The following courses, listed alphabetically by department, have been approved for graduate credit. Please see the Interdepartmental (IDPT) section for courses which are taught cooperatively by individual departments.

**BIOSTATISTICS**

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
<th>Instructor</th>
<th>Prerequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 6601</td>
<td><strong>Applied Biostatistics I</strong></td>
<td>3.0 cr.</td>
<td>J. Barnette (Spring, Summer, Fall)</td>
<td>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.</td>
</tr>
<tr>
<td>BIOS 6602</td>
<td><strong>Applied Biostatistics II</strong></td>
<td>3.0 cr.</td>
<td>S. MaWhinney (Spring)</td>
<td>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, Poisson regression, and Cox regression. The statistical package SAS is used extensively.</td>
</tr>
<tr>
<td>BIOS 6603</td>
<td><strong>Biostatistics Lab - SAS</strong></td>
<td>1.0 cr.</td>
<td>D. Lezotte (Spring, Summer, Fall)</td>
<td>Prereq/Coreq: BIOS 6601 or equivalent. Restriction: No credit toward degree if 6603/6604/6605 have 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.</td>
</tr>
<tr>
<td>BIOS 6604</td>
<td><strong>Biostatistics Lab - SPSS</strong></td>
<td>1.0 cr.</td>
<td>D. Lezotte (Spring, Summer, Fall)</td>
<td>Prereq/Coreq: BIOS 6601 or equivalent. Restriction: No credit toward degree if 6603/6604/6605 have 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.</td>
</tr>
<tr>
<td>BIOS 6605</td>
<td><strong>Biostatistics Lab - Excel</strong></td>
<td>1.0 cr.</td>
<td>D. Lezotte (Spring, Summer, Fall)</td>
<td>Prereq/Coreq: BIOS 6601 or equivalent. Restriction: No credit toward degree if 6603/6604/6605 have been taken previously. This course will emphasize statistical analysis and data interpretation through use of Microsoft Excel. Instruction will be provided through laboratory exercises and interactive demonstrations.</td>
</tr>
<tr>
<td>BIOS 6606</td>
<td><strong>Statistics for the Basic Sciences</strong></td>
<td>3.0 cr.</td>
<td>D. Everett (Fall)</td>
<td>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.</td>
</tr>
<tr>
<td>BIOS 6611</td>
<td><strong>Biostatistical Methods I</strong></td>
<td>3.0 cr.</td>
<td>A. Baron (Fall)</td>
<td>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.</td>
</tr>
<tr>
<td>BIOS 6612</td>
<td><strong>Biostatistical Methods II</strong></td>
<td>3.0 cr.</td>
<td>S MaWhinney (Spring)</td>
<td>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.</td>
</tr>
</tbody>
</table>
BIOS 6621  **Statistical Consulting I**  1.0 cr.
G. Grunwald  (Spring, 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. Under faculty supervision, advanced students will work on consulting projects with investigators.

BIOS 6622  **Statistical Consulting II**  1.0 cr.
G. Grunwald  (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**  3.0 cr.
T. Fingerlin & N. Carlson  (Spring)  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 6631  **Statistical Theory I**  3.0 cr.
D. Glueck  (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.
S. MaWhinney  (Spring)  Prereq: BIOS 6631

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.
M. Strand  (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**  2.0 cr.
A. Barón  (Spring)  Prereq: BIOS 6611 and BIOS 6631  Coreq:  BIOS 6612 and BIOS 6632

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 of Clinical Trials**  2.0 cr.
J. Kittelson  (Fall)  Prereq: BIOS 6611 or BIOS 601.

The design and conduct of human intervention trials. Specific topics include: specifying the research question, study endpoints, study populations, study treatments, sample size evaluation, and choice of control groups. Common trial designs and issues in trial monitoring are described.

BIOS 6651  **Masters Research Paper**  1.0-6.0 cr.
S. MaWhinney  (Spring, Summer, Fall)

M.S. research paper is completed under this course.

BIOS 6670  **Special Topics- Biostatistics**.  1.0-3.0 cr.
D. Lezotte (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 the CSPH Website for offerings and topics for this course each semester.

**BIOS 6680  SAS Database Design/Mgt**
J. Bondy  (Fall)
Course introduces students to how SAS can be used to manipulate data and prepare it for analysis: inputting, recoding, reformattting, subsetting, merging data, and simple reports and SAS Macros. Principles and implementation of database design will also be discussed

**BIOS 6685  Topics in Public Health Informatics**
J. Bondy  (Spring)
Course examines the use, design, evaluation and administration of information systems in public health. The focus will be a high-level view of systems and their effect on public health practitioners, public health decision-making, clinicians, partner organizations, resource use and population health.

**BIOS 6840  Independent Study for MPH-Biostatistics**
D. Lezotte  (Spring, Summer, Fall)  Restrictions: Open only to MPH students.
Faculty directed independent study for MPH students in topics related to biostatistics.

**BIOS 6841  Independent Study for MS-Biostatistics**
S. MaWhinney  (Spring, Summer, Fall)  Course Restrictions: Open only to MS students or Permission of Instructor.
Resources of the department 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**
S. MaWhinney  (Spring, Summer, Fall)
Biostatistics Master thesis work is completed under this course.

**BIOS 7010  Latent Variable Methods**
N. Whitesell - (Fall)  Prereq: BIOS 6601, BIOS 6602 or equivalent.  Crosslisted: CBHS 7010. Restriction: Enrollment in the DrPH program or permission of the instructor.
Covers latent variable statistical techniques commonly used in behavioral sciences research – including scale development, factor analysis, and structural equation modeling, and introduces advanced latent modeling techniques. Students will analyze data using statistical software, interpret results and write summaries of findings.

**BIOS 7659  Stat Methods in Genomics**
Dr. K Kechris  (Fall)
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 next generation sequencing.

**BIOS 7670  Advanced Special Topics - Biostatistics**
S. MaWhinney  (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 7731  Advanced Mathematical Statistics I**
K. Kechris (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.
J. Kittelson (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.
S. MaWhinney (Spring, Summer, Fall) Restrictions: 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 Dissertation  1-10 cr.
S. MaWhinney (Spring, Summer, Fall)

PhD dissertation work is completed under this course.

