

# FPH - FAMILY PUBLIC HEALTH

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## FPH 7010 Seminar in Public Health Cr. 1

Introduction to basic public health concepts, functions, and activities. Offered Fall.

**Restriction(s):** Enrollment is limited to Graduate level students.

## FPH 7015 Biostatistics I Cr. 4

Descriptive statistics; elementary probability; measures of central tendency and of dispersion; random samples; probability distributions including the binomial, the Poisson, the normal, the t, the chi-square, and the F; introduction to estimation and hypothesis testing; rates and vital statistics. Computer laboratory included. Online version is offered for non-M.P.H. students only during winter semesters. Offered Fall.

**Restriction(s):** Enrollment is limited to Graduate level students.

## FPH 7020 Biostatistics II Cr. 3

Statistical models for health-related fields. Analysis of variance, experimental design, linear regression, logistic regression and proportional hazards models. Topic include simple and multivariable models, model fitting procedures, model diagnostics and multiple comparisons procedures. Application of these methods to health-related data. Offered Fall.

**Prerequisites:** ([FPH 7015 with a minimum grade of C])

**Restriction(s):** Enrollment is limited to Graduate level students.

## FPH 7100 Health Care Organization and Administration Cr. 3

General overview of the U.S. health care system; social and organizational aspects of the delivery, financing, utilization, planning, and development of health care systems. Offered Spring/Summer.

**Restriction(s):** Enrollment is limited to Graduate level students.

## FPH 7150 Probability and Inference Cr. 4

Mathematical foundation of statistics based on principle of probability. It covers notions of probability, conditional probability, Bayes' theorem, random variables discrete/continuous, expectation and standard deviation, moment generating function, bivariate distribution, special sampling distribution (e.g. chi-square, t, F-distribution etc.), CLT, sufficiency, completeness, point estimation, MLE, unbiased and UMVUE, testing of hypothesis, UMP test, LRT, confidence interval, etc. Offered Fall.

**Restriction(s):** Enrollment is limited to students with a major, minor, or concentration in Biostatistics, Public Health or Public Health Practice; enrollment is limited to Graduate or Professional level students.

## FPH 7160 Linear Regression and ANOVA Cr. 3

Statistical methods utilized in linear regression and analysis of variance (ANOVA). Theoretical underpinnings of linear model techniques are emphasized with a focus on gaining practical knowledge in linear model data analysis in public health. Topics will include model building strategies, assumption checking and the theoretical aspects of general hypothesis testing. Offered Fall.

**Restriction(s):** Enrollment is limited to Graduate level students.

## FPH 7210 Research Methods for Health Professionals Cr. 4

Logic of research design; formulation of research problems and objectives; development of hypotheses, specification of variables; sampling; random assignment; issues in measurement; data collection; sources of error; analyses. Computer laboratory included. Offered Fall.

**Prerequisites:** ([FPH 7015 with a minimum grade of B-]) AND ([FPH 7240 with a minimum grade of B-])

**Restriction(s):** Enrollment is limited to Graduate level students.

## FPH 7230 Health Program Evaluation Cr. 3

Principles and application of program evaluation in health care fields. Design, implementation, and management of evaluations in health environments. Offered Fall.

**Restriction(s):** Enrollment is limited to Graduate level students.

## FPH 7240 Epidemiology Cr. 3

Epidemiologist's task list; research of problems without known etiology; infectious and non-infectious models; examination of current problems. Offered Fall.

**Restriction(s):** Enrollment is limited to Graduate level students.

## FPH 7250 Applied Epidemiology Cr. 3

Epidemiological principles, practice, and methodology as applied to researchable health delivery or health questions. Emphasis on design, conduct and analysis of non-experimental studies; student design of epidemiological study. Offered Winter.

**Prerequisites:** ([FPH 7015 with a minimum grade of C]) AND ([FPH 7240 with a minimum grade of C])

**Restriction(s):** Enrollment is limited to Graduate level students.

## FPH 7260 Epidemiologic Methods Cr. 2

Methodologic concepts underlying the science of epidemiology; conduct and interpretation of epidemiologic studies. Emphasis on elements of observational study design, data analysis, and inference, including issues related to causation, bias, and confounding. Offered Irregularly.

**Prerequisite:** FPH 7015, with a minimum grade of C ; FPH 7240, with a minimum grade of C

**Restriction(s):** Enrollment is limited to Graduate level students.

## FPH 7300 Health Care Policy Cr. 3

Concepts, issues, and problems in health care policy; substantive information regarding policy formulation and content. Offered Biannually (Fall).

**Restriction(s):** Enrollment is limited to Graduate level students.

## FPH 7320 The Social Basis of Health and Health Care Cr. 3

Social, cultural, and psychological aspects of health and health-related behavior. Topics include: health prevention and promotion, relationship between stress and illness, health services utilization, patient-practitioner interactions, and coping with chronic illness. Offered Winter.

**Restriction(s):** Enrollment is limited to Graduate level students.

## FPH 7340 Generalized Linear Models and Categorical Data Cr. 4

Statistical analysis of categorical and non-normal data, with an emphasis on the cohesive approach of generalized linear models. Specific types of models to be examined include logistic regression, probit regression, and log-linear models. Offered Winter.

**Prerequisites:** ([FPH 7150 with a minimum grade of C]) AND ([FPH 7160 with a minimum grade of C])

**Restriction(s):** Enrollment is limited to Graduate level students.

## FPH 7350 Statistical Programming for Public Health Practice Cr. 2-3

Statistical programming using R and SAS in public health. SAS topics include error checking, reading datasets, coding and formatting variables, writing reports, tables, and graphs. R topics include data visualization and analysis, numeric optimization and bootstrapping. Offered Winter.

