# BIOS 6601 Applied Biostatistics I
(Spring, Summer, Fall)
Applied biostatistical methods including descriptive and statistical inference; odds ratio and relative risk, probability theory, parameter estimation, tests for comparing statistics of two or more groups, correlation and linear regression and overviews of: multiple and logistic regression and survival analysis.

# BIOS 6602 Applied Biostatistics II
(Spring) Prereq: BIOS 6601
A continuation of BIOS 6601 extending the basic principles of descriptive and inferential statistics to modeling more complex relationships using linear regression, logistic regression, and Cox regression. The statistical package SAS is used extensively.

# BIOS 6603 Statistical Computing – SAS
(Spring, Summer, Fall) Prereq/Coreq: BIOS 6601 or equivalent. Restriction: No credit toward degree if BIOS 6603/6604/6605 has been taken previously.
This course will emphasize statistical analysis and data interpretation through use of the SAS statistical computing package. Instruction will be provided through laboratory exercises and interactive demonstrations.

# BIOS 6604 Statistical Computing - SPSS
(Spring, Summer, Fall) Prereq/Coreq: BIOS 6601 or equivalent. Restriction: No credit toward degree if BIOS 6603/6604/6605 has been taken previously.
This course will emphasize statistical analysis and data interpretation through use of the SPSS statistical computing package. Instruction will be provided through laboratory exercises and interactive demonstrations.

# BIOS 6606 Statistics for the Basic Sciences
(Fall) Restrictions: Enrollment in UCD-AMC graduate program or permission of the instructor.
This course provides an overview of fundamental concepts in statistics such as hypothesis testing and estimation, and it provides an overview of statistical methods (for example, regression and analysis of variance) that apply to many areas of science.

# BIOS 6611 Biostatistical Methods I
(Fall) Prereq: Differential calculus
This is a first course in applied statistics covering elementary probability, descriptive, parametric and non-parametric methods for one and two sample estimation/testing and some common simple cases of the univariate general linear model. The statistical package SAS used extensively.

# BIOS 6612 Biostatistical Methods II
(Spring) Prereq: BIOS 6611
This is a continuation of BIOS 6611, covering univariate linear modeling and emphasizing multiple regression and analysis of variance. Logistic regression and methods for correlated data are also covered. Matrix algebra and the statistical package SAS will be used.

# BIOS 6621 Statistical Consulting I
(Fall) Coreq: BIOS 6611 and consent of instructor/program director.
Students will gain experience with statistical consulting and common statistical problems and techniques encountered in consulting through a combination of real examples and consultations with investigators. Emphasis will be on methods for effective consulting and communication with investigators.

# BIOS 6622 Statistical Consulting II
(Spring) Prereq: BIOS 6611; Coreq: BIOS 6612 and consent of instructor/program director.
Students will gain experience with statistical consulting and common statistical problems and techniques encountered in consulting through a combination of real examples and consultations with investigators. Emphasis will be on analytic methods, and on interpretation and presentation of analyses.

# BIOS 6623 Advanced Data Analysis
(Fall) Prereq: BIOS 6601 and BIOS 6602 or BIOS 6611 and BIOS 6612 or permission of instructor.
This course teaches the students how to be effective collaborators. Students will learn to modify project hypotheses to be statistical hypotheses. The students will identify and perform the appropriate data analyses and communicate their analyses both verbally and in writing.
BIOS 6629  Applied Survival and Longitudinal Data Analysis  3.0 cr.
(Fall)  Prereq: BIOS 6612
This course will focus on the application of regression modeling to time-to-event and longitudinal data. Descriptive and inferential methods will be developed for each type of data with an emphasis on graphical inspection at all stages of analysis.

BIOS 6631  Statistical Theory I  3.0 cr.
(Fall)  Prereq: Differential and integral calculus
This course presents an introductory coverage of the theory of discrete and continuous random variables and applications to statistical problems. Topics include probability theory, transformations and expectations, common families of distributions, multiple random variables, and properties of a random sample.

BIOS 6632  Statistical Theory II  3.0 cr.
(Spring)  Prereq: BIOS 6631 and differential and integral calculus
This course covers theoretical and applied fundamentals of statistical inference. The course is a continuation of BIOS 6631. The primary topics include point estimation, hypothesis testing, interval estimation and asymptotic methods.

BIOS 6643  Analysis of Longitudinal Data  3.0 cr.
(Fall)  Prereq: BIOS 6632 and BIOS 6612 or permission of instructor
Theory and application of models appropriate for clustered and longitudinal data are studied. Models for different types of outcome variables (e.g., normal, Poisson, binomial) are covered, with an emphasis on linear mixed models for normal outcomes.

BIOS 6646  Survival Analysis  3.0 cr.
(Spring)  Prereq: BIOS 6611 and BIOS 6631 or instructor permission; Coreq: BIOS 6612 and BIOS 6632 or instructor permission
This course covers the analysis of time-to-event data with applications to biology, medicine, and public health. Nonparametric methods for group comparisons and semi-parametric regression models will be emphasized. Parametric methods and distribution theory for survival analysis will also be included.

BIOS 6648  Design and Conduct of Clinical Research  3.0 cr.
(Fall)  Prereq: BIOS 6601 or BIOS 6611 or consent of instructor. Restriction: Offered in odd years.
Design and conduct of clinical research (including clinical trials). Topics include endpoint specification, sample size evaluation, design software, phase I-IV trials, cross-over studies, factorial designs, randomization, study monitoring and adaptive designs. Intended for non-biostatistics students.

BIOS 6649  Design of Studies in the Health Sciences  3.0 cr.
(Spring)  Prereq: BIOS 6611; Coreq: BIOS 6612 and BIOS 6648
Statistical design of studies in the health sciences including clinical trials, cross-over trials, epidemiological studies. Designs for continuous, binary, count, longitudinal and time-to-event outcomes. Designs for two-group comparisons, k-group comparison, and regression analyses. Group sequential designs for study monitoring.

BIOS 6650  MPH Research Paper  1.0-2.0 cr.
(Spring, Summer, Fall)  Prereq: Permission of department required
Independent research project resulting in a publishable paper. All projects will involve the analysis of primary or secondary data.

BIOS 6651  Masters Research Paper  1.0-6.0 cr.
(Spring, Summer, Fall)
Masters research paper in Biostatistics is completed under this course.

BIOS 6655  Statistical Methods in Genetic Association Studies  3.0 cr.
(Fall)  Prereq: BIOS 6612 or permission of instructor
This course is designed to give an introduction to statistical methods in genetic association studies. Topics include an introduction to population genetics topics relevant to genetic association studies, design strategies, and analysis methods for case-control and family data.

BIOS 6660  Analysis of High-Throughput Data  2.0 cr.
(Spring, Fall)  Prereq: BIOS 6611 or equivalent
This course provides students with hands on experience in analyzing full-scale microarray data using the statistical software R and its packages from the Bioconductor consortium.

BIOS 6670  Special Topics: Biostatistics  1.0-3.0 cr.
(Spring, Summer, Fall).
Special interest areas of current biostatistics research and practice are presented and analyzed. The course format is lecture and discussion or seminar. Check with CSPH website for offerings and topics for this course each semester.

BIOS 6680  SAS Database Design/Management  3.0 cr.
(Fall)
Course introduces students to how SAS can be used to manipulate data and prepare it for analysis. Inputting, recoding, reformatting, subsetting, merging data, and simple reports and SAS Macros. Principles and implementation of database design will also be discussed.
BIOS 6685 Introduction to Public Health Informatics 3.0 cr.
(Spring) Survey course explores public health informatics topics such as current public health informatics initiatives, data sources, public health information systems, standards, health information exchange, system development/procurement, threats to information security and privacy, and decision support in the public health context.

BIOS 6840 Independent Study for MPH in Biostatistics 1.0-3.0 cr. (Spring, Summer, Fall) Course Restrictions: Open only to MPH students; Department consent required. Faculty directed independent study for MPH students in topics related to biostatistics.

BIOS 6841 Independent Study for MS in Biostatistics 1.0-3.0 cr. (Spring, Summer, Fall) Course Restrictions: Open only to MS students or permission of instructor. Resources of the program are available to those MS students who elect to carry out research in chosen topics related to biostatistics. A faculty member will provide guidance throughout the project.

BIOS 6950 Masters Thesis: Biostatistics 1.0-6.0 cr. (Spring, Summer, Fall) Biostatistics Master thesis work is completed under this course.

BIOS 7659 Statistical Methods in Genomics 3.0 cr. (Fall) Prereq: BIOS 6611 or permission of instructor; Cross-listed: CPBS 7659. This course will give an introduction to statistical methods for analyzing molecular sequences and genomic data generated from high throughput technologies such as microarrays and the next generation sequencing.

BIOS 7670 Advanced Special Topics - Biostatistics 1.0-3.0 cr. (Spring, Summer, Fall) Advanced special interest areas of current biostatistics research and practice are presented. The course format is lecture and discussion or seminar. Check the CSPH Website for offerings and topics for this course each semester.

BIOS 7712 Statistical Methods for Correlated Data 1.0 cr. (Spring) Prereq: BIOS 6643. This course will cover statistical models and methods for serially correlated data, including autoregressive models, Markov models, and Markov chain Monte Carlo methods.

BIOS 7713 Statistical Methods for Missing Data 2.0 cr. (Spring) Prereq: BIOS 6643. This course covers methodological research being carried out for longitudinal studies with missing data. Topics include missing data mechanisms, non-ignorable missing data, multiple imputation, mixture models and sample size determinations. Students complete a project applying methods to real datasets.

BIOS 7714 Advanced Statistical Computing 3.0 cr. (Spring, Fall) Prereq: BIOS 6611, BIOS 6612, BIOS 6631, BIOS 6632, or permission of instructor. This course is intended for students in the PhD/Biostatistics program. This course covers the theory & implementation of estimation algorithms used in statistical analysis. Possible topics: numerical analysis (quadrature), optimization (Newton-Raphson, EM algorithm, stochastic optimization), and simulation (pseudo-random numbers, rejection sampling, Markov chain methods).

BIOS 7715 Stochastic Modeling 2.0 cr. (Spring) Prereq: BIOS 6643 and BIOS 6632 or consent of instructor. Intended for Biostatistics PhD students. This course covers theory, application and software for stochastic models commonly used in health sciences, including time to event, recurrent event, multi-type recurrent event, and multi-state models.

BIOS 7716 Topics in Statistical Genetics 1.0 cr. (Spring) Prereq: BIOS 6632 or consent of instructor. Intended for Biostatistics PhD students. This course covers theory of causal models and inference as applied in Statistical Genetics. Specific methods include counterfactuals, Directed Acyclic Graph (DAG), d-separated, G-computation, marginal structural models.

BIOS 7731 Advanced Mathematical Statistics I 3.0 cr. (Fall) Prereq: BIOS 6631 and BIOS 6632 or equivalent. This course will provide the framework for understanding the formal concepts, models and assumptions in statistical theory. Topics include random variables, parameter estimation, measures of performance, hypothesis testing and asymptotic approximations.