COMMUNITY BEHAVIORIAL HEALTH SCIENCES

CBHS 6610  Social and Behavioral Factors and Health  3.0 cr.
A.. Levinson & K.. Albright– (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 healthy environments and lifestyles are examined. Online
in summer.

CBHS 6611  Foundations Health Behavior  3.0 cr.
J. Leiferman – (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-Research and Evaluation  3.0 cr.
B. Risendal, Y. Kellar-Guenther, & L. Crane – (Spring, Fall) Prereq: BIOS 6601

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. (EPID 6630 recommended prior to this course.)

CBHS 6613  Program Planning and Implementation  3.0 cr.
E. Belansky & L. Crane – (Spring, Fall) Prereq: CBHS 6611 and CBHS 6612 (CBHS 6612 may be taken
concurrently)

Course examines planning and implementation process with specific focus on health promotion
programs. Students will learn about: using results of 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.
A. Brega – (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 6620  Survey Research  2.0 cr.
L. Crane – (Fall) Restrictions: Offered in odd years.

Course examines survey research methodology, including face-to-face, telephone, mail and
internet surveys. Includes: methods of data collection; developing and ordering questions; formatting;
reliability and validity; sampling; implementation; maximizing response rate; data issues; survey ethics and reporting.

**CBHS 6622 Qualitative Research Methods**  
K. Albright – (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 6624 Community Health Assessment**  
J. Baxter & H. Wolf – (Spring) Prereq: EPID 6630 and either 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**  
L. Bryant – (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 in older adults; and 2) appropriate responses by public health, aging services and the research community.

**CBHS 6628 Tech-based health Promotion**  
S. Bull – (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 6630 Mental Health**  
K. Albright – (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 6632 Pub Hlth in Carribean/Lat Amer**  
J. O’Connell – (Summer)  
This is an intermediate level course and is intended to introduce graduate students to international public health issues by providing an intensive study of public health in the Caribbean and Latin America.

**CBHS 6670 Special Topics in Public Health - Community Behavioral Health**  
L. Crane – (Spring, Summer, Fall).  
Special interest areas of current community and behavioral 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.

**CBHS 6840 Independent Study- Community Behavioral Health**  
L. Crane - (Fall) Restriction: Permission of instructor required.  
Faculty directed independent study in topics related to community and behavioral health.

**CBHS 7010 Latent Variable Methods**  
N. Whitesell - (Fall) Prereq: BIOS 6601, BIOS 6602 or equivalent. Crosslisted: BIOS 7010. Restriction: None.  
Covers latent variable statistical techniques commonly used in behavioral sciences research – including scale development, factor analysis, and structural equation modeling, and introduces advanced latent modeling techniques. Students will analyze data using statistical software, interpret results and write summaries of findings.
CBHS 7020  DrPH Sem in Leadership-Part I  1.0 cr.
J. Ablino, J. Baxter– (Spring)

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. Prerequisite: DrPH Seminar. Restrictions: Restricted to CSPH DrPH students. Crosslisted: EPID 7020.

CBHS 7022  DrPH Sem in Leadership-Part II  2.0 cr.
J. Ablino, J. Baxter– (Summer)

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. Prerequisite: DrPH Seminar, Must have taken CBHS 7020, DrPH Seminar in Leadership - Part I. Restrictions: Restricted to CSPH DrPH students. Crosslisted: EPID 7022.

CBHS 7670  CBH Advanced Seminar  3.0 cr.
Prereq: L. Crane - (Spring) Restrictions: Enrollment in DrPH or permission of instructor. CBHS 6610, 6611, 6612, 6613, 6620 or equivalent, 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 HEALTH AND OCCUPATIONAL HEALTH

EHOH 6614  Occupational and Environmental Health  3.0 cr.
J. Adgate & L. Newman- (Fall Spring) Prereq: EPI 6630

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.

EHOH 6616  Environmental & Occupational Toxicology  3.0 cr.
R. Witter – (Spring) Prereq: Undergraduate Biology & Chemistry Coreq: EHOH 6614; EPI 6630

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.

EHOH 6617  Environmental & Occupational Exposure Assessment  2.0 cr.
J. Martyny – (Spring) Prereq: EHOH 6614 Coreq: EPI 6630

Course will provide the methodologies by which environmental hazards can be anticipated, recognized, evaluated and controlled. Methodologies to determine the degree of hazard and personal protection will be covered. Practical experience will be provided by field trips and labs.

EHOH 6618  Environmental Health Policy and Practice  3.0 cr.
J. Litt – (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.

EHOH 6619  Environmental Exposures & Health Effects  3.0 cr.
J. Martyny, C. Rose, & G. Plumlee – (Fall) Prereq: EHOH 6614 Coreq: EPI 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.

**EHOH 6620 Risk Analysis & Decision Making**  
J. Adgate (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.

**EHOH 6621 GIS for Public Health Research & Practice**  
D. Thomas – (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**  
D. Kreisberg – (Summer)  
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 6640 Principles of Ergonomics**  
J. Adgate – (Fall)  
Theory and practice of ergonomics.

**EHOH 6670 Special Topics-Environmental & Occupational Health**  
J. Litt – (Spring, Summer, Fall)  
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 Chng & Hlth**  
(Spring)  
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. Crosslisted GEOG 5710.

**EHOH 6715 Public Health Emergency Preperation-Community Resil**  
D. Kreisberg – (Summer)  
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 6840 Independent Study-Environmental & Occupational Health**  
J. Litt – (Spring, Summer, Fall)  
Faculty directed independent study in topics related to environmental and occupational health.

**EPIDEMIOLOGY**

**EPID 6622 Cancer Prevention and Control**  
T. Byers – (Summer) Prereq: EHOH 6614, EPID 6630  
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  2.0 cr.
A. Shupe – (Spring) Restriction: Offered odd years. Prereq: EPID 6630
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.

EPID 6626  Research Methods in Epidemiology  3.0 cr.
D. Lezotte – (Spring) Prereq: BIOS 6601, BIOS 6680, EPID 6630
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.

EPID 6629  Clinical Epidemiology  2.0 cr.
M. Sontag, & J. Hokanson – (Summer) Prereq: EPID 6630 Restriction: Offered even years.
Course provides an overview of the design, conduct, and appraisal of clinical research. Topics include study design, issues in randomized trials, bias, measurement error, assessment of diagnostic and screening tests, measurement of health-outcomes, meta-analysis and use of questionnaires.

