**EPIDEMIOLOGY (EPID)**

**EPID 600. Principles of Epidemiology for Public Health. 3 Credits.**
An introductory course that considers the meaning, scope, and applications of epidemiology to public health practice and the uses of vital statistics data in the scientific appraisal of community health. One lecture and two lab hours per week.

Rules & Requirements
Grading Status: Letter grade.

**EPID 625. Injury as a Public Health Problem. 3 Credits.**
This course examines unintentional injuries from a public health perspective. The course covers core concepts in injury prevention and control, including the epidemiology of unintentional injury, prevention strategies, behavioral models, child and adolescent injury, messaging framing, the Haddon matrix, and injury surveillance.

Rules & Requirements
Requisites: Corequisite, EPID 600.
Grading Status: Letter grade.
Same as: MHCH 625, HBEH 625.

**EPID 626. Violence as a Public Health Problem. 3 Credits.**
This course covers core concepts in violence prevention and control, including the epidemiology of violence, prevention strategies for interpersonal and intra-personal violence, behavioral models that describe power structures that reinforce personal and societal factors affecting self-harm and violence towards others, and violence directed towards children and adolescents.

Rules & Requirements
Grading Status: Letter grade.
Same as: MHCH 626, HBEH 626.

**EPID 695. Research in Epidemiology. 1-3 Credits.**
Permission of the instructor. A course for undergraduate students who wish to conduct research as part of an ongoing epidemiology project or as an independent activity.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics; 3 total credits. 3 total completions.
Grading Status: Letter grade.

**EPID 696. Problems in Epidemiology. 1-3 Credits.**
A course for undergraduate students who wish to make an intensive study of some special problems in epidemiology.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics; 3 total credits. 3 total completions.
Grading Status: Letter grade.

**EPID 700. SAS and Data Management. 3 Credits.**
An introduction to statistical analysis, programming, and data management, using the SAS programming language. Two lecture hours and two lab hours per week.

Rules & Requirements
Grading Status: Letter grade.

**EPID 701. R for Epidemiologists. 3 Credits.**
This course is intended to be the most effective and efficient way for UNC Epidemiology students to establish a foundation in the R programming language, RStudio IDE, and functional programming modalities. Special attention is given to R topics and packages relevant for epidemiological data management, analysis, and visualization.

Rules & Requirements
Grading Status: Letter grade.

**EPID 702. Systematic Review. 2 Credits.**
Course gives students background in assessing and conducting systematic reviews. Focuses on 1) reading, discussing, and critiquing systematic reviews on various topics; 2) reading background and methods articles on systematic reviews; 3) developing a focused question for systematic review; and 4) developing a protocol for a systematic review over the semester.

Rules & Requirements
Grading Status: Letter grade.
Same as: PUBH 702.

**EPID 704. Socially Responsible Epidemiology. 1 Credits.**
EPID 704 aims to provide level-setting and foundational content on ethics, equity, and anti-racism, with the goal of facilitating a transition into later equity content in the other epidemiology methods courses. Designed for first-year Epidemiology PhD students, second priority to Applied Epidemiology MPH students and permission of instructor required for others to enroll.

Rules & Requirements
Grading Status: Letter grade.

**EPID 705. Introduction to Deductive and Probability Logic in Epidemiology. 2 Credits.**
Permission of the instructor for nonmajors. Covers properties of logical relations, truth tables and Euler diagrams, valid and fallacious arguments, cognitive heuristics and biases, interpretations of probability, the probability calculus, Bayes’ theorem, binomial and normal distributions, applications of probability logic and probabilistic fallacies, all in an epidemiologic context.

Rules & Requirements
Grading Status: Letter grade.

**EPID 710. Fundamentals of Epidemiology. 3 Credits.**
An intensive introduction to epidemiological concepts and methods from a perspective of causal inference. This course is for students intending to lead, engage in, collaborate in, or interpret the results of epidemiologic studies. Some familiarity with biomedical concepts may be needed. Three lecture hours a week.

