PubH 3003. Fundamentals of Alcohol and Drug Abuse. (2 cr; §3004) Rothenberger
Lecture, discussion, and special readings on scientific, sociocultural, and attitudinal aspects of alcohol and other drug abuse problems. Emphasis on incidence, high risk populations, prevention, intervention.

PubH 3004. Basic Concepts in Personal and Community Health. (5 cr; §5023; prereq ed major or #) Rothenberger
Scientific, sociocultural, and attitudinal aspects of communicable and degenerative diseases, environmental and occupational health hazards, and alcohol and drug problems. Role of education in health conservation, disease control, and drug abuse.

PubH 3301. Perspectives: Interrelationships of People and Animals in Society Today. (2-3 cr; §5301, §CV 3100, §CV 5100) Dunlop
Social and economic consequences of pets and people sharing urban environments; animal rights; differences in cultures and their influence on animal/human relationships.

PubH 5003. Fundamentals of Alcohol and Drug Abuse. (2 cr; §5023; prereq ed major or #) Rothenberger
Lecture, discussion, and special readings on scientific, sociocultural, and attitudinal aspects of alcohol and other drug abuse problems. Emphasis on incidence, high risk populations, prevention, intervention.

PubH 5004. Field Instruction in Public Health. (Cr ar; prereq #)
Generalized, function-oriented or discipline-oriented community experience under academic and professional supervision. Applying knowledge and skills to relevant health issues and problems.

PubH 5005. Topics in Public Health. (Cr ar; prereq, #)
Directed instruction; selected readings in public health with discussion based on readings.

PubH 5017. Culture and Health Behavior. (3 cr; grad-level student or #) W. Williams
Cultural diversity and its impact on health behaviors; etic (universal) and emic (culture-specific) approaches.

PubH 5020. Public Health Social Work Integrative Seminar. (3 cr, §5020; prereq M PH /M SW or other pub hth or social work student or #) Wagenaar
Integrated, synthesized public health-social work philosophy, roles, functions, knowledge, skills for practical application to major contemporary social health problems: expansionist, social epidemiologic, conceptual problem analysis and community intervention.

PubH 5022. Personal and Community Health. (2 cr, §5023; prereq ed major or #) Rothenberger
Principles of health conservation and disease prevention.

PubH 5023. Basic Concepts in Personal and Community Health. (4 cr, §5022; prereq ed major or #) Rothenberger
Scientific, sociocultural, and attitudinal aspects of communicable and degenerative diseases, environmental and occupational health hazards, and alcohol and drug problems. Role of education in health conservation, disease control, and drug abuse.

PubH 5025. Seminar in Community Health Education Research. (1 cr; prereq che student) Forster
Research issues, approaches in the field.

PubH 5026. Psychosocial Approaches to Health Behavior Change. (3 cr; prereq pub hth student or bio or eh or epi MPH or epi grad or #) Lytle, Finnegan
Foundations of community health education with emphasis on individual behavior change.

PubH 5027. Community and Environmental Approaches to Health Behavior Change. (3 cr; prereq 5026, the student) Wagenaar
Socioenvironmental factors influencing health-related behavior. Role of groups, institutions, and social structures in encouraging healthy or unhealthy behavior. Interventions to improve health behavior through changes in social environment; economic, social, and political structures and practices creating barriers to effective interventions.

PubH 5028. Organizational and Institutional Settings of Community Education. (3 cr; prereq 5026, 5027, the student or #) Wolfson
Organizational and institutional factors (including opportunities and constraints) that influence how community health interventions are conducted.

PubH 5030. Prevention of High-Risk Behavior Among Adolescents. (3 cr; prereq grad-level behavioral science course [5026 preferred], che or pub hth nutr or epi MPH or epi grad or #; second-yr master's student recommended)
Definitions, etiology, intervention programs for high-risk behavior among adolescents. Review of current literature. Students design prevention program overview, based on theory and etiological data, using health education/behavior change methods.

PubH 5035. Applied Research Methods. (4 cr; prereq che or pub hth nutr student or #, 5414 or 5450 or equiv, 5806 or 5852 or equiv; 5420 recommended)
Complements master's project work using forms, questionnaires, interviews. Literature searching, questionnaire development, scale construction, item analysis, data coding, entry and analysis, report writing. Students develop questionnaire and conduct data analysis using software.
PubH 5040. D ying and D eath in C ontemporary C ommunity. (3 cr, §H SU 5040, §M ort 5040; prereq pub hlth student or ed or hlsy sci or mort sci sr or #; UC only) Rothenberger
Concepts, attitudes, ethics, and lifestyle management related to dying, death, grief, and bereavement. Emphasis on preparing community health and helping professionals and educators for educational activities in this area.

PubH 5044. T opics in A lcohol and D rug P roblems. (1-4 cr; prereq #)
Individualized, directed instruction. Selected readings in alcohol and drug problems with discussion based on these readings. (Not an appropriate substitute for 5003, 5004, 5003, or 5023.)

PubH 5049. L egislative A dvocacy S kills for P ublic H ealth. (4 cr; prereq 5398, #) Forster
State legislature as arena for public health practice: developing skills necessary to operate in that arena. A nalyses emergence, development, and resolution of legislative issues of public health importance.

PubH 5061. P revention and C ontrol of A lcohol and D rug P roblems. (3 cr; prereq pub hlth student or #)
Theory and practice. Approaches include education, citizen action, and public policy.

PubH 5084. I nternship in H ealth D uration P ractice I. (Cr ar; prereq hlth ed or che student or #)
Supervised health education internship in a health or public health setting under academic and professional supervision. Applying health education knowledge and skills to relevant health issues and problems.

PubH 5090. R esearch T opics in H ealth D uration. (2-8 cr; prereq hlth ed or che student or #)
Review of health education research and experience in a selected area for an M.P.H. project.

PubH 5096. C h E M a ster's R esearch P roject. (Cr ar; prereq hlth ed or che student or #)
Original research in or secondary analysis of data sets related to health education.

PubH 5097. T opics: S elected R eadings. (Cr ar; prereq hlth sci grad)
Health education topic not covered in available courses.

PubH 5150. T opics in E nvironmental and O ccupational H ealth. (Cr ar; prereq #)
Selected readings and discussions of problems in environmental and occupational health.

PubH 5151. E nvironmental H ealth. (3 cr; prereq pub hlth student or #)
Methods for promoting human health and comfort by controlling environment.

PubH 5152. E nvironmental H ealth. (2 cr) Vesley
Principles of environmental health relating to macro- and microenvironments and products consumed or used by people.

PubH 5154. P racticum in E nvironmental and O ccupational H ealth. (1-6 cr, §§N urs 5882; prereq eh student or nurs grad)
Working with organizations on environmental health concerns under joint supervision of a faculty adviser and organization staff.

PubH 5155. I ssues in E nvironmental and O ccupational H ealth. (2 cr, §§N urs 5883; prereq #; offered SS1) Olson
The field, current issues, and principles and methods of environmental and occupational health protection. Independent field visits to observe, review, and analyze environmental/occupational health programs.

PubH 5156. E nvironmental H ealth S urvey. (3 cr; prereq eh student)
Vesley
Environmental health programs (macroenvironment, microenvironment, products used and consumed by people) and controversial issues associated with these programs.

PubH 5158. H ealth R isk E valuation. (3 cr; prereq eh student or #) Barber
Principles of health risk assessment and management: environmental pollutants; public domain and workplace, legislation and regulations.