EPID 6630  Epidemiology  3.0 cr.
D. Dabelea & R. Hamman – (Spring, Fall)
Introduction to approaches/methods used in describing the natural history of disease in the community and for locating clues to causes of disease and analytical epidemiology used in the study of disease etiology and critical review of the public health literature.

EPID 6631  Analytical Epidemiology  3.0 cr.
J. Hokanson – (Fall) Prereq: EPID 6630, BIOS 6601, BIOS 6602
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.

EPID 6632  UCD Advanced Epidemiology  3.0 cr.
J. Marshall - (Spring) Prereq: EPID 6630, EPID 6631, BIOS 6601
This is an advanced course on epidemiologic methods designed to improve the student’s ability to conduct and interpret observational epidemiologic studies.

EPID 6635  Communicable Disease Epidemiology  2.0 cr.
C. Nyquist - (Spring) Prereq: EPID 6630.
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.

EPID 6636  Chronic Disease Epidemiology  3.0 cr.
J. Lowery - (Fall) Prereq: EPID 6630 Restriction: Offered odd years.
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.

EPID 6637  Injury & Violence Epidemiology and Prevention  2.0 cr.
C. DiGuiseppi - (Fall) Prereq: EPID 6630 or permission of Instructor. Restrictions: Offered even years.
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 options.

EPID 6638  Cardiovascular Epidemiology  1.0 cr.
J. Hokanson - (Fall) Prereq: EPID 6630. Restriction: Offered even years.
Course provides practical introduction to current concepts, research methods, unanswered
questions in epidemiology of coronary artery disease, stroke/peripheral artery disease. It prepares students for independent work in academic/nonacademic settings in the area of cardiovascular disease surveillance, etiology, and outcome research.

**EPID 6639  Genetic Epidemiology  2.0 cr.**
J. Norris – (Fall) Prereq: EPID 6630, BIOS 6601 Restriction: Offered even years.
This course reviews basic genetic principles and teaches epidemiologic methods employed in the investigation of the genetic susceptibility to chronic disease.

**EPID 6640  Invest of Disease Outbreaks  2.0 cr.**
E. Scallan – (Summer)
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. Prerequisite: EPID 6630

**EPID 6646  Introduction to Systematic Reviews  1.0 cr.**
C. DiGuiseppi - (Fall) Prereq: EPID 6630, or permission of instructor. Restriction: Offered odd years
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.

**EPID 6651  Masters Research Paper  1.0-6.0 cr.**
(Spring)
Masters research paper in epidemiology is completed under this course.

**EPID 6670  Special Topics-Epidemiology  1.0-3.0 cr.**
M. Sontag - (Spring, Summer, Fall) Restrictions: Permission of instructor.
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.

**EPID 6840  Independent Study- Epidemiology  1.0-3.0 cr.**
M. Sontag - (Spring, Summer, Fall) Restrictions: Permission of Instructor.
Faculty directed independent study in topics related to epidemiology.

**EPID 6950  Independent Study- Epidemiology  1.0-6.0 cr.**
Epidemiology thesis work is completed under this course.

**EPID 7010  DrPH Sem in Leadership- Part I  1.0 cr.**
J. Albino, J Baxter- (Spring)
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. Prerequisite: DrPH Seminar. Restrictions: Restricted to CSPH DrPH students. Crosslisted: CBHS 7020.

**EPID 7022  DrPH Sem in Leadership- Part II  2.0 cr.**
J. Albino, J Baxter- (Summer)
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. Prerequisite: DrPH Seminar, Must have taken EPID 7020, DrPH Seminar in Leadership - Part I. Restrictions: Restricted to CSPH DrPH students. Crosslisted: CBHS7022.

**EPID 7605  Res Meth w/Sec Data Sets  3.0 cr.**
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. Offered Spring of even years.

**EPID 7615 Pharmacoepidemiology 2.0 cr.**
R. Valuck - (Fall) Prereq: EPID 6630: 2 course biostatistics series (BIOS 6601-6602 or BIOS 6611-6612) Restrictions: Offered odd years, NA for 2 credit section.

This course builds upon fundamental concepts and methods of epidemiology, applied to the study of pharmaceuticals. 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.

**EPID 7911 Epidemiologic Field Methods 1.0-4.0 cr.**
D. Dabelea - (Spring, Summer, Fall). Prereq. EPID 6626, EPID 6630, EPID 6631, EPID 6632, BIOS 6611, BIOS 6612. Course Restrictions: Enrollment in Epidemiology PhD Program or permission of Instructor.

Ph.D. 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 cr.**
D. Dabelea, T. Fingerlin – (Spring) Prereq: EPID 6626, EPID 6630, EPID 6631, EPID 6632, BIOS 6611, BIOS 6612 Restrictions: Enrollment in Epidemiology PhD or DrPH degree program or Permission of the instructor.

Course instructs students how to prepare quality, successful, research grant applications. It offers students an opportunity to familiarize themselves with the grant writing and review process, enhance critical thinking skills, formulate hypothesis and interpret results, improve quality of scientific writing.

**EPID 7915 Analytic Methods in Epidemiology 1.0-4.0 cr.**
D. Dabelea – (Spring, Summer, Fall) Prereq: EPID 6626, EPID 6630, EPID 6631, EPID 6632, BIOS 6601/BIPS 6602 or BIOS 6611/BIOS 6612. Course Restrictions: Permission of the instructor is required.

Advanced treatment of techniques in the analysis of epidemiological studies, including longitudinal, time-dependent, survival data, causality, missing data, etc. Students will analyze data sets currently on file using contemporary epidemiological methods.

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

Doctoral thesis work in Epidemiology

**HEALTH SYSTEMS MANAGEMENT AND POLICY**

**HSMP 6602 Health Equity 2.0 cr.**
Dr. A. Sauaia - (Fall)

This course addresses disparities in racial and ethnic minorities, women, children, elderly, low-income, low literacy, disabled, GLBTI by studying the institutionalized, personally mediated and internalized causes. Potential solutions and challenges encountered in the quest for health equity will be discussed.

**HSMP 6603 Health Systems and Management 3.0 cr.**
A. Atherly - (Fall, Spring, Summer)

Students are introduced to basic components of current health care system and basic economic principles as applied to selected aspects of the health care system.

