UM SPH Academic Courses

BIOSTAT449
Topics In Biostatistics
Winter term(s)
3 Credit Hour(s)
Instructor(s): Kalbfleisch, Jack
Prerequisites: Statistics 401 or permission of instructor
This course will make use of case studies to discuss problems and applications of biostatistics. Topics will include cohort and case control studies, survival analysis with applications in clinical trials, evaluation of diagnostic tests, and statistical genetics. The course will conclude with a survey of areas of current biostatistical research.
This course is cross-listed with Statistics 449 in the Literature, Science and the Arts department.

BIOSTAT503
Introduction to Biostatistics
Fall term(s)
4 Credit Hour(s)
Instructor(s): Staff; Mukherjee, Bhramar
Offered every year
Prerequisites: Elementary algebra
Fundamental statistical concepts related to the practice of public health: descriptive statistics; probability; sampling; statistical distributions; estimation; hypothesis testing; chi-square tests; simple and multiple linear regression; one-way ANOVA. Use of computer in statistical analysis.

BIOSTAT510
Statistical Computer Program Packages
Winter term(s)
3 Credit Hour(s)
Instructor(s): Welch, Kathy
Prerequisites: Biostat 503 or 553 or permission of instructor
Students learn use of several widely used statistical computer program packages such as BMDP, SAS and SPSS. Emphasis placed on relative merits of these packages with respect to types of statistical analyses they perform and their methods of data management.

**BIOSTAT513**
Application of Regression Analysis to Public Health Studies
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff; Ye, Wen
Offered every year
Prerequisites: Biostat 503, 553 or Perm. Instr.
Biostat 513 will cover a general overview of linear, logistic, Poisson, and Cox regression. The course will use SPSS as the statistical software.

**BIOSTAT523**
Biostatistical Analysis for Health-Related Studies
Winter term(s)
3 Credit Hour(s)
Instructor(s): Kim, Myra; Staff
Prerequisites: BIOSTAT 553; BIOSTAT 503 w/ instructors permission
A second course in applied biostatistical methods and data analysis. Concepts of data analysis and experimental design for health-related studies. Emphasis on categorical data analysis, multiple regression, analysis of variance and covariance.

**BIOSTAT553**
Applied Biostatistics
Fall term(s)
4 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Calculus
Fundamental statistical concepts related to the practice of public health: descriptive statistics; probability; sampling; statistical distributions; estimation; hypothesis testing; chi-square tests; simple and multiple linear regression; one-way ANOVA. Taught at a more advanced mathematical level than Biostat 503. Use of the computer in statistical analysis.

BIOSTAT560
Statistical Methods in Epidemiology
Fall term(s)
4 Credit Hour(s)
Instructor(s): Banerjee, Mousumi
Prerequisites: Biostat 523, EPID 503 or EPID 601
Statistical methods commonly used in environmental epidemiology. Emphasis on choosing appropriate statistical methods and subsequent interpretation. Topics include probability, measures of association and risk, sample size calculations, SMR and PMR analysis, logical regression and survival analysis.

BIOSTAT578
Practical Projects
Fall, Winter, Spring, Spring-Summer, Summer term(s)
1-4 Credit Hour(s)
Instructor(s): Staff
Prerequisites: NONE
Practical projects in consultation and statistical analysis of data in research studies with health investigators. Course requirements include an approved practical work experience related to Biostatistics in consultation with a faculty advisor. May be elected more than once. Enrollment limited to Biostatistics majors with at least two full terms of prior registration.

BIOSTAT600
Introduction to Biostatistics
Fall term(s)
1 Credit Hour(s)
Instructor(s): Braun, Thomas; Welch, Kathy
Prerequisites: Admission to a degree program in Biostatistics
The purpose of this course is to review basic applied statistical concepts and tools and to introduce the SPH computer network and statistical software.

BIOSTAT601
Probability and Distribution Theory
Fall term(s)
4 Credit Hour(s)
Instructor(s): Nan, Bin; Staff
Prerequisites: Three terms of calculus
Fundamental probability and distribution theory needed for statistical inference. Probability, discrete and continuous distributions, expectation, generating functions, limit theorems, transformations, sampling theory.

BIOSTAT602
Biostatistical Inference
Winter term(s)
4 Credit Hour(s)
Instructor(s): Murray, Susan
Prerequisites: Biostat 601
Fundamental theory that is the basis of inferential statistical procedures. Point and interval estimation, sufficient statistics, hypothesis testing, maximum likelihood estimates, confidence intervals, criteria for estimators, methods of constructing test and estimation procedures.

BIOSTAT605
Intro to SAS Statistical Programming
Fall term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: One course in introductory statistics;
Co-requisite Biostat 601 or equivalent or Perm. Instr
This course provides incoming master's students in biostatistics with basic experience in SAS programming for data set creation and manipulation, an introduction to SAS macros, and SAS matrix manipulation.

BIOSTAT610
Readings in Biostatistics
Fall, Winter term(s)
1-4 Credit Hour(s)
Instructor(s): Staff
Prerequisites: One of Biostat 503, Biostat 524, Biostat 553 or Biostat 601/Biostat 602
Independent study in a special topic under the guidance of a faculty member. May be elected more than once. Enrollment is limited to biostatistics majors.

BIOSTAT615
Statistical Computing
Fall, Winter term(s)
3 Credit Hour(s)
Instructor(s): Abecasis, Goncalo

Not offered 2007-2008

Prerequisites: Biostat 601 or Perm. Instr.

A survey of key algorithms for statistical computing and its applications in Biostatistics. The course will cover fundamental computational techniques for dynamic programming, sorting, and searching, as well statistical methods for random number generation, numerical integration, function optimization, Markov-Chain Monte Carlo, and the E-M algorithm. Enables students to understand numerical results produced by a computer and to implement their own statistical methods.

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BIOSTAT617

Theory and Methods of Sample Design (Soc 717 and Stat 580 and SurvMeth 617)

Fall term(s)

3 Credit Hour(s)

Instructor(s): Lepkowski, James M

Prerequisites: Three or more courses in statistics, and preferably a course in methods of survey sampling

Theory underlying sample designs and estimation procedures commonly used in survey practice.

This course is cross-listed with Stats 580 Soc 717 SurvMeth617 in the Rackham department.

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BIOSTAT619

Clinical Trials

Fall term(s)

2 Credit Hour(s)

Instructor(s): Braun, Thomas

Prerequisites: Biostatistics 601 or equivalent or Perm. Instr.

One course Introductory Statistics
This course is designed for individuals with a strong quantitative background that are interested in the scientific, policy, design and management aspects of clinical trials. Topics include types of clinical research, bias and random error, study design, ethics, treatment allocation, randomization and stratification quality control, power and sample size, group sequential monitoring, crossover designs and meta-analysis.

**BIOSTAT630**
Statistical Methods in Biological Assay
Fall term(s)
3 Credit Hour(s)
Instructor(s): Staff
**Not offered 2007-2008**
Prerequisites: Biostat 650 and Co-requisite Biostat 651 or Perm. Instr.
Logic of biological assay; dosage response curves; quantitative and quantal responses; parallel line and slope-ratio assays; simplified estimators; sequential assays; problem of design.

**BIOSTAT642**
Introduction to Functional MRI
Fall term(s)
3 Credit Hour(s)
Instructor(s): Staff
**Not offered 2007-2008**
This course presents the basic skills to design and analyze functional magnetic resonance imaging (fMRI) experiments. We start by reviewing the basic Matlab and Unix skills necessary to manipulate image data. Next we introduce the principles of MRI and the nature of the Blood Oxygenation Level Dependent (BOLD) effect, including artifacts that corrupt the BOLD signal. We cover blocked and event-related designs, and how to optimize statistical power of design. We cover subject safety.

BIOSTAT645
Time Series Analysis with Biomedical Applications
Fall term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Biostat 602, Biostat 650 or Perm. Instr
Introduction to statistical time series analysis with an emphasis on frequency domain (spectral) methods and their applications to biomedical problems. Topics include autocorrelation, stationarity, autoregressive and moving average processes, power spectra, periodograms, spectral estimation, linear filters, complex demodulation, autoregressive integrated moving average (ARIMA) models, cross-correlation, cross-spectra, coherence, time and frequency domain linear regression. The methods will be illustrated in applications to various areas of public health and medical research such as environmental health, electrophysiology, and endocrinology.

BIOSTAT646
Data Analysis in Molecular Biology
Winter term(s)
3 Credit Hour(s)
Instructor(s): Qin, Zhaohui  
Prerequisites: Graduate Standing and Statistics 400, Biostatistics 523, or Biostatistics 553 or permission of instructor  
The course will cover statistical methods used to analyze data in experimental molecular biology. The course will primarily cover topics relating to gene expression data analysis, but other types of data such as genome sequence data that is sometimes analyzed in concert with expression data will also be covered.  
This course is cross-listed with Statistics 545 (Home Program) Bioinformatics in the Rackham department.  

BIOSTAT650  
Applied Statistics I: Linear Regression  
Fall term(s)  
4 Credit Hour(s)  
Instructor(s): Kim, Sinae  
Prerequisites: BIOSTAT601  
Graphical methods, simple and multiple linear regression; simple, partial and multiple correlation; estimation; hypothesis testing, model building and diagnosis; introduction to nonparametric regression; introduction to smoothing methods (e.g., lowess) The course will include applications to real data.  

BIOSTAT651  
Applied Statistics II: Extensions for Linear Regression  
Winter term(s)  
3 Credit Hour(s)  
Instructor(s): Elliot, Michael  
Prerequisites: BIOSTAT601 and BIOSTAT650
Introduction to maximum likelihood estimation; exponential family; proportion, count and rate data; generalized linear models; link function; logistic and Poisson regression; estimation; inference; deviance; diagnosis. The course will include application to real data.

**BIOSTAT652**
Design of Experiments
Fall term(s)
3 Credit Hour(s)
Instructor(s): Staff
**Not offered 2007-2008**
Prerequisites: Biostat 651
Planning of experiments, use of contrasts in analysis of complete and incomplete block designs. A unified approach to analysis of designs through use of eigen-values and eigenvectors of the association matrix. A-D-E optimality criteria factorial exponents; efficiency of a design, confounding, fractional replication, response-surface designs, rotability criterion, mixture designs, analysis of two-way designs, analysis when blocks are random, applications in biological and biomedical problems.

**BIOSTAT653**
Applied Statistics III: ANOVA and Linear Mixed Models
Winter term(s)
3 Credit Hour(s)
Instructor(s): Braun, Thomas
Prerequisites: BIOSTAT650 and concurrent enrollment in BIOSTAT651
One-way layout, two-way and higher-way layouts; fixed effects and random effects; multiple comparisons; matching and blocking; balanced and unbalanced designs; weighted least squares; repeated measures; longitudinal and clustered data; linear mixed models; variance components; BLUP; REML. The course will include applications to real data.

BIOSTAT664
Special Topics in Biostastics
Fall, Winter, Spring-Summer term(s)
1-4 Credit Hour(s)
Instructor(s): Zoellner, Sebastian; Rosenberg, Noah
Not offered 2007-2008
Prerequisites: Permission of instructor
Master's level seminar designed to provide an extensive review of a number of substantive and methods and skill areas in biostatistics. Readings, discussion, and assignments are organized around issues of mutual interest to faculty and students. Reviews and reports on topics required in the areas selected. May be elected more than once.

BIOSTAT666
Statistical Models and Numerical Methods in Human Genetics
Winter term(s)
3 Credit Hour(s)
Instructor(s): Qin, Zhaohui
Prerequisites: Biostat 602 or Perm. Instr.
Introduction to current statistical methods used in human genetics. Topics will include sampling designs in human genetics, gene frequency estimation, the coalescent method for simulation of DNA sequences, linkage analysis, tests of association, detection of errors in genetic data, and the multi-factorial model. The course will include a simple overview of genetic data and terminology and will proceed with a review of numerical techniques frequently employed in human genetics.

BIOSTAT675
Survival Time Analysis
Fall term(s)
3 Credit Hour(s)
Instructor(s): Schaubel, Douglas
Prerequisites: Biostat 602 and Biostat 650
Concepts and methods for analyzing survival time data obtained from following individuals until occurrence of an event or their loss to follow-up. Survival time models, clinical life tables, survival distributions, mathematical and graphical methods for evaluating goodness of fit, comparison of treatment groups, regression models, proportional hazards models, censoring mechanisms.

BIOSTAT680
Applications of Stochastic Processes I
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Biostat 601 and Math 450 or equiv
Conditional distributions, probability generating functions, convolutions, discrete and continuous parameter, Markov chains, medical and health related applications.
BIOSTAT682
Applied Bayesian Inference
Winter term(s)
3 Credit Hour(s)
Instructor(s): Kim, Sinae; Staff
Prerequisites: Biostat 602, Biostat 650 and Biostat 651

BIOSTAT685
Elements of Nonparametric Statistics
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Biostat 602 or STAT 511, and Biostat 650 or Perm. Instr
First half covers theory and applications of rank and randomization tests: sampling and randomization models, randomization t-test, Wilcoxon rank sum and signed rank tests, Kruskal-Wallis test, asymptotic result under randomization, relative efficiency; second half covers theory and applications of nonparametric regression: smoothing methods, including kernel estimators, local linear regression, smoothing splines, and regression splines, methods for choosing the smoothing parameter, including unbiased risk estimation and cross-validation, introduction to additive models.

BIOSTAT690
Health Applications of Multivariate Analysis
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Biostat 650 and Biostat 651 and Math 417 or Perm. Instr.
Techniques of multivariate analysis related to health and biomedical problems. Emphasis on computational techniques and programs with health examples. Tests of significance for one, two or more populations; general linear model; multivariate analyses of variances and covariances; correlation procedures; principal components and discriminant analyses.

BIOSTAT695
Analysis of Categorical Data
Fall term(s)
3 Credit Hour(s)
Instructor(s): Johnson, Timothy
Prerequisites: Biostat 602 and Biostat 660
Regression models for the analysis of categorical data: logistic, probit and complementary log-log models for binomial random variables; log-linear models for cross-classifications of counts; regression models for Poisson rates; and multinomial response models for both nominal and ordinal responses. Model specification and interpretation are emphasized, and model criticism, model selection, and statistical inference are cast within the framework of likelihood based inference.

**BIOSTAT699**

Analysis of Biostatistical Investigations

Winter term(s)

4 Credit Hour(s)

Instructor(s): Taylor, Jeremy; Gillespie, Brenda W

Prerequisites: Registration for last term of studies to complete MS or MPH

Identifying and solving design and data analysis problems using a wide range of biostatistical methods. Written and oral reports on intermediate and final results of case studies required.

**BIOSTAT800**

Seminar in Biostatistics

Winter term(s)

1 Credit Hour(s)

Instructor(s): Staff

Presentations and discussions of current consulting and research problems. May be elected more than once. Enrollment limited to biostatistics majors.

**BIOSTAT803**

Biostatistics in Cancer Seminar

Fall, Winter term(s)
The purpose of this class is to describe biostatistical research that is occurring in collaboration with cancer researchers, and to provide exposure to the field of cancer research. Activities include seminars on statistical methods in cancer; presentations of cancer research; presentations of articles from statistical literature; discussion of cancer clinical trial protocols and grant proposals; and visits to research laboratories. Students formally in the training program are expected to enroll in this course every semester. The course is open to students not participating in the training grant. It is open to both PhD and Masters students.

**BIOSTAT815**

Advanced Topics in Computational Statistics

Fall term(s)

3 Credit Hour(s)

Instructor(s): Abecasis, Goncalo

Prerequisites: Biostat 601, Biostat 602 and Biostat 625 or equiv and proficiency in Fortran or C

Modern numerical analysis for statisticians. Combination of theory and practical computational examples illustrating the current trends in numerical analysis relevant to probability and statistics. Topics choose from numerical linear algebra, optimization theory, quadrature methods, splines, and Markov chains. Emphasis on newer techniques such as quasi-random methods of integration, the EM algorithm and its variants, and hidden Markov chains. Applications as time permits to areas such as genetic and medical imaging.

**BIOSTAT820**

Readings in Biostatistics
Students assigned special topics for literature study under guidance of individual faculty members. May be elected more than once. Enrollment limited to biostatistics majors.

**BIOSTAT830**  
Advanced Topics in Biostatistics  
Fall, Winter, Spring-Summer term(s)  
1-4 Credit Hour(s)  
Instructor(s): Tsodikov, Alexander  
Advanced training in biostatistical methods primarily for doctoral students. Format will include lectures, readings, presentations and discussions in an area of special interest to students and faculty, such as stopping rules and interim analysis in clinical trials, conditional and unconditional inference and ancillarity, or nonparametric regression.

**BIOSTAT840**  
Advanced Topics in Data Analysis  
Fall, Winter, Spring-Summer term(s)  
3 Credit Hour(s)  
Instructor(s): Staff  
**Not offered 2007-2008**  
Prerequisites: Biostat 650 and Biostat 651  
Alternate methods of data analysis useful when data do not fulfill unusual assumptions of statistical tests. Using articles from the literature, students learn methods of data analysis more robust than usual methods and how to choose among them. Focuses on comparison of groups, ANOVA and regression.

**BIOSTAT845**
Advanced Topics in Times Series Analysis
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Biostat 645, Stat 531 or Perm. Instr.
Advanced theory of stationary univariate and multivariate time series. Additional advanced topics such as analysis of non-stationary, non-linear, and/or categorical time series; time-frequency analysis; and statistical methods based on the wavelet transform or related transforms. Application of methods to time series data sets from health research.

BIOSTAT850
Research in Biostatistics
Winter, Spring-Summer term(s)
2-4 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Research on selected topics involving the application of statistical methods to health problems. May be elected more than once. Enrollment limited to biostatistics majors.

BIOSTAT851
Linear Statistical Models (Stat 642)
Fall term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Biostat 602 and Biostat 651 or Perm. Instr.

**BIOSTAT866**
Advanced Topics in Genetic Modeling
Fall term(s)
3 Credit Hour(s)
Instructor(s): Zoellner, Sebastian
Prerequisites: Biostat 601, Biostat 602, Biostat 666 or Perm. Instr.
Advanced topics in quantitative genetics with emphasis on models for gene mapping, pedigree analysis, reconstruction of evolutionary trees, and molecular genetics experiments, computational mathematics, and statistical techniques such as Chen-Stein Poisson approximations, hidden Markov chains, and the EM algorithm introduced as needed.

**BIOSTAT870**
Analysis of Repeated Measurements
Winter term(s)
3 Credit Hour(s)
Instructor(s): Raghunathan, Trivellore
Prerequisites: Math 417, Biostat 602, Biostat 651 and one of Biostat 690, Biostat 851, or Biostat 890
Mixed model analysis of variance; multivariate profile analysis; linear mixed effects models with unbalanced designs, time-varying covariates, and structured covariance matrices; maximum likelihood (ML), restricted maximum likelihood (REML), and Bayes estimation and inference; nonlinear mixed effects models.

**BIOSTAT875**
Advanced Topics in Survival Analysis
Winter term(s)
3 Credit Hour(s)
Instructor(s): Schaubel, Douglas
Prerequisites: Biostat 675
Lectures and readings from the literature on advanced topics in survival analysis. Covers regression for censored data, general event-history data and models, competing risks. Statistical, mathematical, and probabilistic tools used in survival analysis are extended for these general problems.

BIOSTAT880
Statistical Analysis With Missing Data
Fall term(s)
3 Credit Hour(s)
Instructor(s): Little, Roderick
Prerequisites: Biostat 602 and 651, and at least one of Biostat 690, Biostat 851, Biostat 890, or Biostat 895 or Perm Inst.
Statistical analysis of data sets with missing values. Pros and cons of standard methods such as complete-case analysis, imputation. Likelihood-based inference for common statistical problems, including regression, repeated-measures analysis, and contingency table analysis. Stochastic censoring models for nonrandom nonresponse. Computational tools include the EM algorithm, the Gibbs sampler, and multiple imputation.

BIOSTAT885
Nonparametric Statistics
Winter term(s)
3 Credit Hour(s)
Instructor(s): Taylor, Jeremy
Not offered 2007-2008
Prerequisites: Biostat 601/602 or Perm. Instr.
Theory and techniques of nonparametrics and robustness.
M-estimation, influence function, bootstrap, jackknife,
generalized additive models, smoothing techniques, penalty
functions, projection pursuit, CART.

**BIOSTAT890**
Multivariate Statistical Models (Stat 640)
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Math 417 and either Stat 511 or Biostat 602 and Perm. Instr.
Derivation of multivariate techniques: multivariate estimation,
$T$, criteria for testing linear hypothesis, test for additional
information, testing covariance matrices, factor analysis,
growth curves and elementary time series.

**BIOSTAT895**
Analysis of Multivariate Categorical Data
Fall term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Biostat 651 and Biostat 695 or Perm. Instr.
Probability models for two-way tables; multi-factor,
multi-response framework; product multinomial distribution
theory; Taylor series estimates of variance, weighted least
squares and Wald statistics; constraint equations; models for
characterizing interactions; step-wise variable selection;
factorial designs with multinomial responses; repeated
measurement experiments; log-linear models; paired-choice
and bioassay experiments; life-table models.
BIOSTAT990
Dissertation/Pre-Candidacy
Fall, Winter, Spring-Summer term(s)
1-8 Credit Hour(s)
Instructor(s): Staff
Prerequisites: (1-8 Full term, 1-4 Half term)
Election for dissertation work by doctoral student not yet admitted to status as a candidate.

BIOSTAT995
Dissertation Research for Doctorate in Philosophy
Fall, Winter, Spring-Summer term(s)
1-8 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Admission to Doctoral Program(1-8 Full term, 1-4 Half term)
Election for dissertation work by doctoral student who has been admitted to status as a candidate.

EHS311
Naturally Occuring Biological Toxins
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Biology, Chemistry (organic preferred)
Explanation of principles needed to understand sources, adverse effects, mechanism of action, and treatment for exposure to naturally occurring toxins from substances such as mushrooms, herbs, plants, microbes, marine organisms, and insect and animal venom. Implications of bioterrorism will be discussed.
This course is cross-listed with Naturally Occurring Biological Toxins, EHS 311 in the LS&A department.

EHS500
Principles of Environmental Health Sciences
Fall term(s)
2 Credit Hour(s)
Instructor(s): Robins, Thomas; Hu, Howard
Not offered 2007-2008
Prerequisites: Seniors with Perm. Instr.

This course provides a broad overview of some of the most important and current challenges to human health from environmental and occupational risk factors while teaching the basic knowledge and multi-disciplinary skills used to assess, control, and prevent them. We will address specific threats, such as outdoor and indoor air pollution, toxic metals, pesticides, radiation and occupational stressors; analyze impacts on specific diseases and injuries, such as cardiovascular disease, asthma, cancer, musculoskeletal injuries and impaired child development; and introduce emerging threats, such as the hormone-mimicing potential of plastic chemicals and the impact of global climate change on heat-related mortality and shifting patterns of infectious disease. Emphasis will also be given to understanding the worsening environmental health impacts of industrialization on developing countries, the effects of globalization, such as the growing movement of hazardous industries, products, and wastes across borders, and the rise of the environmental justice movement. The course fulfills the MPH core competency in environmental health and is also open to students in LSA and other UM graduate schools. A basic understanding (high school level) of human biology and chemistry is recommended.

EHS501
Occupational Environmental Disease
Winter term(s)
2 Credit Hour(s)
Instructor(s): Robins, Thomas
Prerequisites: EHS 505, 506 or equivalent
Selected topics in the diagnosis, treatment and prevention of environmental and occupational disease, including coverage of toxins, exposures, organ systems, and disease. Lectures and case studies address exposures to solvents, radon, lead and other metals, asbestos and other pneumoconiotic dusts, outdoor air pollution, indoor air quality, and noise. Major health effects and disease categories covered include cancer, respiratory disease, and reproductive health. Prerequisites: basic knowledge of human physiology, and exposure assessment. (These requirements may be taken concurrently with this course).

EHS502
Environmental Health in Developing Areas
Winter term(s)
3 Credit Hour(s)
Instructor(s): Nriagu, Jerome
The course provides a review of basic environmental health knowledge and skills and their applications in developing areas of the world; case studies from Africa, South America, and Southeast Asia. Delivery will include lectures, reading assignments individual exercises, and term paper.

EHS503
Law and Policy in Environmental Health
Fall term(s)
2 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
This course is intended to familiarize students with the laws governing the administrative process by which science is translated into science policy by government in the form of regulations in the areas of environmental health, occupational health and toxicology. The course also illustrates the process by which costs are compared to benefits in choosing the final science policy. Case studies in the form of appellate and Supreme Court opinions are used to illustrate risk-cost-benefit evaluation, the law's use of science, and other topics in law and policy. Syllabus cases illustrate environmental health policy in the areas of hazardous chemicals, clean air, clean water, drinking water, radioactive waste, occupational health, new drug approval, and food additives. The course is also intended to demonstrate how judges analyze issues in areas involving scientific information, that is, to illustrate legal reasoning.

EHS504
Genes and the Environment
Winter term(s)
2 Credit Hour(s)
Instructor(s): Franzblau, Alfred
Prerequisites: None.
In past years disease causation frequently was thought of as a "dichotomy" between genes ("nature") and the environment ("nurture"). More recently this view has been replaced with a more holistic perspective that emphasizes the importance of interactions between genes and environmental and/or occupational exposures. The focus of this course will be on interaction between genes and specific environmental and/or occupational exposures. The course will consist of detailed evaluation of specific examples of gene-exposure interaction (e.g., beryllium-related lung disease, peripheral neurotoxicity from organophosphate pesticides, bladder cancer and amine exposure) the underlying science of such examples, medical consequences, potential policy and social implications of current and future scientific knowledge, and review of current and pending legislation that address these issues. The course will meet for one two-hour session per week, and will be conducted in an advanced seminar-style format. Student will be expected to make presentations and lead discussion, in addition to presentations by faculty and outside guests. Student evaluations will be based on written reports, class participation and class presentation.

EHS506
Principles of Toxicology
Fall term(s)
2 Credit Hour(s)
Instructor(s): Richardson, Rudy
Prerequisites: Biology, Organic Chemistry, Grad Standing or Perm. Instr.
Principles underlying the chemical, physiological and anatomical basis of toxicity. Dose-response relationships, toxicokinetics, and biotransformation, mechanisms of cellular injury and death, organ system toxicity, developmental toxicology, genotoxicity and toxicogenomics, and chemical carcinogenesis. Principles will be illustrated where appropriate with specific examples of toxicity from environmental contaminants and pharmaceutical agents.

EHS507
Principles of Exposure Assessment
Fall term(s)
2 Credit Hour(s)
Instructor(s): Robins, Thomas
Prerequisites: BIOS 503, EPID 503, EPID 601, EHS 505 (concurrent enrollment is acceptable) or Perm. Instr.
This course is designed to provide the knowledge and skills necessary to assess exposure to environmental agents. Topics include the selection of study populations; the conditions under which people or other target species could be exposed; identification and quantification of exposure pathways; the design of exposure assessment strategies; integration of exposure and population information; and the evaluation of historical (exposure reconstruction), current and prospective exposures. The course focuses on occupational and environmental settings and includes chemical, biological (bacteria, fungi, pathogen) and physical agents that may be air-, water-, food- or vector-borne.

EHS513
Pathologic Basis of Disease
Fall term(s)
3 Credit Hour(s)
Instructor(s): Philbert, Martin
This course will examine the major pathological processes of humans and mammals elicited by chemical, biological and physical entities of interest to practitioners of Public Health. Specifically, the pathophysiological mechanisms of disease will be examined with a view to understanding the cellular, biochemical and molecular processes that cover injury, degeneration and regeneration.

EHS515
Naturally Occurring Biological Toxins
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Biology, Chemistry (organic preferred)
Explanation of principles needed to understand sources, adverse effects, mechanism of action, and treatment for exposure to naturally occurring toxins from substances such as mushrooms, herbs, plants, microbes, marine organisms, and insect and animal venom. Implications of bioterrorism will be discussed
This course is cross-listed with Naturally Occurring Biological Toxins, EHS 311 in the LS&A department.

EHS530
Nutrition in Public Health
Winter term(s)
2 Credit Hour(s)
Instructor(s): Kannan, Srimathi
Principles of normal nutrition and relation of nutrition to health. Designed for graduate students in other programs and schools, especially students in health education, physical education and nursing.
EHS531
Herbs and Dietary Supplements
Winter term(s)
2 Credit Hour(s)
Instructor(s): Tsai, Alan
Prerequisites: Biology
The course will examine the status of the usage, production, claimed effects, mechanism of effects and potential misuse and safety of the major herbs and dietary supplements in the US. The course will carefully review the literature and examine the evidence that support the claimed or alleged effects. The course will also discuss the government and industry rules and regulations and the controversies associated with the use of these products.

EHS540
Maternal and Child Nutrition
Winter term(s)
2 Credit Hour(s)
Instructor(s): Kannan, Srimathi
Explores the nutritional requirements and support associated with the physiologic changes of pregnancy, lactation, and fetal, infant, child and adolescent growth. Review of recent nutrition issues and recommendations related to mothers and children.

EHS547
Food Science
Fall term(s)
3 Credit Hour(s)
Instructor(s): Mancuso, Peter
Prerequisites: Organic Chemistry
An examination of food composition and the chemical and physical changes that result from food processing. Discussion of foods as complex systems containing a wide variety of chemicals including nutrients, phytochemicals, functional ingredients, natural or transferred toxins and additives. Discussion of changes in chemicals with different types of food preservation. Consideration of health risks associated with dietary exposure to selected nutrients and other chemicals. Exploration of the role of sensory analysis related to food acceptance. Overview of important regulations related to the content of food products.

EHS550
Introduction to Occupational and Environmental Health
Fall term(s)
3 Credit Hour(s)
Instructor(s): Vincent, James
Prerequisites: Grad Status or Senior Standing
Discussion of the basic concepts of occupational and environmental hygiene; recognition and evaluation of chemical, physical and biological hazards; the human environment; control hierarchies, strategies and technologies; personal protection; criteria and standards; the international dimension; and ethical issues. The course provides basic underpinnings of the nature of theory and practice in occupational and environmental hygiene, and thus provides a structural framework for thinking about the field, identifying linkages between disciplines and specialties, and providing a platform for more advanced study in the individual areas listed. The course is offered as a three-credit course in both the regular term and in the OJ/OC format.

EHS556
Occupational Ergonomics
term(s)
2 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008

Principles, concepts and procedures concerned with worker performance, health and safety. Topics include: biomechanics, job safety, anthropometry, work physiology, psychophysics, work stations, tools, work procedures, work standards, Musculoskeletal disorders, noise, vibration, heat stress and the analysis and design of work.

EHS570
Water Quality Management
Fall, Winter term(s)
3 Credit Hour(s)
Instructor(s): Xi, Chuanwu

Principles of science and engineering used in the evaluation and control of water quality. Includes current legislation, types of pollution, sources and nature of pollution, introduction to water quality management practices, water supply and treatment, hydrologic concepts, effects of waste discharge on receiving waters, lake management, and water quality criteria and standards.

EHS571
Water Quality Management Practices
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: EHS 570
Principles and methods in water quality management. Methods, applications, and water quality considerations associated with water reclamation and re-use; soils and sediments as factors in water pollution control; flow regulation for water quality management; economics and institutions in water quality management.