PubH 5166. E mployee H ealth S ervices and C ost C ontainment. (3 cr, §§N urs 5884; prereq ohn or nurs grad) McGovern
Examine trends in corporate health cost containment for implications regarding planning and financing of healthcare for employees and families. A nalyses associated role development of occupational health, safety, and employee benefits specialists.

PubH 5167. T heory and P ractice of O ccupational H ealth. (3 cr, §§N urs 5680; Summer—Graduate O ccupational H ealth and Safety Institute; UC only) O lsen
Major concepts and issues in occupational health and safety. Students develop a conceptual framework for working with aggregate populations of workers.

PubH 5168. T heory and P ractice of O ccupational H ealth: F ield E xperience. (4 cr; §N urs 5885; prereq 5167 or N urs 5680) O lsen
A ranged field experience, seminar course. Applying occupational health and safety concepts. Builds on theories explored in 5167.

PubH 5171. E nvironmental M icrobiology. (4 cr; prereq Microb 3103 or #) Vesley
Survival, dissemination, transportation, and significance of microorganisms in the environment; applying principles to environmental health problems.

PubH 5181. A ir P olution. (4 cr; prereq 2 yrs calculus, chemistry, general physics or #) Swackhamer
Air pollution problems, sources of pollutants, gas phase and aerosol phase chemistry, fate of pollutants, human health and materials effects.

PubH 5184. M easurement of A irborne C ontaminants in W orkplaces. (4 cr; prereq 5211, 5216 or #) Ramachandran
Lectures; lab and field exercises to calibrate field equipment for analyzing air contaminants, gas, and vapor; respiratory aerosol mass sampling; and dust counting and sizing. Direct reading instruments; sampling strategy.

PubH 5186. E nvironmental C hemistry. (3 cr; prereq 2 yrs general and organic chem or #) Swackhamer
Air, water, and soil chemistry with emphasis on pollution; pollutant transport and behavior; current topics.

PubH 5191. I ntroduction to O ccupational S afety. (1 cr; Summer—Graduate O ccupational H ealth and Safety Institute; UC only) O Imstead
Provides background on occupational safety as well as an understanding of OSHA and Workers’ Compensation. Identifying safety problems, recommending solutions, and managing OSHA and Workers’ Compensation issues.

PubH 5192. O ccupational S afety. (3 cr; UC only) O Imstead
Developing occupational safety programs essential to workers’ health and safety as well as public health in general.

PubH 5194. I njury P revention in the W orkplace, C ommunity, and H ome. (3 cr) Gerberich
Analyzing injury problems in the workplace, community, and home; epidemiologic strategies for prevention and control.

PubH 5195. S eminar: S afety in the W orkplace. (1 cr) Gerberich
Health analysis, prevention and control of worker injuries.

PubH 5197. T opics: I njury P revention in the W orkplace, C ommunity, and H ome. (1-3 cr; prereq #) Gerberich
Projects relevant to injury problems.

PubH 5198. S afety E ngineering F undamentals. (3 cr; UC only) Shutkske
Safety engineering design and control principles applied to injury and property loss prevention. Standards; guarding; systems analysis; fire protection; legal/ethical considerations; engineering controls for noise, vibration, radiation, electrical and mechanical hazards.
PubH 5201. Radiation Protection and Measurement. (2 cr) Barber
Ionizing radiation sources, detection and measurement, protection principles, health implications.

PubH 5202. Radiation Laboratory. (1 cr; prereq 5201 or §5201) Barber
Radiation lab for 5201.

PubH 5211. Survey of Industrial Hygiene. (3 cr; Summer—Graduate Ocupational Health and Safety Institute; UC only) M Ulhaisen
Recognizing, evaluating, and controlling health hazards in the workplace. For safety and health professionals and others interested in basic understanding of industrial hygiene without detail required for practicing industrial hygienists.

PubH 5212. Ventilation Control of Environmental Hazards. (3 cr; prereq 5211 or #) Vincent
Theory and application of exhaust ventilation in controlling airborne environmental hazards: principles of air movement and mixing, design of appropriate ventilation controls, techniques for measuring and evaluating controls. For environmental health, engineering, and other students interested in industrial hygiene.

PubH 5213. Ergonomics in Occupational Health. (2 cr)
Risks associated with failing to apply ergonomic principles; how to evaluate workspaces; principles to use when designing workspaces; tools, equipment, and procedures to reduce the likelihood of specific injury types.

PubH 5216. Properties of Workplace Airborne Contaminants. (3 cr; prereq eh student or grad student with background in physical sci or engineering or environmental sci) Vincent
Properties of aerosol and gaseous contaminants like those found in workplace atmospheres and their bearing on exposure and health effects; monitoring and ventilation for hazard control.

PubH 5218. Field Problems in Occupational Health. (3 cr; §Nurs 5886, prereq 5210 or 5211 or nurs grad or #) Olson
Guided evaluation of potential occupational health problems; recommendations and design criteria for correction if indicated.

PubH 5219. Seminar: Occupational Health. (1 cr; Summer—Graduate Occupational Health and Safety Institute; UC only) Greaves, staff
Interdisciplinary forum for discussing current policy issues, problems, and trends related to the practice of occupational and environmental health and safety.

PubH 5221. Noise in the Workplace. (2 cr; prereq eh student) Ward
Nature of noise exposure in the workplace: physical description of sound and noise, measurement and dosimetry, possible ill-health effects (hearing loss), control measures.

PubH 5233. Seminar: Microbiology of the Human Environment. (1 cr; prereq #) Vesley
Selected topics of current research interest on infectious disease and injury prevention through environmental intervention.

PubH 5250. Environmental and Occupational Health Master's Project. (1-4 cr; prereq eh student or #)
Directed study toward completion of a master's project or Plan B paper in environmental or occupational health.

PubH 5253. Introduction to Hazardous Waste Management. (3 cr) Thompson
Roles of public and private sectors as generators, disposers, and regulators of hazardous wastes. Definitions, sources, transportation, handling, treatment, recovery, disposal, and public health implications.

PubH 5255. Hazardous Materials Management. (3 cr) Brosseau
Proper management and use of hazardous materials. Regulations concerning process safety, transport, air-water releases, hazard communication and emergency response. Chemical properties and toxicity of hazardous materials, personnel protection, air sampling techniques.

PubH 5256. General Environmental Toxicology. (3 cr) Wattenberg
Applying biochemical and physiological principles, assessing potential health hazards, solving toxicological problems.

PubH 5266. Introduction to Health Risk Assessment. (1 cr; Summer—Graduate Occupational Health and Safety Institute; UC only) Shubat

PubH 5267. Environmental and Occupational Toxicology. (3 cr; not open to students with subspecialty in toxicology; Summer—Graduate Occupational Health and Safety Institute; UC only)
Toxicology principles including dose-response relation, metabolism and distribution, target specificity. Examples drawn from exposures in the workplace and industrial toxicology.

PubH 5271. Occupational Epidemiology. (3 cr; prereq basic course in epi and biostats) M Aldonado, M andel
Principles and concepts in identifying health effects in the workplace: strategies for identifying excess risk, evaluating strengths and weaknesses of research techniques, assessing bias and confounding.

PubH 5274. Introduction to Occupational Epidemiology. (2 cr; Summer—Graduate Occupational Health and Safety Institute; UC only) Johnson
Applying epidemiologic methods and principles to evaluation of health effects of occupational exposures.

PubH 5281. Topics in Occupational Medicine. (2 cr; Summer—Graduate Occupational Health and Safety Institute; UC only) Lohman
Major clinical, administrative, and preventive issues in occupational medicine. Disease mechanisms, descriptive epidemiology, public health aspects of common occupational health problems.