**HSMP 6604 Health Care Economics 3.0 cr.**
D. Milne - (Fall)

This course focuses on health care financing and economic issues. A microeconomics framework, including issues of supply, demand, market structure, market failure, price and output are discussed as they apply to the health sector.
**HSMP 6605  Health Policy**  
E. Morrato - (Spring) Prereq: HSMP 6603.  
The focus of this course will be the analysis of important US health policy issues, such as access, cost and quality. Analytic concepts, approaches and frameworks will be used to explore specific health policy issues.

**HSMP 6606  Public Health Administration**  
S. Miller - (Fall) Prereq: HSMP 6603.  
Course designed to present technical, policy and administrative issues within context of operational activities of community and public health agencies. Introduction to basic management skills is included.

**HSMP 6607  Current Legal Issues in Health Care**  
M. Jewel - (Spring)  
This course presents and discusses contemporary public health and health care administration legal issues in the United States.

**HSMP 6608  Ethical & Legal Issues in Public Health**  
P. O’Rourke - (Fall)  
Course explores ethical/legal dimensions of various topics of concern in areas of public health, health policy, epidemiology. Topics: health care reform, medical indigence, screening/genetic screening, epidemiological research, QUALYS and health outcomes research, public health/individual rights, public health in developing countries.

**HSMP 6609  Cost Benefit & Effectiveness in Health**  
H. Fang - (Spring) Prereq: HSMP 6603 and HSMP 6604 or permission of instructor.  
This is an introductory course on the theory, methods and application of economic evaluation in health context.

**HSMP 6610  Health Care Financial Management**  
R. Lindrooth - (Spring, Fall) Prereq: HSMP 6603, HSMP 6604  
This course provides students with a basic understanding of financial decision making including the time value of money, budgeting and financial management and other topics.

**HSMP 6612  Principles of Healthcare Management**  
(Spring) Prereq: HSMP 6603.  
This course will provide students with a basic understanding of financial decision making, including the time value of money, budgeting and financial management and other topics.

**HSMP 6615  Global Health Policy Issues**  
S. Rifkin - (Spring)  
The purpose of this course is to enable students to identify major issues in global health policy, analyze the theory and practice of policy, and use case studies to examine how these issues are articulated, formulated as policy and implemented.

**HSMP 6633  Mgt Nonprofit Orgs in Pub Hlth**  
Bishoff - (Spring)  
Focus on leading and managing non-profit organizations for performance and health outcomes and explores what innovation, social media and change means to the future of public health nonprofits within public health, particularly related to systems, policy and management. Prerequisite: HSMP 6603.

**HSMP 6670  Special Topics-Health Systems, Management, Policy**  
A. Atherly– (Spring, Summer, Fall)  
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 the CSPH Website for offerings and topics for this course each semester.
HSMP 7010 Found in Hlth Serv Rsrch  1.0 cr.
A. Atherly– (Spring, Fall)
   This course introduces students to health services research. It combines research seminars and
course readings to provide an introduction to the core themes of HSR, including methods, patient care
outcomes/quality of care, health policy, delivery systems and access to care.

HSMP 7607 Methds Hlth Serv Rsrch I  3.0 cr.
A. Atherly– (Spring)
   Course provides an overview of the discipline of health services research (HSR)

HSMP 7609 Methds Hlth Serv Rsrch II  3.0 cr.
R. Lindrooth– (Fall)
   Students learn how to analyze health services research data. Topics will be taught by
defining/asking real questions of real data which the students will analyze in Stata. The goal of the course
is to teach advanced econometric methods through application. Prerequisites: HSMP 7607, enrolled in
PhD or DrPH or permission of instructor.

HSMP 6840 Independent Study-Health Systems, Management, Policy  1.0-3.0 cr.
L. Bryant– (Spring, Summer, Fall)
   Faculty directed independent study in topics related to health systems, management and policy.

A. Atherly (Spring, Summer, Fall)
   Doctoral thesis work in Health Systems Management and Policy. Restriction: Permission of instructor.

PUBLIC HEALTH - GENERAL

PUBH 6600 Foundations in Public Health  2.0 cr.
D. Givray & J. Gascoigne - (Spring, Summer, Fall)
   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.

PUBH 6601 A History of Public Health  1.0 cr.
M. Johnson - (Spring)
   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.

PUBH 6606 MPH Practicum  2.0 cr.
J. Gascoigne - (Spring, Summer, Fall) Prereq: BIOS 6601, CBHS 6610, EHOH 6614, EPID 6630, HSMP
6603, PUBH 6600 OR Permission of the Instructor. Restrictions: Only open to MPH students.
   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.

PUBH 6619 Public Health in the Global Community  3.0 cr.
K. Kennedy - (Summer, Spring) Restriction: Permission of the instructor required for non-degree/non-
certificate students.
   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.

PUBH 6620 Geographic Perspective on Global Hlth  1.0 cr.
D. Thomas - (Summer) Restriction: Permission of the instructor required for non-degree/non-certificate
students.

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.

**PUBH 6624 Nutrition in Global Community** 2.0 cr.
S. Johnson & N. Krebs - (Fall) Restriction: Permission of the instructor required for non-degree/non-certificate students.

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.

**PUBH 6626 International Travel and Health** 1.0 cr.
C. Wilson - (Spring, Fall) Restriction: Permission of the instructor required for non-degree/non-certificate students.

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.

**PUBH 6651 MPH Research Paper** 1.0-4.0 cr.
J. Barnette - (Spring, Summer, Fall) Prereq: BIOS 6601, CBHS 6610, EHOH 6614, HSMP 6603, EPID 6630, PUBH 6600 OR permission of Instructor.

Independent research project resulting in a publishable paper. All projects will involve the analysis of primary or secondary data.

**PUBH 6670 Special Topics-Public Health** 1.0-3.0 cr.
J. Barnette - (Spring, Summer, Fall) 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.

**PUBH 6840 Independent Study-Public Health** 1.0-3.0cr.
J. Barnette - (Spring, Summer, Fall) Faculty directed independent study in topics related to public health.

**PUBH 6842 DrPH Seminar** 1.0 cr.
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. Restrictions: Enrollment in DrPH or permission of instructor.

**PUBH 6955 MPH Capstone Project** 1.0-2.0cr.
J. Barnette - (Spring, Summer, Fall) Prereq: BIOS 6601, CBHS 6610, EHOH 6614, EPID 6630, HSMP 6603, or permission of Instructor.