EHS572
Environmental Impact Assessment (NRE 514)
Fall term(s)
2 Credit Hour(s)
Instructor(s): Batterman, Stuart
Prerequisites: EHS 574, Grad Status
A comprehensive framework for predicting and evaluating environmental impacts is presented. The course emphasizes the theory, application, integration and evaluation of models simulating transport and fate of contaminants in air, surface and ground water, and soil. Case studies and computer exercises demonstrate contemporary exposure and health risk assessment problems.
This course is cross-listed with NRE514 in the NRE department.

EHS574
Environmental Chemistry
Fall term(s)
3 Credit Hour(s)
Instructor(s): Nriagu, Jerome
Prerequisites: College Chemistry including Organic Chemistry and Calculus
Environmental chemistry of the atmosphere, hydrosphere, geosphere and soils. Review of physical and chemical hazards and sources, distribution, transformations, routes to man of environmental contaminants. Human exposure assessment procedures and applications in health risk analysis programs.

**EHS575**
Population-Environmental Dynamics (SNRE 545)
Fall term(s)
3 Credit Hour(s)
Instructor(s): Staff
This course examines the dynamics of the relationship between human populations and the global environment with a focus upon critical time periods in the evolution of societies. Population-environment dynamics are visualized as a family of transitions occurring across many sectors of society. Transitions examined include forestry, agriculture, demography, epidemiology, toxicity (air and water pollution, solid waste), urbanization, energy, transportation, and education.

**EHS576**
Microbiology in Environmental Health
Winter term(s)
3 Credit Hour(s)
Instructor(s): Xi, Chuanwu
Prerequisites: Biology, Grad Standing or Perm. Instr.
Graduate level course on basic knowledge about microbes in the environment and its impact on public health. Topics will include: - introduction on microbiology; - growth and control of microbes in the environment; - characterization and identification of microbes in the environment; - biofilms and its control; - transmission and persistence of health-related microbes in various environments such as water, air, food, indoor and industrial settings; - microbial transformation of organic and metal contaminants in the environments; - spread of antibiotic resistance in the environment.

EHS578
Practical Projects
Fall, Winter, Spring, Spring-Summer, Summer term(s)
1-4 Credit Hour(s)
Instructor(s): Staff
Prerequisites: None
Practical Projects in the application of theory and principles of Environmental Health Sciences in public health settings. Course requirements include an approved practical work experience related to Environmental Health Sciences in consultation with a faculty advisor. May be elected more than once. Enrollment limited to Environmental Health Sciences majors with at least two full terms of prior registration.

EHS579
Environmental Risk Communication (SNRE 551)
Fall term(s)
1 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Graduate Standing or Perm. Instr.
This course provides a brief introduction to environmental risk assessment and management and then focuses on environmental risk communication. With the help of case studies, students evaluate existing risk communication practices and formulate ways to change these practices such that they will lead to improved environmental risk decisions.

EHS580
Conservation of Biological Diversity (SNRE 517)
Fall term(s)
4 Credit Hour(s)
Instructor(s): Staff
Prerequisites: General Ecology (Bio 381), Grad Status or Perm. Instr.
Overview of historic and present-day causes of species extinction, and of biological principles central to species conservation and sustainable management of ecosystems.

EHS581
Principles of Radiological Health
Winter term(s)
1 Credit Hour(s)
Instructor(s): Miklos, Joseph
Not offered 2007-2008
Prerequisites: Calculus
Broad principles and practices of radiological health for environmental and occupational health generalists. Basic physics, measurement, control of radiation sources and bioeffects, risks, and control policies. Lectures and demonstrations.

EHS582
Principles of Community Air Pollution
Winter term(s)
Discussion of economic, nuisance, and health aspects, emphasizing sources, causes, effects, control measures, and the organization and administration of community control programs.

**EHS583**

Radiation Biology

Fall term(s)

3 Credit Hour(s)

Instructor(s): Ljungman, Mats

Prerequisites: Biology

Integration of current knowledge about radiation effects processes on mammals, with particular emphasis on mechanisms of radiogenic cancer. Quantitative evaluation of relations between characteristics of various radiation exposures and somatic and genetic effects in humans. Radiation protection and therapeutic measures. Lectures and a student research paper.

**EHS585**

Food Safety Management

Winter term(s)

3 Credit Hour(s)

Instructor(s): Mancuso, Peter

Prerequisites: Grad status
Evaluation of Food safety from multiple perspectives, including microbial and chemical (pesticide residues, food packaging materials, inorganic/organic materials) contamination. Identification of methods for estimating exposure to chemicals carried by food. Identification of food services systems and methods for quality control/changing the risks for food contamination. Utilization of HACCP (Hazardous Analysis Critical Control Point) in different food service situations. Provision of managerial level training course for inspection/monitoring of food establishments.

EHS586
Introductory Seminar in Environmental Health Sciences
Fall term(s)
1 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Grad Standing
An overview of research and practice in the field of environmental health sciences. This weekly seminar is designed to introduce entering students to EHS faculty, to highlight topical issues, and to provide a common forum for EHS students. EHS faculty will introduce their specialty areas and present short seminars on their research. Approximately once per month (coinciding with OJ/OC weekends), outside speakers will present seminars addressing crosscutting issues in the environmental health sciences. The seminar is required for all first-year students.

EHS588
Environmental Law (SNRE 475)
Fall, Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Introduces students to Environmental Law and the impact of the legal process on decisions that affect the environment. Topics include common law tort actions, toxic tort actions, statutory controls of pollution and other environmentally harmful activities. Additional areas include administrative agency structure and performance, Constitutional rights to environmental quality and more.

EHS591
Equity Issues in Environmental Health
Winter term(s)
1 Credit Hour(s)
Instructor(s): Nriagu, Jerome
Prerequisites: Grad Status
The course will examine equity issues in environmental health research and practice. Emphasis will be on the sources of inequity (specific environmental hazards), and documentation of environmental injustice using different spatial scales and time frames. It will provide a commentary on the desirability for affected communities to have meaningful input into the design and implementation of environmental health assessment, as well as in the use and communication of the results.

EHS608
Environmental Epidemiology
Winter term(s)
2 Credit Hour(s)
Instructor(s): O'Neill, Marie
Prerequisites: Epid600, Biostat 553 or 503, EHS 506 and 507, 550
This course will serve as an introduction to topics in environmental epidemiology, covering major areas of current inquiry in this field. It will convey the basic tools required to critically read the literature and to develop appropriate study designs in light of intended applications. The class meeting will include lectures and student-led discussions. This course will review epidemiologic methods used in evaluating the health effects of physical, biological and chemical agents in the environment and the available evidence on the health effects of such exposures. We will also consider policy and public health applications of the scientific evidence. Topics include lectures on methodology and major environmental exposures, discussions based on review and critiques of current literature, and presentations by outside experts on specific environmental epidemiology issues of current interest. After taking this course, students should have a better understanding of the scope, limitations, applications and future of environmental epidemiology.

This course is cross-listed with EPID608 in the Epidemiology department.

EHS612
Biochemical and Molecular Toxicology
Winter term(s)
3 Credit Hour(s)
Instructor(s): Harris, Craig
Prerequisites: Biol Chem 515 or equivalent, EHS 511
The objective of this course is to provide an in-depth analysis of the biochemical and molecular pathways altered in cells and organisms through exposure to environmental and therapeutic chemicals. The content is directed toward the needs of doctoral and masters students in the basic biomedical sciences involved in laboratory research projects. Topics will cover areas of modern research emphasis and focus on how chemicals act to disturb cellular processes through interaction with cellular receptors, ion channels, transporters, signal transduction pathways, transcription factors, metabolic pathways, enzymes, cytoskeletal elements and other macromolecular targets. Specific information about the latest theories on the regulation and initiation of cell death, mediation of toxicity through redox status and oxidative stress, mechanisms of carcinogenesis, genotoxicity and immunotoxicology will also be discussed.

EHS616
Introduction to Toxicological Pathology
Winter term(s)
2 Credit Hour(s)
Instructor(s): Philbert, Martin
Prerequisites: Physiology and EHS 511 or equivalent.
This course will provide an introduction to the histologic damage produced by chemical toxicants. A combination of lectures, student-led discussions and slide-reading sessions will be used to integrate concepts of toxicological mechanism, physiology and pathologic outcome. Emphasis will be place on molecular methods and mechanisms used for the diagnosis and investigative toxicological pathology. The pathology associated with chemicals that damage the major organ systems of humans and mammals will be discussed. During the two credit hours of didactic class presentations student will lead discussions on the pathologic effects of chemicals on cells, tissues and organs and the pathophysiologic outcome. This course is intended for advanced graduate students in the life sciences.

EHS620
Mechanisms of Endocrine Toxicology and Hormone Metabolism
Fall term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Grad Status, Biochemistry, Physiology
Analysis and integration of scientific information to enhance understanding of molecular and cellular mechanisms of endocrine toxicity. Emphasis is on student discussion of theoretical and practical aspects of mechanistic studies based on assigned reading from the scientific literature.

EHS621
Mechanisms of Carcinogenesis
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Biochem 515, Epid 515 or equivalent
This course analyzes and integrates genetics, molecular and cellular factors into mechanisms of carcinogenesis. These factors and their interactions with the environment are applied to hypothesis building and testing, risk assessment and management. Breast cancer is the model for the study.

EHS622
Mechanisms of Developmental Toxicology
Fall term(s)
2 Credit Hour(s)
Instructor(s): Harris, Craig
Prerequisites: Grad Status, Biochem 515 or equiv
Integration and analysis of scientific information to enhance understanding and elucidate biochemical and molecular mechanisms in developmental toxicology. Course emphasis is on student discussions of the theoretical and practical aspects of embryology as related to biochemical, physiological and molecular mechanisms of embryotoxicity based on readings from the scientific literature.

EHS623
Mechanisms of Reproductive Toxicology
Fall term(s)
2 Credit Hour(s)
Instructor(s): Loch Caruso, Rita
Prerequisites: Grad Status, Biochemistry, Physiology
Analysis and integration of scientific information to enhance understanding of molecular and cellular mechanisms of reproductive toxicity. Emphasis is on student discussion of theoretical and practical aspects of mechanistic studies based on assigned reading from the scientific literature.
EHS624
Mechanisms of Neurotoxicology
Winter term(s)
2 Credit Hour(s)
Instructor(s): Richardson, Rudy
Prerequisites: Grad Status, Biochemistry, Physiology
Analysis and integration of scientific information to enhance understanding of molecular and cellular mechanisms of neurotoxicity. Emphasis is on student discussion of theoretical and practical aspects of mechanistic studies based on assigned reading from the scientific literature.

EHS625
Environment and the Immune Response
Winter term(s)
2 Credit Hour(s)
Instructor(s): Mancuso, Peter
Prerequisites: EHS 506, EHS 513, or permission of the instructor
Environmental and occupational exposures to pollutants and toxicants in air, water, and food, whether synthetic or natural, influence human health by interacting with the hosts immune system. These exposures can either initiate or exacerbate human disease. The course will consist of detailed evaluations of papers, chosen by the students, that explore the impact of environmental and occupational exposures on immunesuppression, autoimmunity, or hypersensitivity. Students will lead discussions, make presentations, and write a grant proposal or a report.

EHS628
Toxicology Research Analysis and Presentation
Winter term(s)
1 Credit Hour(s)
Instructor(s): Richardson, Rudy
Prerequisites: EHS627
Presentations of research topics from current literature by first year students. Advisors will assist in selection and preparation of materials for presentation. Course is designed to develop oral communication skills for presenting scientific material to peer groups. Presentations followed by discussion and questions.

EHS630
Principles of Nutritional Science
Fall term(s)
4 Credit Hour(s)
Instructor(s): Gong, Tzy-Wen L
Prerequisites: Biochemistry
Integration of biochemical and physiological principles of nutrient utilization, nutrient interactions, and the control and regulation of metabolic processes in humans.

EHS631
Advanced Nutritional Science
Winter term(s)
4 Credit Hour(s)
Instructor(s): Tsai, Alan
Prerequisites: EHS 630
In-depth review of recent advances in selected areas of nutrition. Emphasis on topics of current research interest. Topics include vitamin metabolism, mineral bioavailability and analysis, nutrition and immune function, amino acid relationship, drug-nutrient interactions, and nutritional biochemistry and metabolism in altered physiologic conditions.

EHS635
Principles of Laboratory Research Techniques in Nutrition
Winter term(s)
2-4 Credit Hour(s)
Instructor(s): Tsai, Alan
**Not offered 2007-2008**
Prerequisites: EHS 630 or Perm. Instr.
Discussion and practice of selected biochemical methods used in nutritional research. Emphasis placed on understanding the principles of experimental design and laboratory procedures including diet formulation and on the significance of laboratory results

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EHS636
Clinical Nutrition
Fall term(s)
2 Credit Hour(s)
Instructor(s): Han-Markey, Theresa
Prerequisites: EHS 630
Study of clinical nutrition skills with an emphasis on disease pathophysiology and current intervention approaches. Basic nutritional approaches for management of various gastrointestinal diseases such as reflux, ulcer, inflammatory bowel and diverticular disease, rationale, and evidence for efficacy will be taught. Current controversies are briefly introduced. Clinical nutrition screening, assessment, use of clinical laboratory data, and physical assessment are also introduced. Nutritional therapy in various diseases incorporates case study instructional modules. Diseases covered include malnutrition, starvation, metabolic stress, gastrointestinal, cardiovascular, and neoplasm.

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EHS637
Advanced Clinical Nutrition
Winter term(s)
EHS638
Advanced Clinical Nutrition in Chronic Diseases
Winter term(s)
2 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: EHS 630, EHS 631, EHS 636 (or concurrent enrollment) or equiv
Review of recent advances in clinical nutrition in the management of specific chronic disorders and illness. Knowledge and skills of current management issues in patients with cancer, genetic disorders such as cystic fibrosis, organ transplantation, inflammatory bowel disease, neurologic disorders such as Parkinson's and Alzheimer's, and acquired immuno-deficiency syndrome. Issues in management and rationale for treatment approaches in chronic debilitating illnesses, complications of long-term metabolic disorders, and high-risk pregnancy.

EHS639
Obesity and Eating Disorders (Psych 642)
Winter term(s)
3 Credit Hour(s)
Instructor(s): Sandretto, Anita
Metabolic, physiological, and psychological determinants of diet choice and dietary behavior. Disorders in regulation of food intake and different intervention strategies will be discussed. Course integrates readings from experimental literature of both psychology and medicine and provides opportunity to develop and analyze intervention strategies.

EHS640
Nutritional Assessment
Fall term(s)
3 Credit Hour(s)
Instructor(s): Sandretto, Anita
Prerequisites: EHS 630, Nutrition Science
Didactic and laboratory presentation of anthropometric, biochemical, dietary and physical activity methods for determining nutritional status across all ages of the life cycle. Students will have the opportunity to identify, plan, and implement a simple nutritional assessment research project, with subsequent data management, analysis and interpretation.

EHS642
Community Nutrition
Fall term(s)
3 Credit Hour(s)
Instructor(s): Sandretto, Anita
Prerequisites: EHS 630
An analysis of community programs with primary attention on goals, objectives, implementation and evaluation. Individuals work on a problem in the area of food assistance or nutrition education programs is carried out under the tutorial guidance of an appropriate staff member. Regular conferences are arranged to measure progress and a report is prepared.
EHS643
Food and Nutrition Policy and Programs
Winter term(s)
3 Credit Hour(s)
Instructor(s): Sandretto, Anita
Prerequisites: Perm. Instr.
This course is designed to expose students to the history and development of federal nutrition policy, for example, the Dietary Guidelines for Americans, the Food Guide Pyramid and National Food Labeling and Education Act. The legislation, administration and evaluation of federally sponsored public health programs and mandate nutrition services will be reviewed and the implementation at state levels will be discussed.

EHS645
Nutrition Education: Theory and Practice
Fall term(s)
3 Credit Hour(s)
Instructor(s): Kannan, Srimathi
Not offered 2007-2008
Prerequisites: Grad Status
This advanced course in nutrition education combines both research and practice. The course will address: 1) theories from education, human development, psychology, and communications that guide nutrition education research and practice, 2) theoretical and pragmatic issues in the development and implementation of nutrition education programs, and 3) methods and techniques used to evaluate nutrition education programs.

EHS646
Nutritional Counseling
Winter term(s)
1 Credit Hour(s)
Instructor(s): Resnicow, Ken

**Not offered 2007-2008**

Prerequisites: HBHE 600

This course will be primarily for nutrition students. The course will follow a seminar format, with the instructor and students agreeing on number of sessions for the term. The course will provide the basis of client centered interviewing/counseling as a method to address changes in dietary behaviors, especially those behaviors related to development of chronic diseases. Students will be provided the opportunity to practice counseling techniques.

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**EHS647**

Seminar in Nutrition

Winter term(s)

1 Credit Hour(s)

Instructor(s): Tsai, Alan

Critical reviews of current literature on selected topics and controversies in nutrition, preparation of abstracts and summary reports, and presentation of summarized information in seminar.

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**EHS651**

International Environmental Management System Standards (Bus School & SNRE)

Fall term(s)

2 Credit Hour(s)

Instructor(s): Staff

**Not offered 2007-2008**

Prerequisites: Grad Status or Perm. Instr.
This course provides a comprehensive framework for the understanding of international management standards as applied to environmental and occupational health, with a focus on the rapid globalization of the regulatory environment in response to international trade. Topics will be the International Standards Organization (ISO) 9000 series standards for production system quality management, the ISO 10000 series standards for quality management auditing, the ISO 14000 series standards for environmental management and environmental system auditing, and the proposed standards for occupational health and safety management systems. Auditing methods will be a primary focus of this course.

EHS652
Evaluation of Chemical Hazards
Fall term(s)
3-4 Credit Hour(s)
Instructor(s): Zellers, Edward
Prerequisites: Previous or concurrent enrollment in biostatistics course
Concepts and techniques related to the evaluation of occupational exposures to gases, vapors, and aerosols. Emphasis on operating mechanisms and practical aspects of industrial hygiene air-monitoring equipment, characterizing exposure distributions, and developing sampling strategies. Lectures, laboratory exercises, demonstrations, problems, technical reports, and reading. Primarily for students in occupational health and safety.

EHS654
Control of Exposures to Airborne Contaminants
Winter term(s)
3 Credit Hour(s)
Instructor(s): Vincent, James
Prerequisites: Grad status
Discussion of the principles of controlling airborne contaminants in working and living environments. It deals with general environmental and local exhaust ventilation for indoor spaces, filtration and emission control for the ambient environment, and personal respiratory protection. Specific topics include: basic properties of air and aerodynamics, and behavior of airborne contaminants; general dilution and local exhaust ventilation concepts, methods and design; fan performance and selection; air cleaning equipment; ventilation testing, OSHA and EPA standards, indoor air quality, and others.

EHS655
Occupational Injury Prevention
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Introductory Biostatistics and Epidemiology
This course will describe the application of injury control principles to occupational injury. A specific focus will be the impact of public policy interventions on injury prevention. The goals of this course are to impart the conceptual framework of injury control applied specifically to occupational injuries, and to acquaint the student with how public policy, as well as policy in the private sector, affect the rate and distribution of occupational injury. Students will be expected to describe major dimensions of occupational injury problem in the U.S.; identify major risk factors associated with occupational injury; understand major approaches to occupational injury prevention; and to recognize the sources and influences of public policy on occupational injury prevention.

EHS656
Research Methods in Occupational Health
Fall term(s)
3 Credit Hour(s)
Instructor(s): Robins, Thomas
This course provides an integrated approach to occupational health research design and methodology. Topics include: research problem formulation; choice of study design; source of data; data analysis and strategies; SMR and PMR studies; healthy worker effect; case-control studies of occupational cancer; occupational pulmonary and neurology morbidity studies.

EHS657
Advanced Exposure Assessment
Winter term(s)
3 Credit Hour(s)
Instructor(s): Meeker, John
Prerequisites: EHS507, BIOSTAT503/equivalent, EPID503/equivalent
The course will introduce classical, contemporary, and cutting-edge approaches to the estimation of human exposure to environmental and occupational agents as it relates to epidemiology studies as well as risk science, regulatory compliance, exposure source/route apportionment, and susceptibility factors. Qualitative and quantitative methods in exposure science will be covered, including surrogate measures, exposure modeling, and biological markers of exposure, in addition to statistical concepts such as exposure measurement error and efficient study design.

EHS658
Physical Hazards
Fall term(s)
1 Credit Hour(s)
Instructor(s): Meeker, John
Prerequisites: Graduate Standing or Perm. Instr.
Lectures, discussions, demonstrations on the health effects, measurements methods, regulations, and control technologies related to physical health hazards encountered in occupational settings, including temperature extremes, noise, vibration, and lasers and other forms of non-ionizing radiation (rf, microwave, IR, visible, and UV).

EHS659
Occupational Injury Prevention Seminar
Winter term(s)
1 Credit Hour(s)
Instructor(s): Garabrant, David
Not offered 2007-2008
The focus of this seminar is on current research related to occupational injury, particularly prevention. It will provide an overview of cutting edge research by having seminar presentations for current investigators in the field of occupational injury research. The goals of the seminar are to introduce the students to current research and to introduce the students to injury researchers who might be able to provide mentorship to student research projects related to occupational injury.

EHS668
Professional Seminar in Occupational Health
Winter term(s)
1 Credit Hour(s)
Instructor(s): Meeker, John
Seminars in contemporary occupational health topics and issues. Presentations by noted authorities from industry, labor organizations, governments, and academia.
EHS670
Applications in Environmental Epidemiology
Winter term(s)
3 Credit Hour(s)
Instructor(s): Garabrant, David
Not offered 2007-2008
Prerequisites: EPID 601, EPID 655, EHS 656
Students will complete an independent research project under faculty supervision. Students will apply epidemiological and statistical methods to the analysis of data from epidemiological, exposure assessment or laboratory studies. This course focuses on the conduct of independent research and scientific writing under faculty guidance. Course must be elected for 3 credits. This course is the final course of three, in which students plan their field experience (EHS 659), complete their field experience and present a poster to the department (EHS 600), then conduct data analyses and prepare a research report (EHS 670). It is part of the Capstone experience for Occupational and Environmental Epidemiology Students.

EHS671
Air Pollution Chemistry (AOS 578)
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Tropospheric and stratospheric air pollution are discussed following a review of thermochemistry, photochemistry and chemical kinetics. Gaseous and particulate air pollutants are considered in terms of their origins and transformations. This course is cross-listed with AOS578 in the AOS department.
This 3-hour course describes how consumption and products affect environmental risks and impacts on human health and on ecosystems. Based on a life cycle approach, this course will first provide an overview of the impacts generated by consumers and by the students themselves. How to carry out Life Cycle Assessment (LCA) of products and services will then be presented. For the Life Cycle Impact Assessment phase, a special focus will be given to the characterization of comparative risks of toxics substances on human health and ecosystems. This leads to discussion of the potentials and limitations of LCA compared to other assessment tools such as risk assessment and environmental impact assessment. Practical case studies will be taken from multiple consumption domains, from agriculture and food production up to electronic services.

EHS680
Environmental Management of Hazardous Substances
Winter term(s)
3 Credit Hour(s)
Instructor(s): Batterman, Stuart
Prerequisites: Perm. Instr.
Contemporary and emerging approaches to pollution and waste management that integrate public health, engineering, economic, and regulatory factors related to hazardous substances. Presentation of site assessment, exposure and risk assessment, and permit application practices, impact assessment in pollution prevention, and risk-cost-benefit analysis. In-depth analysis of selected topics using case studies of ongoing or proposed actions.

EHS687
Air Quality Seminar
Fall, Winter term(s)
1 Credit Hour(s)
Instructor(s): Keeler, Gerald
Prerequisites: Perm. Instr.
Advanced topics in air quality control and research will be presented by leading experts in the field and by students. Sample areas to be covered include urban air pollution, health effects of air pollutants, tropospheric ozone, acid deposition, global warming, indoor air quality, the Clean Air Act, hazardous pollutant deposition, global transport, and air-surface exchange of pollutants. The course will also emphasize current topics in the field that are of importance to policy makers and regulators. The course is offered both Fall and Winter terms and may be taken more than one.

EHS688
Topics in Environmental Health Sciences
Fall, Winter term(s)
1 Credit Hour(s)
Instructor(s): Sandretto, Anita
Seminars in contemporary environmental health topics and issues. Presentations by noted authorities from industry, labor organizations, governments, and academia.
EHS697
Readings
Fall, Winter, Spring, Summer term(s)
1-3 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr
Supervised study/review of a selected topic in environmental health, occupational health, nutrition and/or toxicology. May be elected more than once for a maximum of six credits.

EHS698
Research
Fall, Winter, Spring, Summer term(s)
1-6 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.
Original research investigation of a special topic in environmental health, occupational health, nutrition and/or toxicology. May be elected more than once for a maximum of six credits.

EHS699
Master's Thesis
Fall, Winter, Spring, Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm of Thesis Advisor
This course shall be elected by students enrolled in Masters degree programs that require a formal written thesis as a condition of program completion. The thesis shall be defended in front of the students thesis committee. The course grade will reflect the students accomplishments relative to the thesis and its defense. The course is to be elected only once.

EHS717
Toxicological Pathology Laboratory
Winter term(s)
1 Credit Hour(s)
Instructor(s): Philbert, Martin
Prerequisites: EHS 616 or Perm. Instr.
This laboratory course will provide an introduction to the histopathology associated with chemical exposures. Students will perform routine histological maneuvers on tissues from rats treated with unknown chemicals. Following microscopic inspection of tissues, students will describe the pathological process produced in each tissue and will identify the class of (or specific) chemical to which the organism was exposed.

EHS728
Current Topics in Toxicology
Fall, Winter term(s)
1 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Research presentations at the advanced level focused on mechanisms of toxicity. May be elected more than once

EHS757
Occupational Health Aspects of Industrial Processes
Fall term(s)
2 Credit Hour(s)
Instructor(s): Vincent, James
Not offered 2007-2008
Prerequisites: EHS 550 or equiv and Perm. Instr.
Observation and discussion of selected industrial processes, potential hazards, and controls. Potential hazards include chemical, physical, biological, and ergonomic. Emphasis on application and integration of different aspects of occupational health management. Field trips to various industrial plants. Guest lectures and student-lead discussions. Intended for second-year Industrial Hygiene and Occupational Medicine students.

EHS869
Doctoral Seminar in Occupational and Environmental Health
Fall term(s)
1 Credit Hour(s)
Instructor(s): Loch Caruso, Rita; Richardson, Rudy
Prerequisites: EHS Doctoral Student Status
Integrative discussions of dissertation research projects, presentation of research findings, in-depth literature reviews/critiques, and manuscript reviews in occupational and environmental health.

EHS899
Advanced Research
Fall, Winter, Spring, Summer term(s)
1-6 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.
Original investigations of a specific topic in environmental health, occupational health, nutrition and/or toxicology. Designed for doctoral students performing research prior to passing their qualifying exam. May be elected more than once.

**EHS990**  
Dissertation/Pre-Candidacy  
Fall, Winter, Spring, Summer term(s)  
1-8 Credit Hour(s)  
Instructor(s): Staff  
Election for dissertation work by doctoral students not yet admitted to status as candidate.

**EHS995**  
Dissertation Research for Doctorate in Philosophy  
Fall, Winter, Spring, Summer term(s)  
8 Credit Hour(s)  
Instructor(s): Staff  
Election for dissertation work by doctoral students who have been admitted to status as candidate.

**EPID460**  
Introduction to Bacterial Pathogenesis  
Fall term(s)  
3 Credit Hour(s)  
Instructor(s): Marrs, Carl F  
Offered every year  
Last offered Fall 06  
Prerequisites: Introductory Microbiology and Biochemistry or Perm. Instr.
This course covers the basics of the biochemistry, molecular biology, and genetics of chemotaxis and flagella, pili and adhesins, extracellular proteases, bacterial toxins, invasion and intracellular growth, phase and antigenic variation, gene transfer, LPS, iron, M-proteins, capsules, chemotherapy, antibiotic resistance and global regulation of virulence elements.

EPID503
Strategies and Uses of Epidemiology
Winter term(s)
3 Credit Hour(s)
Instructor(s): Sarma, Aruna
Offered every year
Last offered Winter, 2007
Prerequisites: Biostat 503, Grad Status
Basic epidemiology for the public health professional, with review of fundamental principles and concepts, and application to selected examples of chronic, non-infectious diseases and infectious diseases. Designed for students without a doctoral degree.

EPID506
Health of Nations: Introduction to International Health
Fall term(s)
3 Credit Hour(s)
Instructor(s): Monto, Arnold S
Offered every year
Last offered Fall 2006
Prerequisites: Grad Status
This course presents an overview of mortality and disease occurrence in terms of geographic, cultural, nutritional and environmental factors. Reviews health indicators such as infant mortality and economic factors associated with development. Discusses health problems of developing countries and describes programs and organizations involved in addressing them. This course is required for students in the International Health track in Epidemiology but can also be taken by non International Health students.

EPID511
Introduction to Public Health Genetics
Fall term(s)
3 Credit Hour(s)
Instructor(s): Richards, Julia; Marrs, Carl F
Offered every year
Last offered Fall 2006
Prerequisites: Grad status or perm instructor
This course is designed for those interested in a basic understanding of human genetics who have had only a very limited exposure to biologic sciences. This course will cover the basics of genetics at both the molecular and population level. In addition to the basic science, some ethical, legal, and social implications of genetics research will be examined. Examples relevant to public health will be emphasized.

EPID513
Applications in Public Health Genetics
Fall term(s)
1 Credit Hour(s)
Instructor(s): Kardia, Sharon
Last offered Fall 2006
Not offered 2007-2008
A forum for discussing applications of public health genetics and for integrating recent developments in human genetics into the breadth of public health genetics. Topics will be inclusive, from genetics and molecular biology, to assessment, policy development, screening for genetic susceptibility, and ethical, legal, and social issues as they apply to delivery of public health genetics.

### EPID514
Social Epidemiology
Fall term(s)
3 Credit Hour(s)
Instructor(s): Kaplan, George
Last offered Fall 2006
Prerequisites: EPID 503 (or equiv), Biostat 503 (or equiv)
Considers the uses of epidemiology with emphasis on the social determinants of chronic diseases and premature mortality. Theoretical as well as methodological issues in conducting social epidemiology research are emphasized. Designed for graduate students who have prior familiarity with the basic principles and methods of epidemiologic research.
This course is cross-listed with HBHE 514 in the HBHE department.

### EPID515
Genetics in Public Health
Winter term(s)
3 Credit Hour(s)
Instructor(s): Kardia, Sharon
Last offered Fall 2006
Prerequisites: Perm. Instr. or two undergraduate genetic courses.
This course is designed for students with a background in biology or genetics that are interested in understanding genetics in public health. This course will provide an in depth examination of genetics in public health including newborn screening diseases and practices, fundamentals of population genetics, and the genetics of common chronic diseases.

EPID516
Genomics in Epidemiology
Winter term(s)
4 Credit Hour(s)
Instructor(s): Peyser, Patricia A
Last offered Winter 2007
Prerequisites: Epid 503 or equivalent; Epid 515 or equivalent; Biostat 503 or equivalent
This course relates genomics to the core public health discipline of epidemiology emphasizing the use of genomics to help describe disease frequency and distribution and to gain insights into biological etiologies. Topics include genetic material in disease, in families and in populations; the investigation of multifactorial traits; model-based linkage analysis; model-free linkage analysis; segregation analysis; allele association and linkage disequilibrium; and gene-gene interactions and gene-environment interactions. Issues related to implementing studies are considered.