BIOS 7732 Advanced Mathematical Statistics II 3.0 cr. (Spring) Prereq: BIOS 7731 or equivalent. The foundations of the theory of point estimation. A basic introduction to measure-theoretic probability, integration, and convergence. Large sample theory, interval estimation, and efficient likelihood estimation.
BIOS 7899  Independent Study for PhD-Biostatistics  1.0-4.0 cr.
(Spring, Summer, Fall)  Prereq: PhD student or permission of instructor
This course is for the PhD student who wishes to pursue one or more topics in depth. These topics may involve biostatistical material, or biological material necessary to the student's biostatistical work. Supervision by a full-time faculty member is necessary.

BIOS 8990  Doctoral Thesis  1.0-10.0 cr.
(Spring, Summer, Fall)
PhD Dissertation work is completed under this course.

COMMUNITY BEHAVIORAL HEALTH SCIENCES

CBHS 6610  Social and Behavioral Factors and Health  3.0 cr.
(Spring, Summer, Fall)
Considers social, behavioral, and cultural factors that affect the health of individuals and populations, and contribute to health disparities. Development, implementation and evaluation of programs and policies to promote and sustain health environments and lifestyles are examined. Online in summer.

CBHS 6611  Foundations of Health Behavior  3.0 cr.
(Spring, Fall)
Course will cover basic theories, concepts, models from a range of social/behavioral disciplines used in public health research and practice. Applications of theoretical frameworks in specifying multiple targets and levels of intervention to public health research will be addressed.

CBHS 6612  Methods in Research and Evaluation  3.0 cr.
(Spring, Fall)  Prereq: BIOS 6601. EPID 6630 recommended prior to this course
Course covers social science research methods, including qualitative/quantitative research designs, data collection, and program evaluation (formative, process, outcome), to assess effectiveness of public health programs.

CBHS 6613  Program Planning and Implementation  3.0 cr.
(Spring, Fall)  Prereq: CBHS 6611 and CBHS 6612
Course examines planning and implementation process with specific focus on health promotion programs. Students will learn about: needs assessments; specifying program objectives; using behavior change theory and evidence-based strategies; developing program, evaluation, adoption, implementation & sustainability plans.

CBHS 6615  Health Literacy & Public Health  2.0 cr.
(Fall)
This course provides an in-depth examination of health literacy...what it is, what implications it has for health, and how healthcare and public health professionals can ensure that treatment and intervention approaches are appropriate for people across health literacy levels.

CBHS 6619  Public Health in the Global Community  3.0 cr.
(Spring, Summer) Restrictions: Offered in odd years.
This course is a study of population health issues around the world. It enables students to (1) assess the current health status of a country and (2) understand and critically appraise the magnitude and likely causes of various health-related conditions.

CBHS 6620  Survey Research  2.0 cr.
(Fall) Restrictions: Offered in odd years.
Course examines survey research methodology, including face-to-face, telephone, mail and Internet surveys, includes: developing and ordering questions; formatting; reliability and validity; sampling; implementation; maximizing response rate; data issues; survey ethics and reporting.

CBHS 6621  Maternal & Child Health  3.0 cr.
(Fall)
Examines nature and scope, including legislation and programs, of health issues facing mothers and children in US. Child health care, newborn screening, children with special needs, prenatal and perinatal care, childhood obesity and maternal mental health are discussed.

CBHS 6622  Qualitative Research Methods  3.0 cr.
(Fall)
This course is designed to teach graduate students how and when to use a variety of qualitative methods in public health research. Students will gain experience and skills in designing, implementing, analyzing, and writing up the results of qualitative research.

CBHS 6623  Nutrition in Global Community  2.0 cr.
(Fall)
Course provides information and opportunities for discussion regarding fundamentals of nutrition and historical and present-day issues related to global nutrition. Agencies that address nutrition issues domestically and globally, including philosophies, missions and strategies employed by these will be presented.
CBHS 6624 Community Health Assessment  
(Spring, Fall) Prereq: EPID 6630; CBHS 6610 or CBHS 6611  
Course teaches how to assess the social, cultural, economic, physical, and environmental components of population health. Students use national/local demographic and health data. Includes working with community clients and off-campus community-based fieldwork.

CBHS 6626 Public Health and Aging  
(Spring) Restrictions: Offered even years.  
Introduces students to 1) factors across the social-ecological spectrum that will affect population patterns of health, disease, and risk factors to older adults; and 2) appropriate responses by public health, aging services and the research community.

CBHS 6628 Tech-Based Health Promotion  
(Spring)  
This course will introduce students to health promotion programs delivered using computers, the internet and mobile phones. Students will learn strategies for designing, implementing and evaluating technology-based programs and will develop a technology-based health promotion program as a class project.

CBHS 6629 Health and Human Rights  
(Spring) Restrictions: Offered in odd years  
Examines the relationship between health and human rights with an emphasis on the principles of confidentiality, autonomy, justice, and beneficence. Using case studies, students will discuss practical, concrete strategies for improving health and well-being while protecting rights.

CBHS 6630 Mental Health  
(Spring)  
This course examines mental health from the public health perspective. Students will learn the epidemiology of and interventions developed to treat major mental disorders and develop critical awareness of how (1) the prison system and (2) disaster affect mental health.

CBHS 6632 Public Health in the Caribbean and Latin America  
(Fall)  
Course provides overview of global health issues related to community health assessment, program planning and implementation, and program evaluation by providing an intensive study of public health in the Caribbean and Latin America.

CBHS 6633 Intensive Study of Public Health Services in Cuba  
(Spring) Restriction: Permission of instructor required.  
Intensive study of public health system in Cuba, with 2-week trip. Examines health status; public health infrastructure; primary care and prevention services; environmental health; program effectiveness; resource allocation; and social, political, and economic factors influencing health/health services delivery.

CBHS 6650 MPH Research Paper  
(Fall, Spring, Summer) Restriction: Permission of department required  
Independent research project resulting in a publishable paper. All projects will involve the analysis of primary or secondary data.

CBHS 6670 Special Topics: Community & Behavioral Health  
(Spring, Summer, Fall).  
Special interest areas of community and behavioral health are analyzed in depth. The course format is lecture and discussion or seminar. Check the CSPH website for offerings and topics for this course each semester.

CBHS 6840 Independent Study- Community & Behavioral Health  
(Fall, Spring, Summer) Restriction: Permission of department required.  
Faculty directed independent study in topics related to community and behavioral health.

CBHS 7010 Latent Variable Methods  
(Fall) Prereq: BIOS 6601 and 6602 or equivalent.  
Covers statistical approaches commonly used in behavioral sciences research, including reliability analysis, exploratory and confirmatory factor analysis, path analysis, structural equation modeling, and advance modeling procedures. Students will analyze data using statistical software, interpret results, and write summaries of findings.

CBHS 7020 DrPH Sem in Leadership – Part I  
(Spring) Prereq: DrPH Seminar; Restriction: Restricted to CSPH DrPH students; Cross-list: EPID 7020  
Leadership topics: vision, values, collaborative action, teamwork, and practices with skills and application at personal, interpersonal and organizational levels necessary for effective leadership. First of two course sequence; completion of CBHS 7020 and CBHS 7022 required for credit and grade in CBHS 7020.
CBHS 7022 DrPH Sem in Leadership - Part II  
(Summer) Prereq: DrPH Seminar and CBHS 7020. Restrictions: Restricted to CSPH DrPH students. Cross-listed: EPID 7020  
Leadership topics: vision, values, collaborative action, teamwork, and practices with skills and application at personal, interpersonal and organizational levels necessary for effective leadership. Second of two course sequence; completion of CBHS 7020 and CBHS 7022 required for credit and grade in CBHS 7022.

CBHS 7030 DrPH Directed Reading  
(Spring, Summer, Fall) Restrictions: Permission of course director and instructor required; Cross-listed: EPID 7030  
This course will prepare DrPH students for comprehensive exams & dissertation research by becoming an expert in their specific areas of research, including understanding of historical development of specific areas, current research findings in the specific areas, & current practice.

CBHS 7670 CBH Advanced Seminar  
(Spring) Prereq: CBHS 6611, 6612, 6613, 6624 or equivalent or permission of instructor; Restrictions: Enrollment in DrPH or permission of instructor  
This doctoral level course will address theory and practice at a level beyond that covered in CBH Master's level courses. Students will acquire advanced skills in developing, testing, and applying health behavior theory and methods to public health problems.

ENVIRONMENTAL AND OCCUPATIONAL HEALTH

EOHO 6540 Principles of Ergonomics  
(Fall) Cross-listed Course: ERHS 5400 (CSU)  
This course will cover principles of occupational ergonomics with a focus on physiological and anatomical capabilities of the worker and interaction with work environment. Review of anthropometry, physiological basis of work, patterns of work, job analysis, workplace and job design.

EOHO 6614 Occupational and Environmental Health  
(Fall Spring)  
Students will learn about the relationship between the environment, workplace and health. Topics include facets of industrial hygiene, air and water pollution, radiation monitoring, toxicology, occupational medicine, policy, environmental justice and sustainability. Methods include risk assessment, GIS and epidemiology.

EOHO 6616 Environmental & Occupational Toxicology  
(Spring) Prereq: EHOH 6614  
Presents an overview of information needed to assess the relationship between the environment, workplace and health. Topics include facets of industrial hygiene, air and water pollution, radiation monitoring, toxicology studies, clinical occupational medicine and biologic monitoring.

EOHO 6617 Environmental & Occupational Epidemiology  
(Spring) Prereq: EHOH 6614, EPID 6630  
Overall goal of course is to provide a background in epidemiology of diseases related to environmental and/or occupational exposures. Application of epidemiologic research methods to determine and prevent such diseases will be discussed.

EOHO 6618 Environmental Health Policy and Practice  
(Spring) Prereq: EHOH 6614  
Examine the environmental policy-making and planning and regulatory and non-regulatory approaches to controlling environmental hazards. A wide variety of topics will be introduced with cross-disciplinary perspectives ranging from water and air to the built environment and climate change.

EOHO 6619 Environmental Exposures and Health Effects  
(Fall) Prereq: EHOH 6614 Coreq: EPID 6630  
This course integrates earth sciences, exposure sciences and biological sciences to understand conditions and circumstances of recent env/occ exposure events, the methods to assess exposures; and related health impacts. Case studies and laboratory exercises are used to guide instruction.

EOHO 6620 Risk Analysis & Decision Making  
(Fall) Prereq: BIOS 6601 or equivalent  
A general survey of risk analysis and risk-based decision making covering the basic components of risk assessment, communication, and management and how they are applied in various fields.

EOHO 6621 GIS for Public Health Research/Practice  
(Summer)  
This course will expose students to the fundamentals of Health Geographic Information Systems (GIS), including hands-on software experience, across a variety of application areas in the health sciences, particularly focusing on integrating GIS technologies appropriately into research design and practice.
**EHOH 6622  Public Health Emergency Prep-Comm Resil**  
(Summer)  
3.0 cr.
This introductory course focuses on the public health role in community disaster preparedness. It explores the relationship between 10 essential public health services and how these services support the ability to prevent, respond, and rapidly recover from public health emergencies.