PubH 5301. Perspectives: Interrelationships of People and Animals in Society Today. (2-3 cr, §3301, §CVM 3100, §CVM 5100) D unlop
Social and economic consequences of pets and people sharing urban environments; animal rights; differences in cultures and their influence on animal/human relationships.

PubH 5310. Epidemiology of Zoonoses: Common to Humans and Animals. (4 cr; prereq course in microbiol or epi or #; offered alt yrs) Robinson
Selected diseases transmitted between or common to animals and people. Emphasis on diagnostic problems, epidemiologic characteristics, recreational and occupational implications, food and water transmission, prevention, and evaluation of control programs.

PubH 5330. Epidemiology I. (4 cr; prereq pub hth or phrm or med school or nurs or dent or grad student or #)
Epidemiologic principles applicable to infectious and noninfectious disease; host-agent-environment complex; factors underlying spread of infectious disease; lab applications of statistical and epidemiologic methods.

PubH 5333. Principles of Human Behavior I. (3 cr; prereq che or epi grad student or #) Jeffery, L ando
Theoretical perspectives on etiology and modification of health behavior in individuals and communities.

PubH 5335. Epidemiology and Control of Infectious Diseases. (3 cr; prereq epi MPH or epi grad or #) Lison
Principles and methods. Strategies for disease control and prevention, including immunization. Relevance of modes of transmission of specific agents for disease spread and prevention. Public health consequences of infectious diseases at local, national, and international levels.
PubH 5336. Advanced Seminar in Infectious Disease Epidemiology. (4 cr; prereq 5330, 5335, #) How infectious disease epidemiologic principles are applied in the "real world" to contemporary or controversial issues, including development of prevention and control strategies.

PubH 5340. Epidemiology II: Strategies and Methods. (4 cr; prereq 5330, one biostats course or #) A Shaffer, Shahar, A methods course designed to provide students with core knowledge in study design, implementation, analysis, and interpretation. M easures of disease occurrence and strategies and design principles for etiologic and evaluative studies. M easurement problems, interactions, sensitivity and precision, validity and the need for data specification and control of variables.

PubH 5341. Epidemiology III: Interpretation of Data From Epidemiologic Research. (4 cr; prereq 5340, 5420, 5454, epi student or #) M. Urany, M. G. O. F. S. Reiner. Analyzing and interpreting data from epidemiologic studies, including use of standard computer packages.

PubH 5345. Epidemiologic Methods: Data Collection. (3 cr; prereq 5330, 5420, 5450, epi MPH student or #) M. Urany, M. G. O. F. S. Reiner. M ethods and techniques for collecting and managing epidemiologic research data, including practical aspects of sampling; response rates and bias; forms design; selecting and training interviewers; and data preparation, entry, cleaning, and management. E thetical issues in research.

PubH 5348. Writing Research G rants. (2 cr; epi grad or postdoc student or #) L. L. P. S. F. S. Mechler. E mphasizes development and writing, principles of informed consent, budget development, grant-review process, identifying funding sources. Focuses on N I H-type grants.

PubH 5363. Computer Applications in Epidemiology. (2 cr; prereq epi student or #) M. G. O. F. S. Reiner. Epidemiologic data collection and analysis with emphasis on microcomputer applications using SAS, Epi Info, G t e r, and Excel. C reating, maintaining, and analyzing a dataset and statistical power calculations.

PubH 5370. Epidemiology of Alcohol and Other Drugs. (3 cr; prereq bio or dent or eh or ep or med school or nurs or pharm or pub hly grad or #) W. Gerber. Population patterns regarding who uses which drugs, why they use them, and health consequences of alcohol and other drug use. D oes not focus on treatment, care, rehabilitation, exploration of personal attitudes, or practices regarding alcohol or other drug use.

PubH 5379. Epidemiology Master's Project Seminar. (2 cr; prereq epi M P H or epi grad student) Required seminar. Projects should be underway or near completion.

PubH 5381. Genetic Epidemiology. (4 cr; prereq 5330, 5414 or equiv, college coursework in genetics, h l s c grad-level student or #) S. H. B. S. E. S. Sellers. E tiology, distribution, and control of diseases in groups of relatives, inherited causes of disease in populations. A ssociations (case-control family studies), concordance (twin studies), disease transmission (segregation analysis), global gene localization (gene mapping).

PubH 5383. Pathobiology of Human Diseases. (4 cr; prereq bio or dent or eh or ep or med school or nurs or pharm or pub hly grad or #) C. A. C. R. Crow. Basic cell biology and pathology of human diseases. Topics include immunology, infectious diseases, A I D S, cancer, hematology, diabetes, cholesterol, atherosclerosis, cardiovascular diseases, hypertension, nutritional diseases, pulmonary disorders, gastrointestinal disorders, liver diseases, and osteoporosis.

PubH 5384. Human Physiology. (4 cr; prereq epi or epi grad student or #) C. A. C. R. Crow. Basic human physiologic functions and mechanisms related to coronary heart disease, stroke, diabetes, exercise tolerance, and aging. Progressing from cellular function to organ function to coordinated body function. C onsistency of the internal environment—the need for homeostasis; adaptation to change, including chronic disease; energy use; integrated control systems; and age and physiologic function.

PubH 5386. The Public Health Aspects of Cardiovascular Diseases. (3 cr; prereq 5330, 5450 or equiv) E. L. F. S. F. Olsom. E valuating population studies and trials on cardiovascular diseases; modifiable risk factors for coronary heart disease; preventing other types of heart disease.

PubH 5387. Cancer Epidemiology. (3 cr; prereq h lth sci grad or #) R. Robison. E pidemiologic aspects of cancer, including theories of carcinogenesis, incidence, site-specific risk factors, and issues of cancer control and prevention.

PubH 5389. Nutritional Epidemiology. (3 cr; prereq 5330 or #; offered alt yrs) E. L. F. S. F. Olsom. M et hodologic issues of exposure to nutrient intakes, biological basis for nutrition and disease relationships, studies of specific chronic diseases and nutritional intake, analytic issues related to designing and interpreting studies using nutritional measures.

PubH 5390. Smoking Intervention. (3 cr; prereq che or epi student; offered alt yrs) R. Lando. Impact of smoking on U.S. public health; review of research on onset and prevention, factors maintaining dependence, cessation and intervention strategies, public health campaigns, public policies and second-hand smoking controversies, and international issues related to smoking.

PubH 5391. Introduction to Behavioral Epidemiology. (3 cr; prereq bio or dent or eh or ep or med school or nurs or pharm or pub hly grad student or #) J. N. M. W. Webb. T heoretical, measurement, and research issues in behavioral epidemiology. L ife span patterns in developing, changing, and maintaining behaviors related to major chronic diseases. E xamines risk-related behaviors from an epidemiologic perspective using concepts of prevalence, incidence, risk, and trends.

PubH 5392. Seminar: Topics in Epidemiology. (2-3 cr; prereq basic epi and biostats course or #) J. N. M. W. Webb. R eview of literature to understand how theories, models, and assumptions of mass communication research relate to public health.

PubH 5395. Obesity and Eating Disorders. (3 cr; prereq grad-level student or #) C. R. Finnegan. Definition, measurement, prevalence; social, behavioral, and physiological causes; health consequences; treatment, prevention.

PubH 5398. Public Health Policy as a Prevention Strategy. (3 cr; prereq grad-level student or #; offered alt yrs) E. L. F. S. F. Olsom. P hilosophical, ethical, economic, political, and efficacy rationale for a policy approach to prevention; historical and current application of prevention policy to public health problems.

