement and development; intense, highly competitive drills and game situations, doubles through sixes play.
This course is repeatable for 11 credits.

PAC 275. Fitness Walking. (1 Credit)
Establishment of personal fitness programs through walking with emphasis on technique and aerobic components.
This course is repeatable for 11 credits.

PAC 276. Water Polo. (1 Credit)
Team game, played in deep water; instruction in skills, drills, strategies, techniques; game play; knowledge of rules and terminology.
This course is repeatable for 11 credits.

PAC 277. Weight Training: Circuits. (1 Credit)
Fast-paced fitness class using stations of resistance training exercises. Designed to improve cardiovascular fitness and muscular endurance more than strength.
This course is repeatable for 11 credits.

PAC 278. Weight Training I. (1 Credit)
Exercise techniques in both free and fixed resistance training equipment; safety procedures, terminology, and principles of exercise.
This course is repeatable for 11 credits.

PAC 279. Weight Training II. (1 Credit)
Intermediate level of weight training in free and fixed weights.
This course is repeatable for 11 credits.

PAC 280. All-I: Hiking Local Trails. (1 Credit)
Covers the fundamentals of hiking as a recreational activity and an outdoor travel skill. Content will cover local trails, place history, hiking techniques, clothing and equipment selection, elemental first aid and safety concerns, leave-no-trace principles, and map basics. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 281. Restorative Yoga. (1 Credit)
An emphasis on floor postures, supported postures, and longer holds that cultivate a relationship with ease. Techniques will be used to help students facilitate greater personal awareness. Students will use self-reflection practices for personal well-being.
This course is repeatable for 11 credits.

PAC 282. Yoga II. (1 Credit)
Building off Yoga I, this is an intermediate level course meant to develop a deeper understanding of yoga practice.
Equivalent to: PAC 266
This course is repeatable for 11 credits.

PAC 283. Yoga III. (1 Credit)
Principles and practice of basic yoga postures, techniques of posture alignment, yogi breathing styles and their impact on the body and mind. Students will be exposed to a variety of forms of yoga, as well as basic yoga philosophy.
This course is repeatable for 11 credits.

PAC 284. Vinyasa Yoga. (1 Credit)
Dynamic flow that connects movement and breath encouraging meditation in motion. May include sustained yoga postures.
This course is repeatable for 11 credits.

PAC 285. Yoga IV. (1 Credit)
Expands on knowledge and skills learned in Yoga I or Fitness Yoga through three to five class sessions, each 3-6 hours; longer sessions provide students with an intensive mental and physical experience centering on the concepts of yoga; includes introductory relaxation and meditation skills.
This course is repeatable for 11 credits.

PAC 286. Yoga V. (1 Credit)
An emphasis on floor postures, supported postures, and longer holds that cultivate a relationship with ease. Techniques will be used to help students facilitate greater personal awareness. Students will use self-reflection practices for personal well-being.
This course is repeatable for 11 credits.

PAC 287. Yoga VI. (1 Credit)
Equivalent to: PAC 269
This course is repeatable for 11 credits.

PAC 288. Yoga VII. (1 Credit)
Advanced information, skills, practice, and application; experimental and new classes. May have additional fee.
This course is repeatable for 11 credits.

PAC 289. Special Topics. (1-3 Credits)
Covers the fundamentals of hiking as a recreational activity and an outdoor travel skill. Content will cover local trails, place history, hiking techniques, clothing and equipment selection, elemental first aid and safety concerns, leave-no-trace principles, and map basics. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.
PAC 301. ALI: CHALLENGE COURSE EXPERIENCE. (1 Credit)
Emphasis on gaining practical experience and understanding of various components that occur in challenge course activities/programs; group dynamic mental and physical challenges; cooperative games and initiatives that promote communication, problem solving skills and leadership; Low and High challenge course activities that promote self-confidence and agility. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 302. ALI: CHALLENGE COURSE PRACTICES AND FACILITATION. (1 Credit)
Covers the set up and facilitation of various challenge course low and high course elements as they pertain to ALI's Challenge Course programming. Students will learn facilitation skills, risk management concepts, operational procedures, and technical rescue skills. A passing grade in this course will result in a certificate of completion from the OSU ALI Challenge Course. PAC courses may not be used to fulfill upper-division requirements.
Prerequisites: PAC 301 with C- or better
This course is repeatable for 11 credits.

PAC 303. ALI: CAMP CRAFT. (1 Credit)
Provides basic front-country camping skills such as packing, trip planning, how to dress for different climates/weather, storm-proofing, knife and axe techniques and safety, stove and kitchen operations, and fire building. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 304. ALI: BACKPACKING. (1 Credit)
Hiking and camping while carrying all gear; tent set-up, camp site selection, operation of single-burner stoves, loading a backpack; water infiltration, navigation, proper hiking technique, energy conservation; leave-no-trace principles in every aspect of the trip and class; includes classroom instruction and required overnight trip. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 307. ALI: RAFTING. (1 Credit)
An introduction to white water rafting. Students will learn the fundamentals of safe rafting, trip planning and become familiar with the gear associated with rafting. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 308. ALI: CANOEING. (1 Credit)
Designed as an introduction to canoeing. Students learn the fundamentals of safe canoeing, trip planning and become familiar with the gear associated with rafting. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 311. ALI: STAND UP PADDLEBOARD. (1 Credit)
Covers the curriculum for level 1 and 2 American Canoe Association standup paddle board course skills. Skills include equipment, environmental factors, techniques, preparation and planning, emergency management, and environmental ethics. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 313. ALI: CANYONEERING. (1 Credit)
Students will learn the fundamentals of canyoneering, including efficient hiking techniques, safe anchoring, belaying and rappelling techniques, and environmental mitigation skills. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 314. ALI: BOULDERING. (1 Credit)
Introduction to the sport of bouldering, a subset of rock climbing using an indoor climbing facility; emphasis on safety, spotting, climbing movement, training techniques and improvement; provides activities that promote muscular strength and endurance, flexibility, and cardiovascular endurance. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 315. ALI: ROCK CLIMBING I. (1 Credit)
Focuses on developing technical climbing skills related to lead climbing and anchor construction. It will include a one day outdoor experience.
Prerequisites: PAC 315 with C- or better
This course is repeatable for 11 credits.

