

# Department of Epidemiology and Population Health

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The Department of Epidemiology and Population Health offers courses in epidemiology, biostatistics, and population health to graduate students in the Faculty of Health Sciences and the Faculty of Medicine. The course offerings to students in the Master of Public Health (MPH) program, the Master of Science (MS) in Epidemiology program, and the Master of Science (MS) in Population Health program are in the form of core, required, and elective courses. In addition, members of the department offer courses in statistics and epidemiology to students in the Medical Degree program, and coordinate and participate in teaching courses in the preventive medicine and public health programs in the Faculty of Medicine.

**EPHD 225 Medical Statistics 1.2; 2 cr.**  
An introductory course for Medicine I students to the study of statistics applied to medicine. Topics include introduction to design in medical research; planning and conducting survey research; methods of describing data; statistical inference for means and proportions, both parametric and non-parametric; and multiple linear regression and logistic regression.

**EPHD 226 Epidemiology 2.2; 3 cr.**  
A course required of Medicine II students which consists of lectures and complementary practical sessions that provide students with basic epidemiological tools relevant to both clinical and public health practice. This course also covers issues in design, conduct, and analysis of epidemiological studies, in addition to critical appraisals of scientific literature.

**EPHD 311 Epidemiology and Biostatistics 3.2; 4 cr.**  
A course intended to provide the basic principles of epidemiology and biostatistical skills in an integrative approach, which brings together these two related public health disciplines. The course demonstrates methods of exploring, organizing, and presenting data; and also presents the foundations of statistical inference. Statistical analysis covers comparison of sample means and proportions, simple linear regression, and correlation. Furthermore, it provides the basic principles of epidemiology with emphasis on an understanding of the different study designs, analytical methods, and internal and external validity of such designs. Applications of the statistical techniques are carried out using the statistical package SPSS.

**EPHD 312 Analysis of Continuous Data 2.2; 3 cr.**  
A course that deals with concepts and methods for the analysis of continuous outcomes. Main focus is on multiple linear regression. Analytical means to control for confounding and effect modification while maximizing precision is explored. The methods of regression diagnostics are explained. Basic theory is considered; however, the emphasis is on application. Applications of the statistical techniques are carried out using the statistical package SPSS. *Prerequisite: EPHD 311.*

**EPHD 313 Analysis of Categorical Data 2.2; 3 cr.**  
A course that covers univariate and multivariate statistical techniques for categorical data. Topics include distributions, measures of association and inference for categorical data, log-linear models for multi-contingency tables, and logistic regression for binary, polytomous, and ordinal responses. In addition, the concept of maximum likelihood estimation is introduced. Applications of the statistical techniques are carried out using the statistical package STATA. *Prerequisite: EPHD 311.*

**EPHD 320 Design and Analysis of Epidemiological Studies 2.2; 3 cr.**  
A course that introduces elements of study design, data analysis, and inference in epidemiologic research. Cohort and case-control studies are the focus of discussion. Problems of exposure and disease definitions, confounding interaction, and misclassification are considered. Furthermore, the statistical package STATA is introduced. *Prerequisite: EPHD 311.*

**EPHD 321 Design and Analysis of Clinical Trials 1.2; 2 cr.**  
A course that focuses on issues in the design and organization of randomized controlled clinical trials: ethical and legal issues, patient selection, recruitment, masking and randomization, endpoint definition, protocol development, and statistical analysis. Designs such as cross-over designs, factorial-designs, and meta-analysis are discussed. *Prerequisite: EPHD 320 or any other introductory epidemiology course.*

**EPHD 322 Special Topics in Epidemiology 2.0; 2 cr.**  
A course that covers selected topics of special interest to trainees in epidemiology. Examples include assessment of disease burden using epidemiologic studies, occupational epidemiology, epidemiology of aging, epidemiology of maternal-child problems, or nutritional epidemiology.

**EPHD 323 Epidemiology of Infectious and Chronic Diseases 3.0; 3 cr.**  
A course that examines patterns of occurrence and strategies for control and prevention of infectious and chronic diseases, selected because of their importance as causes of morbidity and mortality at the national, regional, and international level.