EPID519
Introduction to Principles and Methods of Molecular Epidemiology
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: EPID 601
This course presents an introduction to the principles of the molecular techniques used in epidemiologic investigations. Emphasis will be on the development of a general understanding of the techniques and vocabulary necessary to communicate with researchers and laboratory personnel involved in the study of disease both at the individual and population level.

EPID520
Immunologic and Cellular Basis for Disease
Fall term(s)
3 Credit Hour(s)
Instructor(s): Rochford, Rosemary
Not offered 2007-2008
Prerequisites: Grad Status and Perm. Instr.
This course will examine the cellular and molecular basis of disease with an emphasis on the role of the immune system in the pathogenesis of both chronic and infectious disease. The course will cover techniques used in the study of pathogenesis, a review of fundamental immunology, and a discussion of the role of the immune system in the pathogenesis of both chronic and infectious disease. The course will include both lectures and discussion of current research articles relevant to the course content. Designed for students with backgrounds in biology.

EPID524
AIDS: A Public Health Challenge
Winter term(s)
3 Credit Hour(s)
Instructor(s): Monto, Arnold S
Not offered 2007-2008
Prerequisites: Upper Division or Grad Status
Lectures will describe the fundamental issues necessary for understanding the public health crisis presented by the AIDS epidemiologic, including the virology of HIV, immune response and natural history, provision of care, prevention, legal/ethical issues. Includes opportunity for small group discussion of policy formulation. For those students satisfactorily completing a paper on a special topic in AIDS, an additional credit hour is available.

**EPID525**  
Clinical and Diagnostic Microbiology  
Winter term(s)  
3 Credit Hour(s)  
Instructor(s): Newton, Duane  
Last offered Winter 2007  
Prerequisites: At least 1 prior microbiology course or permission of the instructor  
This course will provide students with an introduction to methods used by clinical microbiology laboratories to recover and identify bacteria, fungi, parasites, and viruses from human clinical specimens. The focus will be on organisms that are clinically relevant and will demonstrate the role of the clinical microbiology laboratory in patient management.

**EPID543**  
Virus Diseases  
Winter term(s)  
2 Credit Hour(s)  
Instructor(s): Gerrard, Sonja  
Offered every year  
Last offered Winter 2007  
Prerequisites: Pathogenic Bacteriology
The nature of viruses including replication, transmission, pathogenesis, pathology, antigenic relationships and preventive measures

**EPID545**
Viral and Molecular Techniques Laboratory
Winter term(s)
3 Credit Hour(s)
Instructor(s): Marrs, Carl F
Offered every year
Last offered Winter 2007
Prerequisites: Perm. Instr.
Methods, including procedures, employed in the study and identification of viruses and virus diseases, Molecular techniques used in virology, bacteriology, and molecular epidemiology. Techniques covered include PCR, flow cytometry, gel electrophoresis, recombinant DNA technology, westerns and bacterial typing procedures.

**EPID546**
Advanced Virology
Fall, Winter, Spring, Summer term(s)
2-6 Credit Hour(s)
Instructor(s): Staff
Prerequisites: EPID 543 and EPID 545
Advanced laboratory studies of viruses and virus diseases with emphasis upon the application of procedures to investigation. May be elected more than once.

**EPID550**
Reproductive Epidemiology
Winter term(s)
3 Credit Hour(s)
Instructor(s): Harlow, Sioban
This course will provide an overview of epidemiologic methods for the study of reproductive outcomes including menstruation, fertility, pregnancy loss, birth outcomes, and maternal morbidity and mortality. Measurement of these outcomes, problems of study design, selection of study populations, common biases and problems of sample size calculation will be covered. This course is intended for people with a basic understanding of epidemiologic methods. The course will be limited to a maximum of 20 students. Both male and female reproductive concerns are addressed as well as methodologic issues in domestic and international settings.

**EPID 552**
Epidemiology of Chronic Diseases
Fall term(s)
3 Credit Hour(s)
Instructor(s): Sowers, MaryFran
Offered every year
Last offered Fall 2006
Prerequisites: EPID 601
This course uses a data-driven approach to assess the health status of populations, with students preparing and comparing health and demographic data collected from local health jurisdictions, the state of Michigan and the U.S. as a means of learning the Epidemiology of selected chronic diseases and conditions, e.g. heart disease, diabetes, cancer, and musculoskeletal diseases. Students are teamed with local public health practitioners who help provide the context for students to develop grants applications to address those chronic diseases which have been identified through the comparative data analysis as important and for which the student has learned the underlying biology and Epidemiology.

**EPID554**

Introduction to Globalization and Health

Fall term(s)

1 Credit Hour(s)

Instructor(s): Wilson, Mark L

Offered every year

Last offered Fall 2006

Prerequisites: Admitted to Global Health Interdepartmental Concentration

This course will comprise the initial lectures and discussion of Epid 555, and we are requesting that this material be separated into a new one-credit course to be offered at the beginning of MPH training. The material is introductory, and explores the diverse health impacts of economic, environmental, and cultural globalization. The transnational movement of people, technologies, capital, commodities, toxins, pathogens, ideologies and treatments are affecting people's well-being through many pathways. The changing nature of global power relations and the shifting purvey of international organizations have also had significant health implications. Introductory lectures and discussion of readings will explore various topics related to these issues.
EPID555
Globalization and Health
Winter term(s)
2 Credit Hour(s)
Instructor(s): Wilson, Mark L
Last offered Winter 2007
Prerequisites: Students must be admitted to the Global Health IC
This seminar explores the diverse health impacts of economic, environmental, and cultural globalization. The transnational movement of people, technologies, capital, commodities, toxins, pathogens, ideologies and treatments are affecting people's well-being through diverse pathways. Introductory lectures and discussion of readings will explore various topics related to these issues. We will study the forces of globalization, beneficial and harmful health impacts, role in economic development and resource distribution, and implications for public health practice.

EPID556
Introduction to Microcomputers for Epidemiologists
Fall term(s)
1 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Introduction to computing skills for Epidemiologists: An introduction to important computer skills for Epidemiologists. Topics covered include basic SAS programming, Epi-Info, use of spreadsheets, and preparation of graphics.

EPID560
Mechanisms of Bacterial Pathogenesis
Fall term(s)
3 Credit Hour(s)
Instructor(s): Marrs, Carl F
Offered every year
Last offered Fall 2006
Prerequisites: Grad Status and Intro Microbiology and Biochemistry or Perm. Instr.
Microbial structures and their relation to basic mechanisms of bacterial pathogenesis; structure, function, and genetics of bacterial toxins; and host resistance and immunity.
Discussions of pathogenic organisms of major public health importance, diseases caused, and their epidemiology.

EPID562
Advanced Bacteriology Laboratory
Fall, Winter, Spring, Summer term(s)
2-6 Credit Hour(s)
Instructor(s): Staff
Last offered Fall 2006
Prerequisites: EPID 560 and EPID 561 or Perm. Instr.
Individual laboratory studies of selected topics on bacteria of public health importance. May be elected more than once.

EPID565
Research in Hospital and Molecular Epidemiology
Fall, Winter, Spring, Summer term(s)
1-6 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.
Investigation of a selected problem planned and carried out by each student. Pertinent literature, investigational approaches, and progress in the investigations are discussed in seminars. May be taken more than once for up to six credits. Usually taken first for one credit. This is the Capstone Course for Hospital and Molecular Epidemiology Students.

EPID570
Socioeconomic Health Inequalities
Winter term(s)
3 Credit Hour(s)
Instructor(s): Lynch, John
Not offered 2007-2008
Prerequisites: Epid 503/601 and Bios 503 or Perm. Instr.
This course will familiarize students with the extensive epidemiological research and concepts that have documented and attempted to explain socioeconomic inequalities in health. Observations of socioeconomic health inequalities are one of the strongest, pervasive and most consistent findings in epidemiological research. The course will mainly focus on socioeconomic health inequalities in the US, but will also draw on evidence concerning cross-national comparisons among industrialized countries and global health inequalities more generally. The course will focus on developing an understanding of how aspects of the way we structure our socioeconomic systems affects the likelihood of exposure to positive and negative risk factors for disease over the lifecourse. Two key conceptual orientations will be presented: 1) how health inequalities develop over the lifecourse, and 2) how health inequalities are produced by multi-level genetic, biological, psychosocial, economic and other contextual factors.

EPID578
Practical Projects in Epidemiology
Fall, Winter, Spring, Spring-Summer, Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
A period of elective (i.e., non-required) practical projects for international students in Epidemiology. Students work for at least eight weeks in an approved agency. Course requirements include this approved practical work experience related to the student's field of study plus prior and concurrent consultation with the student's faculty advisor. Restricted to Epidemiology majors with at least two full consecutive terms of enrollment.

**EPID582**
Molecular Epidemiology
Winter term(s)
3 Credit Hour(s)
Instructor(s): Foxman, Betsy
Last offered Winter, 2007
Not offered 2007-2008
Prerequisites: EPID 503 or EPID 601; and EPID 515, or equiv
The rapid development in molecular techniques since the early 1980s has enhanced the ability of epidemiologists to define and measure both exposures and outcomes. In this course, we will explore the impact of these measures on the design, conduct and analysis of epidemiologic studies by examining successful and unsuccessful applications of these new measurement tools. We will also discuss the ethical issues arising from an enhanced ability to identify individuals with early stage of disease, increased susceptibility or to measure very low levels of exposure in the environment, and sensitize students to the potential conflicts in research ethics arising from collaborative research projects.

**EPID595**
Foundations of Dental Public Health
Fall, Winter, Spring-Summer term(s)
4 Credit Hour(s)
Instructor(s): Ismail, Amid
This course is the dental public health student's introduction to the discipline. It presents a social and historical context for dental public health, and provides a basis for the more detailed examination of other aspects of the discipline which are covered in other courses. Students will learn about the public agencies and professional organizations involved in dental public health activities, and will have the opportunity to compare and contrast the structure of public health dentistry in the U.S. with that in other countries. Recent activities, projects, and publications in dental public health will be discussed. Practitioners in dental public health need to be able to locate information efficiently, to appraise its value, and to use that information in writing and speaking. They need to be confident in their ability to write clearly and to speak assertively in public. This course aims to provide students with the necessary skills and knowledge needed to locate information, judge its quality, present critical summaries using written and oral communication. The course also allows students to develop confidence in their writing and public speaking. Students will prepare several written projects and oral presentations. The final project will involve the preparation of a mini systematic literature review of a topic chosen by the student, and an oral presentation based on this review.

EPID600
Introduction to Epidemiology
Fall term(s)
3 Credit Hour(s)
Instructor(s): Galea, Sandro
This course consists of lectures and discussion sections, and student lecture attendance is just as important as their participation in the discussion sections for course success. Each student is expected to attend one 1.5 hour lecture a week and one 1.5 hour discussion sections a week. All lectures are given by the instructor. The discussion sections are organized into four sections, each run by a graduate student instructor (GSI). Discussion sections will have two functions. (A) They include discussions of lecture material from that week's lecture, and (B) they will review the solutions to the assignments from the previous week. This course will be divided into three primary sections. The first section will serve as an introduction to the basic principles of epidemiology and the measures used in epidemiology. The second section will discuss epidemiologic study design (include case-control, cohort studies) and analysis (including bias, confounding, effect modification) and the third section will cover special topics that are important to an introductory understanding of epidemiology (including outbreak investigations, clinical trials, screening, and the role of epidemiology in public health).

EPID601
Principles and Methods of Epidemiology
Winter term(s)
4 Credit Hour(s)
Instructor(s): Morgenstern, Hal
Offered every year
Last offered Winter 2007
Prerequisites: Previous or concurrent enrollment in Biostat 523 or equiv; Epid 600 or 503 is recommended but not required
Epid 601 is a comprehensive course in the basic concepts, principles, and methods of population-based epidemiologic research, which serves as a foundation for subsequent courses in epidemiology, biomedical research, and quantitative methods. Class topics expand on those covered in Epid 600. Emphasis is given to study design, quantitative measures, statistical analysis, data quality, sources of bias, and causal inference. The general approach of this course is both theoretical and quantitative, focusing on the investigation of disease etiology and other causal relations in public health and medicine.

EPID602
Foundations in infectious disease transmission modeling
Winter term(s)
3 Credit Hour(s)
Instructor(s): Eisenberg, Joseph
Prerequisites: EPID 600, BIOSTATS 503, 553, or another course that provides a similar background in probability and statistics

Infectious disease transmission modeling provides a theoretical framework for the field of infectious disease epidemiology, and therefore provides the basis for thinking about study design, data analysis, and decision making on public health policy questions. This course will serve as an introduction to infectious disease transmission modeling, teaching more quantitative concepts of disease transmission. It will cover the basic tools required to both critically read modeling papers and to develop and use models as research tools. Emphasis will be placed on using models to understand infectious disease processes and to evaluate potential control strategies. The class meeting will consist of both lecture material covering conceptual issues and a computer lab to apply these concepts using standard infectious disease models.
EPID604
Cardiovascular Disease Epidemiology
Fall term(s)
3 Credit Hour(s)
Instructor(s): Lisabeth, Lynda
Prerequisites: Concurrent or previous enrollment in Epid 600
Epid 604 is a 3-credit course designed to provide an overview of the major topics and issues in cardiovascular disease epidemiology including: 1) pathophysiology, 2) epidemiology of CVD (incidence, prevalence, mortality and morbidity) overall and in special populations, 3) major and putative risk factors for CVD including genetic, social and economic determinants, 4) methodologic issues in CVD research including surveillance and measures of CVD endpoints and relevant exposures, 5) major population-based studies of CVD in the US and globally, 6) primary and secondary CVD prevention, target groups for prevention, and community-based intervention studies, 7) treatment of CVD and major CVD trials, 8) CVD-related research occurring within the Department of Epidemiology.

EPID605
Infectious Disease Epidemiology
Winter term(s)
3 Credit Hour(s)
Instructor(s): Wilson, Mark L
Offered every year
Last offered Winter 2007
Prerequisites: EPID 503 or EPID 601 and prior or concurrent enrollment in EPID 515, or equiv
Introduction to disease and transmission characteristics, and the descriptive epidemiology of infectious agents. This course will help students to understand the theoretical basis of pathogen transmission and what factors determine patterns of disease occurrence. Students will learn how to apply this understanding to disease prevention and control.

**EPID606**
Advanced Infectious Disease Epidemiology
Fall term(s)
3 Credit Hour(s)
Instructor(s): Koopman, James S
Prerequisites: Epid 605
This second course in infectious disease epidemiology will further prepare students to practice infectious disease epidemiology in health departments, NGOs, and academic settings. It addresses the processes and mechanisms which make infectious disease epidemiology differ from non-infectious disease epidemiology with regard to risk assessment and control program implementation. Focus will be on how risk factors, contact patterns, transmission dynamics, and pathogen evolution determine endemic and epidemic levels of infection. This in turn will serve as a basis upon which to discuss how a) vaccination, b) hygiene and sanitation, c) vector control, d) alteration of contact patterns, and e) treatment programs should be organized to minimize endemic and epidemic infection levels.

**EPID607**
Applied Epidemiology for Public Health Practice
Winter term(s)
3 Credit Hour(s)
Instructor(s): Boulton, Matthew
Offered every year
Last offered Winter 2007
This course will address the role of the epidemiologist in the provision of personal and preventive health services in the public health practice setting. Emphasis will be on developing an understanding of the biomedical basis and applied use of these services with particular attention to communicable disease surveillance, immunizations, and sexually transmitted disease services. The effect of changing funding streams, managed care, and the role of federal, state and local political, health, and community agencies in determining service mix and content will also be discussed. Students will have the opportunity to directly participate in service provision in their area of interest and will be expected to develop a semester project addressing a specific public health practice problem.

EPID608
Environmental Epidemiology
Winter term(s)
2 Credit Hour(s)
Instructor(s): O'Neill, Marie
Offered every year
Last offered Winter 2007
Prerequisites: Epid600, Biostat 553 or 503, EHS 506 and 507, 550
This course will serve as an introduction to topics in environmental epidemiology, covering major areas of current inquiry in this field. It will convey the basic tools required to critically read the literature and to develop appropriate study designs in light of intended applications. The class meeting will include lectures and student-led discussions. This course will review epidemiologic methods used in evaluating the health effects of physical, biological and chemical agents in the environment and the available evidence on the health effects of such exposures. We will also consider policy and public health applications of the scientific evidence. Topics include lectures on methodology and major environmental exposures, discussions based on review and critiques of current literature, and presentations by outside experts on specific environmental epidemiology issues of current interest. After taking this course, students should have a better understanding of the scope, limitations, applications and future of environmental epidemiology.

This course is cross-listed with EPID608 in the Epidemiology department.

**EPID609**

Vaccines in Public Health

Winter term(s)

3 Credit Hour(s)

Instructor(s): Yang, Zhenhua

Last offered Winter 2007

**Not offered 2007-2008**

Prerequisites: Epid 601 or permission of instructor
Vaccines represent the most cost-effective medical intervention that has made a major effect on mortality reduction and population growth. This course will cover the epidemiological, statistical, biological, microbiologic, immunological principles, approaches and methods used in vaccine development and vaccination program design. Through a detailed discussion of the pathobiology, epidemiology, vaccine, and vaccination program design of a selected group of vaccine preventable diseases, the course will introduce the students to the major types of infectious diseases defined by the types of pathogens, the different transmission mechanisms of infectious diseases, the concept of population transmission dynamics, and the basic types of population effects of vaccination. Current issues and challenges in vaccine development and immunization practice will also be discussed.

EPID610
Epidemiology and Prevention of Oral Diseases
Fall, Winter, Spring, Spring-Summer term(s)
4 Credit Hour(s)
Instructor(s): Taylor, George
Philosophy, principles, and methods of study in the epidemiology of oral conditions. Includes measurement techniques, risk factor identification, and disease distribution in populations. The scientific basis for procedures and programs to prevent oral diseases is examined, with emphasis on public health applications. Includes water fluoridation, other fluoride programs, pit-and-fissure sealant, diet, nutrition, oral hygiene, chemotherapeutics, and screening programs. Required for all students in dental public health.

EPID611
Administration in Dental Public Health
Fall, Winter, Spring, Spring-Summer term(s)
4 Credit Hour(s)
Instructor(s): Ismail, Amid
The planning, operation, and evaluation of dental public health programs, including quality assurance, budgeting, and legislative issues. Students prepare a research proposal and develop skills in oral presentations. Required for all students in dental public health.

EPID612
Collection and Analysis of Dental Data
Fall, Winter, Spring, Spring-Summer term(s)
4 Credit Hour(s)
Instructor(s): Ismail, Amid
Prerequisites: EPID 610 and Biostat 503
Conduct of a dental field survey and analysis of the data collected. Includes establishment of survey aims, survey organization, examination of subjects, processing and analysis of data, preparation and submission of report. Several otherwise free days are required for the field survey, which is usually conducted outside Ann Arbor. Both custom-written data-capture software and commercial statistical software are employed. Particular attention is paid to the special problems presented by dental data in analysis and interpretation. Extensive use of microcomputers is required. Required for all students in dental public health.

EPID613
Problem in Dental Public Health
Fall, Winter, Spring, Summer term(s)
1-4 Credit Hour(s)
Instructor(s): Taylor, George; Ismail, Amid
Prerequisites: Perm. Instr.
Solutions to problems in dental public health can be pursued by students under the tutorial guidance of a faculty member. The problems can be in any aspect of research or administration. Students can also analyze data from existing research databases, and prepare reports intended for publication. Students meet regularly with the faculty supervisor to assess progress throughout the project. May be elected more than once.

EPID614
Planning and Evaluating Field Experience in Dental Public Health
Spring-Summer term(s)
1-2 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Individual arrangements and preparation for field experience are made with the guidance of the faculty advisor. Arrangements prior to the field experience include setting objectives; selecting the field site; appropriate reading assignments; and assessment of skills and knowledge needed. After the field placement, students submit a written evaluation of the experience to the faculty advisor. The course must be elected the term immediately preceding field experience, and is required if a credit-hour reduction is requested for the field experience.

EPID615
Provision and Financing of Dental Care
Fall term(s)
2 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Analysis of organizational arrangements and patterns for provision of dental care services. Methods of financing dental care. Types of dental personnel and social, economic, and political factors determining their supply and deployment. Emphasis on the United States with some reference to other countries.

EPID616
Neuroepidemiology
Fall term(s)
2 Credit Hour(s)
Instructor(s): Haan, Mary
Offered every year
Prerequisites: Minimum: Research methods class at advanced master's level, 1 year of statistics or biostatistics. Epid 677 is recommended but not required.
This course will cover topics in neuroepidemiology as applied to aging populations, including application of epidemiologic methods and principles to common neurologic outcomes, specific outcomes such as Alzheimer's disease, Parkinson's, stroke, peripheral neuropathy, cognitive impairment, and etiology and prevention of common outcomes including current knowledge from observational and intervention studies. The use of/experience with neuroimaging in population-based studies will be addressed.

EPID617
Social epidemiology II: Social and economic determinants of population health
Winter term(s)
3 Credit Hour(s)
Instructor(s): Galea, Sandro
Offered every year
Last offered Winter 2007
Prerequisites: EPID 514 or permission of instructor
This course rests on the premise that the study of the determinants of health at multiple levels, and their interrelationships, is essential in order to better explain, and potentially predict, the health of populations. Although this course is grounded in an appreciation for the contribution of different disciplines to the study of population health, it focuses on the particular role that epidemiologic perspectives and methods can offer to improve our understanding of population health. As such, this course will be divided into three primary sections. The first section will consider the notion of population health, what we mean by this, and how thinking about population health challenges some of the core methods, and assumptions, of epidemiology. The second section will consider some of the key potential macro-level determinants of population health, and consider the potential role of epidemiologic methods in studying these determinants. The third section will consider epidemiologic methods, their potential, and their limitations in defining population health, understanding its determinants, and assessing the mechanisms through which these determinants influence population health. This course is a combination of didactic lectures and student discussion.

EPID620
The Epidemiology of Women's Health
Winter term(s)
3 Credit Hour(s)
Instructor(s): Sowers, MaryFran
Offered every other year
Last offered Winter 2007
Not offered 2007-2008
Prerequisites: Epid 503, Epid 601 or P.I.
This course will examine sexual differences in biology and
physiology as well as gender differences in social roles,
occupations, and life experiences that can lead to gender
differences in patterns of exposure and disease expression.
This course will then consider when and how these gender
differences influence the selection and implementation of
epidemiologic research methods and areas in which research
methods and measurement tools need development. Topics
will include 1) the physiology and endocrinology of puberty,
the menstrual cycle, menopause, and pregnancy; 2)
physiology and endocrinology of gender differences in
cardiovascular, immunological, neurological and
musculoskeletal systems; 3) womens social and political
role and the theory of womans double burden, occupational
and economic patterns across the lifespan, health care
practices across the lifespan, and social status; and 4) the
impact of gender on research questions, study design,
sampling approaches, recruitment and retention of study
participants, questionnaire design and on research
approaches.

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EPID621
Cancer Epidemiology
Winter term(s)
3 Credit Hour(s)
Instructor(s): Soliman, Amr
Offered every year
Last offered Winter 2007
Prerequisites: EPID 601 or Perm. Instr.

The course will review the socio-demographic magnitude of
cancer, basic concepts of cancer biology and the causes of
cancer. Methods for evaluating genetic factors, tobacco,
alcohol, radiation, chemicals, pharmaceuticals, viruses and
nutrition will be reviewed in lectures and by classroom
discussion of selected publications.
EPID622
CANCER EPIDEMIOLOGY IN SPECIAL POPULATIONS
Winter term(s)
1 Credit Hour(s)
Instructor(s): Soliman, Amr
Offered every year
Last offered Winter 2007
Prerequisites: EPID621 CO-REQUISITE
The focus of the course will be on epidemiologic, genetic, environmental, and lifestyle risk factors of cancer in international and ethnically-diverse populations. Topics will include in-depth discussion of incidence, mortality, and survival of cancer in special populations, distinct aspects of environmental, genetic, and lifestyle factors, and research methods for conducting epidemiologic studies on cancer in special populations.

EPID623
Nutritional Epidemiology
Winter term(s)
3 Credit Hour(s)
Instructor(s): Sowers, MaryFran
Last offered Winter 2007
Not offered 2007-2008
Prerequisites: EPID 503, EPID 601, Biostat 503, Biostat 523
This course will include study in three major areas of nutritional epidemiology: methods of exploring nutrition-disease interrelationships, major epidemiological identified associations between nutritional status and health status, and implications for public health and public health policy in associations between nutritional status and health status.
EPID624
Readings in Epidemiology
Fall, Winter, Spring, Summer term(s)
1-2 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.
Review of literature on selected subjects under guidance of individual faculty members and through scheduled seminars at which reports are presented. May be elected more than once.

EPID631
TOPICS IN CANCER PREVENTION I
Winter term(s)
1 Credit Hour(s)
Instructor(s): Soliman, Amr
Offered every year
Last offered Winter 2007
Prerequisites: NONE
This multidisciplinary seminar will be taught by several faculty from the School of Public Health, School of Nursing, and the Medical School. Each faculty member will give a presentation followed by discussion of research articles.

EPID632
TOPICS IN CANCER PREVENTION II
Fall term(s)
1 Credit Hour(s)
Instructor(s): Soliman, Amr
Offered every year
Prerequisites: NONE
This multidisciplinary seminar will be taught by several faculty from the School of Public Health, School of Nursing, and the Medical School. Each faculty member will give a presentation followed by discussion of research articles.

EPID650
Principles and Practice of Preventive Medicine
Winter term(s)
2 Credit Hour(s)
Instructor(s): Boulton, Matthew
Offered every year
Last offered Winter 2007
Prerequisites: none
This course is intended to introduce preventive medicine residents to the principles of preventive medicine and public health via a seminar approach. Individual seminars are facilitated by residency physician faculty and other invited physician faculty who provide guidance and oversight to the presenting resident for a given session. Presentations are based on peer review papers selected by the residents who also facilitate the participation of non physicians enrolled in the course. Presentations are on a broad range of topics including but not limited to emerging infectious diseases, cancer epidemiology, public health genomics, immunizations, cardiovascular disease, and emergency preparedness. Students are evaluated on appropriateness of selected papers for a given topic, presentation quality, faciliation of class discussion, preparation of pertinent questions, and class participation.

EPID651
Epidemiology and Public Health Management of Disasters
Fall term(s)
2 Credit Hour(s)
Instructor(s): Dean, Sienko  
Last offered Fall 2006  
This course will offer students an overview of natural and man-made disasters as an issue in public health practice and social policy. It will use the foundation of epidemiological principles to develop skills relevant to disaster preparedness, planning, initial response and subsequent relief/recovery efforts. Issues to be examined through course activities include: the types of natural and man-made disaster events, their causes, physical and social impacts, and implications; the frequencies, magnitudes, and geographical/sociopolitical distributions of disaster events along with the epidemiology of injury and disease in the aftermath of disaster; the potential impact of disasters upon community and public health infrastructures; methods to assess risk prior to and evaluate damage following disaster events; issues and considerations in disaster preparedness; interagency roles, responsibilities and coordination in disaster preparedness and management; the man-made disaster of complex emergency, and the health of displaced populations; and issues related to potential disasters from domestic and international terrorism. The course will also discuss contemporary issues such as the recent Tsunami in the South Pacific and the emerging concern about pandemic influenza.

**EPID655**  
Field Studies in Epidemiology  
Winter term(s)  
2 Credit Hour(s)  
Instructor(s): Lisabeth, Lynda  
Offered every year  
Last offered Winter 2007  
Prerequisites: EPID 600 or Perm. Instr.
Formulation of study goals, selection of epidemiologic parameters, sampling strategies, questionnaire design and administration, database construction, entry and validation, interpretation of univariate and bivariate results. Student groups design and execute a pilot field study.

**EPID656**

Applied Epidemiologic Data Analysis

Fall term(s)

3 Credit Hour(s)

Instructor(s): Erdmann, Christine

Offered every year

Prerequisites: EPID 601 and previous or concurrent enrollment in BIOSTAT560; or permission of the instructor

Epid 656 is a one-semester practicum in epidemiologic data analysis designed to integrate and apply concepts learned in previous biostatistics and epidemiologic methods courses. Students learn practical skills to analyze and interpret epidemiologic data with continuous and dichotomous outcome variables through lectures and hands-on exercises. Students develop and execute a data analysis plan for their final project.

**EPID657**

Field Internship in Epidemiology I

Winter term(s)

1 Credit Hour(s)

Instructor(s): Staff

Offered every year

Last offered Winter 2007

Prerequisites: INDI, Grad Standing and Perm. Instr.
Students register for one credit hour with a faculty member who serves as the departmental internship advisor. Coursework involves identifying and applying for an internship, attending required sessions on Human Subject IRB approval processes and attending a planning session for the EPID 658 presentation to be done the following Fall Term.

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**EPID658**

Field Internship in Epidemiology II

Fall term(s)

1 Credit Hour(s)

Instructor(s): Harlow, Sioban

Offered every year

Last offered Fall 2006

Prerequisites: INDI, Perm. Instr.

Presentation, analysis and discussion of student field experience in Epidemiology. Students present a written abstract, visual presentation and oral report on an aspect of their internship experience at the departmental poster session. Students must also complete a confidential evaluation of their internship experience.

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**EPID659**

Applications of Epidemiology

Fall, Winter, Spring, Summer term(s)

2-4 Credit Hour(s)

Instructor(s): Staff

Offered every year

Prerequisites: EPID 601, EPID 655, Perm. Instr.
Application of epidemiological methods and concepts to analysis of data from epidemiological, clinical or laboratory studies. Introduction to independent research and scientific writing under faculty guidance. May be elected more than once for a total credit of not more than four hours. Course must be elected for a total of 4 credits; either elected for 2 credits each during 2 different terms or for 4 credits during a single term. This is the Capstone Course for General Epid and International Health Students.

EPID662
International Health Care Systems
Fall term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Grad Status
This course examines the effects of government and private health services on the health status of populations in developing countries. Other issues analyzed include the politics of health services, their cost-effectiveness and how they are financed. Emphasis is placed on an interdisciplinary approach and on formal techniques of analysis, including the use of some basic statistical, epidemiological, economic and planning models. Prior election of EPID 666 is recommended.

EPID663
Health, Evidence, and Human Rights
Fall term(s)
3 Credit Hour(s)
Instructor(s): Harlow, Sioban
Prerequisites: Graduate Standing
This course will consider how population research can contribute to developing evidence relevant to advancing human rights. The ability to generate and interpret evidence is critical to addressing human rights abuses both in the courts and through the development of national and multilateral policies. Though evidence takes a number of forms and demands a variety of fields of expertise, the skills unique to public health and health research expand the scope of inquiry greatly. Human rights are not an individual phenomenon. They are held at a largely individual level, but in reality, be it in the form of collective claims or as a result of their fundamental interdependence and interrelation, human rights succeed or fail to be realized on a social level, and so also require examination at the population level in order to explicate the complexities that define human rights in the context of community systems. In this central respect, the research capacities of epidemiology and the health professions potentially play an important role in the field of health and human rights. This course will systematically examine how to frame population research priorities from a human rights perspective and how population research methodologies can be applied to human rights questions. Case studies of emerging research in the field will be used to develop a conceptual framework for applying health research methodologies to evidentiary issues in human rights.