**EHOH 6623  Geographic Perspective on Global Health**  
(Summer)  
1.0 cr.
This course will review geographic concepts and tools taking a regional, holistic approach to understanding the world's peoples, places, and processes in order to lay a foundation for an improved knowledge of global health.

**EHOH 6627  Water Quality and Public Health**  
(Fall)  
3.0 cr.
This course covers public health concerns involving water quality issues ranging from contamination of drinking water to socio-political issues that impact accessibility to clean water. The fundamental concept is that access to clean water is a basic human right.

**EHOH 6628  Health Protection/Promotion in the Workplace**  
(Fall)  
2.0 cr.  
Restriction: Permission of department required.
Course emphasizes wellness in the workplace to promote health and improve health behaviors among workers. Worksite wellness is an interdisciplinary field in public health practice, including topics such as nutrition, physical activity, safety, leadership, assessment, program development and communication.

**EHOH 6629  Introduction to Occupational Safety and Ergonomics**  
(Spring)  
2.0 cr.  
Prereq: EHOH 6614
This course will form a foundation for understanding of workplace factors important in the prevention of injuries. Students will recognize safety and ergonomic hazards that may lead to injury as well as learn strategies to abate these hazards.

**EHOH 6650  MPH Research Paper**  
(Spring, Summer, Fall)  
1.0-2.0 cr.  
Restriction: Permission of department required.
Independent research project resulting in a publishable paper. All projects will involve the analysis of primary or secondary data.

**EHOH 6670  Special Topics: Environmental & Occupational Health**  
(Spring, Summer, Fall)  
1.0-3.0 cr.
Special interest areas of current environmental and occupational research and practice are presented and analyzed. The course format is lecture and discussion or seminar. Check the CSPH website for offerings and topics for this course each semester.

**EHOH 6710  Disasters, Climate Change and Health**  
(Spring)  
3.0 cr.  
Cross-listed: GEOG 5710
This course provides a review of the impacts of all types of disasters and climate change on human health, using a broad framework of preparedness, mitigation, response, recovery, with an emphasis on vulnerability and adaptation.

**EPIDEMIOLOGY**

**EPID 6601  A History of Public Health**  
(Spring)  
1.0 cr.
This course provides a broad overview of public health history and the political, economic, medical, legal and ethical factors that have shaped the environment in which the public health care professional of today must function.

**EPID 6622  Cancer Prevention and Control**  
(Summer)  
2.0 cr.  
Prereq: EHOH 6614, EPID 6630. Restriction: Offered in even years.
Course provides overview of preventable cancers, epidemiology and contributing factors. Phases of cancer control research and appropriate methodologies are discussed. Basic principles of intervention development are reviewed. Psychosocial issues related to cancer are discussed. Students research topic related to course.

**EPID 6624  Public Health Surveillance**  
(Spring)  
2.0 cr.  
Prereq: EPID 6630; Restriction: Offered in odd years.
This course focuses on characteristics, development, uses, and evaluation of major public health surveillance systems. History, goals, public health authority, analysis, interpretation, dissemination and privacy issues are covered. Key surveillance systems (communicable diseases, vital statistics, injury, cancer) are explored.
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Schedule</th>
<th>Prerequisites</th>
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</thead>
<tbody>
<tr>
<td>EPID 6626</td>
<td>Research Methods in Epidemiology</td>
<td>3.0</td>
<td>(Spring)</td>
<td>BIOS 6601, BIOS 6680, EPID 6630</td>
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<td></td>
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<td>Principles, concepts and methods for conducting ethical, valid and scientifically correct observational studies in epidemiological research are the focus of this class. Lectures and practical experience reinforce hypothesis formulation, study design, data collection and management, analysis and publication strategies.</td>
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<tr>
<td>EPID 6629</td>
<td>Clinical Epidemiology</td>
<td>2.0</td>
<td>(Summer)</td>
<td>EPID 6630; Restriction: Offered in odd years.</td>
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<td>This course provides an overview of the design, conduct and appraisal of clinical research. Topics include study design, issues in randomized trials, measurement error, assessment of diagnostic and screening tests, measurement of health-outcomes, meta-analysis and use of questionnaires.</td>
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<tr>
<td>EPID 6630</td>
<td>Epidemiology</td>
<td>3.0</td>
<td>(Spring, Fall)</td>
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<td>This course provides an introduction to descriptive and analytic methods in epidemiology and their application to research, preventive medicine and public health practice.</td>
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<tr>
<td>EPID 6631</td>
<td>Analytical Epidemiology</td>
<td>3.0</td>
<td>(Fall)</td>
<td>EPID 6630, BIOS 6601, BIOS 6602</td>
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<td>Course emphasizes analytical foundations of epidemiology and its application to etiologic studies and public health practice. Topics include determining rates of disease occurrence, assessing exposure disease relationships, stratified analysis, measurement error and sampling. Final project requires analysis/interpretation of epidemiologic data.</td>
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<tr>
<td>EPID 6632</td>
<td>CU Advanced Epidemiology</td>
<td>3.0</td>
<td>(Spring)</td>
<td>EPID 6630, EPID 6631, BIOS 6601</td>
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<td>This is an advanced course on epidemiologic methods designed to improve the student's ability to conduct and interpret observational epidemiologic studies.</td>
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<tr>
<td>EPID 6635</td>
<td>Communicable Disease Epidemiology</td>
<td>2.0</td>
<td>(Spring)</td>
<td>EPID 6630.</td>
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<td>This course considers the epidemiology of selected communicable diseases. Methods for their prevention and control, and assessment of these methods will be treated primarily through case studies.</td>
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<tr>
<td>EPID 6636</td>
<td>Chronic Disease Epidemiology</td>
<td>3.0</td>
<td>(Fall)</td>
<td>EPID 6630; Restriction: Offered in odd years.</td>
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<td>The major chronic diseases of Western countries will be reviewed including heart disease, cancer, stroke, diabetes, neurological diseases, and selected other conditions. Factual information about epidemiology of these diseases will be provided with the discussion of methodological issues which arise.</td>
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<tr>
<td>EPID 6637</td>
<td>Injury &amp; Violence Epidemiology and Prevention</td>
<td>2.0</td>
<td>(Fall)</td>
<td>EPID 6630 or permission of instructor; Restrictions: Offered in even years.</td>
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<td>Students will learn the major causes of and risk factors for injuries and violence identify and use key data sources to characterize injury problems, develop and evaluate injury control and prevention strategies, critically analyze literature and explore injury related research questions.</td>
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<tr>
<td>EPID 6638</td>
<td>Cardiovascular Epidemiology</td>
<td>1.0</td>
<td>(Fall)</td>
<td>EPID 6630.; Restriction: Offered even years.</td>
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<td>Course provides practical introduction to current concepts, research methods, unanswered questions in epidemiology of cardiovascular disease. It prepares students for independent work in academic/nonacademic settings in the area of cardiovascular disease surveillance, etiology and outcome research.</td>
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<tr>
<td>EPID 6640</td>
<td>Investigation of Disease Outbreaks</td>
<td>2.0</td>
<td>(Summer)</td>
<td>EPID 6630.</td>
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<td>The investigation of infectious disease outbreaks requires a range of public health and epidemiologic tools. Students apply descriptive and analytical epidemiologic methods to the detection, investigation and control of foodborne disease outbreaks.</td>
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<tr>
<td>EPID 6641</td>
<td>Epidemiology of Foodborne and Diarrheal Diseases</td>
<td>2.0</td>
<td>(Fall)</td>
<td>EPID 6630.</td>
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<td>Agents causing foodborne and diarrheal diseases have different clinical presentations, environmental niches, and modes of transmission. Students will learn about important foodborne agents, surveillance and epidemiological methods used to investigate risk factors for disease, and prevention and control strategies.</td>
</tr>
<tr>
<td>EPID 6642</td>
<td>Genetics in Public Health</td>
<td>2.0</td>
<td>(Spring)</td>
<td>EPID 6630; Restriction: Offered odd years.</td>
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<td>Course introduces public health and research applications in genetics. Topics will include population genetics, genetic epidemiologic principles, screening, ethics, and the effect of genetics on population health. Interactive discussions and lectures will be based on current topics from literature.</td>
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<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
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<tr>
<td>EPID 6644</td>
<td>Maternal Child Health Epidemiology</td>
<td>3.0 cr.</td>
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<td>(Fall)</td>
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<td></td>
<td>The purpose of this course is to train public health students to use epidemiologic tools for the appropriate interpretation of data and information to drive MCH program assessment, planning, evaluation and policy development.</td>
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<tr>
<td>EPID 6646</td>
<td>Introduction to Systematic Reviews</td>
<td>1.0 cr.</td>
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<td></td>
<td>(Summer) Prereq: EPID 6630 or permission of instructor; Restriction: Offered in odd years</td>
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<td>Introduces methods of conducting systematic reviews to identify the best available evidence about health and public health interventions. Topics will include the design and implementation of reviews, publication bias, search strategies, meta-analysis, and reporting results through the Cochrane Library.</td>
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<tr>
<td>EPID 6650</td>
<td>MPH Research Paper</td>
<td>1.0-2.0 cr.</td>
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<td>(Spring, Summer, Fall) Restriction: Permission of department required</td>
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<td></td>
<td>Independent research project resulting in a publishable paper. All projects will involve the analysis of primary or secondary data.</td>
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<tr>
<td>EPID 6651</td>
<td>Masters Research Paper</td>
<td>1.0-6.0 cr.</td>
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<td>(Spring, Summer, Fall)</td>
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<td></td>
<td>Masters research paper in epidemiology is completed under this course.</td>
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<tr>
<td>EPID 6670</td>
<td>Special Topics: Epidemiology</td>
<td>1.0-3.0 cr.</td>
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<td>(Spring, Summer, Fall) Restrictions: Permission of instructor.</td>
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<td></td>
<td>Special interest areas of current epidemiology research and practice are presented and analyzed. The course format is lecture and discussion or seminar. Check the CSPH website for offerings and topics for this course each semester.</td>
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<tr>
<td>EPID 6680</td>
<td>Independent Study: Epidemiology</td>
<td>1.0-3.0 cr.</td>
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<td>(Spring, Summer, Fall) Restrictions: Permission of department required</td>
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<td></td>
<td>Faculty directed independent study in topics related to epidemiology.</td>
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<tr>
<td>EPID 6690</td>
<td>Masters Thesis</td>
<td>1.0-6.0 cr.</td>
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<td>(Spring, Summer, Fall)</td>
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<td></td>
<td>Epidemiology thesis work is completed under this course.</td>
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<tr>
<td>EPID 7020</td>
<td>DrPH Sem in Leadership- Part I</td>
<td>1.0 cr.</td>
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<td></td>
<td>(Spring) Prereq: DrPH Seminar; Restrictions: Restricted to CSPH DrPH students; Cross-listed: CBHS 7020.</td>
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<td></td>
<td>Leadership topics: vision, values, collaborative action, teamwork, and practices with skills and application at personal, interpersonal and organizational levels necessary for effective leadership. First of two course sequence; completion of EPID 7020 and EPID 7022 required for credit and grade in EPID 7020.</td>
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<tr>
<td>EPID 7022</td>
<td>DrPH Sem in Leadership- Part II</td>
<td>2.0 cr.</td>
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<td></td>
<td>(Summer) Prereq: DrPH Seminar and EPID 7020. Restrictions: Restricted to CSPH DrPH students. Cross-listed: CBHS7022</td>
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<td></td>
<td>Leadership topics: vision, values, collaborative action, teamwork, and practices with skills and application at personal, interpersonal and organizational levels necessary for effective leadership. Second of two course sequence; completion of EPID 7020 and EPID 7022 required for credit and grade in EPID 7022.</td>
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<tr>
<td>EPID 7030</td>
<td>DrPH Directed Reading</td>
<td>1.0-2.0 cr.</td>
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<td>(Spring, Summer, Fall) Restriction: Permission of course director and instructor required; Cross-listed: CBHS 7030</td>
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<td>This course will prepare DrPH students for comprehensive exams and dissertation research by becoming an expert in specific areas of research, including understanding of the historical development of specific areas, current research findings in specific areas, and current practice.</td>
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<tr>
<td>EPID 7605</td>
<td>Research Methods with Secondary Data Sources</td>
<td>3.0 cr.</td>
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<td>(Spring) Restriction: Offered in even years</td>
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<td></td>
<td>Principles and methods for research design and analysis of secondary data sources including those designed for surveillance and those derived from practice. Students evaluate whether specific research questions can be answered with secondary data.</td>
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<tr>
<td>EPID 7615</td>
<td>Pharmacoepidemiology</td>
<td>2.0 cr.</td>
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<td></td>
<td>(Fall) Prereq: EPID 6630, 2 course biostatistics series (BIOS 6601-6602 or BIOS 6611-6612); Restrictions: Offered in odd years, NA for 2 credit section.</td>
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<td>Topics include: The FDA approval process, mechanisms of adverse drug effects, methods and data systems for studying drug-effect relationships, and evaluating published pharmacoepidemiology studies.</td>
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<tr>
<td>EPID 7640</td>
<td>Genetic Epidemiology</td>
<td>1.0 cr.</td>
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<td>(Spring) Prereq: EPID 6630, BIOS 6601; Restriction: Offered in odd years.</td>
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<td>This course will be a problem-based class, covering basic genetic principles and teaching epidemiologic methods employed in the investigation of the genetic susceptibility to chronic disease.</td>
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</table>
EPID 7911  Epidemiologic Field Methods  1.0-4.0 cr.
(Spring, Summer, Fall). Prereq. EPID 6626, EPID 6630, EPID 6631, EPID 6632, BIOS 6611, BIOS 6612. Restriction: Enrollment in Epidemiology PhD program or permission of instructor. PhD students have the opportunity to work with faculty on current epidemiologic projects to develop skills in field research, proposal writing, budget development, staff hiring and training, protocol and instrument development and implementation, and specific methods topics.