Rules & Requirements
Requisites: Corequisite, BIOS 600, SPHG 711, or equivalent, or instructor permission.
Grading Status: Letter grade.

**EPID 711. Clinical Measurement and Evaluation. 3 Credits.**
Provide a broad-based introduction to the concepts and methods of epidemiology with particular emphasis on their application in clinical research, clinical practice and health care policy.

Rules & Requirements
Grading Status: Letter grade.
Same as: PUBH 760.
EPID 712. Readings in Fundamentals of Epidemiology. 2 Credits.
A course applying the concepts and methods introduced in EPID 710 (required co-requisite for EPID 712) to readings in the epidemiologic, biometrical, and public health research literature.

Rules & Requirements
Requisites: Corequisite, EPID 710.
Grading Status: Letter grade.

EPID 715. Theory and Quantitative Methods in Epidemiology. 4 Credits.
Required preparation, competence in SAS. An in-depth treatment of basic concepts and skills in epidemiologic research, including problem conceptualization, study design, research conduct, data analysis, and interpretation. Four lecture hours per week.

Rules & Requirements
Requisites: Prerequisites, EPID 705, EPID 710 or 711; Corequisite, BIOS 545; Permission of the instructor required for nonmajors.
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics.
Grading Status: Letter grade.

EPID 716. Epidemiologic Data Analysis. 3 Credits.
Required preparation, documented SAS proficiency. This course is a combined lecture/lab format where students get hands-on experience in the analysis and interpretation of data from cohort and case-control studies. Students may take the SAS exemption exam in lieu of taking EPID 700, EPID 795 or BIOS 511.

Rules & Requirements
Requisites: Prerequisites, EPID 710 or EPID 711; and EPID 700 or EPID 795 or BIOS 511.
Grading Status: Letter grade.

EPID 718. Analytic Methods in Observational Epidemiology. 3 Credits.
This course provides an in-depth treatment of the analysis of data from observational epidemiologic studies, including both tabular and regression modeling approaches, and with an emphasis on the importance of study design in developing and executing an analysis plan. A major focus of the course is the semester-long, independent data analysis project in which students apply and integrate the concepts covered in class to a dataset and research question of their choosing.

Rules & Requirements
Requisites: Prerequisites, EPID 715 and EPID 716; Permission of the instructor for nonmajors.
Grading Status: Letter grade.

EPID 719. Readings in Epidemiologic Methods. 1 Credits.
A discussion in journal-club format of readings in general epidemiologic methods, from problem conceptualization to application of results.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics.
Grading Status: Letter grade.

EPID 722. Advanced Epidemiologic Methods. 3 Credits.
Permission required for non-majors. Required preparation, SAS software expertise. Course covers epidemiologic analysis of time-to-event data and emphasizes weighing threats to the accuracy of inferences. Class time is spent discussing weekly readings and homeworks.

Rules & Requirements
Requisites: Prerequisite, EPID 718.
Grading Status: Letter grade.
EPID 742. Biomarkers in Population-Based Research. 2 Credits.
This course surveys the major issues relevant to the application of
biomarkers in epidemiological research, including the logistical hurdles
in biospecimen collection and storage, assessments of biomarker quality,
analytic issues, and the interpretation of quantitative estimates.

Rules & Requirements
Grading Status: Letter grade.

EPID 743. Genetic Epidemiology: Methods and Applications. 3 Credits.
Concepts and methods of genetic epidemiology relevant to the study
of complex human diseases, including segregation analysis, linkage
analysis, and gene-environment interaction. Includes whole genome
approaches, as well as nonhuman systems. Three lecture hours a week.

Rules & Requirements
Requisites: Prerequisites, BIOS 545 and EPID 715; permission of the
instructor for students lacking the prerequisites.
Grading Status: Letter grade.