Final MPH Capstone project is completed under this course.

**PUBH 6956 Continued MPH Studies** 1.0 cr.
Prereq: PUBH 6651 or PUBH 6955 and permission of instructor. Restriction: Cannot be used for credit for meeting MPH degree requirements.

Course meets 10 times throughout the semester to develop skills related to Capstone Project and to complete project with input from faculty and other classmates. Prerequisites: PUBH 6651 or PUBH 6955 and Permission of Instructor. Restrictions: Cannot be used for credit for meeting MPH degree requirements.

**SCHOOL OF PUBLIC HEALTH- UNC**

**COMMUNITY HEALTH**
CHBH 5000 Stress Management 3.0 cr.
(Spring, Summer, Fall)
A holistic approach to stress management, with cognitive and theoretical knowledge

CHBH 5050 Health Communication and the Media 3.0 cr.
(Spring, Summer, 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 Seminar in Health Behavior 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)
This class explores the multi-cultural 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 5200 Contemp Issues in School Hlth 3.0 cr.
(Spring)
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 5250 Contemp Issues in School Hlth 3.0 cr.
(Spring)
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 Seminars in Health Promotion Strategies 3.0 cr.
(Spring) Prereq: CHBH 5090 or consent of instructor.
Examines the effectiveness of a wide range of strategies used in health promotion/disease prevention programs. Current literature/programs are presented and reviewed.

CHBH 5350 Tools for Effect Comm Hlth Pra 3.0 cr.
(Spring)
Students will acquire strategies preparing them to work effectively with multiple populations. Focus will be placed on collaborating with agencies committed to improving the health of marginalized communities.

CHBH 5400 Principles of Health Program Management 3.0 cr.
(Fall)
Prepares students to assume a supervisory role in the management of health and human services programs. Course covers planning, decision-making, organization, budgeting, marketing, human resource management, leadership.

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 6100 Program Planning and Evaluation**  
3.0 cr.  
(Fall) Prereq: CHBH 5300 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**  
3.0 cr.  
(Fall) Prereq: SRMS 6170.  
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 Independent Study**  
1.0—4.0 cr.  
(Spring, Summer, Fall)  
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. Restrictions: Instructor consent.

**CHBH 6250 Public Health Administration and Policy**  
3.0 cr.  
(Spring)  
Analyze the organization and administration of public health agencies at national, state and local levels. Major public health problems, including administrative and policy decisions regarding their resolution will be included.

**CHBH 6350 Pol/Adv/Lead/Mgt Comm Hlth**  
3.0 cr.  
(Fall)  
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 MPH Masters Project**  
2.0 cr.  
(Spring, Summer, Fall) Prerequisites: CHBH 6930 or concurrent. Restrictions: Consent of Instructor.  
Independent project in which student demonstrates public health competencies. Includes public presentation of project.

**CHBH 6920 Graduate Internship**  
3.0 cr.–6.0  
(Spring, Summer, Fall) Prerequisites: CHBH 6100. Restrictions: Consent of Instructor.  
Supervised experience at a health agency, that allows the student to put into practice knowledge and skills learned in the classroom.

**CHBH 6930 UNC MPH Practicum**  
2.0 cr.  
(Spring, Summer, Fall) Prerequisites: PUBH 6600 Restrictions: Minimum 18 core courses and consent of instructor.  
MPH students must successfully demonstrate competencies and integrate knowledge. Through this practicum, theory and skills will be applied in a public health setting.

**CHBH 6990 UNC Thesis**  
1.0 cr.–6.0  
(Spring, Summer, Fall) Restrictions: Consent of Instructor.  
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**  
3.0 cr.
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 Comm Resources for Elderly** 3.0 cr. (Spring, 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** 3.0 cr. (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** 3.0 cr. (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** 3.0 cr. (Spring)
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**

**HRSS 6100 Interpretation and Evaluation of Behavioral Research** 3.0 cr. (Spring, Fall)
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.

**STATISTICS AND RESEARCH METHODS**

**SRMS 6000 Introduction to Graduate Research** 3.0 cr. (Spring, Summer, Fall)
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.

**SRMS 6170 Biostatistics and Health Data Analysis** 3.0 cr. (Summer)
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.

**SCHOOL OF PUBLIC HEALTH- CSU**

**AGRICULTURE**

**AGRI 5000 Adv Issues in Agriculture** 3.0 cr. (Fall)
Scientific, technical, cultural and social issues facing agriculture, and their interrelationships.

**AGRI 5460 Principles of Coop Extension** 3.0 cr.
L (Spring, Summer, Fall)
Traditional and contemporary delivery systems of Cooperative Extension emphasizing structures of non-formal education

AGRI 5470  Delivery of Co-operative Extension Programs  4.0 cr.
(Spring)
Methods, techniques, and procedures in planning, implementation, and deliver of Cooperative Extension programs. Prereq: Written consent of instructor.

AGRI 6340  Animal Production Systems  3.0 cr.
(Spring, Fall)
Developing animal management systems for a variety of animal species in a forage-based environment.

AGRI 6370  Und Policy & Emerging Issues  3.0 cr.
(Spring, Fall)
Origination, purpose and effects of policy on land-based enterprises; policy effects on management decisions.

AGRI 6950  Ind Study- Agriculture  1.0-18 cr.
(Spring, Summer, Fall)
Independent study in agriculture.

ANEQ 5480  Issues in Manure Management  1.0 cr.
(Fall) Prereq: CHEM 100
Manure management practices maximizing benefits to soils and crops while minimizing hazards to air and water quality and complying with regulation.

ANEQ 5670  HAACP Meat Safety  2.0 cr.
(Spring)
Control of health problems in meat products through hazard analysis critical control point (HAACP) and total quality management (TQM) practices. Prereq: ANEQ 460.

ANEQ 6600  Topics in Meat Safety  1.0 cr.
(Fall)
Topics of current concern in meat safety.

ANEQ 6760  Molecular Approach to Food Safety  3.0 cr.
(Spring)
Molecular subtyping, tracking, and control; molecular ecology and evolution of food-borne pathogens; molecular pathogenesis of food-borne diseases. Prereq: MIP 300 and MIP 301 or MIP 334 and MIP 335.