EPID 7912  Developing a Research Grant  3.0 cr.
(Spring) Prereq: Enrollment in a doctoral program and permission of Instructor. PhD/DrPH students prepare high quality, successful, research grant applications through development of cogent research questions & appropriate study designs. Students familiarize themselves with grant writing and review process and improve critical thinking skills and quality of scientific writing.

EPID 7915  Analytic Methods in Epidemiology  1.0-4.0 cr.
(Spring, Summer, Fall) Prereq: EPID 6626, EPID 6630, EPID 6631, EPID 6632, BIOS 6601/6602 or BIOS 6611/6612. Advanced treatment of techniques in the analysis of epidemiological studies, including longitudinal, time-dependent, survival data, casualty, missing data, etc. Students will analyze data sets currently on file using contemporary epidemiological methods.

EPID 8990  Doctoral Thesis  1.0-10.0 cr.
(Spring, Summer, Fall) Restriction: Permission of Instructor. Doctoral thesis work Epidemiology.

HEALTH SYSTEMS, MANAGEMENT AND POLICY

HSMP 6602  Health Equity  2.0 cr.
(Fall) Addresses health inequities affecting the poor, racial and ethnic minorities, prisoners, rural residents, disabled, GLBTI and other populations. The course studies: 1) measurement/data issues in health inequity research; 2) institutionalized, personally mediated and internalized causes; and 3) solutions/challenges.

HSMP 6603  Health Systems and Management  3.0 cr.
(Spring, Summer, Fall) Provides students an overview of the U.S. healthcare systems. Students learn about the organization, management and financing of the U.S. Healthcare System, including provider payment mechanisms, health insurance theory and practice and the financing and organization of public programs.

HSMP 6604  Health Care Economics  3.0 cr.
(Fall) Uses economic theory and empirical research to examine how our economy utilizes scarce resources to produce, distribute and consume health and medical services. Employs demand, production and cost theories, markets and cost-effectiveness to analyze medical service sectors and policy interventions.

HSMP 6605  Health Policy  3.0 cr.
(Spring) Prereq: HSMP 6603 Course focuses on important U.S. health policy issues and analysis, implementation, and communication skills for the practice of health policy. Evaluation is based on in-class labs, group projects, and analysis paper of a health policy case example.

HSMP 6606  Public Health Administration  2.0 cr.
(Fall) Prereq: HSMP 6603 Course provides an introduction to public health management and administration. Components aim to stimulate interactions around important problems and issues including managerial decision-making and increasing practical knowledge, tools, and strategies required by organizational decision-makers. Business plans are produced.

HSMP 6607  Current Legal Issues in Health Care  2.0 cr.
(Spring) Course trains students in foundational Constitutional principles that guide public health law at the state and federal levels. It also explores cornerstone public health law problems and encourages analysis of contemporary legal questions in public health and health care administration.

HSMP 6608  Ethical and Legal Issues in Public Health  2.0 cr.
(Fall) Course explores the legal and ethical dimension of public health. It focuses on topics that generate legal and ethical controversies, including governmental duties to protect citizens, nature and extent of the government’s ability to regulate conduct, and responses to epidemics.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>HSMP 6609</td>
<td>Cost Benefit and Effectiveness in Health</td>
<td>3.0 cr.</td>
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<tr>
<td>(Spring)</td>
<td>Prereq: HSMP 6603 and HSMP 6604 or permission of instructor</td>
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<td></td>
<td>Introduces students to the basics of economic evaluations of health care interventions or technology. Economic evaluations provide a method to assimilate different cost and health outcomes associated with medical treatments into a common metric.</td>
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<tr>
<td>HSMP 6610</td>
<td>Health Care Financial Management</td>
<td>3.0 cr.</td>
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<tr>
<td>(Spring, Fall)</td>
<td>Prereq: HSMP 6603, HSMP 6604</td>
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<td></td>
<td>Students will acquire the tools to incorporate financial, strategic, and mission-based objectives into capital investment decisions. The material also enables students to assess financing options and understand asset valuation techniques, create financial statements and perform pro-forma financial analyses.</td>
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<tr>
<td>HSMP 6611</td>
<td>Strategic Management in Health Care</td>
<td>2.0 cr.</td>
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<tr>
<td>(Fall)</td>
<td>Prereq: Must have completed HSMP 6603</td>
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<td>Students will learn the principles of competition, strategic analysis and management, and will develop important skills necessary to analyze the healthcare environment and adapt strategies, systems, products, services and culture to effectively manage healthcare organizational change and renewal.</td>
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<tr>
<td>HSMP 6612</td>
<td>Principles of Healthcare Management</td>
<td>2.0 cr.</td>
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<tr>
<td>(Fall)</td>
<td>Prereq: HSMP 6603</td>
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<td>Course develops business knowledge and skills to work effectively in healthcare. Covers staffing/human resource issues along with QA and quality improvement approaches and tools to analyze real world data. Through original cases, the establishment of a healthcare firm is explored.</td>
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<tr>
<td>HSMP 6614</td>
<td>MCH Program Management &amp; Policy Analysis</td>
<td>3.0 cr.</td>
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<td>(Fall)</td>
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<td>Students will learn and apply program management concepts and policy analysis methods to choose among potential policy and programmatic solutions to improve the health outcomes of pregnant women, infants, children, and children with special health care needs.</td>
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<tr>
<td>HSMP 6615</td>
<td>Current Global Health Policy Issues</td>
<td>2.0 cr.</td>
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<td>(Summer)</td>
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<td>Students will identify major actors and their roles in global health policy; discuss major policy issues focusing on poverty reduction using case study examples; and write a health policy analysis paper for the assessment in this course.</td>
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<tr>
<td>HSMP 6630</td>
<td>Grant Writing for Public Health Professionals</td>
<td>2.0 cr.</td>
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<tr>
<td>(Spring)</td>
<td>Prereq: BIOS 6601, EPID 6630, and the core course within the student’s MPH concentration</td>
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<td>Course focuses on the basic skills required to develop, fund and evaluate data-driven, evidence-based public health programs, interventions and projects.</td>
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<tr>
<td>HSMP 6633</td>
<td>Management of Non-Profit Organizations in Public Health</td>
<td>2.0 cr.</td>
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<tr>
<td>(Spring)</td>
<td>Prereq: HSMP 6603</td>
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<td></td>
<td>Course introduces nonprofit theory, focuses on nonprofit leadership and management, and explores nonprofit innovation and change within the context of public health. A highly practical and applied approach for students working in the nonprofit sector or with nonprofit partners.</td>
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<tr>
<td>HSMP 6650</td>
<td>MPH Research Paper</td>
<td>1.0-2.0 cr.</td>
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<tr>
<td>(Spring, Summer, Fall)</td>
<td>Restriction: Permission of department required</td>
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<td></td>
<td>Independent research project resulting in a publishable paper. All projects will involve the analysis of primary or secondary data.</td>
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<tr>
<td>HSMP 6670</td>
<td>Special Topics: Health Systems, Management and Policy</td>
<td>1.0-3.0 cr.</td>
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<td>(Spring, Summer, Fall)</td>
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<td></td>
<td>Special interest areas of current health systems, management, and policy research and practice are presented and analyzed. The course format is lecture and discussion or seminar. Check with CSPH website for offerings and topics for this course each semester.</td>
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<tr>
<td>HSMP 6840</td>
<td>Independent Study: Health Systems, Management and Policy</td>
<td>1.0-3.0 cr.</td>
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<tr>
<td>(Spring, Summer, Fall)</td>
<td>Restriction: Department consent required</td>
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<td></td>
<td>Faculty directed independent study in topics related to health systems, management and policy.</td>
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<tr>
<td>HSMP 7010</td>
<td>Foundations in Health Services Research</td>
<td>1.0 cr.</td>
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<td>(Spring, Fall)</td>
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<td>Introduces students to the academic health services research literature. This seminar course requires students to participate in small seminars led by faculty on different health services research topics plus attending larger HSMP departmental seminars. Evaluation is based on weekly papers.</td>
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<tr>
<td>HSMP 7607</td>
<td>Methods in Health Services Research I</td>
<td>3.0 cr.</td>
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<td>(Spring)</td>
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<td>Introduces students to the basics of statistical and econometric tools in health services research. Ordinary least squares, Logistic, and Probit regressions will be described and their regression assumptions will be discussed. Stata software will be used in this course.</td>
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<td>Course Code</td>
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<tr>
<td>HSMP 7609</td>
<td>Methods in Health Services Research II</td>
<td>3.0 cr.</td>
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**PUBLIC HEALTH – GENERAL**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Prerequisites</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>PUBH 6600</td>
<td>Foundations in Public Health</td>
<td>2.0 cr.</td>
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<td>This course examines the historical and conceptual bases of public health, the key issues and problems faced by the public health system, and the tools available for the protection and enhancement of the public’s health.</td>
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<tr>
<td>PUBH 6606</td>
<td>MPH Practicum</td>
<td>2.0 cr.</td>
<td>PUBH 6600 and successful completion of 3 additional core courses; Restriction: Student must be in good academic standing to enroll. Only open to MPH Students. Instructor consent required.</td>
<td>All MPH concentrations require students to successfully complete a practicum in which the student demonstrates competencies and integrates knowledge. It is intended to enrich student's experience by providing an opportunity to apply theory and skills in a public health setting.</td>
</tr>
<tr>
<td>PUBH 6626</td>
<td>International Travel and Health</td>
<td>1.0 cr.</td>
<td>Fall Restriction: Permission of the instructor required for non-degree/non-certificate students.</td>
<td>This course addresses personal and public health issues and risks characteristic of international travel. Topics include pre-travel preparation, common health risks of travel, preventive health, safety and security measures, emergency management of common health problems, and management of group health.</td>
</tr>
<tr>
<td>PUBH 6651</td>
<td>MPH Research Paper</td>
<td>1.0-2.0 cr.</td>
<td>BIOS 6601, CBHS 6610 or CBHS 6611, EHOH 6614, HSMP 6603, EPID 6630, PUBH 6600 and permission of instructor.</td>
<td>Independent research project resulting in a publishable paper. All projects will involve the analysis of primary or secondary data.</td>
</tr>
<tr>
<td>PUBH 6670</td>
<td>Special Topics: Public Health</td>
<td>1.0-3.0 cr.</td>
<td>Spring, Summer, Fall</td>
<td>Special interest areas of current public health research and practice are presented and analyzed. The course format is lecture and discussion or seminar. Check the CSPH website for offerings and topics for this course each semester.</td>
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<tr>
<td>PUBH 6690</td>
<td>Global Inequality and Change</td>
<td>3.0 cr.</td>
<td>Fall Prereq: SOC 500</td>
<td>Major issues in global inequality and change from a historical and contemporary perspective.</td>
</tr>
<tr>
<td>PUBH 6840</td>
<td>Independent Study: Public Health</td>
<td>1.0-3.0 cr.</td>
<td>Spring, Summer, Fall Restriction: Permission of department required</td>
<td>Faculty directed independent study in topics related to public health.</td>
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<tr>
<td>PUBH 6842</td>
<td>DrPH Seminar</td>
<td>1.0 cr.</td>
<td>Spring, Summer, Fall</td>
<td>This doctoral level course will address theory and practice at a level beyond that covered in Master's level courses. Students will acquire advanced skills in developing, testing, and applying theory and methods to public health problems.</td>
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<tr>
<td>PUBH 6850</td>
<td>DrPH Practicum</td>
<td>2.0-4.0 cr.</td>
<td>Spring, Summer, Fall Restriction: Permission of instructor</td>
<td>DrPH Practicum is minimum 240 hours field experience under joint direction of CSPH Faculty mentor and practicing professional in community with leadership experience in public health agency. Written report/oral presentation specifying activities/products/outcomes of experience required upon practicum hours completion.</td>
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<tr>
<td>PUBH 6955</td>
<td>MPH Capstone Project</td>
<td>2.0 cr.</td>
<td>BIOS 6601, CBHS 6610 or CBHS 6611, EHOH 6614, EPID 6630, HSMP 6603, and permission of instructor.</td>
<td>Self-directed student project experience course, intended to connect all aspects of curriculum, including seminars, lectures, course work, independent studies, projects &amp; practice experiences to demonstrate competency in student’s chosen concentration. Class concludes with student presentations at public health forum.</td>
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<tr>
<td>PUBH 6956</td>
<td>Continued MPH Studies</td>
<td>1.0 cr.</td>
<td>Spring, Summer, Fall</td>
<td>Prereq: PUBH 6955 and permission of instructor. Continuation of MPH study experience.</td>
</tr>
</tbody>
</table>