PubH 5399. Seminar: Topics in Epidemiology. (2-3 cr; prereq basic epi and biostats course or #) E. L. F. S. F. Olsom. O ne or more topics of current epidemiologic interest.

PubH 5404. Introduction to Biostatistics and Statistical Decision. (4 cr; prereq h r p & a student or #) W. E. F. S. W. Eckersley. V ariation; frequency distribution; probability; significance tests; estimation; trends; data handling; simple operations research applications. S tatistical approach to rational administrative decision making. L ections and lab exercises.
PubH 5414. Biostatistical Methods I. (4 cr; §5450; prereq M P H or pub hlth grad student or #) Le
Basic quantitative methods, including tabular, graphical, and numerical descriptive methods; random sampling; principles of statistical inference; confidence intervals; statistical tests of hypotheses using t and chi-square distributions; interpreting correlation and regression.

PubH 5415. Biostatistical Methods II. (3 cr; §5452; prereq grade of B or better in 5409 or 5414 or §5414 or 5450, M P H or hlth sci grad student or #) Goldman
Continuation of basic statistical methods, including correlation, regression, analysis of variance, and nonparametric tests. Using various software for data analysis.

PubH 5420. Statistical Computing I — Using Statistical Packages. (2 cr; prereq 5414 or 5450 or 5450, hlth sci student; # for undergrads) Jeffries
Using SAS for analyzing biomedical data. Data manipulation, description, and statistical analyses (t-tests, chi squares, simple regression).

PubH 5421. Statistical Computing II — Advanced Computational and Graphical Methods. (3 cr; prereq 5464, knowledge of C or FORTRAN, grad or #) Carlin
UNIX-workstation-based computing and graphical methods for biostatistical analysis. Linear systems, numerical integration and differentiation, optimization, Monte Carlo methods, designing and analyzing simulation studies.

PubH 5422. Statistical Computing III — Data Collection and Management. (3 cr; prereq 5420 or 5446, 5462) Connett, Eaton
Methods of data collection, forms design, and data entry for clinical trials and epidemiologic studies. Data editing methods, database design, and statistical report generation using N O M A D and SAS.

PubH 5450. Biostatistics I. (4 cr; §5414; prereq M ath 1111 or M ath 1201, hlth sci student; # for undergrads) Jeffries, Kjelsberg, Thomas
Descriptive statistics; Gaussian probability models; point and interval estimation for means and proportions; hypothesis testing, including t-tests and chi-square tests; regression and correlation techniques; one-way analysis of variance; applications in the health sciences using output from statistical packages.

PubH 5451. Biostatistics II. (4 cr; §5415; prereq grade of B or better in 5450 or #) Jeffries
Analysis of variance and multiple regression for biological and health sciences data; estimation, testing, prediction; underlying assumptions; model selection; applications.

PubH 5454. Biostatistics III. (4 cr; prereq 5420 or 5452 or equiv or #) Gombosch
Analyzing categorical data; emphasizes log-linear models and inferences from observational data. Methods and applications of logistic regression and survival analysis, including Cox's proportional hazards model.

PubH 5456. Biostatistical Inference I. (4 cr; §5450; prereq Stat 5131 or §Stat 5132, bio student or #) Anderson
Multiple regression, matrix notation, polynomials, diagnostics, splines, ANOVA as regression.

PubH 5465. Biostatistical Inference II. (4 cr; §5452; prereq Stat 5132 or §Stat 5133, bio student or #) Anderson
Multiple regression, matrix notation, polynomials, diagnostics, splines, ANOVA as regression.

PubH 5466. Biostatistical Inference III. (4 cr; §5454; prereq Stat 5133 or §Stat 5132, bio student or #) Connett
Contingency tables, logistic regression, categorical outcome from cohort and case-control studies, Poisson regression.

PubH 5468. Written and Oral Communication in Biostatistics. (2 cr; prereq bio student or #) Hodges
Study and practice of written and graphical communication skills for various target audiences. Exercises, peer discussion. Plan B projects or other required writing and presentation may be used.

PubH 5470. Topics in Biostatistics. (Cr ar; prereq #)
Selected readings with discussion based on these readings.

PubH 5605. Perinatal Health and Family Planning. (3 cr; prereq pub hlth grad student or #)
Perinatal and family planning issues, programs, services, and policies. Emphasis on social, cultural, psychological, physical, environmental, economic, ethical, and political factors affecting family planning, pregnancy, and infant outcomes.

PubH 5606. Health of Infants and Young Children. (3 cr; prereq pub hlth grad student or #)
Major causes of mortality and morbidity, public health interventions, public policies that prevent disease/ injury and enhance health in infants and young children. Emphasis on U.S. populations at risk. For students already well grounded in a health-related discipline.

PubH 5607. Adolescent Health: Issues and Challenges. (3 cr; prereq pub hlth grad student or #)
Major public health issues and problems of U.S. adolescents; relationship among societal, political, economic, environmental, psychosocial, and cultural determinants that impact adolescent health status and services.

PubH 5610. Principles of M aternal and C hild H ealth. (3 cr; prereq pub hlth or grad student or #) MCH staff
Current issues related to health needs of families, mothers, and children with emphasis on principles of primary care, health maintenance, preventive care, organization, and evaluation.

PubH 5613. Ch ildhood Disability. (3 cr; prereq pub hlth or grad student or #) Patterson
Epidemiology, identification, management, follow-up, and prevention of childhood chronic and handicapping conditions. Community programs related to emotional, physical, and intellectual handicaps.

PubH 5614. Field Experience in M aternal and C hild H ealth. (3 cr; prereq mph student) MCH staff
Field experiences selected by students to meet their career goals.

PubH 5622. Women's H ealth: Issues and Controversies. (4 cr; UC only)
Women's health issues and controversies affecting women's healthcare from historical and public health perspectives. Contrasts methods of healthcare delivery, professional and consumer education, and addresses current literature. Specific health needs of under-served women in the population.

PubH 5623. Principles of M aternal and C hild H ealth Research. (3 cr; prereq mph student or #)
Students develop master's project proposal through examination of methodological and theoretical issues.

PubH 5637. Seminar: Cross-Cultural Health Issues in Minnesota. (3 cr; prereq mph and community professional; UC only)
Lecture, discussion, readings, and group project in proposal writing. Health issues and "health culture" of four ethnic communities in Minnesota: Hmong, Hispanic, African American, and Native American. Cultural factors that influence health and health services.
PubH 5639. Prevention: Theory, Practice, and Application in Public Health Service. (4 cr; UC only) Shandling
Current issues and controversies concerning prevention and how it relates to health services. History, ideal of prevention, terminology, lifestyle intervention, programs and legislative issues, education, roles, implications for societal action.

PubH 5645. Families and Health. (3 cr; prereq pub hth or hth sci student or hth-related professional or social or behavioral sci grad or #) Patterson
Relationship between family and health. Family theory and research on family's impact on health. Implications for primary and secondary prevention in public health educational programs, clinical practice, and public policy.

PubH 5647. Independent Study in M aternal and C hild H ealth. (C r ar; prereq mch student or #) MCH staff
Independent study guided by a maternal and child health faculty member.

PubH 5648. Topics in M aternal and C hild H ealth. (C r ar; prereq #) MCH staff
May include new course offering, selected readings, or individualized directed instruction.

PubH 5649. M aternal and C hild H ealth M aster's Project. (3-4 cr; prereq mch student, #) MCH staff
Selected readings in maternal and child health with paper or other scholarly product completed.