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, Summer)
This course is designed to introduce students to the way social scientists study disaster.
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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ANTP 5400</td>
<td>Medical Anthropology</td>
<td>3.0 cr.</td>
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<td>(Spring)</td>
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<tr>
<td></td>
<td>Cultural and biocultural approaches to health, illness, and the body; theory and application in medical anthropology. Prereq: Graduate standing.</td>
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<tr>
<td>ANTP 5470</td>
<td>Mind, Medicine and Culture</td>
<td>4.0 cr.</td>
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<td>(Spring)</td>
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<tr>
<td></td>
<td>Cultural-psychological influences on health and healing; mind-body medicine; complementary and alternative medicine; Indigenous and spiritual healing. Prereq: Graduate standing.</td>
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<tr>
<td>ANTP 5710</td>
<td>Anthropology and Global Health</td>
<td>3.0 cr.</td>
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<td>(Fall)</td>
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<td>Global health concerns and problems including poverty, urbanization, malnutrition, diet, war and refugees, climate, and environment</td>
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<tr>
<td>ANTP 6950</td>
<td>Independent Study: Anthropology</td>
<td>1.0—18 cr.</td>
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<td>(Spring, Summer, Fall)</td>
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<td></td>
<td>Independent Study: Anthropology. Prerequisite: Graduate Standing.</td>
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**EDUCATION RESEARCH METHODS**

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<tr>
<th>Course Code</th>
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<tbody>
<tr>
<td>EDRM 7010</td>
<td>Applied Linear Models</td>
<td>3.0 cr.</td>
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<td>(Spring)</td>
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<td></td>
<td>General Linear model applications in educational research emphasizing conceptual understanding and characteristics of non-experimental designs</td>
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<tr>
<td>EDRM 7030</td>
<td>Application of Longitudinal Data Analysis</td>
<td>3.0 cr.</td>
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<td></td>
<td>Methods and empirical applications of individual growth modeling and discrete-time event history analysis in educational research.</td>
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**ENVIRONMENTAL AND RADIOLOGICAL HEALTH SCIENCES**

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<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>ERHS 5020</td>
<td>Fundamentals of Toxicology</td>
<td>3.0 cr.</td>
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<td>Fundamental principles of toxicology; dose-response, organ targets, toxic agents.</td>
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<tr>
<td>ERHS 5200</td>
<td>Environmental and Occupational Health</td>
<td>3.0 cr.</td>
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<td>(Fall)</td>
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<td></td>
<td>Issues in environmental and occupational health sciences in the context of public health and regulatory concerns.</td>
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<tr>
<td>ERHS 5260</td>
<td>Industrial Hygiene</td>
<td>3.0 cr.</td>
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<td>(Fall)</td>
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<td>Theory and application of industrial hygiene principles to management of the occupational environment. (Fall) Prereq: CHEM 245 or CHEM 341 or CHEM 345; ERHS 520 or concurrent registration; PH 110 or PH 121</td>
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<tr>
<td>ERHS 5270</td>
<td>Industrial Hygiene Laboratory</td>
<td>1.0 cr.</td>
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<td>(Fall)</td>
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<td></td>
<td>Industrial hygiene field monitoring equipment and techniques.</td>
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<tr>
<td>ERHS 5300</td>
<td>Radiology Physics and Dosimetry I</td>
<td>3.0 cr.</td>
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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)
Advanced topics in occupational health emphasizing contemporary issues, topics, trends, and problems in the field of industrial hygiene. Prereq: ERHS 446 or ERHS 526.

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

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

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

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

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

ERHS 5610  Radiation in Public Health  2.0 cr.
(Spring, Fall) Prereq: ERHS 3000 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.
(Summer, Spring, Fall)
Experimental course in environmental and radiological health sciences.

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

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

ERHS 6400  Advanced Epidemiology  3.0 cr.
In-depth exploration of advanced epidemiologic methods. Prereq: ERHS 532.

**ERHS 6420  Appl Logistic Regression**
(Spring)
Basic and advanced concepts of logistic regression with focus on practical applications in epidemiology using SAS. Prereq: ERHS 532; ERHS 542.

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

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

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

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

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

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

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

**ERHS 6951  Independent Study – Environmental, Occupational Health**
(Spring, Summer, Fall)
Specialized study in environmental and occupational health under supervision of faculty.

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

**ERHS 6980  MPH Capstone Project**
(Spring, Summer, Fall)
Capstone project for Master of Public Health students.

**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.

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**ETHNIC STUDIES**

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

**ETHS 6950 Independent Study-Ethnic Studies**  
(Spring, Summer, Fall)  
Independent study in ethnic studies.

### FOOD SCIENCE AND HUMAN NUTRITION

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<tr>
<th>Course Code</th>
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<th>Credits</th>
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<tbody>
<tr>
<td>FSHN 5000</td>
<td>Food System/Nutrition/Food Security</td>
<td>2.0 cr.</td>
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<tr>
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<td>(Fall) Prereq: FSHN 350</td>
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<tr>
<td></td>
<td>Global and local food systems and their potential influence on nutrition and food security.</td>
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<tr>
<td>FSHN 5200</td>
<td>Advanced Medical Nutrition Therapy</td>
<td>3.0 cr.</td>
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<td></td>
<td>(Summer) Prereq: FSHN 5500 or 5510</td>
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<td></td>
<td>Role of nutrition in etiology and treatment of selected disorders.</td>
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<tr>
<td>FSHN 5250</td>
<td>Nutrition Education, Theory and Practice</td>
<td>2.0 cr.</td>
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<td>(Fall) Prereq: FSHN 350. Restriction: Instructor permission if not in Public Nutrition focus area.</td>
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<td></td>
<td>Examination of current theories, skills, and models used in nutrition education programs as preparation for research and practice.</td>
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<tr>
<td>FSHN 5500</td>
<td>Advanced Nutritional Science I</td>
<td>3.0 cr.</td>
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<td>(Spring)</td>
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<td></td>
<td>Protein, vitamin, mineral metabolism: human studies, animal models. Prereq: BC 351 or BC 403: FSHN 350.</td>
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<tr>
<td>FSHN 5510</td>
<td>Advanced Nutritional Science II</td>
<td>3.0 cr.</td>
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<td>(Fall) Prereq: BC 351 or BC 403; FSHN 350. Restriction: Instructor permission if not in Public Nutrition focus area.</td>
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<td>Carbohydrate, lipid, energy metabolism; human studies, animal models.</td>
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<tr>
<td>FSHN 6200</td>
<td>Community Nutrition Plan and Evaluation</td>
<td>3.0 cr.</td>
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<td>(Spring)</td>
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<td>Community nutrition assessment; nutrition program planning and evaluation; nutrition policy analysis. Prereq: FSHN 350.</td>
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<tr>
<td>FSHN 6400</td>
<td>Selected Topics in Nutritional Epidemiology</td>
<td>2.0 cr.</td>
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<td>(Fall) Prereq: FSHN 350; STAT 301 or STAT 307/ERHS 307.</td>
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<td>Overview of topics in nutritional epidemiology; study design, interpretation of findings, linkage of data to action.</td>
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<tr>
<td>FSHN 6501</td>
<td>Human Nutrition-Carbohydrates/Lipids/Energy</td>
<td>2.0 cr.</td>
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<td>(Fall) Prereq: FSHN 350. Restriction: Instructor permission if not in Public Nutrition focus area.</td>
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<td>Appraisal of literature on human nutritional status.</td>
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<tr>
<td>FSHN 6600</td>
<td>Women’s Issues in Lifecycle: Nutrition</td>
<td>2.0 cr.</td>
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<td>(Spring)</td>
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<td></td>
<td>Current nutritional issues related to selected stages of the lifecycle compared to normal adult nutritional needs. Prereq: FSHN 459.</td>
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<tr>
<td>FSHN 6610</td>
<td>International Nutrition</td>
<td>2.0 cr.</td>
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</tbody>
</table>