**EPID664**
Field Methods in Epidemiology for Developing Countries
Winter term(s)
3 Credit Hour(s)
Instructor(s): Soliman, Amr
Offered every year
Last offered Winter 2007
Prerequisites: Epid 503 or Epid 601
This course is developed for students and researchers interested in pursuing collaborative epidemiologic research in international settings. The course will focus on steps and procedures for setting up and conducting international epidemiologic studies. Topics will include relationship between research groups and host country policy makers and collaborators, cultural and logistical differences between research studies in the U.S. and international settings. Other topics will include developing and maintaining research infrastructure, research design, field operations, anticipated obstacles, monitoring, ethical and IRB requirement for international studies, funding, and plans for maintaining future collaborations. Occasional guest lecturers, actively involved in international epidemiologic research will be integrated into the syllabus.

**EPID665**

Research Seminar in International Health
Winter term(s)
1 Credit Hour(s)
Instructor(s): Harlow, Sioban
Offered every year
Last offered Winter 2007
Prerequisites: Perm. Instr.

The seminar provides a forum for the discussion of capstone research projects in international health. Students in both the General Epidemiology and the Hospital and Molecular Epidemiology tracks of the International Health Program present their research findings. In addition, the seminar includes presentations of international health research by other speakers from the University and elsewhere.

**EPID666**

Health and Socioeconomic Development
Winter term(s)
3 Credit Hour(s)
Instructor(s): Stein, Howard
Offered every year
Last offered Winter 2007
Prerequisites: Grad Status
Reviews links between health conditions and socioeconomic development in low-income countries; trends in health indicators; determinants of health, including medical services, income, education, nutrition, fertility, environmental conditions, etc; effects of health changes on the economy. Prior or concurrent election of BIOSTAT 523 or equivalent is recommended.

EPID677
Epidemiology of Aging
Fall term(s)
3 Credit Hour(s)
Instructor(s): Haan, Mary
Offered every year
Prerequisites: EPID 600 OR EPID 503, BIOSTAT 503 or 553
This course will address the epidemiology of aging from a public health perspective with a specific focus on epidemiologic methods and their application to the study of function and disease in the elderly. These will include demography, biology of aging, models of aging, functional status, genetics of longevity, cognition and dementias, social factors, sensory changes. Group projects will involve small scale data collection on elderly individuals or analysis of existing data on aging. The project will emphasize understanding of some aspect of epidemiologic methods.

EPID680
Hospital Epidemiology
Fall term(s)
2-3 Credit Hour(s)
Instructor(s): Staff
Offered every year
Last offered Fall 2006
Prerequisites: Basic Epidemiology and Microbiology and Perm. Instr.

An integration of information from basic courses allows application of microbiologic, epidemiologic and statistical principles to problems of infections in hospitals. Surveillance, investigation and control of hospital infections described.

EPID682
Current issues in Molecular Epidemiology of Infectious Diseases
Winter term(s)
1 Credit Hour(s)
Instructor(s): Foxman, Betsy
Last offered Winter 2007
Not offered 2007-2008
Seminar providing a forum for discussing current topics in molecular epidemiology of infectious diseases. Required for students in the interdisciplinary program in infectious diseases. This course can be taken more than once for credit.

EPID701
Fundamentals of Biostatistics
Summer term(s)
3 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.
This course will provide students with some of the tools necessary to compute sample and population statistics and to make inferences using them. Some of the topics to be covered will be descriptive statistics, probability, sampling distributions, hypothesis testing, confidence intervals, correlation and simple linear regression. An emphasis will be placed on understanding the assumptions made to perform some statistical techniques and what can be done if these assumptions are violated. The course will be based on lectures, homework and reading assignments and some class exercises. Hand calculators will be required.

EPID701D
Fundamentals of Biostatistics
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: General algebra
This course will provide students with some of the tools necessary to compute sample and population statistics and to make inferences using them. Some of the topics to be covered will be descriptive statistics, probability, sampling distributions, hypothesis testing, confidence intervals, correlation and simple linear regression. An emphasis will be placed on understanding the assumptions made to perform some statistical techniques and what can be done if these assumptions are violated. The course will be based on lectures, homework and reading assignments and some class exercises.

EPID702
Principles and Applications of Epi Info
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Introductory level courses in Biostatistics and Epidemiology and knowledge of IBM PC and Perm. Instr.
This course will focus on the use of Epi Info 2000 software for the conduct of epidemiologic studies and surveillance from the data collection stage through final data analysis. Students in the course will learn how to create questionnaires and data entry forms with built-in validity checks, enter data, merge and update data from multiple sources, perform statistical analyses and create basic graphics, and import/export data between Epi Info and other programs. Students will also be introduced to Epi Map, a Geographic Information System (GIS) module within Epi Info 2000 that can be used to spatially represent epidemiological data. Class participants will receive extensive hands-on experience by working as individuals or in groups to enter and analyze their own data. Prerequisite: Introductory-level course in epidemiology. No previous experience using Epi Info is required.

EPID703
Topics in Infectious Diseases
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr., Introductory epidemiology and microbiology.
This course will focus on current topics and new concepts in infectious disease epidemiology. We will discuss factors and issues of diseases most currently prevalent in the world, their status, epidemiology, and methods of control and prevention and barriers to their successful applications. The diseases to be discussed include but are not limited to: diarrheal diseases, HIV/AIDS, tuberculosis, vaccine preventable diseases, avian influenza, emerging infections, West Nile virus, hemorrhagic fevers, zoonoses such as ehrlichiosis and variant Creuzfeldt-Jacob disease, hospital infections including multiple resistant staphylococcus and antibiotic resistance of other organisms. The class format will include lectures, discussions, and critical review of assigned reading material. Prerequisite: Basic knowledge of epidemiology and microbiology.

**EPID704**
Epidemiology, Biology, and Prevention of Cancer
Summer term(s)
1 Credit Hour(s)
Instructor(s): Schottenfeld, David
Prerequisites: Perm. Instr. and Intro level course in Epidemiology
The Epidemiology of selected cancer sites will be reviewed comprehensively, emphasizing current concept of cancer biology, established risk factors, and probable causal mechanisms. Major causal factors will be reviewed in relation to lifestyle, the workplace, medical care, and the general environment. Special topics will include how molecular epidemiological studies may incorporate biomarkers of exposures in tissues, or that determines host susceptibility.

**EPID705**
Epidemiology in Public Health Policy
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.; Intro Epidemiology and Microbiology

This course deals with selected applications of epidemiologic methods and findings to health-services research, population health planning and evaluation, risk assessment and health policy. The major objective is to provide a framework for integrating causal inference with decision making, thereby bridging the gap between science and practice. Emphasis is given to important conceptual and methodologic issues that confront public-health and clinical researchers, policy analysts, health planners, attorneys, and decision makers.

Prerequisites: Introductory level courses in epidemiology and biostatistics.

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EPID707
Nutritional Epidemiology
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.

The overall objective of this course is to provide an understanding of the theoretical and practical considerations in the conduct of nutritional epidemiologic studies. The course will review methods for assessing dietary intake as well as cover specific studies of diet, nutrition, and chronic diseases. In addition, given the obesity epidemic and the public health importance of this nutritional disease in our society, the course will also examine epidemiologic research related to the causes, consequences, and prevention of obesity. Prerequisite: Introductory-level course in epidemiology.

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EPID709
Fundamentals of Epidemiology
Summer term(s)
3 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Previous or concurrent course in Intro. Biostats, P.I.
The course will provide participants with an understanding of basic concepts and methods of epidemiology. The course will familiarize students with specific methods and quantitative techniques for describing patterns of disease and for elucidating disease etiology. Applications of epidemiology to certain areas of public health such as screening as an approach to disease control will be illustrated. The course will be based on lectures, discussions, assigned readings, and problem solving. Students are required to bring hand calculators to class.

EPID711
Epidemiology of Injury and Violence
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Intro Epidemiology and Perm. Instr.
Injuries, both unintentional and intentional, are the leading cause of premature death and a leading cause of physical and emotional disability. Injuries occur in predictable patterns, and they are highly amenable to prevention and to interventions that reduce their severity. A basic understanding of the epidemiology of injuries is an important first step to successful prevention and control. This course will introduce students to the theory and methods used in injury epidemiology. The course will review the different approaches to studying injury patterns including causal mechanisms and the different phases where injuries occur and can be controlled. Specific topics include: theoretical basis of injury control research; review of available national and local data sources and their limitations; classification schemes for types and external causes of injury; measures of injury occurrences including exposure measurement, risk, and rate derivation; describing and interpreting injury data; and appropriate choice of study design and effect measures for injury studies. This course emphasizes the use of epidemiological methods and data in considering injury control options and the evaluation of the effectiveness of injury control programs. The curriculum includes lectures, discussions, practical exercises, and critical review of epidemiological literature. Students will practice prioritizing injury problems, formulating approaches for studying different injury problems, and interpreting epidemiological data pertaining to injury causation and prevention. Prerequisite: Introductory level course in epidemiology.

EPID713
Epidemiology of Mental Disorders
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.
This course reviews the methodological issues and measures used in current psychiatric epidemiological research. Epidemiological findings from several areas are critically reviewed, including depression in community and primary care populations, children's mental health, stress-related disorders, dementia, schizophrenia, and substance use disorders. The findings from recent large-scale epidemiological studies of treated and untreated populations will be highlighted.

EPID714
Preventing the Disabling Conditions of Aging
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intro Epidemiology and Perm. Instr.
This course begins with a basic overview of research on the epidemiology of important clinical and social conditions that lead to disablement and death among older persons in the United States and other western countries. There will be a detailed consideration of known and putative risk factors for these conditions, examining the level of evidence and addressing newly suggested factors. Conditions that will be emphasized include general physical disability, dementia and Alzheimer's disease, osteoporosis and osteoarthritis, coronary heart disease, selected cancers, depression, elder abuse and selected common infections. Finally, each condition will be explored for its preventability using both clinical and population intervention strategies. Prerequisite: Introductory-level course in epidemiology.

EPID716
Clinical Epidemiology and Evidence-Based Decision Making
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff  
Prerequisites: Perm. Instr.

With the increasing demand for an evidence-based approach in the delivery of health care services and the economic pressures for a more rational and efficient use of limited health care resources, practitioners and administrators in the health care field need to develop clinical measurement and evaluative skills in order to conduct their work optimally. Clinical Epidemiology and Evidence-Based Decision Making identifies and teaches these skills. The course will cover the basic concepts of clinical epidemiology in the context of appraising the recent medical literature pertaining to issues of causation, diagnosis, management, and economic evaluation. The format will include problem-based learning. Course materials will be provided in advance of the sessions, and should be reviewed before the course begins in order to obtain the maximum benefit from enrollment in the course. All health professionals (clinicians and administrators) who rely on the medical literature to guide their activities are invited to attend the course. No prerequisite.

**EPID717**  
Design and Conduct of Clinical Trials  
Summer term(s)  
1 Credit Hour(s)  
Instructor(s): Staff  
Prerequisites: Intro Epidemiology and Perm. Instr
The theoretical and practical challenges to be considered in designing and conducting a clinical trial will be presented. Topics to be discussed include the specification of a primary objective, adherence to accepted ethical guidelines, the role of randomization and the means of its implementation, the choice of design strategy and design strengthening features, and the considerations involved in sample size determination and patient recruitment. Detailed analytic issues will be considered in the complementary one-week course that follows. No prerequisite.

**EPID718**

Analysis of Clinical Trials  
Summer term(s)  
1 Credit Hour(s)  
Instructor(s): Staff

Prerequisites: Intro Biostatistics and Perm. Instr.

Methods of analysis appropriate to various designs, such as cross-over designs, nested designs, factorial designs, and designs with repeated measures will be presented. The use of GLM techniques for analysis will also be illustrated. Topics will include estimation of survival functions, survival comparison between groups of subjects, identification of important covariates, adjustment for covariates, testing for interaction, and understanding the difference between confounding and interaction. Specific tools to be discussed include the Kaplan-Meier estimators, the log-rank (Mantel-Haenszel) statistics, and the Cox proportional hazards model. Instruction will focus on empirical use of methodologies rather than formal algebraic knowledge. Practical applications of manual and software-based analysis will illustrate specific procedures and interpretation of results. Students receive a disk with the data and analysis programs for all examples in the course. Students are advised to bring a scientific calculator.
EPID719
Genetics in Epidemiology
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm Instr; Introductory level courses in epidemiology, biostatistics, human genetics. Completion of EPID 773.
This course will focus on the methods used for identifying disease susceptibility genes, and evaluating their contribution to disease risk in epidemiologic research. There will be discussions relating to three broad genetic issues: 1) methods used in gene mapping, 2) data collection issues for family and population studies, 3) statistical approaches for examining familial aggregation, linkage and association. In addition, the use of biomarkers of exposure in epidemiologic research will be discussed. The course will include didactic lectures, data analysis and discussions of current literature. Prerequisites: Introductory level courses in epidemiology, biostatistics, and human genetics. Completion of EPID 773 Introduction to Genetics in Epidemiology is sufficient to meet the human genetics requirement. NOTE: There is a companion weekend course EPID 773 Introduction to Genetics in Epidemiology.

EPID720
Planning, Delivery, and Evaluation of Community-Based Interventions for Behavioral and Social Change
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Perm. Instr.
Community-based programs that are designed to change health-related behaviors comprise the vast majority of the public health efforts to reduce the morbidity and mortality in populations. This course covers the life stage of community-based programs from inception, implementation, and sustainability. The course applies the theoretical concepts from the social and behavioral sciences, health education, and health communication to the planning, design, and evaluation of community-based interventions. A program planning framework provides the methodology to examine social and behavioral determinants of health and to identify appropriate intervention design. Characteristics of theory-based interventions are discussed, critiqued, and assessed for relevance to the needs of the students who will have the opportunity to apply these ideas to their own work. No prerequisite.

EPID722
Pharmacoepidemiology
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intro Epidemiology and Perm. Instr.
This course will cover the application of epidemiologic methods to study the use and effects of pharmaceuticals, biologics and other medical products. In particular, it will cover methods of detecting adverse and beneficial drug effects, including spontaneous reporting systems, ad hoc epidemiologic studies, and the growing use of automated databases. Emphasis will be placed on the need to quantify the frequency of drug effects and risk factors for these drug effects, rather than simply documenting causation. We will also address the renewed interest in adverse events as a major public health problem and how it will impact the health care system through the more recent implementation of pharmaceutical risk management plans. Other topics to be covered include measuring the frequency of drug use, the quality of prescribing, and new developments in pharmacoepidemiology methods. Teaching methods will include lectures and workshops, as well as development of a study protocol. Prerequisite: Introductory-level course in epidemiology.

EPID723
Evaluation of Occupational and Environmental Hazards
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.; Intro level Epid and intro to biostatistics
This course will cover the fundamental concepts and methods used in Occupational and Environmental Epidemiology. Designs and methods for the analyses of occupational cohort mortality, nested and population based case-control, cross-sectional and longitudinal studies will be reviewed. Methodological issues such as exposure misclassification and the healthy worker survivor effect in occupational studies will be discussed. Meta-analysis and the use of risk assessment methods will also be presented. Case studies on environmental tobacco smoke, air pollution and formaldehyde exposure will be used to illustrate these issues. Prerequisite: Introductory-level course in epidemiology.

EPID724
Risk Assessment in Environmental and Occupational Epidemiology
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intro Epidemiology and Perm. Instr.
Risk assessment has become an essential tool in the development of policies for controlling environmental and occupational hazards, and the use of epidemiological data in risk assessment has been steadily increasing. This course will provide an overview of the current practices and controversies in risk assessment as it is practiced today, and of issues of particular concern regarding the use of epidemiology in risk assessment. Methods for using epidemiological data for identifying hazards will be reviewed including meta-analysis. Methods for developing quantitative estimates of risk by modeling epidemiological data using statistical and biologic models will also be reviewed. Class laboratory exercises will be conducted using contemporary examples where epidemiological data has played a major role in risk assessment such as: particulate air pollution and respiratory disease, electromagnetic fields (EMF) and cancer risk, and benzene and leukemia risk.

EPID725
CVD Epidemiology: Foundation for Public Health Policy & Practice
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intro Level Epid and Perm. Instr.
This course will provide an opportunity through lectures and discussion to address major aspects of CVD epidemiology, including 1) the nature and scope of cardiovascular diseases (principally coronary heart disease and stroke) in their population context; 2) the determinants of cardiovascular diseases as they contribute to differences in rates among populations and risks among individuals; 3) concepts of prevention of cardiovascular diseases as these have evolved over several decades; and 4) the culmination of these in a new, comprehensive, public health strategy for heart disease and stroke prevention. In addition, questions will be posed for discussion that may be critical for research in cardiovascular disease epidemiology in the future. The framework for the course is given by the text, Epidemiology and Prevention of Cardiovascular Diseases: A Global Challenge, Labarthe, Aspen 1998. Supplemental materials will be provided as needed. Prerequisite: Introductory-level course in epidemiology.

EPID727
Fertility and Pregnancy - An Epidemiologic Perspective
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intro course in epidemiology and Perm. Instr.
Few stories in biology are as fascinating as the development of a fully formed infant from a single fertilized cell and no period of life is more crucial in laying the groundwork for long-term health. This course covers the gamut from fertility and conception to fetal development, birth defects, diseases of pregnancy, the controversial role of birth weight in survival, and the long-term effects of events during pregnancy on adult diseases. A sub-plot in this story is the array of deceptive analytic traps inherent in epidemiologic studies of reproduction and pregnancy. Finally, we will consider the importance of evolution and genetics in perinatal studies, and the special role of the case-parent-triad study design as a genetic tool. No prerequisite.

EPID729
Applied Epidemiology for Health Practitioners
Summer term(s)
3 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.
The course will emphasize the practical application of the principles of applied epidemiology to the investigation of public health problems. The material will be directed toward public health practitioners whose responsibilities include epidemiological investigations of disease problems in the community as well as to others who are interested in a refresher course or entry level course in applied epidemiology. There will be presentations and discussions of applied epidemiology, field investigations, public health surveillance, methods of control and prevention, surveys and sampling, and evaluation. Participants will work on a number of case studies prepared from actual field investigations that will extend the discussion of the above subjects. This allows a practical application in the classroom of the principles of epidemiology to the solution of disease problems. Selected diseases will be discussed that will emphasize the principles of epidemiology as applied to infectious and non-infectious diseases. Students are requested to bring hand calculators to class.

EPID730
Occupational and Environmental Exposure Assessment
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intro Epidemiology, P.I.
In recent years significant advances have been made in the exposure assessment methods used in epidemiologic studies of occupational and environmental hazards. These have resulted in major improvements in both validity and reliability and have increased our understanding of the impact of misclassification. This course will present an overview of the methods currently available for occupational and environmental exposure assessment in both workplace and community-based studies and provide participants with the ability to assess the strengths and limitations of different strategies. Topics will include assessing feasibility, designing an effective strategy, quantitative and semi-quantitative methods, assessing misclassification, and analysis strategies. The course will use a combination of lectures, case studies, and problem-solving exercises. Prerequisite Introductory level course in epidemiology. NOTE: It is highly recommended that students for this course also take Epid 723 Occupational and Environmental Epidemiology which is offered during the same week in the morning session.

EPID731
Sexually Transmitted Diseases: Epidemiological Principles
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.
Microbes, passion, power, and politics converge to create public health policy for STD and HIV. Each of these fascinating diseases brings a unique set of epidemiological features and social issues. The course will cover bacterial diseases (syphilis, gonorrhea, chlamydia), viral diseases (herpes, hepatitis B, genital warts, Kaposis sarcoma, AIDS, and cervical cancer), and syndromes caused by sexually transmitted infections (pelvic inflammatory disease and ectopic pregnancy). We will: focus on characteristics of the infections that influence their distribution and provide opportunities for public health intervention; emphasize fundamental epidemiological principles illustrated by studies of these diseases; and explore issues involved in the design and evaluation of control programs. No prerequisite.

**EPID734**

Epidemiology of Substance Abuse
Summer term(s)
3 Credit Hour(s)
Instructor(s): Staff
Prerequisites: P.I.
Substance abuse is associated with death, disease and injury especially among children and young adults. This course will cover the various substances of abuse and will focus on alcohol, cocaine crack, benzodiazepines, amphetamines, marijuana and heroin. Information helpful in conducting and/or interpreting epidemiological studies of substance abuse will be presented. These include data on trends and patterns of drug use, biologic and other causal theories, Diagnostic and Statistical Manual of Mental Disorders (4th Edition), and other classification typologies, and methodological research problems unique to substance abuse. Various methods of studying substance abuse and associated morbidity and mortality and other consequences will be illustrated and examined. Epidemiological issues will be discussed including the validity and reliability of self-reported drug use, urinalysis and other means of detecting and quantifying drug use. Consequences of substance abuse presented include depression and suicide, traffic accidents and other injuries, crimes and violence, deaths, adverse pregnancy outcomes, HIV infections and other sexually transmitted diseases and the impact of substance abuse on the health care system.

EPID740
Methods in Medical Quality Assessment and Improvement
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Clinical training, intro epidemiology, knowledge or experience in hospital epidemiology or other quality assurance, risk management, or utilization review programs, P.I.
This course will focus on methods of assessing and improving the quality of medical care. Measurement is an essential component of quality improvement efforts. The course will emphasize the application of common epidemiological tools and methods, and explore the use of other techniques including survey methodologies, quality improvement techniques, and methods for evaluating cost.

EPID741
Epidemiology Measures
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intro Epidemiology and Biostatistics and Perm. Instr.
The features and pitfalls of using rates, odd ratios, rate ratios, probabilities and probability ratios are described in biostatistical terms producing an in-depth understanding of these fundamental epidemiologic tools for measuring association. The companion concepts of interaction (effect-modification) and confounding bias are also presented to identify important issues in drawing conclusion from these statistical measures. Once the properties of these summary statistics are established, such topics as combining data, analysis of trends, transformations and smoothing techniques are presented to illustrate the process of measuring associations in collected data. Rigorous and detailed explanations combined with applied illustrations are intended to improve the application of statistical measures to the analysis of epidemiologic data. Prerequisites: Introductory level courses in epidemiology and biostatistics.

EPID742
Introduction to Logistic and Poisson Models
Summer term(s)
The vast majority of epidemiologic data involve either binary or count data. Logistic (binary data) and Poisson (count data) regression analyses are two important analytic approaches that frequently provide valuable insights into collected data. Both techniques will be presented in a practical and an applied fashion. The discussed material begins with the simplest case with the goal of understanding the fundamental properties of each model. Once these properties are established, more advanced topics such as collinearity, variable selection, non-linear explanatory variables and goodness-of-fit will be described and applied to several multivariable epidemiologic data sets. These two analytic approaches not only provide simple and effective ways to explore complex relationships but illustrate the general process of using a linear model to draw conclusions from the analysis of epidemiologic data. Prerequisites: Introductory level courses in epidemiology and biostatistics.
This course discusses the applications of linear regression models to medical research and public health data. We will focus on the two major goals of linear models: (1) explanation, the estimation of associations using linear regression models, and (2) prediction, the use linear regression models to predict subject outcomes, as with diagnostic tests and nomograms. Specific topics include graphical exploratory data analysis, assumptions behind simple and multivariate linear models, the use of categorical explanatory variables, identifying when transformations of explanatory and/or outcome variables are needed, assessing the presence of predictor/outcome associations through hypothesis testing, identifying when confounding and effect modification are present, assessing model fit, and model selection techniques. Prerequisite: Targeted audience members include researchers and health professionals with some basic knowledge of statistics and epidemiology who desire some in-depth exposure to the concepts and principles of linear regression models. Although some statistical output will be presented, students will not directly analyze data in this course and no prior knowledge of any statistical software, such as SAS or SPSS, is required.

EPID745
Epidemiological Issues in Women's Health
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr., Introductory epidemiology
Did you know that compared to men, women are three times more likely to develop an autoimmune disease, die from cardiovascular disease in greater numbers, and have different responses to pharmaceuticals? While much is known about certain diseases affecting women, such as osteoporosis and breast cancer, there is a lack of research in many other areas. A relatively new research area, gender-based medicine, is gaining more attention. It is becoming clear that women have unique health needs and that what is known about men's health cannot simply be translated into women's health. In this course, we will examine these differences to help us gain a more complete picture of how a gender-based approach can have strong implications for the way that diseases are prevented, diagnosed, and treated.

**EPID747**
Successful Scientific Writing
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.
This course takes an active, participatory approach to help public health and health care professionals learn how to communicate the findings of their research and investigations more effectively and expedite publication of their manuscripts. Working in small groups, students spend much of their class time critiquing actual published and unpublished manuscripts, including their own, and solving a wide range of exercises that exemplify the real-world challenges that authors face. Free-form in-class discussions make it possible for class members to learn from one another's experiences. Major components of the course include the following: basic sections of a scientific article: the purpose, elements and organization of each section; principles of style for writing in public health and epidemiology; systematic approaches to the process of writing and publishing an article in a peer-reviewed journal; effective strategies for dealing with requests of journal editors and reviewers.

EPID749
Applied Computing in Epidemiologic Research
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intro Epidemiology and Biostatistics, Perm. Instr.
The overall objective of this course is to have students develop skills to improve their use of computers in epidemiologic research. A number of case studies are used to step through the process of performing simple descriptive analyses to more complicated multivariable analyses. An important aspect of this process includes how to perform certain epidemiologic and statistical analyses using software and, just as important, how to interpret the output. Programs such as Epi Info, SAS, SPSS, OpenEpi, and others will be presented. Epidemiologic analyses, such as stratification, logistic regression, and survival analysis, are described. The important issues of assessing and dealing with effect modification and confounding are emphasized. Some basic programming in Epi Info and SAS will be presented. Prerequisites: Introductory-level courses in epidemiology and biostatistics. Experience with the use of statistical software is desirable.

EPID750
Cancer Epidemiology: Etiologic Evidence for Assigning Priorities in Cancer Prevention
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intro Epidemiology and Perm. Instr.
This course will review advances in cancer epidemiology that illuminate understanding of causal mechanisms and the basis for preventive interventions. The syllabus will include lectures on the global burden of cancer; tobacco, alcohol and ultraviolet radiation exposures as major risk factors contributing to the global burden; endogenous and exogenous sex steroid hormones in the pathogenesis of breast and endometrial cancer; obesity and cause-specific cancer mortality; conditions associated with chronic inflammation that impact the causal pathway in human carcinogenesis. Prerequisite: Introductory-level course in epidemiology.

EPID751
Cancer Prevention
Summer term(s)
1 Credit Hour(s)
Instructor(s): Schottenfeld, David
Prerequisites: Intro level Epid and Perm. Instr.
The principal focus of this course is the assessment of cancer prevention strategies. We will initially review theories and evidence supporting the notion that cancer is largely preventable. Important concepts in this review include the understanding of cancer as a decades-long process rather than a discrete event, the implications of geographic variations in cancer occurrence, and the potential roles of behavior change, pharmacological (chemopreventive) therapy, screening, and regulatory processes as approaches to cancer prevention. We next will explore the scientific, economic, and ethical considerations that go into formulation of clinical and public policies directed toward cancer prevention. The remainder of the course will entail an examination of preventive approaches to specific cancers, including those of the uterine cervix, lung, colorectal, breast, and prostate. We will focus on the scientific evidence supporting the effectiveness of early detection, chemoprevention, behavioral change, and regulatory policy for each of these cancers and will examine the statements and actions of governmental and private organizations in the light of this evidence.

Prerequisite: Introductory level course in Epidemiology.

EPID752
Epidemiology and Prevention of Violence
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.
Violence-related injury is a leading cause of morbidity and mortality around the world. Using a public health perspective, this course will explore the epidemiological, etiological, and programmatic landscape of violence-related injury in its prevention. Students will learn about: 1) how to find and interpret relevant epidemiologic information, 2) theories and evidence regarding causes of violent behavior, 3) leading evidence-based strategies for preventing violent behavior, and 4) strategies to implement, evaluate, and maintain programs to prevent violent behavior. No prerequisite.

EPID753
Ethics and Epidemiology
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Perm. Instr.
This course focuses on topics that are common in conducting epidemiologic research, including the development of the informed consent process, the assessment of risks and benefits, conflict of interest, and scientific misconduct. The course examines the underlying ethical principles, international ethical guidelines and federal regulations that are relevant to these issues, as well as the application of these concepts to actual situations. Prerequisite: Course or equivalent in epidemiological methods.

EPID754
Design and Evaluation of Injury Prevention Programs
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intro Epidemiology and Perm. Instr.
This course will provide students with an opportunity to develop basic skills necessary for the design, implementation and evaluation of prevention programs. Although examples used throughout the course will be drawn from the field of injury prevention, most concepts are also directly applicable to intervention development in other areas of public health. Using a problem-solving framework, students will be introduced to problem identification, definition, and measurement; identification of key determinants and of modifiable casual factors; identification of possible intervention strategies; selection of an intervention strategy; and integrated implementation and evaluation planning. The contest focus will be on developing prevention programs in a way that optimizes limited resources while achieving the maximum likelihood of success. Special attention will be given to assessing the social and environmental factors that impact the development, delivery, and outcomes of interventions. The educational focus will be on practical skill building. The class will be interactive, and students are encouraged to bring real-world injury prevention problems or success stories to contribute to class discussions and group exercises. Strongly recommended prerequisite: Previous or concurrent course in epidemiology.

EPID756
Epidemiology and the Law
Summer term(s)
1 Credit Hour(s)
Instructor(s): Peyser, Patricia A
Prerequisites: Perm. Instr.
Increasingly, epidemiological studies are offered as evidence or as a foundation for expert testimony in criminal, civil, and administrative proceedings. Presently, courts and administrative agencies are implementing the guidelines set forth by the U.S. Supreme Court in Daubert, a landmark 1993 case that established new standards for the admission of scientific evidence. Daubert emphasized that to be legally reliable, scientific evidence must be scientifically valid.

This course reviews evidentiary standards focusing on the tests that should be applied to epidemiological studies to assess their scientific validity. The Federal Rules of Evidence will be the primary legal standards discussed. Recent court decisions interpreting these rules will be reviewed. Scientific writing describing how to assess study designs, data, methods, and reporting of findings will also be reviewed. The application of legal and scientific standards will be illustrated through simulations presenting realistic situations for class discussion. The course is intended for judges, lawyers, regulators, witnesses, students of law and epidemiology, and practicing epidemiologists interested in legal issues.

