

Epidemiology (EPID)

EPID 5001 Epidemiology I: Principles of Epidemiology 3 Credits

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

EPID 5002 Epidemiology II 3 Credits

This course builds on epidemiologic concepts introduced in EPID-501 with emphasis on causal inference and common study designs. Conceptual understanding rather than quantitative estimation will be emphasized. However, it is assumed that students will have a basic understanding of common epidemiologic and statistical calculations taught in EPID 501 and 503. By the end of the course, students will be able to understand causal inference in epidemiologic studies; develop appropriate study designs for specific research questions with particular emphasis on health equity; recognize and think of ways to remediate common biases in study designs; and gain knowledge of confounding and effect modification in epidemiologic studies.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

EPID 5003 BioStats I: Intro to Biostatistics 3 Credits

This course is designed for introductory biostatistical theory and application for students pursuing a master's degree in fields outside of the Department of Biostatistics, Bioinformatics, and Biomathematics. Students first learn the four pillars of exploring and displaying data appropriately, exploring relationships between two variables, issues of gathering sample data, and understanding randomness and probability. On these pillars, students then can develop the platform for statistical inference including proportions and means, multiple regression, and ANOVA.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

EPID 5004 Intro to Epidemiological Statistics 1 Credit

This is an introductory course to statistical software packages used in epidemiological applications, utilizing the open-source programming language R and the popular statistical software SAS.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

EPID 5005 Biostatistics II 3 Credits

This course is designed for applied biostatistical theory and application for epidemiology. Students are expected to have understanding of EPID 503 material. More advanced modeling for linear models, general linear models, ANOVA and ANCOVA, logistic regression, survival analysis, and sample size planning are included.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

EPID 5006 Computer Software Lab II 1 Credit

This is an advanced course in statistical software and computation for applied applications of biostatistics methods in epidemiological research.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

EPID 5007 Intro Social Behavior Health Disparities Research 3 Credits

This is a core course required for all students in the MS Epidemiology program. The course will be divided into two modular courses per semester: (A) Part I: Health Behavior Theory, Research Design and Methods; and (B) Part II: Principles and Practice of Health Disparities Research. This course introduces students to individual-, interpersonal-, and community-level theories of behavior commonly used in public health science, as well as to methods for instrument development, testing, and measurement of health behavior from multiple perspectives. It also introduces students to concepts of health disparities and health equity, provides a broad overview of existing health disparities in the US and globally, and introduces students to quantitative methods in health disparities research.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

EPID 5008 Intro to Cancer Epidemiology 1.5 Credits

In this course, students in the Cancer Epidemiology track and other interested MS students will learn how epidemiological methods are applied to research on cancer causes, surveillance, and prevention.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

EPID 5009 Intro to Infectious Disease Epidemiology 1.5 Credits

This course provides an introduction to the basic principles of infectious disease epidemiology focusing on emerging and re-emerging disease agents that affect medical care and public health, e.g. viruses, bacteria and eukaryotic parasites, with special emphasis on how these infections cause or exacerbate health disparities locally and globally. This is a core course required for all students in the M.S. in Epidemiology program.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

EPID 5010 Research Ethics and Professional Development Seminar 1 Credit

Epidemiology research ethics & professional development seminar

Level: Graduate, Undergraduate

Grading: Pass/Fail Default

EPID 5011 Research Ethics Development 1 Credit

This is a core course required for all students in the M.S. in Epidemiology program. This course is designed to provide ethics training as it related to safeguarding the rights and welfare of all human subjects in compliance with federal law and Institutional policies. Also provided will be seminars on various epidemiology topics from differing perspectives, e.g., academic, industry, and government.

Level: Graduate, Undergraduate

Grading: Pass/Fail Default

EPID 5012 Research Ethics Prof Developm 1 Credit

This course explores ethical considerations and issues pertaining to scientific research, especially biomedical research with human subjects. Issues regarding scientific integrity, ethical research design and implementation, and research involving special populations are discussed and analyzed. Certification of training in the protection of human subjects is accomplished during this course. The core content areas of research ethics for human subjects include conflict of interest and commitment, collaborative science, data acquisition, publication practices and responsible authorship, peer review, and research misconduct. In addition, guest speakers will expose students to a wide variety of topics in epidemiology from different perspectives, i.e., academia, industry, and government.