**Restriction(s):** Enrollment is limited to Graduate level students; enrollment limited to students in the School of Medicine.

**FPH 7370 Health, Disease, and Aging Cr. 3**

Study of health, health problems, and medical care of aging populations. Biomedical, psychosocial and public health aspects of later life illness; family, community, and societal response to health problems; hospital and longterm care; disparities in health and medical care. Offered Spring/Summer.

**Restriction(s):** Enrollment is limited to Graduate level students.

**FPH 7390 Biostatistical Methods in Epidemiology Cr. 4**

Application and interpretation of biostatistical methods used in epidemiologic studies. Topics include: approaches to missing data, sensitivity analysis, bootstrap methods, statistical power, sample size estimation, and analysis of ordinal exposures and outcomes. Offered Irregularly.

**Prerequisite:** FPH 7020, with a minimum grade of C ; FPH 7260, with a minimum grade of C

**Restriction(s):** Enrollment is limited to Graduate level students.

**FPH 7420 Principles of Environmental Health Cr. 3**

Current environmental health issues that affect individuals at work and in their communities. Sources of chemical, physical, and biological agents; their associated health effects. Air pollution, exposure prevention, water and solid waste management, and occupational health and safety. Impact of environmental exposures on human health; case studies. Offered Winter.

**Restriction(s):** Enrollment is limited to Graduate level students.

**FPH 7440 Practicum in Public Health Cr. 3**

Individual field experience in public health setting. Integration and synthesis of content and experiences of the public health courses; direct hands-on experience, with appropriate reporting mechanism. Offered Every Term.

**Restriction(s):** Enrollment is limited to Graduate level students.

**FPH 7460 Linear Mixed Models Cr. 3**

Statistical modeling to incorporate random effects. Topics will include clustered-data analysis, longitudinal data analysis, hierarchical linear models, correlated data, and covariance structure. Offered Winter.

**Prerequisites:** ([FPH 7150 with a minimum grade of C] OR [FPH 7160 with a minimum grade of C])

**Restriction(s):** Enrollment is limited to Graduate level students.

**FPH 7480 Design of Experiments and Clinical Trials Cr. 3**

Introduction to five different types of experimental designs and design and analytic issues that arise in each of the study designs. Extension of the designs to clinical trials and microarray experiments are discussed. Offered Fall.

**Prerequisites:** ([FPH 7015 with a minimum grade of C])

**Restriction(s):** Enrollment is limited to Graduate level students.

**FPH 7500 Survival Analysis Cr. 3**

Statistical methods for analyzing survival data, including parametric and nonparametric approaches. Topics include Kaplan-Meier estimation, log rank test, and proportional hazards regression analysis. Offered Fall.

**Prerequisites:** ([FPH 7150 with a minimum grade of C] OR [FPH 7160 with a minimum grade of C])

**Restriction(s):** Enrollment is limited to Graduate level students.

**FPH 7510 Community Health: Detroit Initiatives Cr. 2-3**

Current urban health initiatives examined using a range of social science frames; focus on field work skills, perspectives, and methodologies useful for working with ongoing community-based initiatives and grass-roots organizations. Includes optional field experience for 1 credit. Offered Irregularly.

**Restriction(s):** Enrollment is limited to Graduate level students.

**FPH 7760 Community Health Education Cr. 3**

Analysis of community health problems and change strategies for health promotion; application of principles and techniques of community health education to multiple ethnic groups and diverse health problems. Offered Biannually (Winter).

**Restriction(s):** Enrollment is limited to Graduate level students.

**FPH 7860 Principles of Occupational Health Cr. 3**

Current occupational health issues; interplay between work environment and worker health. Through case studies, students employ integrative approaches to ensure worker safety and to optimize worker health, well-being and performance. Offered Fall.

**Restriction(s):** Enrollment is limited to Graduate level students.

**FPH 7870 Occupational Health Psychology Cr. 3**

Theory and research on relationships between the work environment and employee health and well-being; development and maintenance of health people within healthy organizations and the prevention of illness and injuries. Offered Winter.

**Restriction(s):** Enrollment is limited to Graduate level students.

**FPH 7880 Organizational Determinants of Employee Health and Productivity Cr. 3**

Organizational and leadership theories, research and practical applications of practices and processes contributing to employee health and productivity; emphasis on service and knowledge workers, that make up 80 percent of the workforce. Offered Spring/Summer.

**Restriction(s):** Enrollment is limited to Graduate level students.

**FPH 7990 Directed Studies in Community Health Services Cr. 1-6**

Studies dealing with the public health practice and research to supplement regular course offerings. An approved directed study proposal is required prior to registration. Offered Every Term.

**Restriction(s):** Enrollment is limited to Graduate level students.

**FPH 8090 Interdisciplinary Perspectives on Addictions Cr. 3**

This course is designed for students in the alcohol and drug studies certificate program, but is available to other students with consent of instructor. Capstone course designed to integrate content from other substance abuse courses in a multidisciplinary context. Offered Spring/Summer.

**Restriction(s):** Enrollment is limited to Graduate level students.

**FPH 8990 Master's Project Cr. 1-3**

Offered Every Term.

**Restriction(s):** Enrollment is limited to Graduate level students.

**FPH 8999 Master's Thesis Research and Direction Cr. 2-8**

Offered Every Term.

**Restriction(s):** Enrollment is limited to Graduate level students.

**Repeatable for 8 Credits**