12 Colorado School of Public Health
COMMUNITY HEALTH

CHBH 5000  Stress Management  3.0 cr.
(Spring, Summer, Fall)
A holistic approach to stress management, with cognitive and theoretical knowledge and stress reduction techniques to
prevent or alleviate physical symptoms of stress.

CHBH 5050  Health Communications and the Media  3.0 cr.
(Fall)
Focuses on the design, production, evaluation and acquisition of appropriate media and materials for health
education/promotion programs.

CHBH 5080 UNC Special Topics  3.0 cr.
(Spring, Summer, Fall)
This course will be a forum to discuss important topics related to community and behavioral health. Such topic areas can
include: preparation for field work in culturally diverse communities, historical trauma and health and others. Topics
offered will change by semester, see specific schedule.

CHBH 5090  Behavior Change Theories  3.0 cr.
(Fall)
Review theories of behavior and behavior change as they relate to current health issues. Health behavior change models
will be examined and applied.

CHBH 5100 International Health: Cross Cultural Comparisons  3.0 cr.
(Spring, Summer, Fall) Restriction: Only offered select semesters – please check CSPH schedule of classes each
semester to verify offering.
This class explores the multicultural aspects of health and international comparisons of various health indicators.
Students will examine specific health problems, and the nature of health care delivery worldwide.

CHBH 5250 Contemporary Issues in School Health  3.0 cr.
(Fall) Restriction: Offered in odd years.
This course examines the relationship between child/adolescent health and their school experience. The course will be
organized around the eight components of the Coordinated School Health Program Model. Current issues and
approaches to school health will also be presented

CHBH 5300 Strategies for Community Health Promotion  3.0 cr.
(Spring)
This course examines the effectiveness of a wide range of community strategies used in health promotion/disease
prevention programs.

CHBH 5320 Physical Activity and Public Health  3.0 cr.
(Spring) Restriction: Offered in even years.
An examination of physical activity and the public health implications of physical inactivity. Emphasis will be placed on
epidemiologic evidence of physical activity benefits and chronic disease prevention.

CHBH 5330 Physical Activity Interventions in the Community  3.0 cr.
(Spring) Restriction: Offered in odd years.
This course is designed to acquaint graduate students with theory-based interventions to increase participation in physical
activity. The course will cover a variety of evidence-based approaches to physical activity promotion targeting various
sub-populations and settings within the community.

CHBH 5350 Effective Community Health Engagement  3.0 cr.
(Fall) Prereq: CHBH 5300 or consent of instructor
This course will enable students to develop skills necessary to effectively work with and within a variety of communities to
promote public health. Topics include historical impacts, effective theories and strategies, appropriate tools to consider
and others.

CHBH 5500  Environmental Health  3.0 cr.
(Spring)
Investigate and discuss the relationships of environmental health problems to human health and welfare. Include sources
of these problems, their recognition and control and current research studies.

CHBH 5750  Public Health Issues in Reproductive Health  3.0 cr.
(Summer)
This course will examine reproductive health issues that impact society and public health. Topics include pregnancy,
childbirth, teen pregnancy, sexually transmitted infections, birth control, infertility, abstinence only educational programs
and comprehensive sexuality education.
CHBH 6100  Program Planning and Evaluation  
(Fall) Prereq: CHBH 5090 or consent of instructor.
Theories and practices of program planning and evaluation including needs assessment, planning approaches, selection of strategies, data collection and analysis, evaluation design, program implementation and utilization of evaluation data.

CHBH 6200  UNC Epidemiology  
(Spring) Prereq: SRMS 6170 or consent of instructor.
Epidemiological principles analyzed with an emphasis on selected topical issues, infectious and chronic/degenerative diseases, research design and analysis. Practical applications of statistical and epidemiological methods.

CHBH 6220 Directed Studies  
(Spring, Summer, Fall) Restriction: Instructor consent required
Individualized investigation under the direct supervision of a faculty member. Minimum of 37.5 clock hours required per credit hour. Repeatable. Maximum concurrent enrollment is two times.

CHBH 6350 Policy, Advocacy, Leadership & Management in Community Health  
(Fall) Prereq: PUBH 6600 or consent of instructor.
Health policy, advocacy, leadership and management is a multidisciplinary field of public health practice that is concerned with the delivery, quality and costs of public health services.

CHBH 6860  Master of Public Health Capstone Project  
(Spring, Summer, Fall) Prereq: CHBH 6930 or concurrent; Restrictions: Consent of instructor
Independent project in which student demonstrates public health competencies. Includes public presentation of project.

CHBH 6930  Master of Public Health Practicum  
(Spring, Summer, Fall) Prereq: CHBH 6100 and consent of instructor.
Theory and skills applied in a public health setting. Students must complete a minimum of 150 practicum field hours incorporating core competencies.

CHBH 6990 Thesis  
(Spring, Summer, Fall)  
Optional supervised research project for Master of Public Health candidates in Health Education. Content to be jointly determined by student and sponsoring professor.

GERONTOLOGY

GERO 5550  Grant Development and Administration  
(Spring)
Overview of proposal planning and grant development process. Application of skills in identifying funding options, program planning, proposal writing, budgeting and establishing controls for grant administration.

GERO 5600 Community Resources for the Elderly  
(Fall)
Community-based learning required. Review needs of older persons in the community and evaluate the continuum of long-term care resources available, service gaps, program models, and funding mechanisms.

GERO 6250 Psychosocial Aspects of Aging  
(Spring)
Later life issues are explored using an ecological approach that highlights the benefits and consequences of aging for the individual, family, and society.

GERO 6350 Social Policies of Aging  
(Spring)
This course covers social policy and policy making at federal, state, and local levels. The history and development of key social policies that affect older Americans are reviewed, as are developments in regard to policies benefiting the elderly population.