EPID757
Introduction to Systematic Reviews and Meta-analysis
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intro Epidemiology and Biostatistics and Perm. Instr.
In the last several years, there has been an explosion in the number of published meta-analyses in the biomedical literature. Although controversy exists about the relative merits of the technique of meta-analysis (compared to results obtained through single trials or through qualitative reviews), the widespread and growing application of meta-analyses to address important research questions, makes it useful for health professionals to be able to understand and critique this research design. This one-week course will provide a detailed examination of the strengths and limitations of the technique as well as intensive introduction into the design and execution of a meta-analysis. Specific topics to be covered (and emphasized through numerous examples from the medical literature) include: *identification of research questions appropriate for meta-analysis; *systematic abstraction and quality scoring of data from research articles; *a critique of the performance of meta-analysis contrasted with conclusions from clinical trials; selection of a proper statistical model in meta-analysis, including computer-based problem sets with practical examples of fixed and random effects models; the use of meta-regression to evaluate heterogeneity; *graphical and tabular templates for the presentation of data from a meta-analysis

EPID759
Introduction to SAS
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intro. Epidemiology and Biostatistics and Perm. Instr
This course will present SAS at an introductory level for public health professionals. The overall objective of the course is to enable students to develop the ability to use SAS for basic statistical analyses, and to prepare for more advanced uses of SAS. Students in the course will learn how to navigate SAS in the Windows environment, create and submit command files, print output, do simple troubleshooting, create and manipulate SAS data sets, recode and transform variables, and do simple statistical analyses using SAS. Data management tasks, such as merging data sets to add variables, and adding cases to a data set will also be covered, as will information on how to import/export data between SAS and other programs, such as Excel, dBase, SPSS, and Epi Info. SAS/INSIGHT will be introduced for examining the distributions of variables and checking statistical assumption, using interactive graphics. The class will be taught as a lab, with lectures and demonstrations.

EPID760
Economic Measures of the Effectiveness of Health Care Services
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.
This course will introduce students to tools of economic evaluation and demonstrate how these tools can be used in the health care arena. Specifically, students will learn the mechanics of cost minimization, cost effectiveness, and cost utility analyses. Major foci of the class will be on how to frame studies and on the different ways to define and measure health outcomes, particularly quality adjusted life years (QALYs). The class format will be lectures, supplemented by discussion of case studies from the literature.
EPID761
Perspectives in Social Epidemiology
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intro Epidemiology and Perm. Instr.

There are few arenas of epidemiologic inquiry which do not bear the imprint of societal and psychosocial processes. This course will provide an introduction to some of the core theories, concepts, methods, and findings in the social epidemiologic investigation of health and diseases. Using a combination of lectures, in-class exercises and discussions, we will focus on describing and understanding the associations between social class, race and ethnicity, psychosocial factors, neighborhood characteristics and lifecourse processes to the incidence and progression of various health outcomes. Our approach will include a discussion of both upstream and downstream factors, covering both policy and intervention issues as well as the more proximal behavioral and biological mechanisms which link social and psychosocial factors to health outcomes. Prerequisite: Introductory-level course in epidemiology.

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EPID762
Complex Sample Surveys Data Analysis with SUDAAN
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intermediate Biostat, Introductory Epid, Statistical package experience, prefer (SAS)
Do you need to analyze data from complex health sample surveys such as NHANES, NHIS, BRFSS, PRAMS or YRBS? Do you need to learn how to use specialized statistical methods and software so you can obtain correct point estimates, confidence intervals and tests of significance for sample survey data analyses? Do you need to compare or combine sample surveys over time? If yes, then this course is for you!

Participants use the comprehensive sample survey software SUDAAN Release 9 for descriptive and design based modeling analyses of sample survey data. SUDAAN offers several variance estimation options: Taylor Series linearization and replication techniques (balanced repeated replication [BRR] and jackknife). The SUDAAN procedures DESCRIPT, CROSSTAB, RATIO, LOGISTIC (logistic regression) and REGRESS (linear regression) are used for descriptive, comparative and design based modeling analyses. Marginal prediction options are illustrated for logistic regression.

Participants analyze the sample survey datasets NHANES-III, NHANES 1999-2002 (maybe through 2004). SUDAAN design syntax for other sample surveys (e.g. BRFSS, PRAMS, and YRBS) is reviewed so that participants can use acquired SUDAAN skills for other sample survey datasets. The course packet includes copies of Power Point slides for the course, annotated example analyses with SUDAAN, structured lab exercises using SUDAAN, answers to lab exercises, recently published articles on sample survey data analysis, and a bibliography. The course packet serves as useful reference material when participants conduct future analyses with SUDAAN. This course does not include details on how to design probability samples; see EPID 764 for this topic.

Prerequisites: Intermediate biostatistics, basic epidemiology, experience with at least one statistical software package, and basic knowledge of SAS. Background in the theory and/or practice of sample surveys (e.g. EPID 764) is helpful but not mandatory. Bring a zip disk (100 or 250 MB) or a memory stick 1 to store your data files and lab work for the course.
EPID763
Integration of Biomarkers in Epidemiology
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intro Epidemiology and Biostatistics and Perm. Instr
Topics to be covered include study design considerations, the types of samples that can be collected and how they can be used (e.g., urine or blood; use of a biomarker as the exposure or as the endpoint), sample collection and storage, both sources and evaluation of laboratory variability, dealing with batch-to-batch variability in the data, and ethical issues in the use of biomarkers.

EPID764
Probability Sampling Techniques in Epidemiology
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intro level Epid and Biostat, P.I.
Do you need to design/select probability samples for epidemiological studies? Do you need to hire/monitor a contractor who designs/selects probability samples for you? Do you need to write/critique research proposals or articles that include simple or complex sampling methodology? Do you need to understand sampling plan documentation for public release sample survey data? Have you missed formal training or mentored experience in practical sampling methods? If yes, then this course is for you! Course participants learn the operational procedures, advantages, disadvantages, and cost implications of: (1) simple random sampling, (2) stratified random sampling, (3) multi-stage cluster sampling, (4) random digit dialing (RDD), and (5) area probability sampling (sometimes referred to as household sampling). Prototype sampling plans are illustrated with BRFSS, NHIS, NHANES-III, continuing NHANES, PRAMS, YRBS and others. Participants learn how to define survey response rates, including recent AAPOR recommendations on this topic. Participants learn the general strategy in weighting sample survey data, including nonresponse adjustments and poststratification. Probability sampling procedures available in SAS (SURVEYSELECT) and SPSS (CSPLAN and CSSELECT) are illustrated. Course participants design probability samples of dialysis facilities and patients in the U.S., using sampling techniques discussed in the course. The course packet serves as a useful reference for designing probability samples. Course participants are encouraged to e-mail to the instructor a draft description of any probability sampling plan(s) they are developing. These examples may be discussed in the course. This course does not include procedures for analysis of complex sample survey data; see EPID 762 for this topic. Prerequisites: Introductory level courses in biostatistics and epidemiology. Basic knowledge of either SAS or SPSS is helpful, but not required.

EPID765
Analyzing Complex Sample Surveys: SPSS and STATA Procedures
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Intermediate Biostat, Introductory Epid, Statistical package experience
Do you need to analyze data from complex health sample surveys such as NHANES, NHIS, NHSDA, BRFSS, YRBS, or PRAMS? Do you need to learn how to use specialized sample survey methods and software so you can obtain correct point estimates, confidence intervals and tests of significance for sample survey data? Do you need to compare or combine sample surveys over time? If yes, then this course is for you!
Participants will use SPSS and STATA, general statistical software packages, for descriptive and modeling analyses of sample survey data. STATA has comprehensive sample survey analysis capability, and SPSS released its first sample survey procedures in late 2003 as an add-on module for Version 12. SPSS sample survey descriptive and analytical procedures include CSDESCRIPTIVES and CSTABULATE. STATA descriptive and design based modeling commands include: svyset, svydes, svymean, svyprop, svytotal, svyratio, svytab, lincom, nlcom, testnl, svylogit (logistic regression), and syregress (linear regression). The basics of navigating STATA are reviewed for those who have not used STATA previously. Participants analyze the NHANES-III and NHIS sample survey datasets. SPSS and STATA syntax for other sample surveys (BRFSS, PRAMS, YRBS, etc.) is explained so that participants can use their SPSS and STATA skills for other sample survey datasets. Handouts include copies of Power Point slides for the course content, annotated example analyses with SPSS and STATA, structured lab exercises, answers to lab exercises, recently published articles by the instructor on sample survey data analysis, and a
Handouts serve as useful reference material when participants conduct future sample survey analyses with SPSS or STATA. Prerequisites: Intermediate biostatistics, basic epidemiology, experience with at least one statistical software package, and basic knowledge of SPSS. Experience with STATA is not necessary. Background in the theory and/or practice of sample surveys (e.g. EPID 764) is helpful but not mandatory. Bring a zip disk (100 or 250 MB) or a memory stick to store your data files and lab work for the course.

**EPID766**  
Analysis of Longitudinal Data from Epidemiologic Studies  
Summer term(s)  
1 Credit Hour(s)  
Instructor(s): Staff  
Prerequisites: Intro. Level Epid and Biostat, P.I.
It has been popular in epidemiology to conduct longitudinal studies where study participants are followed over time and repeated measurements of interest are obtained. Compared to traditional cross-sectional or case-control studies, longitudinal studies can be more efficient to detect difference of interest, offer more evidence for possible causal inference, etc. However, longitudinal data are likely to be correlated, which presents substantial challenge in analyzing such data. This course will address 1) epidemiologic methods for the design and interpretation of longitudinal studies involving repeated measures and 2) statistical methods appropriate for longitudinal data including generalized estimating equations (GEEs), linear mixed models and generalized linear mixed models. A series of studies will be used to illustrate the major design issues and statistical approaches. Relevant procedures in statistical package SAS will be introduced and appropriate interpretation of results will be emphasized. Prerequisite: Introductory level courses in epidemiology and biostatistics and courses in linear regression and logistic regression.

EPID767
The Law and Public Health Practices
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: P.I.
Health-related behaviors are major contributors to risk, morbidity, and mortality for many different health problems. Effective programs designed to modify risk behaviors and promote healthier ones can have significant benefits for both individuals and communities. This course will help students apply theoretical concepts from the social and behavioral sciences, health education, and health communication to the planning, design, and evaluation of health promotion and behavior change programs. A program framework will be used to help students examine social behavioral determinants of health, and to identify appropriate intervention strategies to address those factors. Examples of effective, theory-based interventions will be presented and discussed, and students will have the opportunity to apply this knowledge to their own work. No Prerequisite.

EPID768
Global Health Issues and Dynamics
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.
Many of the world’s developing countries are plagued by unemployment, poor housing, low education, high infant mortality, malnutrition, communicable and parasitic diseases, and disability due to injury and occupational hazards. They are also affected by natural or manmade disasters, wars and conflicts that produce situations of emergency with a high impact in the life of exposed population groups. Developed countries also face some of these problems, as well as worldwide issues like emerging diseases, violence, bio-terrorism and drug trafficking. It is essential for the health professional and community leaders to be aware of the health conditions in the various countries of the world, how economic, social and political factors influence observed health and living trends and how international health activities, both from bilateral and multilateral agencies are organized to face them. This course will review the present knowledge and approaches to these issues through presentations, videotapes and special exercises and will provide an opportunity for students to become acquainted with the problems related to emergencies and crisis situations and the methods used for preparedness, mitigation and cooperation among countries. This course is presented in English but students could also use Spanish, Portuguese, French or Italian in their participation. No prerequisite.

EPID770
Environmental Determinants of Infectious Diseases
Summer term(s)
1 Credit Hour(s)
Instructor(s): Wilson, Mark L
This course will explore the diverse associations and processes underlying broad range of environmental influences that affect the transmission of infectious disease agents. The fundamental mechanisms of transport and colonization will be addressed in their ecological and evolutionary contexts. Various anthroponotic and zoonotic diseases in the U.S. and abroad will be compared by considering how different environmental factors shape their distributions, maintenance, intensity and epidemic potential. The role of ecological changes such as dams, irrigation, agricultural intensification, urbanization, deforestation and reforestation will be considered for a variety of water-, vector-, and airborne diseases. Possible effects of global climate change and species introductions on these infectious diseases, as well as new analytical tools for their study, also will be explored. No Prerequisites.

EPID774
Introduction to Evaluation Research
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: P.I.
This short course provides an introduction to the fundamentals of evaluation research as applied to public health programs and policies. The course covers impact, outcome, process and participatory evaluation, and a number of research designs common in public health evaluation research. The course also discusses strategies for planning an evaluation and working with stakeholders, as well as ethical issues common to evaluation research. Class format includes lecture, class discussion and small group exercises.

EPID775
Public Health Informatics
This course is an introduction to the field of public health informatics, the systematic application of information and computer science and technology to public health practices and research. Students will learn practical principles and techniques enabling them to become effective managers of information systems development projects and serve as high-level advisors to policy makers and scientists at federal, state, and local health agencies regarding the acquisition, development, and management of integrated, enterprise-wide public health information systems. Topics include information architecture, database design, networks, data standards, privacy, confidentiality, security, managing information technology people and projects, information resource management, avoiding information system disasters, and effective internet use. Prerequisites: Familiarity with the use of personal computers, and experience using at least one public health data system. Prior work in a public health agency helpful. No previous computer science or programming training required.

EPID776

Bioterrorism and Other Weapons of Mass Destruction; How Can Public Health Respond to the Threat?

This course will focus mainly on bioterrorism but will also...
This course will focus mainly on bioterrorism but will also include discussions of other weapons of mass destruction (chemical and radiological). Initial lectures will cover descriptions of biological, chemical, and radiologic weapons and the dangers they pose. Questions to be considered include: Why would anyone use these weapons? Who would use them? How easy is it to access or produce these weapons? Subsequent lectures will focus on how localities, states and the federal government are preparing for the inevitable use of these weapons. Questions to be considered in these lectures include: Are we currently prepared for weapons of mass destruction events? Can we ever prepare adequately for these events? How must preparation for biological events differ from preparations for chem/rad events? The course will conclude with a discussion of future research aimed at detecting biological agents and treating victims of biological attacks. No prerequisite.

EPID777
Geographic Information Systems for Epidemiology
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff

Geographic Information Systems (GIS) are used for analyzing and displaying spatial data. Data from a variety of sources may be compared with overlay analysis and spatial statistics. Modern tools permit novice GIS users to perform advanced spatial analysis without extensive training. This course will introduce students to ArcView, the world's leading GIS analysis package. Examples of epidemiological applications will give students the opportunity to see and use this powerful tool. Some of the topics to be covered are data import/export, layering, table management, classification, labeling, spatial and attribute queries, buffering, and address geocoding. No prerequisite.
EPID780  
Causal Inference and Causal Regression Models in Epidemiology  
Summer term(s)  
1 Credit Hour(s)  
Instructor(s): Staff  
Prerequisites: Introductory-level courses in epidemiology and biostatistics.  
The course will serve as a relatively gentle introduction to issues regarding estimation of causal effects, with emphasis on observational data. Much of the course will concentrate on defining rigorously a causal effect and the minimal conditions necessary to consistently estimate such effects. We will discuss different parameters of interest (total effects, direct effects, etc.) as well as techniques used to estimate such parameters. Specific topics to be discussed include confounding, counterfactuals, causal effects, statistical and graphical models, the G-computation algorithm and marginal structural models. Although the material is challenging, the course is designed for students with limited statistical background. Prerequisites: Introductory-level courses in epidemiology and biostatistics.

EPID781  
Molecular Epidemiology of Cancer  
Summer term(s)  
1 Credit Hour(s)  
Instructor(s): Staff  
Not offered 2007-2008  
Prerequisites: Introductory-level course in epidemiology.
The objectives of this course are a) to introduce students to basic concepts in molecular epidemiology of cancer, design considerations for gene-environment interaction, and statistical methods for analyzing haplotype data; b) to discuss practical issues such as biologic specimen collection, processing and banking of samples, and quality control in the laboratory; c) to understand methodologic issues related to the major categories of biologic markers (exposure, susceptibility, and early biologic response); and d) to review current research in the molecular epidemiology of cancer. The course will explore concepts and issues found at the interface of the basic sciences and cancer epidemiology, including discovery of new biomarkers, whole genome association studies, expression profiling and proteomics, and development of new technologies for cancer screening. Students will be asked to apply the knowledge gained to a particular problem in cancer epidemiology. The course will incorporate lecture and discussion. Prerequisite: Introductory-level course in epidemiology.

**EPID782**
Introduction to Deductive and Probability Logic for Epidemiologists
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
This course provides basic training in deductive and probability logic, core skills for the practicing epidemiologist. In deductive logic, we see how even simple relations such as negation and disjunction can be mishandled in epidemiologic discourse. Using truth tables, we distinguish valid arguments from fallacious ones. We dwell on the fallacy of affirming the consequent, endemic in epidemiology. After reviewing subjective and objective interpretations of probability, we apply the rules of probability logic in screening and other epidemiologic problem settings, Bayess theorem playing its central role. Fallacies again receive special attention, particularly the prosecutors fallacy, the root cause of misinterpretations of P-values and confidence intervals. We discuss attitudes toward uncertainty and review ways of communicating probabilistic information to consumers of epidemiologic research. Time permitting, we enroll ourselves into a mock clinical trial to deepen our appreciation of the role of chance in epidemiologic results.

**EPID783**

Methods in Community-Based Participatory Research for Health

Summer term(s)

1 Credit Hour(s)

Instructor(s): Staff

**Not offered 2007-2008**

Prerequisites: No prerequisite
There is increasing recognition and support for more comprehensive and participatory approaches to research and interventions in order to address the complex set of determinants associated with public health problems that affect populations generally, as well as those factors associated with racial and ethnic disparities in health more specifically. Community-based participatory research (CBPR) is one such partnership approach that equitably involves all partners in all aspects of the research and intervention process, aimed at both increasing knowledge and understanding and linking the knowledge gained with interventions and policy change to enhance the health and quality of life of community members. This course will provide an introduction to some of the core principles, concepts and methods involved in using a CBPR approach. Organized along the phases of CBPR, this course will focus on describing and understanding partnership formation, maintenance and evaluation; the use of quantitative and qualitative methods (e.g., survey, focus group interview, observational checklist) for the purposes of community assessment, examining basic research questions, and developing and evaluating interventions; and feedback, interpretation, dissemination and application of research results. The course will examine the rationale for, benefits of and challenges associated with using a community-academic partnership approach to research and interventions. Class format includes lectures, discussions, case studies, and small group exercises.

EPID784
Survival Analysis Applied to Epidemiologic and Medical Data
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Introductory level course in statistics. The description of survival analysis is frequently mathematically complex because the topic is mathematically complex. The primary goal of his course, however, is a sophisticated introduction to survival analysis concepts using only elementary mathematics and relying heavily on examples and intuitive explanations. The mathematical level is completely accessible with knowledge of high school algebra, a bit of calculus (one semester) and a one-year course in basic statistical techniques (for example, t-tests, chi-square analysis, correlation and some experience with linear regression models). With this background in mathematics and statistics, the participant should be able to appreciate the analytic methods and with the help of modern computer systems use these techniques to analyze and to interpret much of epidemiologic and medical survival data. The topics covered will be: Rates and their properties Product-limit estimation Life tables Exponential survival probability distribution Weibull survival probability distribution Analysis of two-sample data General survival model: parametric -- Weibull model General survival model: nonparametric -- Cox proportional hazard model All statistical techniques are extensively illustrated with both analytic and graphic examples from the San Francisco Men's Heath Study. This unique study was established in 1983 to conduct a population based prospective investigation of the epidemiology and natural history of the newly emerging disease, Acquired Immunodeficiency Syndrome (AIDS). The collected data are a source of valuable and extensive information on the AIDS epidemic in its earliest years. These data are used to illustrate realistically the discussed analytic techniques. A "workbook" of non-computer problems is included to further explore the practical side of survival analysis. Finally, a bit of computer code is presented to give a sense of survival analysis software.
EPID785
Public Health Surveillance
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
**Not offered 2007-2008**
Prerequisites: Basic knowledge of epidemiology and descriptive statistics.
Public health surveillance is an integral ingredient of any efficient and effective disease control and prevention program. Public health professionals must have information concerning the parameters of a disease's occurrence in order to be able to develop and maintain a program to reduce the occurrence of that disease. This course will provide a strong background in all aspects of public health surveillance. Discussions will cover its history, purposes and uses, and the elements involved in a public health surveillance program, surveillance data sources, data analysis, preparation of reports, program evaluation, and ethical and legal issues. Newer concepts of public health surveillance will also be discussed such as syndromic surveillance. Surveillance at local, state, and federal levels as well as as practiced in other countries will also be discussed. Several case exercises will be worked on in the classroom.

EPID786
Bias and Its Control in Epidemiologic Research
Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
**Not offered 2007-2008**
Prerequisites: Participants should have some previous training or experience in epidemiologic research, in particular, having some knowledge about epidemiologic study designs and measures of frequency and effect.

This is a second level epidemiology course that emphasizes the underlying concepts and methods for addressing validity and bias issues in epidemiologic research. Topics covered in the course include: overview of validity and bias, selection bias, information bias, confounding bias, and options for controlling extraneous variables. Administrators, practicing professionals, researchers, graduate or undergraduate students in the health, medical, and behavioral sciences interested in learning fundamental principles and methods of epidemiologic and public health research should take this course.

EPID801
Topics in Epidemiologic Analysis
Winter term(s)
3 Credit Hour(s)
Instructor(s): Koopman, James S
Offered every year
Last offered Winter 2007
Prerequisites: EPID 655, Biostat 560 or equiv.
Small group seminars on topics relevant to design of a Ph.D. thesis in General Epidemiology: philosophical basis for formulation of epidemiologic questions, quantitative basis for design of studies and interpretation of results, models used for prediction of effects, models used for causal analyses, measures of causal effect, systems behavior effects, assessment of confounding, assessment of effect modification, causal interactions, measurement and misclassification errors in different types of studies, selection biases in different types of studies and power to achieve epidemiologic goals.

EPID802
Computer Simulation of Epidemiologic Processes
Fall term(s)
3 Credit Hour(s)
Instructor(s): Koopman, James S
Offered every year
Last offered Fall 2006
Prerequisites: EPID 503 or EPID 601 or equiv and Perm. Instr.
This course deals with dynamics of disease in populations. The student learns how to construct simulations of disease processes in populations using deterministic, continuous state space, computer simulation software. Using these simulations the student learns how the parameters of causal models relate to epidemiological parameters and the statistics that are commonly calculated from epidemiological data. The simulation capabilities acquired are intended to improve the students ability to develop and evaluate causal models and explore the consequences of specific theories. Temporal and exposure group patterns in non-communicable disease are emphasized. An introduction to communicable disease transmission system analysis is also presented.

EPID803
Topics in Social Epidemiology and Population Health
Fall, Winter term(s)
2 Credit Hour(s)
Instructor(s): Kaplan, George

Not offered 2007-2008
This is a proseminar designed for doctoral students from public health and other fields who are interested in social epidemiology. It is open to doctoral students in Epidemiology, other SPH departments, and other units in that order of priority. Enrollment will be limited to 20. Permission of instructor is required to enroll. The course focuses on a rotating selection of topics, with a different selection each year. The focus is on building bridges between biological and social approaches. Topics include, but are not limited to: socioeconomic status and health; community structure and function and health outcomes; life-course approaches to chronic disease; psychosocial factors in cardiovascular disease and cancer; the social epidemiology of the epidemiologic transition; gender, race and class; impact of catastrophic events on the health status of individuals and populations; social factors in aging and disability transitions; religion, spirituality and health; biological mechanisms underlying psychosocial associations with health outcomes; psychosocial factors in infectious disease; globalization and health, measurement of health inequalities, and issues given an expanded definition of social epidemiology. The course is taught as a seminar and includes substantial readings, student presentations, and visiting speakers. Evaluation is based on class participation, including presentations.

EPID804
Population Health and its Determinants
Fall term(s)
2-3 Credit Hour(s)
Instructor(s): Kaplan, George
Prerequisites: permission of instructor
This seminar, involving considerable reading, will introduce students to the emerging area of scholarship and research on the determinants of Population Health and its trends. The focus will be on patterns of health in populations seen from the integration of core findings on inequalities in health, race/ethnicity, community and spatial aspects of health, behavioral and psychosocial factors, lifecourse perspectives, stress biology, and policy/intervention. Thus the seminar will concentrate on multi-level approaches to important health issues. The course is open by permission of the instructors to participants in the Health and Society Scholars program, and advanced doctoral students in public health and other fields. This course is cross-listed with SOC 595 in the LSA/Sociology department.

EPID805
Research Seminar in Social Epidemiology and Population Health
Fall, Winter term(s)
1-2 Credit Hour(s)
Instructor(s): Kaplan, George
Offered every year
Last offered Winter 2007
Prerequisites: Consent of Instructor based on evidence of current research involvement in field
This course is designed for advanced MPH students and doctoral students who are currently conducting research in the area of social epidemiology/population health. It provides an ongoing venue for the discussion of research ideas, presentation of interim results, problem-solving necessary for the conduct of the research or the interpretation of results, and discussion of findings. Students are exposed to this process in the consideration of their own work, as well as that of post-doctoral and faculty researchers.

**EPID810**  
Epidemiologic Methods for Longitudinal Studies  
Winter term(s)  
4 Credit Hour(s)  
Instructor(s): Harlow, Sioban  
**Not offered 2007-2008**  
Prerequisites: EPID 655, Biostat 560 or Perm. Instr.  
This course will address 1) epidemiologic methods for the design and interpretation of longitudinal studies involving repeated measures; 2) field problems and measurement issues unique to longitudinal studies; and 3) statistical methods appropriate for longitudinal data including robust variance estimation, growth curve models and random effects models, and transitional models. A series of case studies will be used to illustrate the major design issues and statistical approaches.

**EPID811**  
Critical Appraisal of Epidemiologic Studies  
Winter term(s)  
2 Credit Hour(s)  
Instructor(s): Hoggatt, Katherine  
Offered every year  
Last offered Winter 2007
Prerequisites: Doctoral standing or Perm. Instr.
This course will act as the introductory epidemiologic course for doctoral students enrolling in the epidemiology program at SPH. The course will provided a unifying examination of epidemiological constructs and their application to the critical evaluation of the literature. Topics will include: Importance of causal relationships; study designs that can demonstrate and test causation; interpretation of results from causation; selection of study subjects; error and bias in observation; confounding and chance variation; combination of results from several studies using several methodologies.

EPID812
Critical Appraisal of Pathobiology
Winter term(s)
2 Credit Hour(s)
Instructor(s): Barbosa-Cesnik, Cibele; Staff
Offered every year
Last offered Winter 2007
Prerequisites: Grad Standing & Perm. Instr
This course is for doctoral students in the Epidemiology department that are preparing for the Preliminary Examination. This course will integrate basic concepts of disease mechanisms with the biology and epidemiology of representative human diseases. Students will be required to give a presentation on a selected disease and discuss what is known of the pathogenesis of disease as well as how epidemiologic students inform pathogenesis and how knowledge of pathogenesis informs epidemiologic studies.

EPID814
Topics in epidemiologic analysis
Fall term(s)
3 Credit Hour(s)
Instructor(s): Diez-Roux, Ana  
Offered every year  
Last offered Fall 2006  
Prerequisites: EPID601 BIOS560  
This pilot course will focus on selected theoretical and methodologic issues related to the analysis of epidemiologic data with the purpose of drawing causal inference. The topics covered will include long-standing fundamental issues as well as new techniques or novel epidemiologic applications of methods used in other disciplines. The course will consist of 14 three hour sessions. Each session will include a brief didactic presentation of the key issues for the session by the instructor followed by a structured small group and class discussion of a selected reading or readings.

EPID815  
Research Seminar on AIDS and Sexually Transmitted Infections  
Winter term(s)  
3 Credit Hour(s)  
Instructor(s): Ford, Kathleen  
Not offered 2007-2008  
Prerequisites: 1 semester epidemiology, Biostatistics 560, some knowledge of STIs, and permission of instructor.  
This pilot course will focus on theoretical and methodological issues in the design and conduct of research on AIDS and sexually transmitted diseases. The topics covered will include issues on collecting sensitive data, working with stigmatized groups, designing studies in clinical and community settings, collecting data on networks, and estimating the demographic impact of the AIDS epidemic.

EPID816  
Tuberculosis: Pathogen, Host and Environment  
Fall term(s)
2 Credit Hour(s)
Instructor(s): Yang, Zhenhua
Last offered Fall 2006
Not offered 2007-2008
Prerequisites: EPID 605, 609 617 or any other infectious disease course.

Tuberculosis remains one of the deadliest diseases in the world. Social and operational factors, the growing AIDS epidemic, and increasing drug resistance have dramatically compounded the tuberculosis crisis. This course will review the history, epidemiology, biology, pathogenesis, and clinical management of tuberculosis. It will examine the current issues related to tuberculosis and discuss the complex mechanisms that contribute to the almost unparalleled impact of tuberculosis on global health in the past and present time, including the impact of the emergence of AIDS epidemics. Each session will include a one-hour didactic presentation of the specific topic for the session by the instructor followed by a structured class discussion of reading(s) relevant to the session-specific topics that address emerging methods. In the last session, the students will be asked to present their research proposals on an infectious disease of their primary interests using the concepts and methods learned in this class. While the focus of the lectures will be centered on tuberculosis, the discussions will address the application of general concepts in infectious disease.

EPID817
Advanced Genomic Epidemiology
Winter term(s)
3 Credit Hour(s)
Instructor(s): Kardia, Sharon
Not offered 2007-2008
Prerequisites: BIOSTAT 560 EPID 515 or equivalent
This course provides a depth of experience in advanced genomic epidemiology methods. The focus will be on developing and implementing high throughput analyses of single nucleotide polymorphisms and their association with disease. Analytical methods such as linkage disequilibrium testing, haplotype estimation, gene-environment interactions, gene-gene interactions, classification trees, and neural networks will be reviewed and then applied to a real dataset. We will also review and apply the many bioinformatic resources available from the National Center for Biotechnology and Information (NCBI) to provide a biological context to the analysis and facilitate interpretation of genomic epidemiological association studies. Emphasis will also be placed on issues of statistical hypothesis testing such as the multiple testing (e.g. adjusting p-values using false discovery rate methods and permutation methods) and will learn techniques for performing cross-validation. Students will get hands on experience with creating analysis plans, performing data analysis, and interpreting genomic association results.

EPID818
Methodological Issues in Cancer Epidemiology
Winter term(s)
2 Credit Hour(s)
Instructor(s): Erdmann, Christine
Last offered Fall 2006
Prerequisites: Epid 503 or Epid 600 or Epid 601; Epid 621; or permission of the instructor
This course covers methodologic issues in the conduct of research in cancer etiology, prevention, and control. Topics include use of case-case, cohort, and nested case-control study designs. Other topics include the use of intermediate biomarkers, gene-environment interaction, mechanisms of carcinogenesis, screening, and prevention strategies.
EPID819
Epidemiology of Psychiatric Disorders
Fall term(s)
3 Credit Hour(s)
Instructor(s): Galea, Sandro
Last offered Fall 2006
Prerequisites: Epid 601 or permission of instructor
This course offers an introduction to the epidemiology of mental health and mental illness. This course takes an explicit epidemiologic perspective and focuses on the study of the determinants of mental illness. A broad array of potential determinants will be discussed, including psychosocial, biologic, and genetic determinants. Students will learn about the epidemiology of specific diseases, but will also consider the methodologic challenges involved in the study of mental health and illness, the social consequences of mental illness, and the social and political contexts within which mental health and mental illness occur. This course will be divided into three primary sections. The first section will serve as an introduction to psychiatric epidemiology, considering the role of psychiatric epidemiology and the historic, political, and cultural context of mental illness. The second section will consider epidemiologic insights about some of the key psychiatric disorders, including affective, psychotic, anxiety, and substance use disorders. Each topic discussion will also consider the interrelationship between these disorders and the role of epidemiologic methods in studying these conditions. The third section will consider special topics in psychiatric epidemiology, including issues of Comorbidity, measurement (including case ascertainment and diagnostic methods), and issues that pertain to service delivery and its assessment.