PubH 5650. Teenage Pregnancy and Parenting: Models for Intervention. (1 cr; UC only) Resnick
Understanding adolescent pregnancy, parenting, and sexual decision making from a developmental perspective. Recommendations for counseling and teaching; prevention and intervention for schools, community, and youth-serving organizations; state and national policy.

PubH 5651. Critical Readings of Scientific Literature in A dolescent H ealth. (2 cr; prereq #) Resnick
Provides graduate public health students with basic analytic tools to critically read and analyze peer-reviewed publications from a variety of professional perspectives. Emphasis on articles related to adolescent health concerns.

PubH 5654. A dolescent Sexual Identity: Teen Risk and P rofessional Responsibility. (1 cr; prereq BA or employment in ed or hth or social services) Yoakum
A adolescent sexuality and sexual orientation from perspective of individual identity; impact of the community; response of youth-serving professionals toward gay/lesbian/bisexual youth and their families.

PubH 5655. Sexual Orien tation I ssues for A dolescents. (3 cr; prereq BA or employment in ed or hth or social services) Yoakum
A adolescent sexuality and sexual orientation from perspective of individual identity; impact of the community; response of youth-serving professionals toward gay/lesbian/bisexual youth and their families.

PubH 5700. Foundations of P ublic H ealth Administration Practice. (3 cr; prereq pha student or #) Block
Planning, organizing, and administering public health agencies at the state level and how these agencies function in relation to public health at federal and local levels. Opportunity to interact with practicing public health administrators and specialists.

PubH 5702. P olicy I ssues in P ublic H ealth Administration. (3 cr; prereq pha student or #) Block
Issues, problems, structure, administration, and activities of community and public agencies administering public health programs or impacting the public's health, and of related organizations providing support services to these agencies.

PubH 5704. F ield E xperience: P ublic H ealth Administration. (C r ar; prereq pha student or #)
Supervised field experience at a management level in selected community or public health agencies and institutions.

PubH 5707. I ndependent Study: P ublic H ealth Administration. (1-12 cr; prereq pha student or #)
Independent study, under tutorial guidance, of selected problems and current issues in public health administration.

PubH 5711. P ublic H ealth Law. (4 cr; prereq pub hth student or #) Feinwachs
Basic concepts of the law, legislative process, legal bases for the existence and administration of public health programs, legal aspects of current public health issues and controversies, regulatory role of government in the health services system.

PubH 5720. M anagement Communications. (3 cr; prereq ha or pha student) Veninga
Role of communication in health services administration. Emphasis on developing skills in presentational speaking, interviewing, and writing. Case-study analysis of communication problems in hospitals and public health organizations.

PubH 5731. P ublic H ealth Program Planning and G rant Writing. (3 cr, §N nurs 5966; prereq pha or nurs grad student or #)
Knowledge and skills for planning disease prevention and health promotion programs; determining prioritized health risks and problems from using and analyzing available data; planning process for setting up prevention/promotion programs; management skills for implementing, conducting, and evaluating these programs.

PubH 5733. P ublic H ealth Interventions Across the Life Span. (3 cr; prereq 5330, Nurs 8040 or #) Bearinger
Synthesizing life cycle developmental approach and public health perspective with nursing and behavior change models to develop effective interventions.

PubH 5734. E thical D imensions of P ublic H ealth. (1 cr, §5516; prereq pub hth or grad student or #) Aroskar
Ethical issues and dilemmas that confront public health professionals and agencies. How ethical/value aspects affect political, legal, economic, and cultural considerations.

PubH 5735. P ublic E thics/ Political s and P ublic H ealth. (2-3 cr; §5523; prereq pub hth or grad student or #) Aroskar
Systematic examination of ethical/value aspects related to decision making in public health interventions. Responsibilities of the state in relation to health, politics as public ethics, distributive justice in a pluralistic society.

Sociological, biological, and psychological aspects of aging; theories of aging; death and bereavement; issues and problems of older adults in the United States; human services and their delivery systems (health, nutrition, long-term care, education); public policy and legislation; environment and housing; retirement.

PubH 5739. T opics: P ublic H ealth Administration. (C r ar; prereq pha student or #)
Selected readings in public health administration with discussion based on these readings.

PubH 5740. O rganizational B ehavior. (3 cr; prereq ha student or #) Veninga
Human behavior in organizations; motivation, leadership, influence of organizational structure, informal group behavior, interpersonal relations, supervision. Emphasis on preventing and solving problems among individuals and groups in organizations.

PubH 5742. M anagement of H ealthcare P rganizations. (3 cr; prereq ha student or #) Reiling
Role of the hospital in health services delivery and relationships with other elements of the healthcare system. Problems of achieving results with emphasis on governance, medical staff, and role of administrator.

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PubH 5743. Ethics in Healthcare Administration. (2 cr; prereq ha or pha student or #) Aroskar
Ethical perspectives on managing healthcare organizations; components of a decision-making framework with framework applied to selected ethical issues; institutional mechanisms for dealing with ethical problems.

PubH 5744. Principles of Problem Solving in Healthcare Organizations. (3 cr; prereq ha student or #) Dombloser, staff
Lectures, seminars, and demonstrations on problem-solving theory and technique. Management problem solving of cases. Solving a management problem within a healthcare services organization and presenting a report.

PubH 5745. Advanced Problem Solving in Healthcare Organizations. (5 cr; prereq 5744) Dombloser, staff
Defining, analyzing, and solving significant senior management-level operational or health public policy problems by student groups in Twin Cities health services organizations.

PubH 5746. Clerkship. (3 cr; prereq 5744, ha student) M.iller, staff
Survey and solution of management problems within a local health services organization, preparation of formal management report.

PubH 5747. Human Resources Management. (3 cr; prereq ha or pha student or #) Langan
Concepts in human resources management as applied to health services organizations. Relationship between human resources management and general management, nature of work and human resources, compensation and benefits, personnel planning, recruitment and selection, training and development, employee appraisal and discipline, union-management relations.

PubH 5749. Long-Term Care Administration. (3 cr; prereq ha or pha student or #) Grant
Administrative issues in long-term care; public policy, client needs, institutional and noninstitutional settings.

PubH 5750. Long-Term Care Industry. (3 cr; prereq ha or pha student or #) Grant
Organization, financing, and delivery of long-term care services to the aged. Demographic trends, financing structures, public policies, solicited responses to long-term care issues.

PubH 5751. Principles of Management in Healthcare Organizations. (3 cr; prereq grad student) Veninga
Lectures and case studies about the role of healthcare services administrators, principles of management, and the administrative process.

PubH 5753. Strategic Management in the Healthcare Industry. (3 cr; prereq ha student or #) Erickson
Evaluating application of organizational theory, analysis, and behavior and competitive analysis to healthcare providers, suppliers, and insurers.

PubH 5754. Marketing Health Services. (3 cr; prereq ha or pha student or #) Hildes
Managing the marketing function; marketing planning, strategy, and management concepts. Identifying marketing problems and opportunities; constructing evaluating and managing a marketing plan.

PubH 5756. Financial Accounting in Healthcare Organizations. (4 cr; prereq ha or pha student or #)
A counting principles and practices applicable to healthcare organizations, with emphasis on hospitals and ambulatory care services; total financial requirements; cost-finding methodologies; third-party payer negotiation; internal control; and internal and external financial reporting.

PubH 5757. Managerial Accounting in Healthcare Organizations. (4 cr; prereq 5756, ha or pha student or #) Allen
Budgeting for operational, capital, and cash flow requirements of hospitals and other healthcare organizations.