GERO 6400 Health Aspects of Aging  
(Fall)
This course examines contemporary physical and mental health concerns of older adults. Course activities examine health and aging, and develop skills in presenting information to older adults, caretakers, academic peers and professionals who work with older adults.
### HUMAN REHABILITATIVE SERVICES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HRSS 6100</td>
<td>Interpretation and Evaluation of Behavioral Research</td>
<td>3.0 cr.</td>
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<td>(Spring)</td>
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<tr>
<td></td>
<td>Understanding of applications of appropriate statistical techniques and necessary skills for interpretation and evaluation of research in human services. Emphasizes basic concepts, design and utilization of behavioral research.</td>
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</table>

### STATISTICS AND RESEARCH METHODS

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRMS 6000</td>
<td>Introduction to Graduate Research</td>
<td>3.0 cr.</td>
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<td>(Spring, Summer, Fall)</td>
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<tr>
<td></td>
<td>Principles of research, design and analysis. Read and critique published research. Required of all first year graduate students except in those departments with substitutes. Taught every semester.</td>
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<tr>
<td>SRMS 6170</td>
<td>Biostatistics and Health Data Analysis</td>
<td>3.0 cr.</td>
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<td>(Fall)</td>
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<td></td>
<td>Students will gain an understanding of biostatistical methods. This course enables students to develop the skills and knowledge necessary to manage and analyze health care and biomedical data.</td>
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### COLORADO SCHOOL OF PUBLIC HEALTH- COLORADO STATE UNIVERSITY

### AGRICULTURE

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>AGRI 5000</td>
<td>Advanced Issues in Agriculture</td>
<td>3.0 cr.</td>
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<tr>
<td></td>
<td>(Fall)</td>
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<tr>
<td></td>
<td>Scientific, technical, cultural and social issues facing agriculture, and their interrelationships.</td>
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<tr>
<td>AGRI 5460</td>
<td>Principles of Cooperative Extension</td>
<td>3.0 cr.</td>
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<tr>
<td></td>
<td>(Spring, Summer, Fall)</td>
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<tr>
<td></td>
<td>Traditional and contemporary delivery systems of Cooperative Extension emphasizing structures of non-formal education.</td>
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<tr>
<td>AGRI 5470</td>
<td>Delivery of Co-operative Extension Programs</td>
<td>4.0 cr.</td>
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<tr>
<td></td>
<td>(Spring) Prereq: Written consent of instructor. Methods, techniques, and procedures in planning, implementation, and deliver of Cooperative Extension programs.</td>
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<tr>
<td>AGRI 6340</td>
<td>Animal Production Systems</td>
<td>3.0 cr.</td>
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<td>(Spring, Fall)</td>
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<tr>
<td></td>
<td>Developing animal management systems for a variety of animal species in a forage-based environment.</td>
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<tr>
<td>AGRI 6370</td>
<td>Understanding Policy &amp; Emerging Issues</td>
<td>3.0 cr.</td>
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<td>(Spring, Fall)</td>
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<td></td>
<td>Origination, purposes and effects of policy on land-based enterprises; policy effects on management decisions.</td>
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<tr>
<td>AGRI 6950</td>
<td>Independent Study- Agriculture</td>
<td>1.0-18.0 cr.</td>
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<td>(Spring, Summer, Fall)</td>
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<tr>
<td></td>
<td>Independent study in agriculture.</td>
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### ANIMAL SCIENCES

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>ANEQ 5480</td>
<td>Issues in Manure Management</td>
<td>4.0 cr.</td>
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<td></td>
<td>(Fall) Prereq: CHEM 100</td>
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<tr>
<td></td>
<td>Manure management practices maximizing benefits to soils and crops while minimizing hazards to air and water quality and complying with regulation.</td>
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<tr>
<td>ANEQ 5670</td>
<td>HAACP Meat Safety</td>
<td>2.0 cr.</td>
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<td>(Spring) Prereq: ANEQ 460</td>
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<td>Control of health problems in meat products through hazard analysis critical control point (HAACP) and total quality management (TQM) practices.</td>
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<tr>
<td>ANEQ 6600</td>
<td>Topics in Meat Safety</td>
<td>1.0 cr.</td>
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<tr>
<td></td>
<td>(Fall) Prereq: ANEQ 5670</td>
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<tr>
<td></td>
<td>Topics of current concern in meat safety.</td>
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<tr>
<td>ANEQ 6760</td>
<td>Molecular Approach to Food Safety</td>
<td>3.0 cr.</td>
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<td>(Spring) Prereq: MIP 300 and MIP 301 or MIP 334 and MIP 335.</td>
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<tr>
<td></td>
<td>Molecular subtyping, tracking, and control; molecular ecology and evolution of food-borne pathogens; molecular pathogenesis of food-borne diseases.</td>
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</tr>
</tbody>
</table>
### ANTHROPOLOGY

**ANTP 5300** Human Environ Interactions 3.0 cr.  
(Fall, Spring)  
Paradigms and concept in ecological anthropology with an emphasis on adaptation and resilience.

**ANTP 5320** Culture of Disaster 3.0 cr.  
(Fall, Spring)  
This course is designed to introduce students to the way social scientists study disaster.

**ANTP 5400** Medical Anthropology 3.0 cr.  
(Spring) Prereq: Graduate standing.  
Cultural and biocultural approaches to health, illness, and the body; theory and application in medical anthropology.

**ANTP 5450** Culture and Mental Health 3.0 cr.  
(Fall)  
Anthropological contributions to cross-cultural study of mental health; indigenous peoples’ health/healing; integration of theory and method. Theories discussed illuminate dynamics of health and healing as they are shaped and impacted by culture, poverty, gender, and political marginality.

**ANTP 5470** Mind, Medicine and Culture 4.0 cr.  
(Spring) Prereq: Graduate standing.  
Cultural-psychological influences on health and healing; mind-body medicine; complementary and alternative medicine; Indigenous and spiritual healing.

**ANTP 5710** Anthropology and Global Health 3.0 cr.  
(Fall) Prereq: Graduate Standing  
Global health concerns and problems including poverty, urbanization, malnutrition, diet, war and refugees, climate, and environment.

**ANTP 6950** Independent Study: Anthropology 1.0-18.0 cr.  
(Summer) Prerequisite: Graduate Standing.  
Independent Study: Anthropology.

### AGRICULTURAL RESOURCE ECONOMICS

**AREC 5660** Current Economic Issues in Developing Countries 3.0 cr.  
(Spring) Prereq: Statistics required; Economics coursework preferred, but not required  
The course provides an overview of the current economic challenges and opportunities facing developing countries and, often, non-urban US communities. Topics include sustainability, development, agriculture, forestry, tourism, poverty, fragility and the access/distribution of opportunity.

**AREC 5720** Social Benefit-Cost Analysis 3.0 cr.  
(Fall) Prereq: 300-level microeconomics course required  
Theory, application of concepts relating to social benefit cost analysis of public projects, policies intended to promote social welfare, economic growth.

### EDUCATION RESEARCH METHODS

**EDRM 6060** Principles of Quantitative Data Analysis 3.0 cr.  
(Spring, Summer, Fall)  
This course is designed to prepare graduate students in the social and health sciences to understand and use some of the primary tools of descriptive and inferential statistics.

**EDRM 7010** Applied Linear Models 3.0 cr.  
(Spring, Fall) Prereq: EDRM 6060  
General Linear model applications in educational research emphasizing conceptual understanding and characteristics of non-experimental designs.

**EDRM 7030** Appl Longitudinal Data Analysis 3.0 cr.  
(Fall) Prereq: EDRM 7010  
Methods and empirical applications of individual growth modeling and discrete-time event history analysis in educational research.

### ENVIRONMENTAL AND RADIOLOGICAL HEALTH SCIENCES

**ERHS 5020** Fundamentals of Toxicology 3.0 cr.  
(Fall) Prereq: BMS 300 or BMS 360; CHEM 245 or CHEM 341 or CHEM 345, Fundamental principles of toxicology; dose-response, organ targets, toxic agents
ERHS 5200 Environmental/Occupational Health 3.0 cr.
(Fall) Prereq: CHEM 245 or CHEM 341 or CHEM 345; ERHS 520 or concurrent registration; PH 110 or PH 121.
Issues in environmental and occupational health sciences in the context of public health and regulatory concerns.

ERHS 5260 Industrial Hygiene 3.0 cr.
(Fall) Prereq: CHEM 245 or CHEM 341 or CHEM 345; ERHS 520 or concurrent registration; PH 110 or PH 121
Theory and application of industrial hygiene principles to management of the occupational environment.

ERHS 5270 Industrial Hygiene Laboratory 1.0 cr.
(Fall) Industrial hygiene field monitoring equipment and techniques.

ERHS 5300 Radiology Physics & Dosimetry I 3.0 cr.
(Fall) Prereq: MATH 155 or MATH 160; PH 122.
Theory and detection of ionizing radiation; measurement and calculation of exposure and dose.

ERHS 5320 Epidemiologic Methods 3.0 cr.
(Fall) Prereq: STAT 307
Method of epidemiologic investigation and study design. Applications to disease control with literature examples.

ERHS 5360 Advanced Occupational Health 3.0 cr.
(Spring) Prereq: ERHS 446 or ERHS 526.
Advanced topics in occupational health emphasizing contemporary issues, topics, trends, and problems in the field of industrial hygiene.

ERHS 5400 Principles of Ergonomics 3.0 cr.
(Fall) Cross-listed: EHOH 6540
Theory and practice of ergonomics.

ERHS 5420 Biostatistics for Qualitative Data 3.0 cr.
(Fall) Prereq: STAT 301 or STAT 307
Statistical analysis of categorical data obtained in epidemiology, toxicology, occupational health, and clinical settings.

ERHS 5440 Bio Methods for Quan Data 3.0 cr.
(Spring) Prereq: STAT 301 or STAT 307.
Regression and analysis of variance methods applied to both observational studies and designed experiments in the biological sciences.

ERHS 5490 Environmental Health Risk Assessment 3.0 cr.
(Spring) Prereq: ERHS 446 or ERHS 5020 or ERHS 5320.
Environmental contamination and health effects of chemicals using risk assessment, management and communication approaches.

ERHS 5500 Principals Radiation Biology 5.0 cr.
(Spring) Prereq: ERHS 300 or ERHS 530.
Dose-response relationships; physical, chemical, and biological modification of radiation damage; radiation oncology; radiation genetics and oncogenesis.

ERHS 5610 Radiation in Public Health 2.0 cr.
(Fall, Summer) Prereq: ERHS 300 or ERHS 530
Dose-response relationships; physical, chemical, and biological modification of radiation damage; radiation oncology; radiation genetics and oncogenesis.

ERHS 5810 Experimental Course - ERHS 1.0-5.0 cr.
(Spring, Summer, Fall)
Experimental course in environmental and radiological health sciences.

ERHS 6300 Radiology Physics and Dosimetry II 3.0 cr.
(Spring) Prereq: ERHS 530.
Calculations and measurement techniques for dosimetry shielding and protection from ionizing radiations.

ERHS 6360 Industrial Hygiene Control Methods 3.0 cr.
(Summer) Prereq: ERHS 526; ERHS 536 or concurrent registration.
Controlling occupational exposures to chemical agents, emphasizing local exhaust ventilation; personal protective devices.

ERHS 6400 CSU Advanced Epidemiology 3.0 cr.
(Spring) Prereq: ERHS 532.
In-depth exploration of advanced epidemiologic methods.
ERHS 6420  App Logistic Regression  
(Spring) Prereq: ERHS 532; ERHS 542.  
Basic and advanced concepts of logistic regression with focus on practical applications in epidemiology using SAS.  
3.0 cr.

ERHS 6560  Occupational Noise Control  
(Fall) Prereq: ERHS 5270  
Measurement and control of industrial or environmental noise emphasizing practical solutions.  
3.0 cr.