EPID820
Multilevel studies and multilevel analysis in public health research
Winter term(s)
3 Credit Hour(s)
Instructor(s): Diez-Roux, Ana
Last offered Winter 2007
Prerequisites: EPID600, EPID601, BIOS560
Multilevel studies and multilevel analysis are increasingly used in the public health field. This course will discuss the rationale for multilevel studies and multilevel analysis in public health as well as differences with other study designs and other analytical approaches. Although the course will not be heavily mathematical, we will review the basics of fitting multilevel models for different types of outcomes as well as the interpretation of estimates obtained from multilevel models. We will also review and critique empirical applications in the health field. The course will conclude with a discussion of causal inference in the context of multilevel research questions, including the utility of directed acyclic graphs, propensity scores, and instrumental variables. Special emphasis will be placed on the strengths and limitations of multilevel analysis in investigating social and group-level determinants of health. The course assumes no prior knowledge of multilevel analysis, and the focus will be on fundamentals and applications rather than on statistical detail, although knowledge of linear and logistic regression is a prerequisite.

EPID821
Interdisciplinary Doctoral Seminar in Global Health Research
Fall term(s)
2 Credit Hour(s)
Instructor(s): Harlow, Sioban
Last offered Fall 2006
Prerequisites: Permission of the Instructor

The Interdisciplinary Doctoral Seminar in Global Health Research offers graduate students the opportunity to develop pre-dissertation proposals and dissertation prospectuses, together with their peers, in an interdisciplinary setting. Through critical readings and presentation and critique of dissertation research proposals, students will have an opportunity to develop their own research prospectus. Students will also develop a broader understanding of the role for multi-sectorial engagement in priority global health research. It is a required course for students receiving a UM-GHRT predissertation travel fellowship.

EPID822
Malaria and other important vector-borne diseases
Fall term(s)
3 Credit Hour(s)
Instructor(s): Wilson, Mark L
Prerequisites: Epid 602, Epid 605 or equivalent; EHS 513 or equivalent
Infectious agents transmitted by arthropod vectors produce an enormous disease burden worldwide, especially in underdeveloped countries. Malaria alone kills more than one million people each year, mostly children, and results in 42 million DALYs lost. This course is designed to investigate the epidemiology of malaria and other important vector-borne diseases that principally affect poor people living in tropical countries. The complex interactions influencing transmission dynamics, including immunologic, ecologic, economic and social factors are explored. Options for treatment, prevention and control involving vectors, parasites and human behavior are examined. Analysis also considers the role of other infections, including HIV, as altering transmission and disease. Class sessions will include a brief didactic presentation of the key issues for that topic followed by a structured discussion of selected readings.

**EPID840**  
Current Issues in Oral Epidemiology  
Fall, Winter, Spring, Spring-Summer term(s)  
2 Credit Hour(s)  
Instructor(s): Ismail, Amid  
Seminar for the detailed examination of current knowledge, etiologies, risk factors, methods of measurement, data collection procedures, quality of existing data, and further research needs in the epidemiology of oral conditions. Required for doctoral students in oral epidemiology.

**EPID841**  
Research in Dental Public Health  
Winter term(s)  
3 Credit Hour(s)  
Instructor(s): Ismail, Amid
Identification of problems in dental public health and development of research strategies to address them. Various research designs and their application in dental services research, program evaluation, testing of treatment procedures, behavioral studies, and clinical trials, as well as epidemiology of oral conditions. Funding sources, political aspects of research, procedures for acquisition and management of research funds. Required for doctoral students in dental public health.

**EPID850**

Psychosocial Factors in Mental Health and Illness (Soc 850/Psych 890)

Fall, Winter term(s)

2 Credit Hour(s)

Instructor(s): Staff

Last offered Fall 2006

Prerequisites: Perm. Instr.

Selected advanced topics including problems of diagnosing psychopathology through community surveys, psychosocial predictors of mental illness, primary prevention and coping with undesirable life events. This seminar meets in conjunction with a training program, National Institute of Mental Health. May be elected more than once. (Follows in sequence with Soc 850/Psych 890; Soc 851/Psych 891; Soc 852/Psych 892; Soc 853/Psych 893.)

**EPID870**

Data Analysis Using R

Winter term(s)

2 Credit Hour(s)

Instructor(s): Erdmann, Christine

Last offered Winter 2007
Prerequisites: EPID601; BIOSTAT560 or concurrent enrollment; or permission of the instructor

This is a one-semester introduction to the R statistical programming language for data analysis. R is a freely available, multi-platform (Windows, Linux, Unix, Mac OS), versatile, and powerful program for statistical computing and graphics (http://www.r-project.org). This course will focus on core basics of organizing, managing, and manipulating data; introduction to R programming; and basic R graphics. The material will be taught in the context of reviewing a number of statistical methods, including descriptive methods and linear models. Other techniques particularly suited to R will be introduced, including graphing, regression model diagnostics, and simulation techniques. The overall goal of the course is to provide students with a set of new and advanced data analysis tools.

EPID880

The Epidemiological Links between Infection and Chronic Disease

Fall term(s)

3 Credit Hour(s)

Instructor(s): Aiello, Allison

Prerequisites: EPID 658 and EPID 605, 607, 609

Exploring the Link between Infection and Chronic Disease: Research Challenges and Pathways

As early as the mid 19th century researchers were exploring the idea that chronic conditions, such as cancer, were caused by infectious organisms. During the epidemiological transition when the book on infectious diseases was thought to be closed and the concomitant increase in research on "life-style" factors began to flourish, a line was formed distinguishing chronic and infectious disease research agendas. This distinction has been dissolving as an increasing number of infections are being implicated in the multifactorial risk profiles of chronic
health outcomes. Examples include the link between Helicobacter pylori infection and peptic ulcer disease, human papilloma virus and cervical cancer cases, and the growing body of research examining the link between infection and cardiovascular disease. The use of observational studies for assessing the relationship between infection and chronic health outcomes have been called into question since randomized clinical trials examining the effect of anti-infective treatments on incidence of chronic disease have shown equivocal results. The dynamic nature of the pathways by which infection may influence chronic disease has implications on the use of the randomized clinical trial as the "gold-standard" for assessing these links. It is evident that there are numerous methodological, sociological, and biological factors that must be considered when evaluating the epidemiological literature supporting a link between infection and chronic disease. Some examples of these issues include the need to: "Explore the role of co-factors and the influence of socioeconomic and other demographic determinants on the pathways between infection and chronic disease outcomes " Assess the type of damage that may be caused by a particular organism. For example, some organisms may act in a hit-and-run manner that triggers chronic disease processes well after the widow of detection of the invading organism has passed " Measure and characterize latent and recurrent infections as well as immune response, since latent and recurrent infections may cause repeated damage over the lifecourse " Gather data on the interaction between co-infections or overall burden of infection with multiple pathogens " Detect new infectious organisms and devise methods for isolating organisms from tissue or serum Examples abound that demonstrate the complicated epidemiology concerning the link between infection and chronic conditions. Understanding the influences of demographic shifts, timing of infection and social processes can help elucidate these linkages. The association between H.
pylori infection and stomach cancer illustrate these issues well: " Demographic shifts: There are strong disparities in the prevalence of stomach cancer between the US and lesser developed countries. In the US, the incidence in stomach cancer has dropped steadily since the 1900's but the incidence in lesser developed countries is still high. " Timing of infection: The disparity in cancer prevalence could be explained by age at infection, since H.pylori infection is likely to occur at younger ages among individuals living in lesser developed areas compared to the US. Therefore, individuals in lesser developed countries may be infected with H. pylori for a longer period of time, leading to higher levels of damage to the stomach. " Social processes: Studies have reported a stronger association between low socioeconomic position in childhood compared to adult socioeconomic position and incidence of stomach cancer in adulthood. It appears that socioeconomic determinants in childhood shape adult risk of stomach cancer, independent of adult socioeconomic status. Therefore, lifecourse socioeconomic processes influence the link between H. pylori infection and later life chronic disease outcomes.

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**EPID890**

Doctoral Seminar in Epidemiology

Fall, Winter, Spring, Summer term(s)

2 Credit Hour(s)

Instructor(s): Staff

Students will give a 50-minute presentation as part of the departmental seminar series. One faculty member will work with student in developing seminar and then critique it afterwards.

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**EPID891**

Advanced Readings in Epidemiology

Fall, Winter, Spring, Summer term(s)
2 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Instr.
Students will review assigned readings on the epidemiology or natural history of specific infections or chronic diseases or on host or environmental factors associated with disease, or on epidemiological methods and their application. May be elected more than once

EPID970
Pre-candidacy research in Epidemiology
Fall, Winter, Spring, Spring-Summer, Summer term(s)
1-8 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Doctoral Student in Epidemiology Standing
Original investigations in the various fields of Epidemiology as part of the student's preparation for their dissertation research and writing.

EPID990
Dissertation Research/Pre-Candidate
Fall, Winter, Spring, Summer term(s)
1-8 Credit Hour(s)
Instructor(s): Staff
For students who have NOT reached candidacy yet.

EPID995
Dissertation Research/Candidate
Fall, Winter, Spring, Summer term(s)
8 Credit Hour(s)
Instructor(s): Staff
Election for dissertation work by doctoral student who has been admitted to status as a candidate
HBEHED516
Global Health Anthropological Perspectives (Anthro 416)
Fall term(s)
3 Credit Hour(s)
Instructor(s): Mark, Padilla
Offered every year
Last offered Fall, 2006
Master's level lecture course designed to provide an extensive overview of the major initiatives and issues in global health over the past three decades. Anthropological perspectives on and critiques of international health development programs will be emphasized. Readings will focus on examples of anthropology in global public health, and written reactions to these readings, along with two objective exams, will form the basis for course grading. The course constitutes an elective for students in the developing Global Health IC, and will be cross-listed as an upper-division undergraduate course in the Department of Anthropology (LS&A). Although anthropological perspectives will be emphasized no prior anthropological coursework or competencies are expected of students.

HBEHED530
Techniques of Survey Research
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Techniques of sample interview surveys developed through lecture, research literature, discussion, and experience in design, including sampling considerations; questionnaire construction and interviewing; coding; processing, including adaptation to machine methods; and application, presentation, and evaluation of results. Emphasis on health surveys. A research project is developed as part of the course.
HBEHED540
Fundamentals of Reproductive Health
Fall term(s)
3 Credit Hour(s)
Instructor(s): Anderson, Frank J.
Prerequisites: Recommend prior human physiol course
The course provides a comprehensive introduction to the field of reproductive health, in the USA and internationally. The course will introduce students to historical trends in the global burden of reproductive ill-health, the social ecology of reproductive risk, clinical health practice, and current controversies in policy and practice. Through a comparative look at reproductive health needs (e.g. maternal morbidity, contraceptive use, STI care and HIV-related services), in a range of diverse social settings, we will critically examine the logic and impact of current international standards for RH policy and practice.

HBEHED547
Consultation - Theory and Process
term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Grad Status
Concepts and theory of the consultation process, role and functions of the consultant, consultant methods and skills, agency and administrative settings, linkage of consultation process to use of technical knowledge and skills. Field consultation project required.

HBEHED550
The Challenge of HIV/AIDS: Strengthening Health Systems in Resource-Poor Settings
Winter term(s)
3 Credit Hour(s)
Instructor(s): Snow, Rachel
Over 40 million people are currently infected with HIV, with over 30 million of these living in the poorest countries. While new drugs and social interventions in the North are preventing mother-to-child HIV transmission, and have substantially reduced AIDS-related morbidity and mortality, similar interventions are making limited headway in resource-poor settings, especially those most severely affected by HIV/AIDS. Failure is in part due to funding, but more often a consequence of the underlying weakness of health systems. This course will address the operational and social challenges of implementing HIV prevention and care where health and education systems are weak, and political structures fragile. We will critically evaluate a wide range of health and behavioral interventions that have failed or succeeded in sub-Saharan Africa and South Asia, and explore why things work, and attempt to identify models of best practice for diverse settings. We will review emerging opportunities posed by the Global Fund and the Millennium Development Goals to use HIV-related donations to leverage improvements in the overall health sector in poor countries.

HBEHED578
Practical Projects
Fall, Winter, Spring, Spring-Summer, Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: None
Practical projects in the application of theory and principles of Health Behavior and Health Education to individual and community-based public health settings. Course requirements include an approved practical project related to Health Behavior and Health Education in consultation with a faculty advisor. May be elected more than once. Enrollment limited to Health Behavior and Health Education majors with at least two full terms of prior registration.

**HBEHED580**
The Environmental Health Movement

term(s)
3-2 Credit Hour(s)
Instructor(s): Staff

**Not offered 2007-2008**

Prerequisites: Grad Status

This course, taught in seminar format, focuses on the grassroots groups across the nation that have organized to fight against exposure to pollution and for environmental justice. It introduces students to the social movement literature and encourages them to critique social movement theory in light of the experiences of these community groups. A major feature of the course is an examination of competing explanations for environmental degradation, and the implications each has for political organizing and social change.

**HBEHED590**
Health Issues in an Aging Society

term(s)
3 Credit Hour(s)
Instructor(s): Staff

**Not offered 2007-2008**
This course focuses on the cultural, environmental, and economic aspects of an aging society and its impact on public health. It examines the health characteristics of a diverse older population and the implications of age-related changes in health on older people and their families. The course also provides a critical review of the social and political factors influencing the availability of health care and related support services to the older population.

**HBEHED600**

Psychosocial Factors in Health-Related Behavior

Fall term(s)

3 Credit Hour(s)

Instructor(s): Strecher, Vic

Psychological and social determinants of health, illness, and sick role behavior, emphasizing the decisional bases for health-related actions. Critical review of models of health behavior. Role of social communication and influence processes in health decisions. Application of concepts from behavioral science to a variety of health problem areas.

**HBEHED601**

Health Behavior and Health Promotion

term(s)

3 Credit Hour(s)

Instructor(s): Staff

*Not offered 2007-2008*

Prerequisites: HBHE 600 or similar course preferred
Relationships among each of several risky behaviors and health status, educational and structural approaches to modification of those behaviors, prevention of relapse, ethics of health promotion, sites for health promotion activities, and evaluation of health promotion. Ecological models, empowerment theory and intervention design issues are considered. Each student prepares one oral and one written report covering some one-health promotion topic in depth.

**HBEHED603**

Population Change: Gender, Family & Fertility in Africa and Asia  
Winter term(s)  
3 Credit Hour(s)  
Instructor(s): Snow, Rachel

**Not offered 2007-2008**

Prerequisites: Permission of instructor required.

This seminar will review causes and consequences of recent demographic change in Africa and Asia, highlighting emerging trends in gender, family formation and fertility. An exploration of general global and regional trends will be followed by in-depth case-study of five countries: India, China, Burkina Faso, South Africa and Zimbabwe. In each case we will reflect on the relative contributions of demographic pressure, population policies and programs, the international womens movement, and the continuing AIDS epidemic, to the observed trends in sexual behavior, gender norms, marriage, and fertility.

**HBEHED606**

Foundations of Reproductive, Maternal, and Infant Health  
Fall term(s)  
3 Credit Hour(s)  
Instructor(s): Misra, Dawn
Prerequisites: Grad Status
Course participants critically examine major problems and issues and related policies and programs associated with fertility, reproduction, birth and the health status of women of reproductive age and infants. Themes include: historical and present context of health issues, programs and policies; biological, social, cultural, behavioral and environmental influences; social and ethical issues associated with emerging reproductive technologies; content and efficacy of policies and programs. Special topics include AIDS, sexually transmitted diseases, contraception and related services; genetic issues and services; abortion, maternal-fetal treatments; prenatal care, childbirth and perinatal care; pregnancy outcomes and infant mortality; and breast feeding. Students learn to use common social and health status measures; synthesize research literature and other data/information; write concise issue analysis papers on selected topics; and participate in group discussion and decision-making regarding recommended actions.

HBEHED607
Foundations of Child and Adolescent Health (SW 714)
term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Perm. Instr.
This course uses a developmental perspective to focus on key problems and issues and related program and policy interventions that affect the health of children and adolescents. Within this structure, the etiology of health problems and issues at each life phase is considered, followed by discussion of related policies and program solutions. Biological, social, cultural, behavioral, political, economic and physical factors and their interrelationships as they influence the context of health status, policies and programs are examined. Sources and appropriate use of common measures of child and adolescent health status and service are introduced.

HBEHED608
Infant Mortality: Paradoxes, Programs and Policies

term(s)
3 Credit Hour(s)
Instructor(s): Staff

Not offered 2007-2008
Prerequisites: Grad Status and Perm. Instr.

Greater proportions of U.S. children die during the first year of life than in most industrialized and several developing countries. Several paradoxes in risk factor-outcome relationships have recently been described in diverse populations, suggesting that many risk factors are rather inadequate proxies for other more causal variables. This course provides the opportunity for in-depth analysis of infant mortality and its causes. Major explanatory hypotheses and possible causal mechanisms will be examined, along with gaps in theory and knowledge. The evidence supporting or refuting current program and policy initiatives will also be assessed.

HBEHED610
Issues in Public Health Ethics
This course will address a range of issues in public health ethics. The first part of the course will provide an introduction to key ethical frameworks and concepts relevant to public health, and it will describe the overlap and distinctions between public health and medical ethics. The remainder of the course will use a case-based approach to considering ethical dilemmas in several domains, including the following: 1) resource allocation and distributive justice; 2) questions of autonomy and paternalism; 3) health promotion & disease prevention; 4) clinical care; 5) research ethics; and 6) emerging issues in public health ethics. The course will use a blend of lectures and group discussions to consider topics of interest. Students will play an active role in researching, presenting, and writing up case studies that will be used to illustrate ethical concepts and conflicts and to facilitate class discussion.

HBEHED612
LGBT Identities & Health: Theory, Research and Practice
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Last offered Fall, 2006
Not offered 2007-2008
Prerequisites: SPH students or permission of instructor
This course will explore the health status, health behaviors and health needs of lesbian, gay, bisexual and transgender communities. While the major focus will be descriptive and epidemiologic, the course will also cover measurement and definitional issues, methodological considerations and concerns, theoretical explanations for disparities, and finally, we will review and critique prevention and intervention programs among LGBT populations.

This course is cross-listed with Course ID of cross listing will be determined pending approval of course in the This course will be cross listed in Women's Studies department.

**HBEHED614**

Women's Health and the Timing of Reproduction  
Fall term(s)  
3-4 Credit Hour(s)  
Instructor(s): Geronimus, Arline T  
**Not offered 2007-2008**  
Prerequisites: Perm. Instr.

Applies a systems perspective to examine the personal, social, and cultural factors that influence the age at which women initiate childbearing and the implications of these factors for the health of women and infants. Topics include teenage childbearing, Black American fertility patterns, infant mortality, ethnographic and other research methods, and related policy issues. Reviews current, historical, and cross-cultural examples. Students apply course concepts and methodologies to specific research and policy questions.

**HBEHED615**

Mass Media, Public Health Practice, and Intervention  
term(s)  
3 Credit Hour(s)  
Instructor(s): Staff
**Not offered 2007-2008**

The purpose of this course is to provide students with an understanding of how mass media can be used as part of an advocacy strategy to promote health and healthful public policy. Students will gain experience in framing issues to garner attention for public health solutions to social problems. Topics to be covered include theories of mass communication; uses and limitations of public health education campaigns; and unintended consequences of mass communication for health.

**HBEHED616**

Complementary Therapies and Alternative Healing

term(s)

3-4 Credit Hour(s)

Instructor(s): Raisler, Jeanne

**Not offered 2007-2008**

This course examines the principles, practices, utilization and outcomes of complementary therapies and alternative healing. It will provide an overview of the field; review selected systems of alternative healing, and focus on specific healing modalities that are widely used in the general population. Students will learn to use evidence-based criteria to evaluate the risks and benefits of selected healing modalities. The integration of alternative and conventional health practices will be examined, and ethical, legal professional issues will be explored. Emphasis will be placed on taking alternative healing history, facilitating patients decision-making regarding alternative therapies, communication between allopathic and alternative healers, and training and certification issues. A holistic approach to the patient-healer relationship that emphasizes self-care will be maintained.

**HBEHED618**
Multiculturalism and Health Education

3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008

This course focuses on the meaning of ethnicity and social group membership as factors that influence one's identity and effectiveness as a public health professional. The course will give students an overview of the range of theoretical approaches, key practice concepts, and skills used to promote health in a multicultural society. It will include a focus on moving beyond paternalism in community settings. As a result of taking this course, students will be better equipped as professionals to consider self-reflexively their own attitudes about the other, and to identify, design, and implement positive strategies for health education in multicultural settings.

HBEHED620
Behavioral Research Methods in Public Health
Fall term(s)
3 Credit Hour(s)
Instructor(s): Zimmerman, Marc

Principles of design of behavioral research on public health problems and programs. Objectives, philosophy, and methods of science including causal inference, the role of hypotheses, criteria for establishing adequate hypotheses, research designs and data collection techniques. Formulation of a research problem within a program setting.

HBEHED621
Seminar in Behavioral Research Methods in Public Health
Fall term(s)
3 Credit Hour(s)
Instructor(s): Krause, Neal M
Prerequisites: HBHE 620 or equiv.
Intensive analysis of selected topics; characteristics and advantages of alternative types of studies; purposes of various experimental designs; development of methodology for program evaluation; interviewing and questionnaire construction and problems in analysis of data, with particular emphasis on problems of spuriousness

HBEHED622
Program Evaluation in Health Education
Fall term(s)
3 Credit Hour(s)
Instructor(s): Janevic, Mary
Prerequisites: Biostat 503 or equiv. and a course dealing with health education program development
Examination and application, through a series of exercises, of several program evaluation models relevant for health education, including the goal attainment, goal-free, systems responsive, and decision-theoretic models, with emphasis on both process and impact analysis. Design options for measuring program effect, with the associated threats and external validity, are discussed, and several basic statistical techniques are reviewed and examined in terms of their applicability to program evaluation, including sampling and sample size determination for both surveys and experiments.

HBEHED623
Racial/Ethnic Health Disparities
Winter term(s)
3 Credit Hour(s)
Instructor(s): Neighbors, Harold
Not offered 2007-2008
This course focuses on how public health has responded to the unique health and mental health problems of ethnic "minority" groups with emphasis on African Americans. The course focuses on various models of mental disorder and how those models are operationally defined in community and clinical studies, with particular attention paid to group differences in diagnosis and epidemiologic case-finding. Emphasis is also be placed on risk and protective factors such as stress, social support, identity, discrimination, acculturation, and coping capacity.

This course is cross-listed with 602 in the Social Work department.

HBEHED624
Need Assessment Methods for Behavioral and Educational Health Programs

term(s)
3 Credit Hour(s)

Instructor(s): Staff

Not offered 2007-2008
This course is for the student who is interested in gaining knowledge and skills about different methodological approaches to doing need assessment for health and human service organizations. The course will focus on the use of both secondary (e.g. agency statistics, census) and primary (survey, forums, informants, focus groups) data. The course emphasizes feasible and inexpensive methods, which can be used by internal evaluators. Students will learn how community epidemiologic surveys (e.g. the National Institute of Mental Health Epidemiologic Catchment Area Program) can be used in conjunction with local secondary data for synthetic estimation of health needs. Need assessment will be conceptualized as a political process as well as a research methodology. Three class sessions will be devoted to an in-depth analysis of a major mental health need assessment conducted by the instructor for the Michigan Department of Corrections. By using this study as a case example, students will be provided with an "inside look" at the social side of need assessment. The case study will also focus on using need information for program development.

HBEHED625
Research in Health Behavior
Fall, Winter, Spring, Spring-Summer, Summer term(s)
1-4 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm. Inst.
Individual work on a problem in the area of health behavior relevant to program effectiveness in public health, under the tutorial guidance of an appropriate staff member. Regular conferences are arranged to discuss research designs, proposed problem solutions, methods for data collection and analysis. The investigation is reported in a paper, which may be submitted for publication. May be elected more than once.
HBEHED626
Counseling and the Health Decision Process
Winter term(s)
3 Credit Hour(s)
Instructor(s): Chatters, Linda
**Not offered 2007-2008**
Prerequisites: Graduate Standing
The course will examine counseling for health decisions as an interchange between counselor and client which requires the effective communication of information relevant to the health decision/condition, as well as a recognition of each participants' differing backgrounds, perspectives, and motivations. Course content covers three broad areas: 1) models, goals and components of the counseling process, 2) values and ethics in counseling for health decisions, and 3) how attributes of the client and the health decision itself affect the nature and course of the counseling experience. Several health conditions/situations will be examined to compare and contrast salient features of different counseling interactions. Students will participate in simulations of counseling situations as observer, client, and counselor. The class format will include lectures and class discussion based on assigned readings, attendance at and participation in presentations made by guest speakers, and small group activities.
This course is cross-listed with HLTH 744 (School of Social Work) in the School of Social Work department.

HBEHED627
Chronic Illness Interventions: Infancy to Young Adulthood
Fall term(s)
3 Credit Hour(s)
Instructor(s): Connell, Cathleen
Prerequisites: Perm. Instr.
This course examines intervention efforts aimed at the self-management of chronic illness from a lifespan perspective with a focus on infancy, childhood, adolescence, and young adulthood. Theoretical and conceptual frameworks for viewing chronic illness in the context of individual and family development will be discussed. Specific examples of health education interventions for selected chronic illnesses and school-based approaches to cardiovascular risk reduction will be examined. The appropriate developmental tasks and psychosocial and cognitive stages for individuals and their implications for the self-management of chronic illness will be described. The format of the course will rely heavily on structured and informed discussion. A brief overview will be provided each week, followed by exchange generated by discussion questions for each week's reading assignments as well as small group exercises. Student presentations based on a wide variety of chronic illnesses will be scheduled throughout the course.

HBEHED628
Chronic Illness Interventions: Midlife to Older Adulthood
Winter term(s)
3 Credit Hour(s)
Instructor(s): Connell, Cathleen
Prerequisites: Graduate standing
This course examines intervention efforts aimed at the self-management of chronic illness from a lifespan perspective with a focus on midlife and older adulthood. Theoretical and conceptual frameworks for viewing chronic illness in the context of individual and family development will be discussed. Specific examples of health education interventions for selected chronic illnesses will be examined, including diabetes, arthritis, asthma, health disease, COPD, and HIV/AIDS. The appropriate developmental tasks and psychosocial and cognitive stages for individuals and their implications for the self-management of chronic illness will be described. The impact of comorbidity, depression, coping, resilience, social support, and self-efficacy on self-management and the role of family caregivers will be discussed. The format of the course will rely heavily on structured and informed discussion. A brief overview will be provided each week, followed by exchange generated by discussion questions for each week's reading assignments as well as small group exercises. Student presentations based on a wide variety of chronic illnesses will be scheduled throughout the course.

HBEHED629
Families and Health
Fall term(s)
3 Credit Hour(s)
Instructor(s): Chatters, Linda
Not offered 2007-2008
Prerequisites: Grad Status
This course will examine families as a primary context for understanding health and health-related behaviors. Major topics include: 1) models and theories of the family, 2) history and current status of family-based practice, 3) the impact of demographic trends and their impact on family structure and functioning, 4) family diversity with respect to social status groups, ethnicity, and culture and their implications for understanding health phenomena, 5) families as the context for socialization to health beliefs and practices, 6) the provision of family-based care, and 7) health profiles of family members and their family roles.

This course is cross-listed with HB727 (School of Social Work) in the School of Social Work department.

**HBEHED630**

Aging and Health Behavior

Fall term(s)

3 Credit Hour(s)

Instructor(s): Connell, Cathleen

Offered every year

Last offered Winter 07

Prerequisites: Graduate standing
This course provides an overview of trends in aging and health with a particular focus on health behaviors and health promotion. Age-related changes in health and health behavior and the impact of societal and personal attitudes toward aging on health behaviors will be discussed. Successful aging, an emerging paradigm for gerontology, will frame discussion of strategies for facilitating optimal health behaviors among older adults. Current recommendations and practices and multi-level interventions will be presented for physical activity, smoking, obesity, weight management, nutrition education, immunizations, and cancer screenings. Recent evidence of the impact of health behaviors on brain health and the prevention of cognitive decline will be discussed.

HBEHED631
Budget Practices in Health Education Programs
Winter term(s)
3 Credit Hour(s)
Instructor(s): McGranaghan, Robert
Offered every year
Last offered Fall 2006
Budget practices in Health Education Programs provides an introduction to budgeting and other administrative skills and strategies relevant to managing public health education programs. Students will receive practical experience in understanding the terms, concepts, strategies, and practices associated with developing and managing budgets, investigating funding sources, and preparing grant proposals. In addition, students will be introduced to human resource issues such as successful hiring and interviewing techniques and managing time effectively. Sessions will include such topics as: Deconstructing the Budget (understanding the terminology and concepts of budgets); Building a Budget: What You Need, and How Do I Justify It? (Planning for and explaining what you'll need to fund a program); Managing a Budget: Where Does the Money Come From and Where Does It Go? (How to research and apply for funding opportunities and how to manage the funds once you get them); and Between the Proposal and the Final Report: Priority Setting, Time Management Skills, and the Hiring Process (including experiential sessions on developing effective strategies for setting and adjusting to daily and weekly priorities; managing your time effectively, and recruiting, interviewing, and hiring the right staff for your program.)

HBEHED633
Social Networks and Social Support in Health Education
Winter term(s)
3 Credit Hour(s)
Instructor(s): Caldwell, Cleo
Not offered 2007-2008
Prerequisites: Perm. Instr. and Grad Status
Review and analysis of theory and empirical evidence concerning social networks and social support and their relationship to health status and health behavior. Examines utilization of social networks in health education programs, e.g., family network interventions, self-help groups, "natural helpers", community organizing.

**HBEHED634**
Administration of Health and Population Programs

- term(s)
- 3 Credit Hour(s)
- Instructor(s): Staff

**Not offered 2007-2008**

Application of analytic tools to practice of administration in family planning organizations. Uses U.S. and international population/family planning case material supplemented by readings focused on administration of human services.

**HBEHED636**
Qualitative Methods and Participatory Action Research

- Winter term(s)
- 3 Credit Hour(s)
- Instructor(s): Israel, Barbara

**Not offered 2007-2008**

Prerequisites: Perm. Instr. and Grad Status

Examines when and how to use appropriate methods of qualitative data collection (e.g., structured and unstructured interviews, observations, group interviews) and data analysis (e.g., constant comparative method, coding schemes, theme memos). Research design issues will be discussed along with the use of qualitative data for health education theory building and program planning. Emphasis will be placed on the use of qualitative methods within a participatory action research framework.
HBEHED637
Qualitative Methods and Proposal Writing
Winter term(s)
2-4 Credit Hour(s)
Instructor(s): Inhorn, Marcia
Not offered 2007-2008
Seminar designed to provide a comprehensive overview of the qualitative research enterprise from an explicitly anthropological (ethnographic) perspective. The course focuses on ethics and entry to the research setting, qualitative research design, interview-based and observational data collection methods, and grant proposal preparation. The course is skill-based, and students will conduct a number of methodological assignments in and out of the classroom. The major written assignment is a grant proposal on a topic chosen by the students, which will incorporate the qualitative research designs and methods discussed in class. The seminar is open to both masters and doctoral students; doctoral students will carry out additional written work regarding the grant proposal.