(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)

Central and peripheral mechanisms controlling energy intake with emphasis on humans. Current theories, experimental approaches, and new research. Prereq: FSHN 350.

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)
Interrrelationships 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.

FWLD 5650  Human Wildlife Conflict  
3.0 cr.
(Spring)
Methods for resolving conflicts caused by wildlife; integrating animal behavior, population dynamics, and human dimensions into solutions.

### HUMAN DEVELOPMENT AND FAMILY STUDIES

HDFS 5920  Grant Writing-Human Services  
3.0 cr.
(Fall) Prereq: STAT 201 Writing grant proposals that support client services or for research.

HDFS 6000  Advanced Study Program Planning and Evaluation  
3.0 cr.
(Spring) Program planning and evaluation.

HDFS 6100  Risk and Resilience  
3.0 cr.

**HDFS 6950 Ind Study- Human Devel**
(Spring, Summer, Fall) 1.0-18 cr.
Independent study in human development and family studies.

**HDFS 6970 Grp Study- Human Devel**
(Spring, Summer, Fall) 1.0-18 cr.
Group study in human development and family studies.

**HEALTH AND EXERCISE SCIENCE**

**(Spring)**
Theory and practice of exercise testing and prescription in apparently healthy and diseased populations. Prereq: HES 403.

**HESC 5450 Evolutionary Basis Human Health/Fitness** 3.0 cr.
(Spring)
Evolutionary basis for human health and fitness based upon dietary and exercise patterns for pre-agricultural humans. Prereq: HES 403; FSHN 350.

**HESC 5560 Wellness & Health Promotion** 3.0 cr.
(Fall)
Discussion of theory and application of health promotion in various settings.

**HESC 5600 Exercise and Nutrition** 3.0 cr.
(Spring)
Interaction of nutrition and physical fitness in exercise performance and promotion of health. Prereq: FSHN 350; HES 403; 2 credits of biochemistry.

**HESC 6000 Data Analysis & Research Design** 3.0 cr.
(Fall) Prereq: One course in statistics. Restriction: Instructor permission if not in Health and Exercise Science focus area.
Methods of research applied to health and exercise science including quantitative techniques of analysis and research design.

**HESC 6030 Advanced Topics in Exercise Physiology** 3.0 cr.
(Fall) Restriction: Instructor permission if not in Health and Exercise Science focus area.
Advanced principles of theoretical and applied exercise physiology at molecular, cellular and systemic levels.

**HESC 6100 Exercise Bioenergetics** 3.0 cr.
(Fall) Prereq: BC 351 or FSHN 350; HES 403. Restriction: Instructor permission if not in Health and Exercise Science focus area.
Biology of energy transfer reactions related to human locomotion and exercise performance in both healthy individuals and disease states.

**HESC 6300 Integrat Exer & Nutr Metab** 3.0 cr.
(Spring)
Advances in integrative human metabolism under conditions of changing energy flux. Prerequisites: FSHN 5510; HESC 6100. Restrictions: Credit allowed for only one of the following: FSHN 5600, HESC 5600, FSHN 6300, HESC 6300.

**HESC 6450 Epidemiology of Health and Physical Activity** 3.0 cr.
(Spring)
Foundation in chronic disease epidemiology that will enable students to evaluate the current epidemiologic literature. Prereq: HES 600.

**HESC 6500 Health Promotion Prog**
(Spring) 3.0 cr.
Development of skills in health promotion program design, implementation and evaluation.

**HESC 6560 Comprehensive Stress Management**
(Spring, Summer, Fall) 3.0 cr.
Relationship between stress and illness emphasizing methods to impact its detrimental effects.

**HESC 6861 Practicum in Wellness Management**
(Spring, Summer, Fall) 1.0-3.0 cr.
Practicum requirement for Health and Exercise Science students.

**HESC 6920 Seminar-Health/Exercise Science**
(Spring, Fall) 1.0 cr.
Restriction: Instructor permission if not in Health and Exercise Science focus area. Consideration of graduate education in health and exercise science.

**HESC 6950 Independent Study - Health**
(Spring, Summer, Fall) 1.0-18.0 cr.
Restriction: Instructor permission if not in Health and Exercise Science focus area. Independent study in health.

**HESC 6951 Independent Study – Exercise Science**
(Spring, Summer, Fall) 1.0-18.0 cr.
Restriction: Instructor permission if not in Health and Exercise Science focus area. Independent study in exercise science.

**HESC 6961 Group Study – Health**
(Spring, Summer, Fall) 1.0-18.0 cr.
Restriction: Instructor permission if not in Health and Exercise Science focus area. Group study in health.

**HESC 7100 Exercise in Disease Prevention**
(Fall) 3.0 cr.
Prereq: HES 403; HES 520 Restriction: Instructor permission if not in Health and Exercise Science focus area. Biology of energy transfer reactions related to human locomotion and exercise performance in both healthy individuals and disease states.