PubH 5758. Strategic Financial Planning in Healthcare Organizations. (4 cr; prereq 5757, ha or pha student or #) Riley
Case studies and readings in the review and analysis of actual hospital financial statements, third-party payer cost reports, and other financial documents. Applying financial ratios to financial statement analysis.

PubH 5759. Healthcare Financial Management (Private Sector Emphasis). (4 cr; prereq 5756, 5757, ha or pha student or #) Knowledge of spreadsheet software recommended) Connor
Principles of corporate finance and selected insurance concepts applied to healthcare with private sector emphasis. NPV; CAPM; capital and operating budgets; M edicare PPS and RBRVS; risk-adjusted capitation; healthcare reform.

PubH 5760. Operations Research and Control Systems for Hospitals. (3 cr, §H Inf 5435; prereq 5404 or #) Potthoff
Decision-making framework for both operating and control systems in the hospital environment. Basic modeling techniques and examples of actual hospital applications.

PubH 5761. Quantitative Methods Applied to Healthcare Administration Problems. (3 cr; prereq basic statistics course) Eckwerth
Applying quantitative methods to secondary data including analysis of cycles, data handling systems, linear regression, discriminant analysis and inventory control used in the solution of health problems at various administrative levels.

PubH 5762. Information Technology in Healthcare. (3 cr; prereq ha or pha student or #) M.ow
How to analyze organizational information needs, incorporate these needs into information technology (IT) policy and planning, and implement IT policies.

PubH 5766. Applied Field Research I. (2 cr; prereq ha student or #)
Eckwerth
Under faculty supervision, students select a topic of importance in healthcare administration and formulate a research problem and approach for field study.

PubH 5767. Applied Field Research II. (2 cr; prereq ha student or #)
Eckwerth
Under faculty supervision, students investigate alternative methodological approaches to the study of the topic selected in 5766 and carry out a field research project.

PubH 5768. Applied Field Research III. (2 cr; prereq 5767) Eckwerth
With the counsel of a faculty adviser, each student carries out research analysis of a selected topic and prepares a report on the findings.

PubH 5770. Topics in Hospital and Healthcare Administration. (1 cr ar; prereq ha student or #): Selected readings in hospital and healthcare administration with discussion based on these readings.

PubH 5771. Health Financial Management (Public Sector Emphasis). (4 cr; prereq college-level accounting course [3 cr] or #; knowledge of spreadsheet software recommended) Connor
Basic principles of finance and selected insurance concepts integrated and applied to healthcare with public sector emphasis. NPV; public financing; capital and operating budgets; Medicare PPS and RBRVS; risk-adjusted capitation; healthcare reform.

PubH 5772. Healthcare ISNs. (3 cr; prereq ha student or #) Johnson
Growth and development of integrated healthcare systems based on open-systems perspective of health organizations. Process of development and strategies of a variety of organizational arrangements. Implications for roles of managers, trustees, and physicians.

PubH 5773. Management and Organization Within the Ambulatory Care Facility. (15 cr; prereq Aternative Studies Program student or #) Eckwerth, staff
Twelve-month program of on-campus residential (two weeks) and off-campus study that includes periodic seminars and monthly sessions with clinical preceptors. Management, organizational behavior, problem solving, executive role, personnel management, financial management, governance, clinicians, productivity, efficiency.
PubH 5774. A administrative and Professional R relationships W ithin the Ambulatory Care Facility. (15 cr; prereq 5773, Alternative Studies Program student or #; Alternative Studies Program) Weckwerth, staff Twelve-month program of on-campus residential (two weeks) and off-campus study that includes periodic seminars and monthly sessions with clinical preceptors. Principles of management, executive role, hospital development and organization, functions of personnel, financial control, business office, patient care services.

PubH 5775. M anagement and O rganization in H ospital and H ealthcare F acilities. (15 cr; prereq A lternative Studies Program student or #; Alternative Studies Program) Weckwerth, staff Twelve-month program of on-campus residential (two weeks) and off-campus study that includes seminars and monthly classes under program preceptors. Principles of management, executive role, hospital development and organization, functions of personnel, financial control, business office, patient care services.

PubH 5776. A administrative and Professional R relationships W ithin the H ealthcare F acility. (15 cr; prereq 5775, Alternative Studies Program student or #; Alternative Studies Program) Weckwerth, staff Twelve-month program of on-campus residential (two weeks) and off-campus study that includes seminars and monthly classes under program preceptors. Board of trustees, medical staff, nursing, hospital law, medical records, planning, community health systems, continuing health education, change theory.

PubH 5777. E xternal F orces A ffecting H ealthcare D elivery. (25 cr; prereq 5774, 5776, 5779, 5786, 5788; Alternative Studies Program student or #; Alternative Studies Program) Weckwerth, staff Ten-month program of on-campus residential (two weeks) and off-campus study that includes seminars and monthly classes under program preceptors. Topics include: role of organization and administrator. Lectures about and on-site visits to health services organizations; emphasis on role of organization and administrator.

PubH 5778. P atient C are M anagement and O rganization W ithin the H ospital and H ealthcare O rganization. (15 cr; prereq 5776, 5779, 5786, 5788; Alternative Studies Program student or #; Alternative Studies Program) M adden Twelve-month program that includes a two-week on-campus session, monthly applied units of study, periodic seminars, and monthly sessions with clinical preceptors. Management, organizational behavior, executive role, problem solving, human resources management, financial management, governance, labor relations, patient care services.

PubH 5779. M anaging M ultiple F orces: I nternal and E xternal Aspects of Patient C are A dministration. (15 cr; prereq A lternative Studies Program student or #; Alternative Studies Program) M adden Twelve-month program that includes a two-week on-campus session, six two-month applied units of study, periodic seminars, and monthly sessions with clinical preceptors. Strategic and long-range planning, financial management, legal issues, moral and ethical dilemmas, managing change.

PubH 5780. A dministration and L aw in L ong-T erm C are. (2-6 cr; prereq prelicensure ltc admin) Twelve-week course combining five days of on-campus seminars with independent study. General principles and legal aspects of management, human resources management.

PubH 5781. G erontology and S ervices for L ong-T erm C are R esidents. (2-6 cr; prereq prelicensure ltc admin) Twelve-week course combining five days of on-campus seminars with independent study. Psychosocial gerontology as base for planning and identifying services and programs in long-term care organizations.

PubH 5782. P racticum in L ong-T erm C are A dministration. (6 cr; prereq 5780, 5781, prelicensure ltc admin or #) Four-hundred-hour practicum in a nursing home setting under the guidance of a preceptor. Includes a three-day seminar on campus.

PubH 5783. M anagerial A ccounting in L ong-T erm C are A dministration. (6 cr; prereq prelicensure ltc admin) Basic tools of financial management for the long-term care facility. Opportunity for practical application of these tools in class and at the work site for students working in long-term care facilities.

PubH 5784. I ssues in L ong-T erm H ealthcare. (2 cr; prereq prelicensure ltc admin) A roskar, staff Readings in topics affecting long-term healthcare; changing delivery of acute care services, right-to-die issues, patient rights and responsibilities, public financing dilemmas. Three written assignments and a final exam.

PubH 5785. M anagement and O rganization W ithin M ental H ealth-Related O rganizations. (15 cr; prereq A lternative Studies Program student or #; Alternative Studies Program) Weckwerth, staff Twelve-month program of on-campus residential (two weeks) and off-campus study that includes periodic seminars and monthly classes under program preceptors. Principles of management, organizational behavior, personnel, problem solving and decision making, financial management, mental health professionals and paraprofessionals, mental health programs and services.