EPID 750. Fundamentals of Public Health Surveillance. 3 Credits.
This course provides the conceptual foundations and practical skills for
designing and implementing surveillance systems, for using surveillance
data for the conduct and evaluation of public health programs and
research.

Rules & Requirements
Grading Status: Letter grade.

EPID 751. Emerging and Re-Emerging Infectious Diseases. 3 Credits.
Basic principles of infectious diseases, focusing on emerging and
re-emerging disease agents that affect public health. Includes an
introduction to the biology of viruses, bacteria, and eukaryotic parasites.

Rules & Requirements
Grading Status: Letter grade.

EPID 754. Advanced Methods in Infectious Disease Epidemiology. 3 Credits.
This course covers theories, concepts, study designs, and analytical
methods of particular importance in studying infectious outcomes.
Teaching methods include lectures, hands-on computer practicals, article
discussions, and written assignments.

Rules & Requirements
Requisites: Prerequisites, EPID 715 and 716.
Grading Status: Letter grade.

EPID 755. Introduction to Infectious Disease Epidemiology. 3 Credits.
Permission required for non-majors. This course will cover concepts,
testing, study designs, and analytical methods of particular importance
in infectious disease epidemiology. Most topics will be introduced
with a didactic lecture and readings, followed by an in-class exercise,
discussion, or computer practical applying relevant theories, concepts,
and methods to specific questions in infectious disease epidemiology.

Rules & Requirements
Grading Status: Letter grade.

EPID 757. Epidemiology of HIV/AIDS in Developing Countries. 3 Credits.
This course examines the epidemiology of AIDS from an international
perspective. It considers the AIDS pandemic in a broad epidemiologic
perspective, including key aspects of basic, clinical, and social science.
Three lecture hours per week.

Rules & Requirements
Requisites: Prerequisite, EPID 600.
Grading Status: Letter grade.

EPID 758. Methods and Principles of Applied Infectious Disease
Epidemiology. 3 Credits.
This course will cover the interaction between an infectious agent, host,
and environment; modes and dynamics of transmission; the role of
immunity in infectious disease epidemiology; and disease elimination
strategies. Three lecture hours per week.

Rules & Requirements
Requisites: Prerequisite, EPID 600.
Grading Status: Letter grade.

EPID 759. Methods in Field Epidemiology. 3 Credits.
Course will focus on epidemiological methods required to investigate
urgent public health problems. Course covers the skills and tools needed
to conduct outbreak investigations and communicate findings to the
public. Three lecture hours per week.

Rules & Requirements
Grading Status: Letter grade.

EPID 760. Vaccine Epidemiology. 3 Credits.
An overview of vaccinology principles, mechanisms of action, and
herd protection, and statistical considerations. Students will obtain
understanding of how vaccines are produced by industry, undergo
preclinical evaluation, and evaluated for efficacy in clinical trials.

Rules & Requirements
Grading Status: Letter grade.

EPID 764. Hospital Epidemiology. 1-2 Credits.
Comprehensive seminar in hospital infection control. Topics include
issues in employee health, surveillance, outbreak investigation,
environmental sampling, and policy formation. May be repeated for
credit. Two to four seminar hours.

Rules & Requirements
Grading Status: Letter grade.

EPID 765. Methods and Issues in Pharmacoepidemiology. 3 Credits.
Required preparation, introductory-level epidemiology and biostatistics.
Application of the epidemiologic knowledge, methodology, and reasoning
to the study of the effects (beneficial and adverse) and uses of drugs in
human populations.

Rules & Requirements
Grading Status: Letter grade.
EPID 766. Epidemiologic Research with Healthcare Databases. 3 Credits.  
Required preparation, competency in data management with SAS (BIOS 511, EPID 700, or equivalent). Learn how healthcare utilization data are generated and use databases to identify study populations and conduct epidemiologic analysis of the utilization and comparative effectiveness/safety of prescription drugs and healthcare services.

Rules & Requirements  
Requisites: Prerequisite, EPID 710 OR EPID 600 (or equivalent); Demonstrated SAS competency.  
Grading Status: Letter grade.  
Same as: DPOP 766.