HBEHED640
Community Organization for Health Education
Fall term(s)
3 Credit Hour(s)
Instructor(s): Israel, Barbara
Prerequisites: Perm. Instr. and Grad Status
Examines social and structural factors associated with health and illness; concepts and theories regarding planned change and community; and models and principles of community organization practice for health education. Several models of community organization are analyzed along the dimensions of: community diagnosis needs assessment, selection and implementation of action strategies, evaluation research, role of the professional and ethical considerations.

**HBEHED641**

Materials and Methods in Health Education Programs

Winter term(s)

3 Credit Hour(s)

Instructor(s): Valerio, Melissa

Prerequisites: Perm. Instr.

The goal of this course is to enable participants to select and use learning materials and methods in health education programs. The course consists of in-class sessions where various materials and media are demonstrated and their utility as enhancements to learning discussed. Technical and production aspects of materials and media are considered in several lab sessions. Students are required to produce health education materials or develop learning activities through fieldwork in addition to in-class and lab sessions.

**HBEHED644**

Readings in Health Behavior and Health Education

Fall, Winter, Spring, Spring-Summer, Summer term(s)

1-6 Credit Hour(s)

Instructor(s): Staff

Prerequisites: Perm. Instr.
Review of literature on selected topics in health behavior, health education or related areas under guidance of faculty member. Critical analysis; written and oral reports. May be taken more than once for a total not to exceed 6 credit hours.

**HBEHED646**

Education of Patients in the Health Care Delivery System

Winter term(s)

3 Credit Hour(s)

Instructor(s): Parker, Edith

**Not offered 2007-2008**

Prerequisites: Grad Status

Analysis of programs and policies in patient and consumer education in hospitals, health maintenance organizations, private practice, and other health care delivery settings. Emphasis on organizational conditions necessary for development of effective education of patients and consumers.

**HBEHED647**

Educational Approaches to Human Resource Development in Health Organizations

term(s)

3 Credit Hour(s)

Instructor(s): Staff

**Not offered 2007-2008**

Models for training and continuing education in health organization presented within context of health manpower development and organizational change. Preparation of training design selection of methods, and evaluation procedures reviewed. Development and implementation of training conference required.

**HBEHED651**
Program Development in Health Education
Winter term(s)
3 Credit Hour(s)
Instructor(s): Parker, Edith
Offered every year
Prerequisites: Perm. Instr.
Focuses on design of effective learning programs: specification of objectives, selection and organization of learning activities, and program assessment. Moves between theoretical bases for program development and examination of applications. Initial sessions focus on framework for development of health education. Subsequent sessions center on specific components of program design and particular applications.

HBEHED652
Group Process in Health Education
Winter term(s)
3 Credit Hour(s)
Instructor(s): Israel, Barbara
Offered every other year
Not offered 2007-2008
Prerequisites: Perm. Instr.
Examines concepts, theories, and research in the field of group dynamics with particular application to health education. Emphasis on developing skills for observing, assessing, participating in, facilitating and evaluating small groups.

HBEHED655
Gender and Health: Ethnographic Approaches
Winter term(s)
3 Credit Hour(s)
An interdisciplinary, graduate-level seminar designed to explore in an in-depth fashion ethnographic approaches to gender and health issues around the globe. Weekly, student-led seminar discussions will focus on summary, discussion (of theory, content, and methods), and critique of thirteen book-length anthropological studies of women's health issues in a wide variety of Western and non-Western sites (with a significant focus on the Middle East and North Africa, the professor's area of regional focus). Additional books will be required for a written comparative review. This course constitutes an elective for students in the Global Health and Reproductive/Womens Health ICs.

HBEHED656
Intersectionality and Women's Health: Ethnographic Approaches to Race, Class, Gender and Difference
Winter term(s)
3 Credit Hour(s)
Instructor(s): Inhorn, Marcia
Not offered 2007-2008
An interdisciplinary seminar designed to examine how the intersections of race, class, gender, and other axes of differences (e.g., age, religion, sexual orientation, disability, immigration) affect women's health in the contemporary United States. In this course, recent feminist approaches to intersectionality and multiplicity of oppressions theories will be introduced. Weekly, student-led seminar discussions will focus on summary, discussion (of theory, content, and methods), and critique thirteen book-length ethnographic studies, which examine some aspects of intersectionality and women's health outcomes in the U.S. Additional books will be required for a written comparative review.
HBEHED660
Theory, Research and Practice in Adolescent Health
Fall term(s)
3 Credit Hour(s)
Instructor(s): Caldwell, Cleo
Prerequisites: Grad Status
Examines educational efforts designed to promote better health outcomes among adolescents. Review developmental theories, research, and interventions to promote health in this population. Addresses various contexts for intervention programs and their implications. Topics covered include, but are not limited to, the effects of peer and family influences on health, resiliency, violence, alcohol and drug use, and sexual behavior.

HBEHED661
Human Communities and Disasters
term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Grad Status
This course will examine the public health dimensions of extreme events. It will examine the reasons for the increase in both natural and man-made disasters. The course will be concerned with the human meaning of disasters, their prevention, the assessment of harm from such events, the design of effective interventions, appropriate clinical responses, the joint involvement of both community members and policy makers in responding to disasters and the education of both lay and professionals in the prevention and intervention of disasters. It will be especially concerned with the phenomena of collective trauma and the selection and application of appropriate theoretical constructs for predicting and changing health behavior in such situations.

HBEHED663
Media Advocacy in Public Health
term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Media advocacy is the strategic use of mass media to pressure policy makers to develop and implement healthy public policies. Students will explore how public health workers and communities can employ media campaigns in order to gain greater control over public health decisions. Participants will learn how to gain access to the media and how to achieve agenda setting in order to reshape policy debates. Of central importance will be how to influence the topics journalists cover. The course will emphasize the importance of shifting focus from personal health behavior to the social, cultural, economic and political context of health problems.

HBEHED664
Developing Mental Health Intervention Programs
This course is designed to provide a theoretical and methodological foundation for the development of mental health intervention programs. Issues the definition, measurement, and epidemiology of mental health and mental disorders are examined. An emphasis is placed on the link between existing theories of mental disorder and the rationale for intervention planning. The efficacy of existing intervention and treatment approaches is examined. Public policy issues involving intervention and treatment are discussed.

HBEHED665
Media Coverage of Public Health Issues

Not offered 2007-2008
Public health reporting is becoming an increasingly important field within the mass media, but few journalists who specialize in covering public health issues have any professional training in public health. Moreover, public health professionals often have a limited understanding of the impact of the media coverage of public health on behavior and policy. The field of journalism provides public health specialists an excellent opportunity to educate and inform the public. This course will introduce students to the field of public health journalism and provide an overview of the media coverage of public health issues. Participants will learn how to critically appraise such coverage, respond to it, and shape it. Students will be provided with techniques and insights on how to influence the coverage of public health in the media in order to use media coverage as one avenue of health education. The perspective of this course will be based primarily on the social sciences. Writing and analytical skills will be stressed.

HBEHED666
Chronic Illness and Aging
term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Grad Status
Review and discussion of selected chronic illnesses to illustrate: the causes and manifestations of chronic illness in various adult populations; differences in pain and treatment reactions; problems with comorbidities in older age groups; assessment and management concerns; research trends; and professional and ethical issues in dealing with chronic illness. Course is designed for departmental majors and other students from the health-related professions and social work, including those with minimal clinical backgrounds, who are interested in case study and team approaches to chronic illness intervention--especially with older adult populations.

HBEHED667
Bioterrorism: Community Preparation and Response
term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: None
Bioterrorism presents unique challenges to both the public health profession and communities. This course will apply lessons learned from disaster studies and the study of bioterrorism to review such questions as what makes communities and specific populations within a community vulnerable?; how can we form responsive partnerships between government and communities?; how can we identify and strengthen individuals, organizations and support networks that can prepare for and respond to such events?; how can we utilize pre-existing volunteer networks?; how can we develop collaborative disaster educational outreach programs for mental health centers, medical clinics, and service agencies? The focus of our investigation will be based on case studies and research literature. Students will be required to develop final projects in collaboration with surrounding communities. Format of the course is lecture/discussion.

HBEHED668
Health Communications for Public Health
Fall term(s)
3 Credit Hour(s)
Instructor(s): Resnicow, Ken
Prerequisites: HBHE 600
From one-on-one health counseling to broad-based social marketing campaigns, a vast body of research over the past twenty years has demonstrated that numerous dimensions of health communications, including message format, receiver characteristics, and delivery channel can affect program impact. This course will address key considerations for constructing effective health communications including the application of behavior change theories and general marketing principles. Selected prior and current health promotion campaigns will be critically reviewed and students will be asked to develop a health communication intervention or social marketing campaign. Occasional guest lecturers, actively involved in development of health communication interventions will be integrated into the syllabus.

HBEHED669
Genetics, Health Behavior, and Health Education
Winter term(s)
3 Credit Hour(s)
Instructor(s): Roberts, Scott
Prerequisites: SPH student or permission of instructor

Advances in genetics research are rapidly presenting both great opportunities and complex challenges for public health. In order for the potential benefits of genetic research to be realized (and unintended harms minimized), numerous health behavior and health education (HBHE) issues will need to be addressed. This course will employ a blend of lectures and group discussions to consider such issues, including the following: genetics and risk communication; ethical issues in HBHE genetics research; the psychological and behavioral impact of genetic testing; public and professional knowledge and attitudes about genetics; health education needs in genetics; and emerging issues in the field (e.g., preimplantation genetic diagnosis, computerized delivery of genetic counseling services).
HBEHED670
The Stress Process
Winter term(s)
3 Credit Hour(s)
Instructor(s): Krause, Neal M
Prerequisites: Grad Status
This course examines the definition, measurement, and epidemiology of stressful life events. Consideration is given to the coping strategies and resources used by individuals who are confronted with stressful events (e.g., chronic illness and impairment, death of spouse, financial hardships). An emphasis is placed on the impact of life stressors on alcohol and drug use, mental disorders, physical health problems, and the utilization of health care services. Special topics include gender as well as racial and ethnic differences in the stress process. An emphasis is also placed on linking emerging models of the stress process with efforts to develop intervention programs.

HBEHED671
Motivational Interviewing in Public Health
Winter term(s)
3 Credit Hour(s)
Instructor(s): Resnicow, Ken
Prerequisites: HBEHED600, Perm Instr.
In the past few years, there has been increased interest in using motivational interviewing (MI) in public health and medical settings. Originally developed for the treatment of addictive behaviors, MI has recently been used to address chronic disease and other public health conditions, such as smoking, diet, physical activity, diabetes management, and medical adherence. At its core, MI is a method for assisting individuals to work through their ambivalence about behavior change. Deeply rooted in the person-centered philosophy of Carl Rogers, MI counselors are trained to rely heavily on reflective listening, more so than direct questioning, persuasion, or provision of advice. This course will provide participants with an in-depth overview of MI and provide opportunities to practice the core techniques.

HBEHED678
Critical Histories, Critical Moments in Health Behavior and Health Education
Fall term(s)
3 Credit Hour(s)
Instructor(s):
Not offered 2007-2008
Prerequisites: HBHE student or permission of instructor
The goal of this course is to introduce health behavior and health education (HBHE) students to the historical roots of the field and to connect these roots to current day issues. To this end, we will examine key historical milestones and figures who were instrumental in developing the discipline. We will discuss major debates that still have currency today, such as the social control of infectious diseases and assumptions about the origins of racial/ethnic, nationality, and class differences in health. We will also examine the historical and intellectual foundations of current HBHE research and practice, including the genesis of stress research, community based participatory research, health disparities, and the ecological framework. Finally, we will examine the continuing influence of several major figures, including (but not limited to) Sydney and Emily Kark, Guy Steuart, Marshall Becker, John Snow, Hans Selye and Paulo Preire.

HBEHED680
Youth Violence: Issues and Prevention
term(s)
3 Credit Hour(s)
Instructor(s): Morrel-Samuels, Susan
Not offered 2007-2008
Prerequisites: Grad Status or NERS 484
This course is designed to provide students with an understanding of intentional injury generally and adolescent violence-related injury in particular as a significant public health problem that is amenable to preventive measures in the same way as other public health problems. It will provide students with a comprehensive overview of the many issues associated with youth violence. The course will acquaint students with injury control theory more generally and cover the epidemiology of major violence-related injuries including disparities, social determinants as well as risk and resiliency factors associated with intentional injury. Topics to be covered include violence in schools, family (e.g., domestic violence) and peer (e.g., dating violence) influences, suicide, alcohol and drug use, firearms, and violence in the media. They will also learn about conceptual and theoretical models describing the etiology of adolescent violence-related injury and gain an understanding of how such frameworks influence the development of prevention programs. The course presents examples from local communities who are actively involved in youth violence prevention. The course will be linked to activities of the CDC funded Youth Violence Prevention Center and will include discussions with community partners. The course will be working with the Office of Community Based Public Health (OCPBH) to create student mini projects.

**HBEHED684**
Politics of Health Care

term(s)
3 Credit Hour(s)
Instructor(s): Staff

*Not offered 2007-2008*
To account for the unequal distribution of morbidity and mortality in the United States, this course examines the structure of American government, the relationships among different levels of government, the political influence of public and private interest groups, and the development and dissemination of political ideology. The course is intended for students with little or no previous course work in political science.

HBEHED685
Health Education Models of Practice and Interventions at the Community Level
Winter term(s)
3 Credit Hour(s)
Instructor(s): Parker, Edith
Not offered 2007-2008
Prerequisites: HBHE doctoral students; second yr MPH/HBHE students; or Perm Instr
The course is designed as a doctoral seminar for HBHE doctoral students. The course will examine and critique current models of health education and behavior change which intervene at the community level to bring about behavior change which intervene at the community level to bring about behavior change. The focus will be on recognized health education interventions/strategies. Major topics will include: 1) methods for behavior change (i.e., community organizing; mass media, etc.); 2) policy activities; 3) organizational change activities; 4) advocacy activities; 5) community planning models. This course will also be available to second year HBHE masters students on a permission of instructor basis.

HBEHED686
Theory-driven Interventions Targeting Individual Behavior Change
This course will involve an in-depth examination of models of health behavior with an emphasis on measurement issues and application of health behavior theory in intervention research. Major issues/constructs to be discussed include: gender differences in health, quality of life, value expectancy models, self-efficacy, patient adherence and the influence of patient-provider relationships. Discussions of research findings and current directions in health education and behavior change will emphasize areas related to women's health.

HBEHED690
Environmental Health Education
Winter term(s)
3 Credit Hour(s)
Instructor(s):
Not offered 2007-2008
Prerequisites: HBHE 600 or Permission of Instructor
This class applies health education principles towards understanding and intervening on different environmental hazards. The course will review various kinds of environmental issues, including biochemical toxins, physical hazards, and psychosocial stressors. Students will learn about select datasources from which they may obtain environmental health information. The course will examine the literature on risk perception, risk communication, ethics, and environmental health education and explore how health educators can use resource and conceptual tools to help ameliorate environmental concerns. This course will also examine case studies from individual communities as focal points for discussion. Based on these case studies, students will explore whether extant theories and approaches can help protect vulnerable populations, insure environmental justice, and reduce health disparities. The format of this class is a combination of lecture and discussion.

HBEHED691
Public Health Issues Among Asian And Pacific Islander Americans
Winter term(s)
3 Credit Hour(s)
Instructor(s):
Not offered 2007-2008
This graduate seminar examines the health of Asian and Pacific Islander Americans (APIAs) in order to more broadly inform the understanding of health disparities. The class will contrast the health of APIAs to other ethnic groups and also explore the variation in health between APIA subgroups. The class will examine the psychosocial factors that may impact APIA health, including: immigration, acculturation, community, ethnic identity, racism, and intergenerational conflict. Further, students will discuss the methodological and conceptual challenges facing the study of APIAs, especially as related to their highly clustered and numerically small representation in the U.S. Finally, we will examine the challenges and successes related to interventions with APIA communities, families, and individuals.

HBEHED692
Women's Health and Reproductive Health
Fall, Winter term(s)
1.5 Credit Hour(s)
Instructor(s): Misra, Dawn
Prerequisites: Permission of Instructor
This seminar course, intended primarily for students enrolled in the Interdepartmental Concentration in Reproductive and Women's Health, provides an overview of the fields of women's health and reproductive health with particular attention to how the fields relate, emerging issues within these fields from a multidisciplinary perspective, and implications for public health programs, health services, and policy. Topics include: the sociohistorical context of changing conceptions of reproduction health and women's health in the United States and worldwide; current understandings of gender as social cause of health and illness; an overview of women's health problems across the lifespan; emerging perspectives on the relationships between women's reproductive health and overall health; social and ethical issues related to emerging reproductive technologies; and issues in access to care, design of health services and public health programs, and policymaking in reproductive health and women's health.

HBEHED693
Seminar on Health and Poverty
Winter term(s)
3 Credit Hour(s)
Instructor(s): Geronimus, Arline T
Not offered 2007-2008
Explores dimensions of poverty in terms of the interrelationships of socioeconomic status, racism, minority status and health. The focus is on the United States and topics discussed include different conceptualizations of and perspectives on the relationship of poverty to health, issues in child and family health, in urban and rural poverty and health, and issues relevant to improving health services and health policy targeted at socioeconomically disadvantaged populations.
HBEHED695
Women and Fertility
term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Perm Instr
This course is an examination of the theoretical and programmatic links between women's status or condition and fertility patterns.

HBEHED699
Health Behavior and Health Education Capstone
Fall, Winter term(s)
1 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm Instr
HBHE 699 is elected by students enrolled in the Masters degree program in Health Behavior and Health Education and who are in their final semester of study. Students engage in a synthesis/analysis of their individual program of study and skill and knowledge formation in health behavior and health education. Specific objectives are to: 1) consider how various aspects of their course work informs their summary evaluation of the field placement and 2) describe how course work, the field placement experience and other activities relate to explicit competencies for the program, as well as specific career goals and objectives. Information used in this process includes a review of the students original statement of purpose, field placement experience, course work within HBHE and the SPH, program and course exit competencies, and related additional work, research or internship experiences. Students write a capstone paper under the guidance and supervision of the faculty advisor.
HBEHED701
Practicum in Health Behavior and Health Promotion
Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: HBHE 601, Perm Instr
This course is designed to provide students with both experience in one of a number of practice sites and classroom education to integrate learning from the field with theoretical perspectives. Topics covered in HBHE 601 are used for discussions about theoretical applications. Practicum sites may include school settings, home health care, intergenerational day care, outpatient adult mental health services, OBGYN clinic, county departments of public health and other community-based sites.

HBEHED702
Reducing Racial/Ethnic Health Disparities
Fall, Winter term(s)
1.5 Credit Hour(s)
Instructor(s): Neighbors, Harold
Prerequisites: Permission of instructor, graduate standing. The course is primarily for doctoral students.
This interdisciplinary, graduate level seminar is designed to: 1) explore in an in-depth fashion racial/ethnic disparities in health in the United States and approaches to reducing those disparities; and 2) to support the development of scholars prepared at the doctoral level to pursue research and interventions to address these disparities. Weekly seminar discussions will focus on summary, discussion (of theory, content and methods), and critique of articles on racial and ethnic health disparities from a variety of disciplinary perspectives (e.g., sociology, political science, health behavior and health education, epidemiology, health management and policy, urban planning, psychology). The seminar will focus on developing a rigorous critical analysis of these disparities and an understanding of the potentials and limitations of various approaches to addressing them (e.g., health care system, behavioral strategies, community change, and policy interventions). As part of the seminar, participants will present and engage in critical discussion of their own emergent research interests. Grades will be given at the end of the second semester of the two-semester course sequence.

HBEHED710
Special MPH Topics in Health Behavior and Health Education
term(s)
1-6 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Masters level seminar designed to provide an extensive review of a number of substantive and methods and skill areas in health behavior and health education. Readings, discussion and assignments are organized around issues of mutual interest to faculty and students. Reviews and reports on topics required in the areas selected. May be elected more than once.
HBEHED733
COMMUNITY-BASED PARTICIPATORY RESEARCH (CBPR)
Winter term(s)
3 Credit Hour(s)
Instructor(s): Israel, Barbara
Prerequisites: Doctoral Student or Advanced Masters Students with permission
The involvement of community members in research and scholarship has emerged as a critical component for public health research. This doctoral student seminar focuses on the ways in which researchers and community members collaborate to conduct research that leads to community change, and improvement in health and quality of life. Such efforts often call for clarifications and/or redefinitions of: scientists' roles and methods, the knowledge development roles of participating community members, and the varying meanings of "community." Attention will be paid to scholarly debates, practical, and methodological issues in the conduct of community-based participatory research. This seminar will address the major issues and methods involved in conducting community-based participatory research across different disciplines. It provides the opportunity for graduate students from different schools and departments to come together to share perspectives, develop new skills and explore how they can apply this learning to community-based participatory research projects.

HBEHED800
Seminar in Health Behavior and Health Education
Fall term(s)
3 Credit Hour(s)
Instructor(s): Caldwell, Cleo
Advanced study of principles of health behavior, educational and motivational approaches to improve health, and research and evaluative issues in health behavior and health education. Includes discussion of behavioral science and health education applications to public health, with special topics selected by students for review and discussion. Designed for doctoral students in Health Behavior and Health Education. May be elected more than once.

**HBEHED810**  
Special Topics in Health Behavior and Health Education  
term(s)  
2-6 Credit Hour(s)  
Instructor(s): Staff  
**Not offered 2007-2008**  
Doctoral seminar designed to provide an extensive review of a number of substantive areas of health behavior and health education. Readings and discussion organized around issues of mutual interest to faculty and students. Reviews and reports on topics required in the areas selected. May be elected more than once.

**HBEHED849**  
Research in Health Education  
Fall, Winter term(s)  
2-6 Credit Hour(s)  
Instructor(s): Staff  
Prerequisites: HBHE 620
Investigation of a selected topic in health education; development of study and plan of operation; conduct of investigation and preparation of final report. Primarily for students in the Department with prior master's or doctoral preparation, others by permission. Emphasis on application of basic research competence in study of problems in health education. May be elected more than once.

**HBEHED850**

Psychosocial Factors in Mental Health
Fall, Winter term(s)
2 Credit Hour(s)
Instructor(s): Delva, Jorge
Prerequisites: Graduate Standing and Permission of Instructor
Selected advanced topics including problems of diagnosing psychopathology through community surveys, psychosocial predictors of mental illness, primary prevention and coping with undesirable life events. This seminar brings together a multidisciplinary set of faculty and students from sociology, psychology, health behavior and health education, psychiatry, and epidemiology to present and discuss recent research on the social and psychological sources of mental and physical health. Substantively, the seminar will focus on the role of psychosocial and social structural factors in the etiology and course of health and illness, including the study of life events, chronic role strains, resources for adapting to potential stressors, and the actual process of coping and adaptation. The application of social epidemiology to problems of service utilization may also be considered.
This course is cross-listed with Soc 850, Psych 890, Epid 850 in the Sociology, Psychology, and Epidemiology/SPH department.

**HBEHED900**

Research in Health Behavior and Health Education
Research work undertaken by doctoral students in collaboration with faculty advisers, including participation in on-going departmental research activities. Open only to doctoral students in Health Behavior and Health Education. May be elected more than once.

**HBEHED990**
Dissertation/Pre-Candidate
Fall, Winter, Spring-Summer term(s)
1-8 Credit Hour(s)
Instructor(s): Staff
Half Term (IIIA or IIIB, 1-4 credits) Election for dissertation work by doctoral students in Health Behavior and Health Education who are not yet admitted to status as a candidate.

**HBEHED995**
Dissertation Research for Doctorate in Philosophy
Fall, Winter, Spring-Summer term(s)
8 Credit Hour(s)
Instructor(s): Staff
Half Term (IIIA or IIIB, 1-4 credits) Election for dissertation work by doctoral students admitted to status as candidate.

**HMP517**
Issues in Public Health Genetics
Fall term(s)
3 Credit Hour(s)
Instructor(s): Citrin, Toby
Prerequisites: EPID 515 or Perm Instr
This course focuses on ethical, legal, and social issues and analysis arising from the increasing application of genetic technologies to the health of individuals and populations. The four course segments cover the technical and social background of population-based genetic interventions, decision making criteria used in assessing the feasibility of proposed genetic screening programs and gene therapy trials, policy frameworks, such as cost-effectiveness analysis and ethical reasoning, which can aid in the selection and design of genetic programs and policies, and the deliberative processes decision making bodies can use in resolving differing interests as policy is developed and adopted. Each segment involves didactic presentations and class exercises in which students will grapple with current and anticipated publicized dilemmas. The segments collectively are linked by examples common to each portion of the course.

HMP518
Issues in Public Health Genetics-Online
Winter term(s)
2 Credit Hour(s)
Instructor(s): Citrin, Toby; Modell, Stephen
Not offered 2007-2008
This course focuses on ethical, legal, and social issues and analysis arising from the increasing application of genetic technologies to the health of individuals and populations. The four course segments cover (1) what we mean by policy-making and the various ways in which genetics issues are being framed and genetics policies are being developed and adopted; (2) issues arising from the application of genetics technology in health care and public health services, and the way these applications affect individual, family, professional and societal interests; (3) issues arising from the ownership and application of genetics technology by the health industry; and (4) a historical view of genetics and consideration of the role genetics might play in either exacerbating or reducing health disparities.

HMP578
Practical Projects in Health Management & Policy
Fall, Winter, Spring, Spring-Summer, Summer term(s)
1 Credit Hour(s)
Instructor(s): Staff
This course is designed for students wishing to pursue an internship relative to their degree program (primarily for international students). Practical experience is required for this course. Note: The Department is not obligated to find employment/internships for students. Course requirements include an approved practical work experience and consultation with faculty advisor.

HMP600
The Health Services System I
Fall term(s)
3 Credit Hour(s)
Instructor(s): Lichtenstein, Richard L
Not offered 2007-2008
Prerequisites: Enrollment in HMP or Perm Instr
First part of two-course sequence focusing on major issues in the organization of a health services system: role of values; assessment of health status; analysis of need, access and use of services; current supply and distribution of health resources; analysis of health care costs and expenditures. Students enrolling in HMP 600 are expected to also complete HMP 601.

HMP601
The Health Services System II
Winter term(s)
3 Credit Hour(s)
Instructor(s): Wyszewianski, Leon
Not offered 2007-2008
Prerequisites: HMP 600
Second part of two-course sequence focusing on major issues in the organization of health services system: private and public financing of health services; quality of care assessment; control of quality and costs of care through market-oriented strategies, professional self-regulation, managerial approaches, and government regulations; and system reform.

HMP602
Survey of the U.S. Health Care System
Winter term(s)
4 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Grad Status
Analysis of current organizational arrangements and patterns for provision and financing of medical care services in the United States. Topics include the medical care process and factors which affect need, access and use of services; factors affecting supply and distribution of health professionals and health facilities, and current issues pertinent to these health care services; factors related to health care costs; quality assessment and assurance; and financing of care through health insurance and governmental programs.

**HMP603**  
Managing Health Care Organizations  
Winter term(s)  
3 Credit Hour(s)  
Instructor(s): Griffith, John R  
Prerequisites: HMP Masters Standing or Perm Instr  
Comprehensive basic review of how modern health care delivery institutions are organized, how they respond to their environment, and how they reach and implement decisions about their future activities. The institution will be viewed as an open system with operational subsystems in governance, clinical service management and support services such as finance, planning information and human resources. Students will leave with the ability to evaluate any real subsystem in terms of functions and performance measurement. For future administrators and those who expect extensive professional involvement with health care provider institutions.

**HMP606**  
Managerial Accounting for Health Care Administrators  
Winter term(s)  
3 Credit Hour(s)  
Instructor(s): Grazier, Kyle; Smith, Dean G  
Prerequisites: Intermediate microeconomics theory
Concepts and techniques of managerial accounting for generalist health care administrators. Topics covered include full cost measurement, differential cost measurement and analysis, sources of revenue, price setting, budgeting and control, costs and decision-making fund accounting.

**HMP607**

Corporate Finance for Health Care Administrators
Fall term(s)
3 Credit Hour(s)
Instructor(s): Wheeler, John RC
Prerequisites: HMP606
Corporate finance theory and applications to health care organizations. Topics include the capital expenditure decision, the capital financing decision, financial feasibility, financial planning, cash management, and financial aspects of prepayment programs. The course makes extensive use of case studies.

**HMP608**

Health Care Financial Accounting
Fall term(s)
1-2 Credit Hour(s)
Instructor(s): Wheeler, John RC; Grazier, Kyle
Prerequisites: none
HMP 604, Health Care Financial Accounting, provides an overview of financial accounting for students interested in health care management and policy. It is designed to serve the needs of both students who have never had a course in financial accounting (for 2 credits) and students who have had an introductory course in financial accounting but without health care applications (for 1 credit).

**HMP610**
Cost-Effectiveness Analysis in Health

Winter term(s)
3 Credit Hour(s)
Instructor(s): Eisenberg, Daniel

**Not offered 2007-2008**
Prerequisites: Perm. Instr

HMP 610 focuses on the use of cost effectiveness analysis to inform decisions about improving health. The course also covers a number of related analytical tools such as cost benefit analysis, decision analysis, and sensitivity analysis. Students will learn theoretical justifications for these tools as well as their limitations. The main goal is for students to understand when cost effectiveness analysis and related tools are appropriate and how to apply them in practice to a broad range of health issues.

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HMP612
Medical Management of Disease

Fall term(s)
1 Credit Hour(s)
Instructor(s): Hayward, Rodney

**Not offered 2007-2008**

Basic introduction to how disease is conceptualized and managed under the medical model. The course includes an introduction to medical terminology and disease taxonomy, and a basic introduction to issues in disease natural history, progression, prognosis, and diagnostic and therapeutic decision making and management relevant to non-medical health services professionals. Designed for students pursuing a Masters in Health Services Administration.

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HMP615
Introduction to Public Health Policy

Fall term(s)
1-4 Credit Hour(s)
Instructor(s): Lantz, Paula
Describes the nature of public policy interventions within the various domains of public health, the theoretical motivations for undertaking them, the influence of the political, bureaucratic, and social environmental in which policy decisions are made, the consequences of such decisions, and the key dimensions of analysis of the effects of public health policies. In addition to conceptual discussion of each of the above, the course includes evaluation of several case studies of public health policy decisions and their implications.

HMP616
Understanding Organizations
Fall term(s)
3 Credit Hour(s)
Instructor(s): Myers, Valerie; Banaszak-Holl, Jane
Prerequisites: MHSA Candidate, MPH Candidate in HMP, or P.I.
This course provides an overview of key issues confronting modern organizations, with an emphasis on healthcare organizations but attention to supplier, customer, and other partnering organizations. The issues will be studied from several perspectives to familiarize students preparing for work in health care organizations with a working understanding of both organizational dynamics and approaches to understanding them. Students completing the course should understand fundamentals of how organizations are formed, governed, designed, and improved. They will also learn how workers and organizations related to each other, and how organizations relate to their environment and other organizations.