Level: Graduate, Undergraduate

Grading: Pass/Fail Default

Course registration restrictions:

Enrollment is limited to Graduate level students.

EPID 5013 Res Ethics Prof Devlp 1 Credit

This course explores ethical considerations and issues pertaining to scientific research, especially biomedical research with human subjects. Issues regarding scientific integrity, ethical research design and implementation, and research involving special populations are discussed and analyzed. Certification of training in the protection of human subjects is accomplished during this course. The core content areas of research ethics for human subjects include conflict of interest and commitment, collaborative science, data acquisition, publication practices and responsible authorship, peer review, and research misconduct. In addition, guest speakers will expose students to a wide variety of topics in epidemiology from different perspectives, i.e., academia, industry, and government.

Level: Graduate, Undergraduate

Grading: Pass/Fail Default

Course registration restrictions:

Enrollment is limited to Graduate or Undergraduate level students.

EPID 5014 EPID Capstone 3 Credits

The Capstone is a self-directed, independent project completed with guidance from a capstone advisor that must address health disparities that will benefit a community, community partner, or program. Accordingly, it is expected to be a substantive and original body of work that allows students to synthesize and integrate knowledge from their training and chosen concentration through the completion of a paper. The capstone represents the culmination of the student's educational experience in the Georgetown MS in Epidemiology Program. Each student is responsible for identifying a focus area for their capstone with the assistance and guidance of their capstone advisor.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

EPID 5015 Meta-Analysis - Public Health 3 Credits

Meta-analysis is a statistical tool to combine findings from multiple independent studies. In recent years, it has been increasingly used in many scientific fields. It plays an important role for improving precision of research results and resolving seemingly contradictory research outcomes. This course will introduce meta-analysis methods commonly used in public health and medical research. The course is designed to help students understand the statistical techniques used to conduct quantitative meta-analyses. Students will learn to systematically synthesize evidence from multiple studies, critically assess study heterogeneity and bias, and apply appropriate statistical models for quantitative data pooling. The course covers fixed-effect and random-effects models, forest plots, meta-regression, publication bias, and the use of software tools such as R and SPSS. Emphasis is placed on practical applications and the interpretation of findings.

Level: Graduate

Grading: Main Campus (UGrad, Grad)

EPID 5021 Informatics of Biological Syst 3 Credits

This course will focus on the management, analysis, and presentation of biological datasets. Datasets ranging from population level, epidemiological datasets to cellular level, nucleotide sequence and immunological datasets will be considered. Students will learn how to access, clean, analyze, and store biological datasets, including increasingly common large and high-dimensional datasets. This course will introduce different methods of statistical and mathematical analysis applicable to biological datasets.

Level: Graduate, Undergraduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

EPID 5514 Community Clinical Trials 3 Credits

Community-Based Clinical Trials Course description Community-based clinical trials are randomized experiments to measure the effect of an intervention outside of a healthcare setting. Such trials provide valuable evidence to inform policies and programs that impact health and other aspects of well-being. This course covers history, theory, and practical considerations for community-based trials. Students will leave the course better equipped to design a trial, and to critique the scientific literature. Readings will cover important trials for health and health equity in the US and abroad. Course objectives 1. Summarize the history of community-based trials and describe the role they play in evaluation of health interventions; 2. Explain the key differences, advantages and disadvantages of experimental versus observational study designs; 3. Develop a protocol, consent statement, monitoring plan and data collection plan for a clinical trial; 4. Review and critique manuscripts presenting the results of community-based trials using CONSORT guidelines; and 5. Explain the key ethical principles regarding the design, conduct and analysis of clinical trials

Level: Graduate, Undergraduate

Prerequisites: (EPID 501 or EPID 5001) and (EPID 503 or EPID 5003)

Grading: Main Campus (UGrad, Grad)

EPID 7949 EPID Independent Study 1-3 Credits

Level: Graduate

Grading: Main Campus (UGrad, Grad)

Course registration restrictions:

Enrollment is limited to Graduate level students.

EPID 9999 Thesis Research

Level: Graduate, Undergraduate

Grading: No Grade

Course registration restrictions:

Enrollment is limited to Graduate level students.