PubH 5786. A administrative and Professional R relationships W ithin M ental H ealth-Related O rganizations. (15 cr; prereq 5785, Alternative Studies Program student or #; Alternative Studies Program) Weckwerth, staff Twelve-month program of on-campus residential (two weeks) and off-campus study that includes periodic seminars and monthly classes under program preceptors. Board of trustees, medical staff, nursing, hospital law, medical records, planning, community health systems, continuing health education, change theory.

PubH 5787. P olicy, R egulation, and C ompliance in L ong-T erm C are. (2 cr; prereq prelicensure ltc admin) Feinwachs Funding mechanisms, major regulatory codes, and regulatory compliance mechanisms currently in force for the long-term care industry.

PubH 5788. M anagement I nformation S ystems in L ong-T erm C are. (2 cr; prereq prelicensure ltc admin) Reiling Basic concepts and technology of management information systems and computer-supported applications for students preparing for licensure as long-term care administrators.

PubH 5790. S ociology of M edicine and H ealthcare: A n I ntroduction to M edical S ociology. (4 cr; § Soc 5855) Litman Social and psychological components of health and medical care. Organization and delivery of healthcare services, their problems and perspectives; focus on the patient, care provider, and environment where healthcare services are dispensed.

PubH 5791. P ublic H ealth and M edical C are O rganizations. (3 cr; prereq pub hth or grad student) Resnick Sociopolitical, economic, and moral/ethical issues confronting the U.S. public health and medical care system. Trends in service provision, human resources, financing and health services organization, and implications for the public’s health.

PubH 5792. H ealth S ervices O rganizations in the C ommunity. (1 cr; prereq ha student or #) Reiling Lectures about and on-site visits to health services organizations; emphasis on role of organization and administrator.

PubH 5796. L egal C onsiderations in H ealth S ervices O rganizations. (3 cr; prereq ha student or #) Feinwachs Laws affecting administration of hospitals and other healthcare organizations; administrative law, corporate and business law, labor law, civil liability, tax-related issues. Legal issues relevant to administration, decision-making, and planning process.
PubH 5806. *Principles of Public Health Research.* (3 cr; prereq pub hlth student or grad status) G Arrand
Critical evaluation of public health research literature, planning of independent research projects, formulation of the research question, research design, sampling techniques, use of research concepts, and data analysis. Questionnaires, interviews, data analysis techniques.

PubH 5812. *Managed Care I.* (3 cr; prereq ha or hsrp or hsrp&a or pha student or #) C Christianson
Development and organization of HMOs: risk-sharing, provider contracts, utilization management, quality improvement.

PubH 5813. *Managed Care II.* (3 cr; prereq 5812 or #) C Christianson
HMO and PPO marketing and new product development; employer relations; Medicaid and Medicare contracting; budget processing; financial performance; pricing; government regulation.

PubH 5852. *Program Evaluation in Health and Mental Health Settings.* (4 cr, §H SU 5026; prereq pub hlth or grad student, 5806 or equiv research methods course, equiv basic statistics course) G Arrand, Pirie
For advanced undergraduate and graduate students in fields related to health or mental health. Evaluation models, evaluative study objectives, subject sampling, data collection methods, methodological designs, data interpretation, final report preparation, ethical and political considerations in conducting an evaluative study.

PubH 5861. *Health Insurance.* (3 cr; prereq intro microeconomic theory course or #) Feldman, N yman
Current topics in financing personal healthcare: theory of insurance, health insurance market, cost sharing, HMOs, PPOs, public and catastrophic health insurance, AID$ and insurance for the uninsured poor; emphasis on public policy.

PubH 5862. *Cost-Benefit, Cost-Effectiveness, and Decision Analysis in Healthcare.* (3 cr; prereq 3 cr intermediate econ course) C Christianson
Applications of cost-benefit, cost-effectiveness, and decision analysis techniques in evaluating healthcare programs; government regulations; new technologies, diagnosis, and treatment protocols. Strengths, limitations, and appropriateness of different approaches.

PubH 5863. *Quality Assurance.* (2 cr) R L Kane
History of assessing and assuring quality of care. Emphasizes recent activities concerning small area variation, outcomes, appropriateness, and effectiveness. Theory and specifics of alternative approaches and their interpretation.

PubH 5868. *Principles of Health Services Research.* (3 cr) R L Kane
Disciplinary contributions to health services, traces how health services research can influence policy using a variety of best case examples to examine the breadth of health services research.

PubH 5870. *Survey Research and Sample Design in Health Services Research.* (3 cr) M oscowicz
General, technical, and theoretical context of survey research in health services research. Survey and sample design issues discussed with extensive use of examples from health services research.

PubH 5893. *Health Economics I.* (3 cr; prereq intro microeconomics course, ha or hsrp or hsrp&a or pha student or #) N yman

PubH 5894. *Public Policy in Healthcare.* (3 cr; prereq ha or hsrp or pha or pub affairs student or #) K ralewski
Development and present status of selected public policy issues in social, economic, and political contexts. A tentative courses of possible public action reviewed and outcomes assessed.

PubH 5900. *Public Health Nutrition: Principles and Programs.* (3 cr; prereq pub hlth nutr student or #) K rinko
Principles of public health nutrition, roles and functions of public health nutritionists, programs and delivery mechanisms for promoting nutritional status of populations. Students explore their beliefs and competencies in relation to principles and philosophy of public health nutrition.
PubH 5935. Child and Adolescent Nutrition. (3 cr; prereq grad-level student or #) Story
For students and professionals in nutrition and related disciplines who want to explore current issues and literature in childhood and adolescent nutrition. Emphasis on major nutrition issues of youth; biological, cultural, psycho-social factors influencing food behaviors; and strategies for improving nutritional health of children and teenagers.

PubH 8150. Research: Environmental and Occupational Health. (1-8 cr; prereq #)
Opportunities for qualified students to pursue research in environmental stresses on human health.

PubH 8185. Analysis of Toxicants. (3 cr; prereq #; offered alt yrs) Swackhamer
Applying principles of analytical chemistry to analysis of toxic chemicals in environmental samples, including air, soil, water, and tissue; survey of instrumental methods (gas and liquid chromatography, mass spectrometry, atomic and molecular spectroscopy); interpretation of results; analytical quality control. Lecture and lab.

PubH 8191. Research: Injury Prevention in the Workplace, Community, and Home. (1-8 cr; prereq #) Erberich
Students develop independent and comprehensive research efforts relevant to injury prevention.

PubH 8192, 8193, 8194. Occupational Injury Prevention and Safety Program Research Seminar. (1 cr f/w/s; prereq eh student or #) Maldonado
Facilitates student research in occupational injury prevention and safety through interdisciplinary involvement of engineering and public health students.

PubH 8264. Human Diseases Caused By Environmental Agents. (3 cr;
prereq 5261, 5262, #) G. Reaves
Clinical presentation of disease; investigation of exposed populations and affected individuals.

PubH 8272. Validity Concepts in Epidemiologic Research. (2 cr; prereq grade of B or better in 5341 or #) Maldonado
Recognizing, preventing, correcting, and evaluating bias in epidemiologic studies.

PubH 8300. Research in Epidemiology. (1-8 cr; prereq epi student)
Opportunities for qualified students to pursue research through the school and various cooperating organizations.

PubH 8332. Readings in Epidemiology. (1-4 cr; prereq epi grad or #)
Readings in current epidemiology research.