PAC 316. ALI: ROCK CLIMBING II. (1 Credit)
Focuses on developing technical climbing skills related to lead climbing and anchor construction. The course will include a weekend long outdoor experience and cover skills ranging from building anchors using natural protection, to advanced outdoor movement skills.
Prerequisites: PAC 315 with C- or better and PAC 316 [C-]
This course is repeatable for 11 credits.

PAC 317. ALI: ROCK CLIMBING III. (1 Credit)
Focuses on developing technical climbing skills in an outdoor setting. The course will include a weekend long outdoor experience and cover skills ranging from building anchors using natural protection, to advanced outdoor movement skills.
Prerequisites: PAC 315 with C- or better and PAC 316 [C-]
This course is repeatable for 11 credits.

PAC 319. ALI: TECHNICAL RAPPELLING. (1 Credit)
Students will learn, practice and hone their skills in the art of technical rappelling. Introduces many different styles, techniques and equipment used for rappelling in a variety of situations. Throughout the course, students will be provided with simple to advanced challenges to overcome. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 320. ALI: MOUNTAINEERING I. (1 Credit)
Snow climbing techniques, anchoring, belaying and rappelling techniques, snow camping/living skills, and wilderness ethics; classroom instruction and required overnight alpine trip. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 321. ALI: MOUNTAINEERING II. (1 Credit)
Building on skills learned in Mountaineering I; rope team/glacier travel experience, fundamentals of crevasse rescue, advanced snow climbing techniques, safe anchoring, belaying and rappelling techniques, snow camping/living skills, and wilderness ethics. PAC courses may not be used to fulfill upper-division requirements.
Prerequisites: PAC 320 with C- or better
This course is repeatable for 11 credits.
PAC 322. ALI: ICE CLIMBING. (1 Credit)
Students will learn the fundamentals of ice climbing, including efficient ice climbing techniques, safe anchoring, belaying and rappelling techniques and wilderness ethics. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 324. ALI: WHITE WATER RESCUE. (1 Credit)
Provides an introduction to white water rescue; students learn the fundamentals of white water rescue, scene management, and the necessary gear to perform rescues. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 325. ALI: WILDERNESS FIRST AID. (1 Credit)
Fundamentals of emergency care in a non-urban environment including anatomy, physiology, injury assessment, short-term care, small-group rescues; backcountry emphasis with long-term care and evacuation complications. PAC courses may not be used to fulfill upper-division requirements.
Equivalent to: PAC 325H
This course is repeatable for 11 credits.

PAC 325H. ALI: WILDERNESS FIRST AID. (1 Credit)
Fundamentals of emergency care in a non-urban environment including anatomy, physiology, injury assessment, short-term care, small-group rescues; backcountry emphasis with long-term care and evacuation complications. PAC courses may not be used to fulfill upper-division requirements.
Attributes: HNRS – Honors Course Designator
Equivalent to: PAC 325
This course is repeatable for 11 credits.

PAC 326. ALI: WILDERNESS LIVING TECHNIQUES. (1 Credit)
Basic wilderness living techniques, knowledge and skills needed for a student to be ethical and efficient, and have the ability to survive in the outdoors. Special emphasis is placed on building shelters, water purification, navigation, awareness, fire, self-sufficiency and caring for groups in the wilderness. PAC courses may not be used to fulfill upper-division requirements.
Prerequisites: PAC 303 with D- or better
This course is repeatable for 11 credits.

PAC 327. ALI: ROCK GUIDE SCHOOL. (1 Credit)
Serves as an opportunity to learn the skills for being a rock guide for the ALI. With five days of training and practice in the field at two climbing sites in Oregon, it serves to help students understand the unique challenges of instructing climbing in the outdoor environment. This course may end with Sport Climbing Instructor certification through the Professional Climbing Instructors of America. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 328. ALI: RAFT GUIDE SCHOOL. (1 Credit)
Provides students the skills and guided practice time needed to become competent paddle raft guides. It is a nine-day course that focuses on the development of water reading, raft maneuvering, risk management, and whitewater rescue skills needed by raft guides. Successful completion of the course will result in a certificate of completion from the American Canoe Association (ACA). PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 329. ALI: WILDERNESS FIRST RESPONDER. (2 Credits)
Fundamentals of emergency care in a non-urban environment, including physiology, injury assessment, short-term care, anatomy, and small-group rescues. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 330. ALI: SNOW TRAVEL AND CAMPING. (1 Credit)
An introduction to traveling in the backcountry in adverse weather conditions that often accompany winter. Topics covered include cross country touring, snow shoeing, winter camping techniques, and winter safety considerations including introducing avalanche safety. PAC courses may not be used to fulfill upper-division requirements.
This course is repeatable for 11 credits.

PAC 331. THE ART OF FLY FISHING. (1 Credit)
Students will be introduced to fly fishing skills such as casting, knot tying, safety considerations, fly selection, and ways to approach water. There will be a general overview of common places and species to fish in Oregon and other locations. This course combines approximately 30 hours of instruction, online activities, and assignments for 1 credit. PAC courses may not be used to fulfill upper-division requirements.
Corequisites: ENG 225, FW 112
This course is repeatable for 11 credits.