### INTERNATIONAL EDUCATION

**IE00 6790 International Development Seminar**
(Spring) 3.0 cr.
Advanced International Development.

**IE00 6920 International Development Seminar**
(Fall) 3.0 cr.
Exploration of contemporary issues in international development from interdisciplinary perspectives.

### JOURNALISM AND TECHNICAL COMMUNICATION

**JTCM 5000 Communication Research & Evaluation Methods**
(Fall) 4.0 cr.
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 4.0 cr.
Examination of communication theory including communicator credibility, messages, channels, audiences and information, behavior and attitude change.

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

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

**JTCM 6300 Telecommunications**
(Spring)
3.0 cr.
Theory and application of telecommunication in information age. Prereq: JTCM 5010.

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

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

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

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

**JTCM 6810 Experimental Course - JTC**
(Spring, Summer, Fall)
1.0-5.0 cr.
Experimental courses in journalism and technical communication.

**JTCM 6950 Independent Study – Communication**
(Spring, Summer, Fall)
1.0-3.0 cr.
Independent study in Journalism and Technical Communication.

### 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.
3.0 cr.
Principles of disease processes; emphasis on reactivity of the diseased cell, tissue, organ or organism.

### NATURAL RESOURCES

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

| PHIL 5640  Seminar in Animal Rights 3.0 cr. (Fall) | Contemporary issues concerning nature and moral status of non-human animals. |
| PHIL 6660  Science and Ethics 3.0 cr. (Spring) | Science, skills, and beliefs directed at the maintenance and improvement of health for all people. |

**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) | Review and assessment of public health competencies, community collaboration, cultural competence, evidence-based practice and public health ethics. Prereq: Admission to MPH degree program. |
| 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, Summer, Fall) | Independent study in psychology. |
| PSCY 5950  Ind Study- Psychology 1.0-18 cr. (Spring) | Science, skills, and beliefs directed at the maintenance and improvement of health for all people. |
| 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 6860  Public Health Practicum 2.0 cr. (Spring, Summer, Fall) | Required CSU public health practicum. |
| PSCY 7920  Seminar - Psychology 1.0-6.0 cr. |  |
Courses based on current public health topics from a psycho/social perspective.

**PSCY 7922 Prev of Occup Injury & Illness** 3.0 cr.
Understanding of the basic public health approach to the prevention and control of occupational illnesses and injuries.

**PSCY 7923 Seminar in Public Health** 3.0 cr.
Seminar course with special topics related to public health.

**SOCIOLOGY**

**SOCO 6950 Independent Study - Sociology** 1.0-6.0 cr.
Independent study in sociology.

**COMMUNICATION**

**SPCM 5320 Theory of Interpersonal Comm** 3.0 cr.
Theories of communication in development, maintenance, and deterioration of friendship, couple, family, group, and business relationships.

**SPCM 5340 Communication-Global Diversity** 3.0 cr.
(Spring)
Ethnographic approach to communication issues and concerns in a global context.

**SPCM 5380 Communicating in Health Clinics** 3.0 cr.
(Spring)
Organizational, interpersonal, and intercultural dimensions of communicating in public health clinical settings.

**SPCM 5390 Communication Theory** 3.0 cr.
(Fall)
Examination of communication philosophies and perspectives; analysis of modern theories of face-to-face communication.

**STATISTICS**

**STAS 5110 Design/Data Analysis Rsrch I** 4.0 cr.
(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** 4.0 cr.
(Spring)
Statistical methods for experimenters and researchers emphasizing design and analysis of experiments. Prereq: STAT 511

**STAS 5200 Intro to Probability Theory** 4.0 cr.
(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  3.0 cr.
(Spring)
  Techniques in spatial analysis: point pattern analysis, spatial autocorrelation. Prereq: STAT 301 or STAT 307/ERHS 307.

STAS 5400 Data Analysis & Regression  3.0 cr.
(Fall)
  Probability, random variables, distributions, expectations, generating functions, limit theorems, convergence, random processes. Prerequisite of six upper division statistics courses.

STAS 5600 App Multivariate Analys  3.0 cr.
(Fall, Spring)
  Multivariate analysis of variance; principal components; factor analysis; discriminant analysis; cluster analysis. Prereq: STAT 301; STAT 307 or STAT 309.

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<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
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<tbody>
<tr>
<td>VSCS 5330</td>
<td>Epidemiologic Infections Disease/Zoonosis</td>
<td>3.0 cr.</td>
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<td>(Spring)</td>
<td>Epidemic features of infectious and parasitic diseases that have a major impact on community medicine.</td>
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<tr>
<td>VSCS 5800</td>
<td>Global Vet Public Health</td>
<td>1.0 cr.</td>
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<td>(Spring)</td>
<td>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.</td>
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<tr>
<td>VSCS 5810</td>
<td>Experimental Course - VS</td>
<td>1.0-5.0 cr.</td>
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<td>(Spring, Summer, Fall)</td>
<td>Experimental courses offered within clinical sciences.</td>
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<tr>
<td>VSCS 6480</td>
<td>Food Animal Production and Food Safety</td>
<td>1.0 cr.</td>
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<tr>
<td>(Spring)</td>
<td>Basic orientation to food animal production units, heard health concepts, and issues of food safety from preharvest through processing and distribution.</td>
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<tr>
<td>VSCS 6620</td>
<td>Research Plan, Design and Analysis</td>
<td>3.0 cr.</td>
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<tr>
<td>(Spring)</td>
<td>Introductory biostatistics course required for MPH students.</td>
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<tr>
<td>VSCS 7330</td>
<td>Advance Vet Epidemiology Research</td>
<td>4.0 cr.</td>
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<td>(Spring)</td>
<td>Provides in-depth knowledge in epidemiological research as it specifically applies to health of animal populations. Prereq: ERHS 5320; VSCS 6620</td>
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<tr>
<td>VSCS 7950</td>
<td>Ind Study – Epidemiology</td>
<td>1.0-5.0crs.</td>
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<tr>
<td>(Spring, Summer, Fall)</td>
<td>Specialized study in epidemiology under supervision of faculty.</td>
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<tr>
<td>VSCS 7960</td>
<td>Group Study – Medicine</td>
<td>1.0-18.0crs.</td>
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<tr>
<td>(Spring, Summer, Fall)</td>
<td>Group study – contact department for topics in a given semester.</td>
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