PubH 8338. Advanced Seminar in Epidemiology: Health Behavior Seminar in Epidemiology. (2 cr; prereq grad or #) Jeffery
Selected current epidemiologic problems focusing on issues related to health behavior.

PubH 8339. Seminar in Epidemiology. (2 cr; prereq epi or physiological hygiene student)
Discussion of selected current epidemiologic problems.

PubH 8420. Survival Analysis. (3 cr; prereq 5466 or equiv, Stat 5133) Le
ters
Theory and applications of statistical methodologies in survival analysis, including estimating survival curves and proportional hazards models. A pplying parametric and nonparametric techniques introduced in clinical trials and other health studies.

PubH 8421. Analysis of Categorical Data. (3 cr; prereq 5466 incl SAS, Stat 5133) Waller
Analyzing categorical data with applications to clinical treatment evaluation, epidemiology, and other public health areas. Log-linear, logit, and linear logistic models; power and robustness studied by exact and approximate methods.

PubH 8422. Modern Nonparametrics. (3 cr; prereq pub hlth or grad student, 5466, Stat 5133 or #) Louis
Classical nonparametric inference; exact tests and confidence intervals for discrete data; robust estimates; jackknife, bootstrap; and cross-validation. Substantial computing; study of a wide variety of models and applications, formal development sufficient for understanding statistical structures and properties.

PubH 8429. Probability Models for Biostatistics. (3 cr; prereq 8420, 8421, Stat 5133, bio student or #) G. Rambusch
Basic models used for stochastic processes in biomedical sciences; Poisson, Markov chain, Brownian motion. Probability structure and statistical inference for each process.

PubH 8430. Sequential Analysis. (3 cr; prereq 8420, Stat 5133, knowledge of FORTRAN, bio student or #; offered alt yrs) G. Oldman, G. Rambusch, Louis
Design and analysis of clinical trials using sequential methods. Use of Monte Carlo methods for studying operating characteristics of sequential tests; illustrations include various types of data. Wald and likelihood ratio theory; specific problems with testing binomial proportions and normal means.

PubH 8431. Biostatistical Decision Theory. (3 cr; prereq Stat 5131-5132-5133, Stat 8311-8312, bio student or #; offered alt yrs) G. Oldman, G. Rambusch, Louis
Bayes and empirical Bayes methods in a decision-theoretic framework for biostatistical analysis.

PubH 8432. Bioassay and Screening. (3 cr; prereq theoretical statistics or #; offered alt yrs) Louis
Properties of progressive disease models, including lead time produced by screening and length-biased sampling. Relates population screening and rodent bioassay models. Estimation approaches and study designs, including sequential methods. Examples include screening for breast and cervical cancer.

PubH 8433. Analysis of Longitudinal Data. (3 cr; prereq Stat 5131-5132-5133 or equiv, Stat 8311-8312 or equiv, bio student or #; offered alt yrs) Andersson
Methods of inference for outcome variables measured repeatedly in time or space; normal theory linear models and nonnormal, nonlinear models with emphasis on GLIM, including random effect; transitional and marginal models with applications to biomedical data.

PubH 8434. Advanced Survival Analysis. (3 cr; prereq 8420, Stat 5131-5132-5133 or equiv; offered alt yrs) G. Rambusch
M ethods and counting process theory as applied to survival data, including martingale foundations, statistical tests for comparing survival among groups, Cox proportional hazards model, diagnostics and analysis of residuals, multivariate survival data, and extensions to event history analysis.

PubH 8435. Seminar in Categorical Data. (3 cr; prereq Stat 5131-5132-5133, Stat 5421 or Stat 8431 or equiv in categorical data or #; offered alt yrs) Louis
Topics of interest in categorical data analysis. Readings from recent published statistical methodology.

PubH 8436. Spatial Biostatistics. (3 cr; prereq 8420, 8421, exper with BM D P or SAS, programming exper with FORTRAN or C; offered alt yrs) Waller
Statistical methodologies for analyzing spatial data. Tests for spatial autocorrelation, spatial prediction through kriging, random spatial processes, tests for disease clustering.

PubH 8437. Advanced Bayesian Methods. (3 cr; prereq 8431, Stat 5133, Stat 8311-8312, bio student or #; offered alt yrs) Carlin
Continuation of 8431. Advanced data analytic and computing issues.

PubH 8449. Topics in Biostatistics. (Cr ar; prereq 5450, #)
Studies in special topics for advanced students.

PubH 8450. Research in Biostatistics. (Cr ar)
Opportunities for qualified students to pursue research.
PubH 8750. Seminar: Alternative Patterns of Healthcare. (4 cr; prereq ha or hsrp&a a student or #) Litman
In-depth examination of problems associated with alternative approaches to organization, financing, and delivery of ambulatory care, long-term care, maternal and child care, mental healthcare.

PubH 8760. Topics in Hospital and Healthcare Administration. (3 cr; prereq hsrp & a student)
Independent study under tutorial guidance of selected problems and current issues in health and healthcare.

8761. Readings in Theory and Principles of Hospital and Healthcare Administration. (3 cr; prereq hsrp & a student or #)

PubH 8762. Contemporary Problems of Hospital and Related Health Services. (3 cr) Weckwerth
Current concepts, problems, principles, and future developments in health and healthcare.

PubH 8763. External Forces Affecting Health Services Delivery. (3 cr; prereq advanced statistics, hsrp & a student or #)
Developing of concepts, models, and principles of financing, social policy making, organizing, and human resource development for healthcare delivery, including written papers, oral presentation, and cross examination.

PubH 8765. Seminar: Organization and Management Theory in Healthcare. (3 cr; prereq advanced statistics, hsrp & a student or #)
Organization, managerial, and administrative theories as they apply to contemporary health services research problems.

PubH 8770. Seminar: Health and Human Behavior. (3 cr; prereq 5790 or Soc 5855 or #) Litman
Sociology of health and healthcare: social and personal components of behavior in sickness and health; community health; relationship of social and cultural factors in the organization and delivery of healthcare services.

PubH 8780. Research Practicum. (3 cr per qtr [max 6 cr]; prereq hsrp & a student or #) Weckwerth
Survey and analysis of applying nonparametric statistics to healthcare research.

PubH 8782. Research Practicum. (3 cr per qtr [max 6 cr]; prereq hsrp & a student or #) Litman, Weckwerth, staff
Supervised independent and team research on selected topics and problems in healthcare.

PubH 8790. Seminar: Political Aspects of Healthcare. (3 cr; prereq hsrp & a student or #; offered odd yrs) Litman
Interrelationships among government, politics, and healthcare; political and social basis of health legislation and community decision making in provision and modification of health services.

PubH 8796. Topics in Health Economics. (3 cr; prereq ha student or #) Dowd
General principles of health economics applied to current issues in health. Implications for health policy.

PubH 8801. Seminar: Health Services Policy. (3 cr; prereq hsrp or hsrp&a a student or #) Kralewski, Moscovice
Policy science: Evolution of U.S. health services policy; alternative policy-making models and substantive policy areas.

PubH 8803. Seminar: Long-Term Care Policy. (3 cr; prereq grad-level health policy course or #) R. A. Kane
Long-term care policy for functionally impaired persons, particularly the elderly. Team-taught from a healthcare and social services perspective and grounded in research literature on evidence of program effects. Emphasis on innovative programs addressing current disconnections.

PubH 8805. Applications of Sociological Theories to Health. (3 cr; prereq hsrp or hsrp&a a student or #) Choi
Examines current and historical health events using modern and classic sociological theories. Frameworks to analyze healthcare systems and activities; methods to test theory applicability.