HMP617
Understanding Health Care Organizations
Winter term(s)
This course is designed for students who are not concentrating in health care management studies but who need some understanding of health care organizations. The course provides an overview of some key issues confronting these organizations and alternative perspectives, drawn from several disciplines, for understanding how to achieve results through health care organizations. Topics include the policy environment for healthcare organizations, organizational structure, motivation and incentives, individual and group behavior, group decision making, quality measurement and improvement, and organizational relations with their environments. Case examples are drawn from current health care organizations.

HMP618
Tobacco: From Seedling to Social Policy
Fall term(s)
3 Credit Hour(s)
Instructor(s): Douglas, Clifford
Provides a comprehensive examination of the historical and contemporary use of tobacco products and of their health and social implications. The objective of the course is to learn how lessons from history, epidemiology, health behavior, and policy analysis can be combined to understand the nature of, and potential policy responses to, the ongoing epidemic of tobacco-related disease. Coverage includes history; production of tobacco products; marketing; elucidation of disease links; societal responses; impacts of anti-tobacco policies; industry responses; economics and politics of tobacco; cessation methods; lawsuits against the industry; contemporary policy developments in the U.S.; the global use of tobacco; the future of tobacco use and tobacco control.

HMP619
Exploring a Health Maintenance Organization
Winter term(s)
2 Credit Hour(s)
Instructor(s): Geyer-Sylvia, Zelda
Not offered 2007-2008
Prerequisites: HMP 600,601,603,607
This course will describe the components of a Health Maintenance Organization and explore which characteristics are necessary to achieve excellent performance. Organizational structure, measurement indicators, and case examples will be used to get inside the workings of an HMO. Major emphasis will be on core operations, network and medical administration, marketing, and financial management. Some discussion of new product designs for the next generation of managed care based on what does the customerboth the employer and patientwant for the future.

HMP620
Understanding the structure and management of nonprofit health organizations
Nonprofit organizations face unique challenges because of their ownership, including greater needs to motivate employees through culture, to manage volunteer workforces and complex stakeholder relations within communities. This course will focus on the analysis of the goals, environmental conditions and organizational structures of specifically nonprofit health organizations, including a variety of smaller (and largely, non-health services) community-based nonprofits. This course is explicitly targeted to meet the needs of those interested in policy and those who may manage non-health services organizations.

HMP623
Topics in Public Health Ethics
Winter term(s)
2 Credit Hour(s)
Instructor(s): Jacobson, Peter
Not offered 2007-2008
Prerequisites: permission of instructor
This course introduces students to the emerging field of public health ethics, the application of ethical inquiry to population health and public health policy issues. Students learn about the ethical issues surrounding topics in public health research and practice through seminar sessions with guest lecturers.

HMP625
Health and Health Systems in the Developing World
Winter term(s)
3 Credit Hour(s)
This course examines the state of public health systems in developing countries in sub-Saharan Africa, Latin America, and parts of Asia in the context of global initiatives to dramatically improve health outcomes. The course will cover recent trends in health outcomes, the structure, history and performance of developing country health systems, the international players in health (including the UN and other multilateral and bilateral organizations), key constraints to improving health care delivery, and potential ways forward. This course focuses on international and national health policy as it pertains to developing countries but also deals with questions of health management and implementation of complex systems. There are wide, and in some instances growing, global disparities in health status. In some countries in southern sub-Saharan Africa, for example, the AIDS epidemic has cut 20 years from average life expectancy over the past decade while the developed world has enjoyed a boom of new health discoveries and advances. AIDS and a resurgence in malaria and TB have added to the tremendous strain on fragile health systems, which have already been ravaged by years of underfunding. Government-run health systems in developing countries, whose main role is to deliver a modest package of essential interventions for largely preventable and/or treatable conditions, are on the verge of collapse.
"Managing & Maximizing Difference and Diversity in Healthcare," examines the confluence of socio-demographic diversity in the workforce and the population, the under representation of women and minorities in healthcare leadership and professional positions, and persistent racial and ethnic disparities in health and healthcare. Students will use organizational behavior and organization theory as frameworks for examining relationships between diversity and disparities in healthcare quality. Conceptually, we will begin by exploring many kinds of "difference" that influence an organization's performance including individual, functional, demographic and ideological differences. We will also review the benefits and risks of difference, giving focused attention to issues of power, conflict, culture and stereotypes. From a practical standpoint, students will conduct self-evaluations, analyze cases, participate in exercises and complete assignments that build competencies for managing diversity. At the end of the course, students will have a repertoire of concrete steps to manage and maximize difference at multiple levels including organizational policies and infrastructure; management & leadership; within and across groups; and one's own minority status. This course is highly interactive and designed to promote growth and learning through personal reflection and interpersonal interactions, as well as from traditional didactic methods.

HMP631
Health Insurance and Payment Systems
Winter term(s)
3 Credit Hour(s)
Instructor(s): Grazier, Kyle
Prerequisites: HMP 600, HMP 602, HMP 606, HMP 661 or Perm Instr
This course examines the conceptual and management frameworks for financing health care services through insurance, contracting and managed care. It analyzes past and current research on the formulation of payment techniques and the impact of reimbursement methods on consumers, providers, payers and society. The course explores the theories on which health care pricing, payment and reimbursement systems are based and the administrative and financial mechanisms through which they operate.
Lectures, cases, readings.

HMP633
Pharmacoeconomics and Outcomes Research
Winter term(s)
1-2 Credit Hour(s)
Instructor(s): Smith, Dean G
Not offered 2007-2008
This course introduces the theory and application of economic analysis and outcomes research in the pharmaceutical industry. It provides an overview of the pharmaceutical industry and the role of cost, quality of life and other outcomes research data in product development and promotion. Applications from industry are presented.

HMP640
Program Evaluation in Public Health
Fall term(s)
3 Credit Hour(s)
Instructor(s): Lantz, Paula
Prerequisites: grad status
The Purpose of this course is to provide students with an understanding of the fundamentals of evaluation and research as applied to public health programs, policies and other types of interventions. The course covers impact, outcomes, process and participatory evaluation, and a number of research designs common in public health evaluation research. Students will gain skills in framing evaluation questions. In addition, students will gain skills needed to understand and critique published evaluation literature, and skills in measurement/data collection strategies. Class format includes lecture, discussion articles, and small group exercises. For final project, students will design and write and evaluation plan in the format of a proposal for funding.

HMP643
Individual and Group Behavior in Health Service Organizations
Fall term(s)
3 Credit Hour(s)
Instructor(s): Banaszak-Holl, Jane
Prerequisites: grad status
This course provides the knowledge and skills for understanding and effectively managing individuals and groups within health care organizations. We consider a wide variety of motivations that draw individuals to their jobs and keep them productive. We also consider why organizations form small groups and the dynamics of these groups over time. Students learn techniques for persuasive communication and conflict management, develop strategies for dealing with interpersonal problems in an organizational setting, and processes for handling work teams. Common organizational problems that students solve include choosing the right person through the hiring process, evaluating employee performance, and negotiating contracts.
HMP644
Strategic Planning and Marketing in Health Care
Fall term(s)
3 Credit Hour(s)
Instructor(s): Calhoun, Judith
Not offered 2007-2008
Prerequisites: HMP 600, HMP 601 or HMP 602 or PI
Covers general concepts of strategic planning for business development and marketing as applied to health care settings. Topics include: assessing and understanding the needs of key customer groups; health consumer behavior; market segmentation and targeting; clinical staff needs and relations; forecasting service demand; new product development; product pricing and distribution; advertising and public relations; analysis of collaborative and competitive environments, and strategy formulation. Potential conflicts between an organization's business objectives and its participation with competitors in collaborative community benefit programs are also explored. In the 3 credit hour version of the course, extra emphasis is placed on experiential learning methodologies for developing health services strategic plans and the exploration of topics key to successful strategic positioning, business development, and marketing in the management of health care services.

HMP645
Seminar in Leadership for Changing American Healthcare
Fall term(s)
3 Credit Hour(s)
Instructor(s): Warden, Gail
Prerequisites: completion of first year requirements for HMP MPH or MHSA, or permission of instructor
This course will use four current, important topics on the national agenda to develop students' insights into how such topics evolve and are guided by professional managers and policy makers. Student teams will be formed around profession interests (e.g. provider management, insurance, government agencies). Each team will prepare two papers on each topic: (1) a background based on prior coursework and surveys of library and web resources, outlining the key issues, political positions of major stakeholders, technical issues, and actions proposed by others (2) a plan of action for a specific agency or organization, with agenda, timeline, types of participation, goals, and achievement issues. These papers will be submitted in writing for grading, and presented to classmates for discussion. A national leader concerned with the issue will join the seminar for the third session on each topic.

HMP652
Health Law
Fall term(s)
3 Credit Hour(s)
Instructor(s): Jacobson, Peter
Not offered 2007-2008
Prerequisites: HMP 600, 601
The purpose of this course is to introduce public health students, especially those interested in health administration and management, to the legal issues they are likely to face in managing a health care organization. The goals of the course are for students to understand generally: the functions of and interaction between courts, legislatures, regulators; the role of the courts in health policy and health care delivery; how to recognize legal issues and communicate with attorneys; how law will affect students as strategic thinkers in health care positions; how to apply basic tort and contract principles; and how to apply basic corporate law and antitrust principles. Specific topics will vary, but will usually include: liability; health care institutions as corporations; antitrust; tax exemption; privacy and confidentiality; regulatory oversight of health care systems, including quality of care; legal requirements for access to health care; nondiscrimination; and general employment issues. This class can be taken as an elective or in fulfillment of the law/politics requirement.

HMP653
Law and Public Health
Winter term(s)
3 Credit Hour(s)
Instructor(s): Jacobson, Peter
Not offered 2007-2008
Prerequisites: Grad Status
The purposes of this course are to examine the legal context of the relationship between the individual and the community, and to understand public health regulation in the context of a market-driven system. The goals of the course are for students to understand generally: constitutional authority and limits on governmental intervention in public health (i.e., individual rights vs. society's rights); the functions of and interactions between courts, legislatures, and regulators; how law will affect students as strategic thinkers in public health positions; how to recognize legal issues and communicate with attorneys; and the process of public health regulation and potential legal barriers to public health intervention strategies. Specific topics will vary, but will usually include: the nature and scope of public health authority; constitutional constraints on public health initiatives; tobacco control; youth violence; injury prevention; the spread of communicable disease; and regulating environmental risk. This class can be taken as an elective, in fulfillment of the law/politics requirement, or as a BIC requirement.

HMP654
Operations Research and Control Systems
Fall term(s)
3 Credit Hour(s)
Instructor(s): Gibson, Teresa
Prerequisites: Biostat 503 or Biostat 553 or equiv and Grad Status
Provides rational framework for decision making for both operating and control systems in the hospital environment. Emphasizes basic modeling techniques and examples of actual hospital applications. Aims at thorough understanding of concepts of total value analysis, objective function formation, and exception reporting. Students become familiar with operations research techniques of inventory modeling, queuing, computer simulation, PERT/CPM, mathematical programming, and quality control. Presentation emphasizes objectives, constraints, and required assumptions of each of these techniques as applied to specific hospital examples.

HMP655
Decision Making Models in Health Care
Winter term(s)
3 Credit Hour(s)
Instructor(s): Mendez, David
Prerequisites: HMP654
Application of computer models for decision making in the health care sector. The students will be exposed to Monte Carlo Simulation, Process Simulation, Multiple Regression analysis, Discriminant Analysis, Project Management, Inventory Control, Integer Linear Programming, and Multi-Criteria Optimization. Use of computers and spreadsheet modeling will be emphasized throughout the class.

HMP657
Ethical Issues in Health Services Management
Winter term(s)
1 Credit Hour(s)
Instructor(s): Griffith, John R
Prerequisites: Second Year HMP
A review of ethical and moral issues commonly faced in health care management, with emphasis upon understanding of diverse viewpoints, methods of resolving conflicting moral obligations, and developing abilities to make moral decisions

HMP658
Governance and Leadership in Non-Profit Health Organizations
Fall term(s)
3 Credit Hour(s)
Instructor(s): Alexander, Jeffrey A
Not offered 2007-2008
Prerequisites: HMP 652 and (HMP 620 or HMP 616 or HMP 640), or permission of instructor.
In nonprofit health organizations, boards of directors play far more important roles than in business firms. Because nonprofits have no owners, boards must simultaneously represent the public and the interests of donors and members, while at the same time serving as links to a variety of stakeholders, including funders, clients, beneficiaries, professional and industry groups, and the communities in which they are located. Boards have ultimate authority to interpret organizational mission, to define goals, to hire and fire staff, and to allocate resources. Governing boards are held accountable when nonprofit organizations run into trouble. This course provides critical and practical understanding of the leadership role of nonprofit governance for managers, board members, and policy makers. It examines the legal characteristics of nonprofit entities, mechanisms of internal and external accountability, the governance implications of organizational structure, the powers and responsibilities of governing boards, factors affecting decision making, board/staff relations, the dynamics of board governance, and the role of stakeholders in governance. Readings include articles and monographs from the fields of anthropology, law, management, organizational behavior, and sociology, as well as cases and pertinent materials from the print media. Students are expected to participate in class discussions, to make oral presentations, to write three short papers, and to write a case study based on an actual organization.

HMP659
Health Care Regulation
Winter term(s)
2 Credit Hour(s)
Instructor(s): Jacobson, Peter
Prerequisites: HMP 601 or PI
This is a seminar on regulating the health care system. Initial sessions will cover administrative law and regulation of the health care industry, implementation of regulations, the economics of regulations, and the politics of regulations. After the introductory sessions, each student will select a particular topic for class discussion. The student, in conjunction with the instructors, will select the reading materials and will lead the class discussion. Topics will vary based on student interest. Previous topics have included: fraud and abuse; ERISA reform and patients’ rights; research integrity and IRB issues; medical record privacy; pharmaceutical regulation; and the future of public health.

HMP660
Economics of Health Management and Policy I
Fall term(s)
3 Credit Hour(s)
Instructor(s): Eisenberg, Daniel; Hirth, Richard; McLaughlin, Catherine G
Not offered 2007-2008
Prerequisites: Grad Status
This course covers the principles of microeconomic theory and the fundamental concepts of the field of health economics. The focus is on individual behavior (demand), firm behavior (supply), and how these forces interact to yield market outcomes (prices and quantities) in health and health care. No previous background in economics is assumed. The purpose of the course is not to train you to be health care economists, rather it is to give you experience analyzing health management and health policy issues using economic tools. The basic framework of economics will be used to analyze the behavior of consumers, insurers, physicians, and hospitals. The tools of economics will be applied to both managerial issues such as pricing decisions and policy issues such as the medically uninsured. Additionally, these economic tools will be used to predict how various parties might respond to changes in the health care system.

HMP661
Economics of Health Services (Econ 438)
Winter term(s)
3 Credit Hour(s)
Instructor(s): Hirth, Richard

Not offered 2007-2008
Prerequisites: HMP 660, Econ 401, SPP 555 or Perm Instr
This course gives students experience analyzing health management and health policy issues using economic tools. The basic framework of economics is used to analyze the behavior of consumers, insurers, physicians, and hospitals. The tools of economics are applied to both managerial issues such as pricing decisions and policy issues such as the medically uninsured. By the end of the course, students should be able to assess the potential impact of hypothetical changes in the health care system on costs and access as well as on providers and consumers.
This course is cross-listed with ECON438 in the Literature Science & the Arts (Economics) Econ is the home dept. department.

HMP662
Topics in Health Economics
Fall term(s)
3 Credit Hour(s)
Instructor(s): McLaughlin, Catherine G

Not offered 2007-2008
Prerequisites: HMP 663, HMP 610, or Perm. Instr.
The focus of this seminar is the use of economic principles to evaluate private and public health care policies. Students read articles and write several short papers on a variety of topics, including health insurance reform, consumer choice and the role of information, the economics of mental health and substance abuse, sin taxes, and the role of technology in health care costs. Students are also required to write a longer paper on a health economics topic of their choice.

HMP663
Economics of Health Management and Policy II
Winter term(s)
3 Credit Hour(s)
Instructor(s): Eisenberg, Daniel; McLaughlin, Catherine G

Not offered 2007-2008
Prerequisites: HMP 600 and HMP 660
This course gives students experience analyzing health management and health policy issues using economic tools. The basic framework of economics is used to analyze the behavior of consumers, insurers, physicians, and hospitals. The tools of economics are applied to both managerial issues such as pricing decisions and policy issues such as the medically uninsured.
HMP664
Applied Health Policy Analysis
Winter term(s)
3 Credit Hour(s)
Instructor(s): Lantz, Paula
Prerequisites: HMP 601, HMP 610 or HMP 661 and HMP 685; or Perm Instr
HMP 664 is the capstone course for HMP masters students who have a strong interest in health-related policy. The course will focus on health policy issues from a government perspective, but will also emphasize the application of analytical skills to a broader range of contexts. Students will draw upon the breadth of skills and knowledge they have acquired in other courses in the program. The main goal is for students, upon completion of the course, to be competent, confident, and excited to conduct full-scale policy analyses related to a broad range of health issues.

HMP665
Information Management and Decision Support Systems in Health Care
Winter term(s)
3 Credit Hour(s)
Instructor(s): Calhoun, Judith
Not offered 2007-2008
Prerequisites: HMP 600, 601 or 602
Covers the strategic management and utilization of computer-based information and decision-support systems in the delivery of health services. Topics include: principles and methods of systems analysis, assessment, and strategic planning; design considerations for information systems development; e-health and e-commerce system trends; health care information systems application areas; large-scale regional information systems; system selection, implementation and evaluation; regulatory requirements; organizational implications of expanding computer usage; and the strategic positioning of information systems and technology for business optimization and collaborative advantage. The course is targeted to those who at some point in their career will oversee or have direct input on one of the highest expenditure areas for health care organizations--the planning, selection, deployment, and management of electronic health records (EHR), management decision-support and tracking systems (DSS), and other health information technologies (HIT).

HMP667
Advanced Seminar in Health Care Financial Management
Winter term(s)
3 Credit Hour(s)
Instructor(s): Grazier, Kyle
Prerequisites: HMP Student or Perm of Instr. and HMP 607
This course builds on the language, theories and methods of finance and accounting through the study of financial transactions involving health care and other industries. Topics include financing alternatives, valuations, financial forecasting, risk management, entrepreneurship and sustainable growth. Among the transactions studied are corporate lending, venture capital acquisition, and public offerings. Cases, readings, lectures.
HMP668
Introduction to Health Informatics
Winter term(s)
3 Credit Hour(s)
Instructor(s): Zheng, Kai
Prerequisites: Graduate status
This course introduces students to the concepts and practices of health informatics. Topics include: a) an introduction to the health informatics field; b) major applications and commercial vendors; c) decision support methods and technologies; d) analysis, design, implementation, and evaluation of healthcare information systems; and e) new opportunities and emerging trends. A semester-long group project provides students with hands-on experience in planning and building healthcare information systems; associated ethical and legal topics, software engineering and human-computer interaction issues, and user adoption and outcome evaluation methodologies will also be addressed.
This course is cross-listed with SI542, BI668 in the School of Information, School of Medicine (tentative), and Bioinformatics Graduate Program at Center for Computational Medicine and Biology (tentative) department.

HMP669
Database Systems and Internet Applications in Health Care
Winter term(s)
3 Credit Hour(s)
Instructor(s): Zheng, Kai
Prerequisites: Grad status
This course covers relation database theory and database-web systems with applications to health care. The students are expected to develop a working knowledge of design, implementation, administration and maintenance of small to medium relational database systems. The students will also be exposed to current technology for deployment, use and administration of relational databases through the Internet.

**HMP671**
Cross-national Comparisons of Aging and Health
Winter term(s)
3 Credit Hour(s)
Instructor(s): Liang, Jersey
Prerequisites: None
This course examines aging and health within a global context. The focus will be placed primarily on old age support systems in the United States and several other developed nations (e.g., Canada, Germany, Japan, and United Kingdom). Specifically, comparisons across these nations will be made in: (a) population aging and health, (b) acute care, (c) long-term care, and (d) family-based support, and (e) financial security in old age. Population aging and health in developing nations (e.g., China, India) will be reviewed in light of the lessons learned in the developed countries.

**HMP675**
Sociology of Medicine
Fall term(s)
3 Credit Hour(s)
Instructor(s): Liang, Jersey
Not offered 2007-2008
This course provides an overview of sociological approaches to the analysis and understanding of health and health care issues. Key topics include (a) social construction of health and sickness, (b) social structure and health, (c) health professions, (d) social organization of health care, and (f) social change, health, and health care. Applications of sociological concepts and methods to health management and policy will be emphasized. To foster a global perspective, health and health care in U.S. will be contrasted with those in other nations.

HMP677
Health Care Organization: An International Perspective
Fall term(s)
3 Credit Hour(s)
Instructor(s): Liang, Jersey
Not offered 2007-2008
Prerequisites: Grad Status
The American pursuit in making its health care system more equitable, effective, and efficient has largely been based on domestic health services research and policy analysis. Although the health care system in each nation is somewhat unique to its culture and history, the issues each faces are remarkably similar. Nations can learn a lot from one another in meeting these challenges. This course examines health care systems in approximately eight developed and developing nations (e.g., United States, Germany, Japan, Canada, United Kingdom, China, Mexico, and Kenya). In particular, comparisons will be made across these nations in the following areas: (a) population health, (b) health care financing and control, (c) health professionals and their patients, (d) health care organization, and (e) health system performance and reform strategies. Understanding how health care is delivered around the world will lead to a better appreciation of the relative merits and limitations of various systems, and will yield many useful insights in management and policy decision making. At the completion of this course, students will be expected to: 1. Describe the global burden of disease and health disparities, 2. Understand how health care is organized and financed in selected developed nations, 3. Learn the strengths and weaknesses of these systems, 4. Know the recent health care reforms enacted in these countries and their results, and 5. Apply the knowledge of international systems to the analysis of current issues in health policy and management. The course will be taught by a combination of lectures, in-class exercises, roundtable discussions, and site visits. Effective interventions in health care and related management and policy issues will be emphasized.

HMP681
Enhancing Physician Performance
Winter term(s)
Not offered 2007-2008

This course will introduce students to the principles of medical management and enhancing physician performance. The class will emphasize techniques and perspectives that optimize a manager's ability to lead and cooperate with these important providers, such as: hiring physicians, managing physicians with disruptive behavior, improving outcomes, disease management, compensating physicians, using case mix and severity adjustment, clinical pathways, practice profiling, clinical information systems, quality and change management, creating an efficient work environment, benchmarking, physician leadership, and legal aspects of managing physicians.
Analysis of cases dealing with administrative and policy issues in health services, offered as the integrative capstone course for persons completing the MHSA or MPH in management in the Department of Health Management and Policy. Emphasis is on student problem solving in ill-defined, multi-faceted problems taken from actual situations. These problem-solving experiences in the class with student written and oral presentations constitutes one of the final competency assessment options for masters students in the Department of Health Management and Policy. On Job/On Campus students choose between HMP664 and HMP682.

**HMP683**  
Quality of Care  
Fall term(s)  
3 Credit Hour(s)  
Instructor(s): Wyszewianski, Leon  
Prerequisites: HMP 601 or HMP 602  
Focuses on the concepts and practices of quality of care assessment, control, and improvement in health care delivery settings. Designed to provide an in-depth understanding of basic concepts and frameworks and of their applicability and relevance in specific situations. Covers major approaches to quality of care assessment, improvement, and control currently in use in the health care field.

**HMP684**  
The Politics of Health Services Policy  
Winter term(s)  
3 Credit Hour(s)  
Instructor(s): Greer, Scott  
**Not offered 2007-2008**  
Prerequisites: MHSA student or PI
Understanding politics is crucial for understanding a health care organization's environment and determining its strategy. Whether through payment structures, coverage plans, safety regulation or simple zoning conflicts, governments shape health care delivery. This course equips students to understand and influence American politics. It presents the basic institutions and political strategies of contemporary health policymaking, focusing on the politics of coverage expansion at the state and federal levels and other current political developments. Major topics will include analyzing the structure and lessons of various federal coverage programs and student-led research into the politics of state health coverage schemes. Students will leave the class with an understanding of the political context in which health care executives operate and the importance of engaging in the political process. Since health care policy is often unpredictably influenced by the broader flow of politics, the course will frame health care delivery in the United States in the context of current American politics. This class can be taken as an elective or in fulfillment of the law/politics requirement.

HMP685
The politics of Public Health Policy
Winter term(s)
3 Credit Hour(s)
Instructor(s): Greer, Scott
Not offered 2007-2008
Prerequisites: Grad Standing
Policy requires politics: behind every positive or negative decision governments make, there are elected politicians, politically skilled officials, journalists, and other stakeholders. Understanding the world of politics is crucial to influencing and implementing policies for public health. Indeed, it is impossible to understand public health policy outside of its political context. This class presents the basic institutions and politics of contemporary public health policymaking through studies of institutions and contemporary policy debates. Through analysis of case studies including obesity, state health plans, smoking and pharmaceutical regulation, students will explore the influence of politics on the definitions and decisions of public health issues. They will leave the class with an understanding of how politics explains current public health policymaking debates and an improved ability to understand the politics of major public health policy issues. This class can be taken as an elective, as a BIC requirement, or in fulfillment of the HMP law/politics requirement.

HMP689
Seminar on Issues of Long-Term Care Policy and Administration
Winter term(s)
3 Credit Hour(s)
Instructor(s): Fries, Brant E

Not offered 2007-2008
Prerequisites: HMP 600 or equiv - second year preferred
This seminar addresses current topics in the care of the elderly and other long-term care recipients in both institutional and non-institutional settings. The primary goal is to develop critical insight into a variety of current, multi-faceted issues employing case studies, lectures, and student presentations. A series of modules, of varying length, will address major issues chosen in part from: nursing home payment systems design, quality assurance in nursing homes, cross-cultural comparisons of long-term care. These topics will be considered using background techniques from management strategic planning, finance, organizational theory, statistics, etc. Each term, topics to be discussed will be determined collaboratively by faculty and students.

HMP690
Readings in Health Management and Policy
Fall, Winter, Spring-Summer term(s)
1-4 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Grad Status and Perm Instr
Directed readings or research on selected topics and problems relevant to health management and policy. May be elected more than once.

HMP693
Mental Health Policy in the United States
Fall term(s)
2-3 Credit Hour(s)
Instructor(s): Eisenberg, Daniel
Prerequisites: Grad Status
Students in this course will analyze mental health policies in the U.S. The class will meet once a week and have an interactive seminar format. We will approach various topics from both descriptive and analytical perspectives. Examples of topics include mental health insurance parity, the integration of mental health services and other health services, delivery of services in schools, delivery of services in prisons, and incentives influencing the balance between medication and therapy.

HMP695
Public Health Policy Issues in Womens Health
Winter term(s)
3 Credit Hour(s)
Instructor(s): Rogers, Juliet
Prerequisites: Grad Status
This course will explore current public health policy issues in U.S. womens health, providing students will the skills necessary to analyze womens health issues from a policy perspective. Current policy issues will be identified and analyzed for a wide variety of womens health issues. In addition, the course will provide an overview of gender differences in morbidity and mortality across the life course, theories of explanations for these differences, and issues related to gender and biomedical research

HMP697
Physician Managers in Managed Care
Fall term(s)
1 Credit Hour(s)
Instructor(s): Weiner, Lowell
Not offered 2007-2008
Prerequisites: Grad Status
This course will introduce the student to the role of the medical director in managed care organizations. Focus will be on the medical director's responsibilities in the areas of benefits administration, utilization management, quality management, credentialing, physician relations, planning and budget.

**HMP800**
Doctoral Seminar on Health Services System I
Fall term(s)
2 Credit Hour(s)
Instructor(s): Alexander, Jeffrey A
Prerequisites: HMP 600, HMP 601 or equiv
Intensive examination of selected topics in HMP 600. For doctoral students in Health Services Organization and Policy.

**HMP801**
Doctoral Seminar of Health Services System II
Winter term(s)
2 Credit Hour(s)
Instructor(s): Wyszewianski, Leon
Prerequisites: HMP800
Intensive examination of selected topics in HMP 601. For doctoral students in Health Service Organization and Policy.

**HMP809**
Logic and Methods of Medical Care Research(Psych 809)
Winter term(s)
3 Credit Hour(s)
Instructor(s): Alexander, Jeffrey A
Principles of the scientific method and the logic of the research process. The logic and methodologies of problem formulation, development of hypotheses and objectives, research design, sampling, operationalism and measurement, coding and analysis strategies. Primarily for doctoral students in Health Services Organization and Policy.

HMP815
Readings in Medical Care
Fall, Winter, Spring, Spring-Summer, Summer term(s)
1-4 Credit Hour(s)
Instructor(s): Staff
Prerequisites: Perm Instr
Directed readings in special areas. May be elected more than once. Primarily for doctoral students in Health Services Organization and Policy.

HMP826
Applied Econometrics in Health Services Research
Fall term(s)
3 Credit Hour(s)
Instructor(s): Staff
Not offered 2007-2008
Prerequisites: Econ571
Application of advanced econometric techniques to problems in the health services field. Focuses on selected econometric topics, including pooled cross-section/time-series data, limited dependent variables, multi-equation systems, and translog cost functions. General discussion of appropriate techniques, with emphasis on students applying these techniques, using a variety of data sets. Series of computer exercises and empirical term paper required.
Advanced Seminar in Health Care Economics
Fall term(s)
3 Credit Hour(s)
Instructor(s): Hirth, Richard
**Not offered 2007-2008**
Prerequisites: Econ 501 and Perm Instr
Analysis of the application of advanced economic theory to problems in the health services field. Focuses on several health economics issues, including topics of current policy interest as well as topics for which the application of economic theory has been more fully explored, Classes will include a general discussion of the appropriate economic theory and empirical evidence and a critical review of the relevant health economics literature. Students must read approximately 30-40 articles and write several short papers.

HMP833
Research Topics in Sociology and Health Care Organization
Fall, Winter term(s)
3 Credit Hour(s)
Instructor(s): Staff
Prerequisites: HMP doctoral students or P.I.
HSOP Program requirements. A topic in sociology and health care organization-policy is selected each term for detailed critical, theoretical, and methodological analysis leading to development, in class, of propositions aimed at advancing scientific status of the area of inquiry. Analysis and development of content follows logic of the research paradigm. Required of students with a sociology cognate in the doctoral program in Health Services Organization and Policy

HMP835
Research Practicum
The purpose of this course is to allow each student, early in his or her doctoral career, to gain experience in the actual performance of health services research. The experience will enable students to build sound research skills and to gain knowledge of the nature of inquiry in their discipline as well as in the field of health services research. Each student in the HSOP program is expected to elect a total of 6 credits in HMP 835.

HMP840
Integrative Seminar in Health Services Organization and Policy
Winter term(s)
3 Credit Hour(s)
Instructor(s): Eisenberg, Daniel
Conceptual and methodological problems in the study of health services organization. Use of the scientific method and statistical design to study the provision and utilization of health services. Development and use of models from the social sciences as conceptual sources. For doctoral students in Health Services Organization and Policy.

HMP990
Dissertation/Precandidates
Fall, Winter, Spring, Spring-Summer, Summer term(s)
1-8 Credit Hour(s)
Instructor(s): Staff
Election for dissertation work by doctoral students not yet admitted to status as candidate.

HMP995
Dissertation Research for Doctorate in Philosophy
Fall, Winter, Spring, Spring-Summer, Summer term(s)
8 Credit Hour(s)
Instructor(s): Staff
Election for dissertation work by doctoral students admitted as candidates