**EPHD 324 Special Topics in Biostatistics 1–3 cr.**  
A course that covers selected topics in biostatistics of special interest to researchers and trainees in epidemiology and population health. *Prerequisite: EPHD 311 or consent of instructor.*

**EPHD 325 Medical Statistics 1.2; 2 cr.**  
Similar to EPHD 225.

**EPHD 326 Epidemiology 2.2; 3 cr.**  
Similar to EPHD 226.

**EPHD 330 Demographic Methods for Public Health Decision-Making 2.0; 2 cr..**

An introductory course on selected demographic methods and measures of population health. The emphasis is on conceptual issues, measurement and hands-on experience with basic techniques, as well as inequalities in health over the life course. Topics covered include sources and quality of population data; rates and ratios; standardization and decomposition; mortality measures and the life-table; perceived versus actual morbidity; the burden of disease; period and cohort measures of fertility; migration rates; and marriage indices.

**EPHD 331 Population Change and Health 3.0; 3 cr.**

An intensive course that examines the field of population studies, with a survey of major issues and research findings from the Middle East region. Topics covered include population growth, sources of demographic data, the demographic transition, models of fertility decline, contemporary fertility transition, fertility and reproductive health, mortality trends, health and mortality decline, urbanization and health, international migration, marriage and family patterns, aging, population, and policy. *Open to undergraduate seniors.*

**EPHD 332 Population and Health Policy 3.0; 3 cr.**

A course designed to explore the links between population, health, and development issues, with a focus on population policies and programs in the Middle East and North Africa. Topics include demographic trends and their implications for health policies; family planning programs and policies; the reproductive health paradigm; HIV/AIDS; gender and population policy; special health needs posed by the youth 'bulge' and population aging; political dimensions of population policies; and debates between the policy objectives of reducing population growth at the macro level and promoting individual well-being.

**EPHD 333 Special Topics in Population Health 3.0; 3 cr.**

An examination of specific topics in population health such as aging, burden of disease, reproductive health, fertility of adolescents, social determinants of population health, and the demography of refugee populations.

**EPHD 334 Reproductive Health 3.0; 3 cr.**

A course that examines selected issues in reproductive health with a focus on developing countries. Topics covered include pregnancy and childbirth, unintended pregnancy, maternal mortality, infertility, gynecological morbidity including sexually transmitted infections, sexuality, birth spacing and family planning, and reproductive rights. Particular emphasis is placed on conceptual issues and recent debates about reproductive health within the context of the international agenda on reproductive rights established at the 1994 Cairo Conference on Population and Development.

**EPHD 339 Tutorial in Epidemiology and Population Health 1–3 cr.****EPHD 340 Seminar 0 cr.**

A seminar that provides an opportunity to review and critique literature in epidemiology or population health from a methodological and conceptual basis, and to learn about faculty research. *Offered in the fall and spring semesters.*

**EPHD 345 Research Project 1.2; 2 cr.**

A course that is required of students exempted from EPHD 365. The course involves a research project that the student carries out within his/her area of concentration or interest, as an individual or as part of a group. This research may focus on one or more of the qualitative and quantitative methodologies introduced in Research Design and Introduction to Epidemiology and Biostatistics. This course gives the student the chance to apply background knowledge and master research skills in an area of interest. *Prerequisites: IDHL 310, EPHD 311, and completion of all, or all but one, of the core and concentration courses.*

**EPHD 365 Practicum in Epidemiology and Biostatistics 0.30; 3 cr.**

An individual program for students to gain research experience in epidemiology and biostatistics mainly through data collection and analysis of various types of data. Students work under the direction of a faculty advisor and may also work with an outside preceptor if appropriate. Field study sites may include the Ministry of Public Health, Ministry of Social Affairs, non-governmental agencies, UN agencies (UNICEF, ESCWA, UNFPA), and health services organizations. *Prerequisite: PBHL 355 and completion of all, or all but one, of the concentration courses.*

**EPHD 399 Thesis 6 cr.**