ERHS 6580  Environmental/Occupational Epidemiology  
(Spring) Prereq: ERHS 5320.  
Epidemiologic analyses of effects of exposure to environmental and occupational health hazards.  
3.0 cr.

ERHS 6930  Research Seminar – Epidemiology  
(Spring, Fall)  
Presentation of student research and discussion of publications from scientific literature.  
1.0 cr.

ERHS 6931  Research Seminar – Industrial Hygiene  
(Spring, Fall)  
Presentation of student research and discussion of publications from scientific literature.  
1.0 cr.

ERHS 6932  Research Seminar – Toxicology  
(Spring, Fall)  
Presentation of student research and discussion of publications from scientific literature.  
1.0 cr.

ERHS 6933  Research Seminar – Health Physics  
(Spring, Fall)  
Presentation of student research and discussion of publications from scientific literature.  
1.0 cr.

ERHS 6950  Independent Study – Epidemiology  
(Spring, Summer, Fall)  
Specialized study in epidemiology under supervision of faculty.  
1.0-5.0 cr.

ERHS 6951  Independent Study: Occupation and Environmental Health  
(Spring, Summer, Fall)  
Specialized study in environmental and occupational health under supervision of faculty.  
1.0-5.0 cr.

ERHS 6960  Group Study - Epidemiology  
(Spring, Summer, Fall)  
Specialized study in epidemiology under supervision of faculty.  
1.0-5.0 cr.

ERHS 6980  MPH Master’s Project  
(Spring, Summer, Fall)  
Capstone project for Master of Public Health students.  
2.0 cr.

ERHS 7260  Aerosols and Occupational Health  
(Fall) Prereq: PH 141  
Properties and behavior of industrial aerosols, emphasizing measurement and control of dust related to disease.  
3.0 cr.

ETHNIC STUDIES

ETHS 5100  Ethnicity, Race & Health Disparities  
(Fall)  
Health status of ethnic / racial populations; cultural dimensions that underlie health and health disparities.  
3.0 cr.

ETHS 6950  Independent Study  
(Spring, Summer, Fall)  
Independent study in ethnic studies.  
1.0-18.0 cr.

FOOD SCIENCE AND HUMAN NUTRITION

FSHN 5000  Food System, Nutrition, Food Security  
(Fall) Prereq: FSHN 350  
Global and local food systems and their potential influence on nutrition and food security.  
2.0 cr.

FSHN 5200  Advanced Medical Nutrition Therapy  
(Summer) Prereq: FSHN 5500 or 5510  
Role of nutrition in etiology and treatment of selected disorders.  
3.0 cr.
FSHN 5250 Nutrition Education, Theory and Practice  2.0 cr.  
(Fall) Prereq: FSHN 350.  Restriction: Instructor permission if not in Public Nutrition focus area.  
Examination of current theories, skills, and models used in nutrition education programs as preparation for research and practice.

FSHN 5500 Advanced Nutritional Science I  3.0 cr.  
(Spring) Prereq: BC 351 or BC 403; FSHN 350.  
Protein, vitamin, mineral metabolism; human studies, animal models.

FSHN 5510 Advanced Nutritional Science II  3.0 cr.  
(Fall) Prereq: BC 351 or BC 403; FSHN 350.  Restriction: Instructor permission if not in Public Nutrition focus area.  
Carbohydrate, lipid, energy metabolism; human studies, animal models.

FSHN 6200 Community Nutrition Plan and Evaluation  3.0 cr.  
(Spring) Prereq: FSHN 350.  
Community nutrition assessment; nutrition program planning and evaluation; nutrition policy analysis.

FSHN 6400 Select Topics in Nutritional Epidemiology  2.0 cr.  
(Fall) Prereq: FSHN 350; STAT 301 or STAT 307/ERHS 307.  
Overview of topics in nutritional epidemiology, study design, interpretation of findings, linkage of data to action.

FSHN 6500 Recent Dev in Human Nutrition – Proteins  2.0 cr.  
(Spring, Fall) Prereq: FSHN 5500.  
The purpose of this course is to read and discuss the recent literature on nutrition topics that are of emerging importance and relevance to major health promotion/disease prevention issues. This course covers protein, vitamins, and minerals.

FSHN 6501 Human Nutrition-Carbohydrates, Lipids, Energy  2.0 cr.  
(Fall) Prereq: FSHN 350.  Restriction: Instructor permission if not in Public Nutrition focus area.  
Appraisal of literature on human nutritional status.

FSHN 6600 Women’s Issues in Lifecycle: Nutrition  2.0 cr.  
(Spring) Prereq: FSHN 459.  
Current nutritional issues related to selected stages of the lifecycle compared to normal adult nutritional needs.

FSHN 6610 International Nutrition  2.0 cr.  
(Fall) Prereq: FSHN 350.  Restriction: Instructor permission if not in Public Nutrition focus area.  
Roles of technological programs and international agencies in meeting nutritional needs.

FSHN 6750 Regulation of Energy Intake  3.0 cr.  
(Spring) Prereq: FSHN 350.  
Central and peripheral mechanisms controlling energy intake with emphasis on humans. Current theories, experimental approaches, and new research.

FSHN 6950 Independent Study: Food Science  1.0-18.0 cr.  
(Spring, Summer, Fall) Restrictions: Instructor permission if not in Public Health Nutrition focus area.  
Specialized study in food science under supervision of Faculty.

FSHN 6951 Independent Study: Nutrition  1.0-18.0 cr.  
(Spring, Summer, Fall) Restrictions: Instructor permission if not in Public Health Nutrition focus area.  
Specialized study in food science under supervision of Faculty.

**FOOD TECHNOLOGY**

FTEC 5720 Food Biotechnology  2.0 cr.  
(Spring)  
Interrelationships among microorganisms, food processing methods, advances in biotechnology and food quality, spoilage, shelf-life and safety.

FTEC 5740 Current Issues in Food Safety  2.0 cr.  
(Spring)  
Current food safety issues from field to table; microbiological, consumer, processing and agricultural issues.

**FISH AND WILDLIFE**

FWLD 5440 Ecotoxicology  3.0 cr.  
(Spring) Prereq: Statistics and introductory biology required.  
The purpose of this course is to provide students with an overview of ecological and environmental aspects of toxicology and pollution ecology. The course will emphasize population, community, and ecosystem responses to contaminants and other anthropogenic stressors.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>FWLD 5650</td>
<td>Human Wildlife Conflict</td>
<td>3.0 cr.</td>
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<td>(Spring) Methods for resolving conflicts caused by wildlife; integrating animal behavior, population dynamics, and human dimensions into solutions.</td>
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**HUMAN DEVELOPMENT AND FAMILY STUDIES**

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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</thead>
<tbody>
<tr>
<td>HDFS 5280</td>
<td>Child and Family Assessment</td>
<td>4.0 cr.</td>
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<tr>
<td>(Fall)</td>
<td>Prereq: Nine credits at 300-400 level in human development and family studies or behavioral science or instructor permission. Restriction: Must register for lecture and laboratory. Students will learn about appropriate and effective assessment measures, multiple assessment techniques, the impact of culture on assessment, and will practice administering assessments and writing summary reports.</td>
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<tr>
<td>HDFS 5920</td>
<td>Grant Writing: Human Services</td>
<td>3.0 cr.</td>
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<tr>
<td>(Fall)</td>
<td>Prereq: STAT 201 Writing grant proposals that support client services or for research</td>
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<tr>
<td>HDFS 6000</td>
<td>Advanced Study Program Planning and Evaluation</td>
<td>3.0 cr.</td>
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<tr>
<td>(Spring)</td>
<td>Program planning and evaluation</td>
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<tr>
<td>HDFS 6005</td>
<td>Parenting</td>
<td>3.0 cr.</td>
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<tr>
<td>(Spring, Fall) Prereq: Six credits in behavioral sciences or permission of instructor. Students will translate theories of parenting into effective practice. Course includes theories on cultural variation in parenting, social cognitive processes, and disparate theories on discipline and parenting education, the application of parenting education, and inclusion of culture in parenting.</td>
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<tr>
<td>HDFS 6100</td>
<td>Risk and Resilience</td>
<td>3.0 cr.</td>
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<tr>
<td>(Spring)</td>
<td>Prereq: 6 credits in behavioral sciences. Risk and resilience processes in human development.</td>
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<tr>
<td>HDFS 6120</td>
<td>Adolescent Development</td>
<td>3.0 cr.</td>
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<tr>
<td>(Fall)</td>
<td>Prereq: One course in adolescence; three credits of upper-division behavioral sciences; or permission of instructor. Course focuses on current theoretical and empirical issues in the field of adolescent development. Students will critically evaluate current research in the field of adolescent development, debate central issues, and gain in-depth knowledge of one topic of their choice.</td>
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<tr>
<td>HDFS 6950</td>
<td>Independent Study- Human Development</td>
<td>1.0-18 cr.</td>
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<tr>
<td>(Spring, Summer, Fall) Independent study in human development and family studies.</td>
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<tr>
<td>HDFS 6970</td>
<td>Group Study- Human Development</td>
<td>1.0-18 cr.</td>
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<tr>
<td>(Spring, Summer, Fall) Group study in human development and family studies.</td>
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<tr>
<td>HDFS 7400</td>
<td>Family Policy</td>
<td>3.0 cr.</td>
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<td>(Fall)</td>
<td>This course will utilize a lifespan developmental framework for examining social and family policy initiatives, with special attention aimed at policies that serve vulnerable populations such as the poor, the elderly, and children.</td>
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**HEALTH AND EXERCISE SCIENCE**

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>HESC 5200</td>
<td>Advanced Exercise Testing and Prescription</td>
<td>3.0 cr.</td>
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<tr>
<td>(Spring)</td>
<td>Prereq: HES 403 Theory and practice of exercise testing and prescription in apparently healthy and diseased populations.</td>
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<tr>
<td>HESC 5450</td>
<td>Evolutionary Basis Human Health/Fitness</td>
<td>3.0 cr.</td>
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<tr>
<td>(Spring)</td>
<td>Prereq: HES 403; FSHN 350 Evolutionary basis for human health and fitness based upon dietary and exercise patterns for pre-agricultural humans.</td>
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<tr>
<td>HESC 5560</td>
<td>Wellness and Health Promotion</td>
<td>3.0 cr.</td>
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<tr>
<td>(Fall)</td>
<td>Discussion of theory and application of health promotion in various settings.</td>
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<tr>
<td>HESC 5600</td>
<td>Exercise and Nutrition</td>
<td>3.0 cr.</td>
</tr>
<tr>
<td>(Spring)</td>
<td>Prereq: FSHN 350; HES 403; 2 credits of biochemistry Interaction of nutrition and physical fitness in exercise performance and promotion of health.</td>
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<tr>
<td>Course Code</td>
<td>Course Title</td>
<td>Credits</td>
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<tr>
<td>HESC 6000</td>
<td>Data Analysis &amp; Research Design</td>
<td>3.0 cr.</td>
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<tr>
<td>HESC 6030</td>
<td>Advanced Topics in Exercise Physiology</td>
<td>3.0 cr.</td>
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<tr>
<td>HESC 6100</td>
<td>Exercise Bioenergetics</td>
<td>3.0 cr.</td>
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<tr>
<td>HESC 6300</td>
<td>Integrative Exercise &amp; Nutrition Metabolism</td>
<td>3.0 cr.</td>
</tr>
<tr>
<td>HESC 6450</td>
<td>Epidemiology of Health and Physical Activity</td>
<td>3.0 cr.</td>
</tr>
<tr>
<td>HESC 6500</td>
<td>Health Promotion Program</td>
<td>3.0 cr.</td>
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<tr>
<td>HESC 6560</td>
<td>Comprehensive Stress Management</td>
<td>3.0 cr.</td>
</tr>
<tr>
<td>HESC 661</td>
<td>Practicum in Wellness Management</td>
<td>1.0-3.0 cr.</td>
</tr>
<tr>
<td>HESC 6920</td>
<td>Seminar-Health and Exercise Science</td>
<td>1.0 cr.</td>
</tr>
<tr>
<td>HESC 6950</td>
<td>Independent Study: Health</td>
<td>1.0-18.0 cr.</td>
</tr>
<tr>
<td>HESC 6951</td>
<td>Independent Study: Exercise Science</td>
<td>1.0-18.0 cr.</td>
</tr>
<tr>
<td>HESC 6961</td>
<td>Group Study in Health</td>
<td>1.0-18.0 cr.</td>
</tr>
<tr>
<td>HESC 7100</td>
<td>Exercise in Disease Prevention</td>
<td>3.0 cr.</td>
</tr>
<tr>
<td>IE00 6790</td>
<td>Advanced International Development</td>
<td>3.0 cr.</td>
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<tr>
<td>IE00 6920</td>
<td>International Dev Seminar</td>
<td>3.0 cr.</td>
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</table>
## JOURNALISM AND TECHNICAL COMMUNICATION

**JTCM 5000 Communication Research & Evaluation Methods**  
(Fall)  
Theory and applied communication research and evaluation methodologies for assessing and improving communication in technological environments.  

**JTCM 5010 Processes & Effects of Communication**  
(Fall) Prereq: JTCM 5000  
Examination of communication theory including communicator credibility, messages, channels, audiences and information, behavior and attitude change.  

**JTCM 5440 Corporate and Institutional Media Production**  
(Fall)  
Advanced techniques in media production and management in corporate and institutional settings.  

**JTCM 5610 Public Communication Campaigns**  
(Fall) Prereq: JTCM 5010  
Conceptual, methodological issues and decisions underpinning determination of communication campaign effects, planning, implementation and evaluation.  

**JTCM 5630 Health Communication**  
(Fall) Prereq: 5010  
The role of health communication in public health programs and campaigns.  

**JTCM 6140 Corporate and Institutional Media Production**  
(Fall)  
Advanced techniques in media production and management in corporate and institutional settings.  

**JTCM 6140 Public Communication Campaigns**  
(Fall) Prereq: JTCM 5010  
Conceptual, methodological issues and decisions underpinning determination of communication campaign effects, planning, implementation and evaluation.  

**JTCM 6300 Health Communication**  
(Fall) Prereq: 5010  
The role of health communication in public health programs and campaigns.  

**JTCM 6400 Telecommunications**  
(Spring) Prereq: JTCM 5010.  
Theory and application of telecommunication in information age.  

**JTCM 6500 Public Relations Management**  
(Spring) Prereq: JTCM 5010  
Theoretical and practical management techniques for public relations campaigns including societal, ethical, and legal issues involved.  

**JTCM 6600 Communication/Technology Transfer**  
(Spring) Prereq: JTCM 5010  
Communication's role in technology transfer as related to nature, process, and effects of technology transfer, knowledge dissemination, and utilization.  

**JTCM 6610 Information Design**  
(Spring) Prereq: JTCM 5010  
Theoretical and empirical review of creation, presentation storage, and distribution of information.  

**JTCM 6620 Comm Science/Technology**  
(Spring) Prereq: JTCM 5010  
Examination of theoretical and empirical studies concerning communication of science and technology subject matter.  

**JTCM 6700 Social Processes of Risk**  
(Spring)  
Provides students with a broad entry to this sprawling and cross-disciplinary literature, from seminal work that served to coalesce study of risk perception and risk communication to the most current literature that's redefining this field and charting its future.  

**JTCM 6810 Experimental Course – Journalism and Technical Communication**  
(Spring, Summer, Fall)  
Experimental courses in journalism and technical communication.  

**JTCM 6950 Independent Study: Communication**  
(Spring, Summer, Fall)  
Independent study in Journalism and Technical Communication.  

**JTCM 7920 Journalism and Technical Communication Seminar**  
(Spring, Fall)  
Topics will vary

## MICROBIOLOGY IMMUNOLOGY AND PATHOLOGY

**MIPO 5550 Principles & Mechanism of Disease**  
(Fall) Prereq: BMS 300; coursework in histology, physiology and anatomy. Restriction: Permission of instructor needed if prerequisites not met.  
Principles of disease processes; emphasis on reactivity of the diseased cell, tissue, organ or organism.
NATURAL RESOURCES

NROO 5120 Spatial Statistical Modeling-Natural Resources 3.0 cr.
(Fall) Prereq: NR 322; NR323; STAT 301
Statistical techniques used to model natural and environmental resources; GIS, remote sensing, and spatial statistics.

NROO 5920 Seminar in Natural Resources 1.0 - 18.0 cr.
(Spring, Summer, Fall)
Topics will vary by semester

PHILOSOPHY

PHLY 5640 Seminar in Animal Rights 3.0 cr.
(Fall)
Contemporary issues concerning nature and moral status of non-human animals.

PHLY 6660 Science and Ethics 3.0 cr.
(Spring)
Science, skills, and beliefs directed at the maintenance and improvement of health for all people.

POLITICAL SCIENCE

POLS 6650 Public Policy Analysis 3.0 cr.
(Spring) Prereq: Previous or concurrent coursework in statistics
Course will help students develop skills that allow them to define and critically analyze policy issues/problems, specify how decisions will be made regarding analysis of problems, evaluate alternative methods/solutions, and assess the means and costs of implementing policies.

PSYCHOLOGY

PSCY 5150 Women’s Health 3.0 cr.
(Spring)
Current issues in women's health.

PSCY 5161 Public Health Practice – History 1.0 cr.
(Fall)
Understanding of the history and breadth of public health and the structure and process of public health practice.

PSCY 5162 Pub Health Prac-Competencies 1.0 cr.
(Spring, Fall) Prereq: Admission to MPH degree program.
Review and assessment of public health competencies, community collaboration, cultural competence, evidence-based practice and public health ethics.

PSCY 5163 Public Health Practice – Oversight 1.0-8.0 cr.
(Spring, Summer, Fall)
Concurrent course with CSU public health practicum.

PSCY 5170 Perspectives in Global Health 3.0 cr.
(Spring)
Science, skills, and beliefs directed at the maintenance and improvement of health for all people.

PSCY 5950 Independent Study- Psychology 1.0-18 cr.
(Spring, Summer, Fall)
Independent study in psychology.

PSCY 6430 Industrial and Organizational Psychology I 3.0 cr.
(Spring)
Integration of multiple perspectives for examining work organizations, roles, and relationships, and organizational entry and socialization.

PSCY 6660 Public Health Practicum 2.0 cr.
(Spring, Summer, Fall)
Required CSU public health practicum.

PSCY 7920 Applied Soc Psy Seminar 1.0-18 cr.
(Spring, Summer, Fall)
Seminar in Applied Social Psychology; topics will vary.
# SOCIOLGY

**SOCO 5620 Sociology of Food Systems and Agriculture**  
(Spring, Fall)  
This course is designed to explore how agricultural choices generate intended and unintended consequences for human communities and the natural environment.  

**SOCO 6950 Independent Study - Sociology**  
(Spring, Summer, Fall)  
Independent study in sociology.

# COMMUNICATION

**SPCM 5320 Theory of Interpersonal Comm**  
(Fall)  
Theories of communication in development, maintenance, and deterioration of friendship, couple, family, group, and business relationships.

**SPCM 5340 Communication-Global Diversity**  
(Spring)  
Ethnographic approach to communication issues and concerns in a global context.

**SPCM 5380 Communicating in Health Clinics**  
(Spring)  
Organizational, interpersonal, and intercultural dimensions of communicating in public health clinical settings.

**SPCM 5390 Communication Theory**  
(Fall)  
Examination of communication philosophies and perspectives; analysis of modern theories of face-to-face communication.

# STATISTICS

**STAS 5110 Design and Analysis for Researchers I**  
(Fall) Prereq: STAT 301 or STAT 307 or STAT 311 or STAT 315.  
Statistical methods for experimenters and researchers emphasizing design and analysis of experiments.

**STAS 5120 Design/Data Analysis II**  
(Spring) Prereq: STAT 511  
Statistical methods for experimenters and researchers emphasizing design and analysis of experiments.

**STAS 5200 Introduction to Probability Theory**  
(Fall) Prereq: MATH 229; MATH 261; MATH 317  
Probability, random variables, distributions, expectations, generating functions, limit theorems, convergence, random processes.

**STAS 5230 Quantitative Spatial Analysis**  
(Spring) Prereq: STAT 301 or STAT 307/ERHS 307.  
Techniques in spatial analysis: point pattern analysis, spatial autocorrelation.

**STAS 5400 Data Analysis and Regression**  
(Fall) Prerequisite of 6 upper-division statistics courses.  
Probability, random variables, distributions, expectations, generating functions, limit theorems, convergence, random processes.

**STAS 5600 App Multivariate Analys**  
(Fall, Spring) Prereq: STAT 301; STAT 307 or STAT 309.  
Multivariate analysis of variance; principal components; factor analysis; discriminant analysis; cluster analysis.

# CLINICAL SCIENCES

**VSCS 5330 Epidemiologic Infections Disease/Zoonosis**  
(Spring)  
Epidemiologic features of infectious and parasitic diseases that have a major impact on community medicine.

**VSCS 5800 Global Vet Public Health**  
(Spring)  
This discussion based course will cover the fundamentals of global veterinary public health including the interconnectedness of animal, human and environmental health and the student's role in the future of global PVH.
VSCS 5810  Experimental Course - VS  
(Spring, Summer, Fall)  
Experimental courses offered within clinical sciences.

VSCS 6480  Food Animal Production and Food Safety  
(Spring)  
Basic orientation to food animal production units, heard health concepts, and issues of food safety from pre-harvest through processing and distribution.

VSCS 6620  Research Plan, Design and Analysis with Recitation  
(Spring)  
Introductory biostatistics course required for MPH students.

VSCS 7330  Advance Vet Epidemiology Research  
(Spring) Prereq:  ERHS 5320; VSCS 6620  
Provides in-depth knowledge in epidemiological research as it specifically apples to health of animal populations.

VSCS 7950  Independent Study – Epidemiology  
(Spring, Summer, Fall)  
Specialized study in epidemiology under supervision of faculty.

VSCS 7960  Group Study: Medicine  
(Spring, Summer, Fall)  
Group study, please contact the department for topics in a given semester.