EPID 770. Cancer Epidemiology and Pathogenesis. 3 Credits.  
Equivalent experience for students lacking EPID 710. Undergraduate major or strong preparation in the biological sciences required. Permission of the instructor for nonmajors. Emphasis on integration of epidemiologic data with laboratory and clinical research findings. Issues in epidemiologic research design, analysis, and interpretation are presented within the context of substantive epidemiology. Three lecture hours a week.

Rules & Requirements  
Requisites: Prerequisites, BIOS 600 and EPID 710.  
Grading Status: Letter grade.

EPID 771. Cancer Epidemiology: Survivorship and Outcomes. 3 Credits.  
Students will evaluate the strengths and weaknesses of data sources common to cancer survivorship and outcomes studies, focusing on epidemiologic study designs. The course addresses cancer detection, treatment strategies, medical surveillance, and personal behaviors as determinants for prognosis, late effects, and the long-term health of cancer survivors.

Rules & Requirements  
Requisites: Prerequisite, EPID 710 or 711.  
Grading Status: Letter grade.

EPID 772. Cancer Prevention and Control Seminar. 3 Credits.  
An interdisciplinary overview of cancer prevention and control. Emphasis on projects and activities from perspectives of epidemiology, health behavior and education, and health policy and management. Appropriate research design and methodologies are covered.

Rules & Requirements  
Grading Status: Letter grade.  
Same as: HPM 765, HBEH 765.

EPID 775. Advanced Cancer Epidemiology: Classic and Contemporary Controversies in Cancer Causation. 2 Credits.  
Readings and discussions on classic and contemporary controversies in cancer. Two seminar hours per week.

Rules & Requirements  
Requisites: Prerequisites, EPID 715, 718, and 770 or 771; Permission of the instructor for students lacking the prerequisites.  
Repeat Rules: May be repeated for credit.  
Grading Status: Letter grade.

EPID 780. Occupational Epidemiology. 3 Credits.  
Required preparation, introductory epidemiology and biostatistics. This course provides a background in the epidemiology of work-related illness and injury and the application of epidemiologic concepts and methods in protecting workers’ health and safety.

Rules & Requirements  
Grading Status: Letter grade.

EPID 785. Environmental Epidemiology. 3 Credits.  
Epidemiologic ideas and methods applied to evaluation and control of human health consequences of environmental hazards. Pollution of environmental media and global change are considered from a human-ecological perspective, with local and international examples. Three lecture hours per week.

Rules & Requirements  
Requisites: Prerequisites, EPID 710 and BIOS 600.  
Grading Status: Letter grade.

EPID 787. Advanced Environmental Epidemiology. 2 Credits.  
Discussion of the epidemiology of environmentally-related disease and the application of epidemiologic concepts/methods to protecting public health from environmental hazards. Examples illustrate discussions regarding exposure assessment, dynamic nature of environments, regulation/assessment of environmental hazards, and methods used for environmental hazard identification and risk assessments.

Rules & Requirements  
Grading Status: Letter grade.

EPID 790. Intervention Epidemiology. 2 Credits.  
Epidemiologic methods for evaluating interventions, primarily in infectious disease epidemiology and injury epidemiology. Covers randomized designs, such as community trials, and evaluation of non-randomized interventions, such as policies and laws.

Rules & Requirements  
Requisites: Co-requisites, EPID 705 and 710.  
Grading Status: Letter grade.

EPID 795. Data in Public Health. 3 Credits.  
This course provides students with an overview of public health informatics and includes in-depth discussions on informatics approaches used in developing the public health information systems in use today.

Rules & Requirements  
Grading Status: Letter grade.

EPID 799A. Special Studies in Epidemiology I. 1 Credits.  
Experimental course to be offered by faculty to determine the need and demand for the subject. Topics will be chosen by faculty based on current public health issues. One credit option.

Rules & Requirements  
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics; 3 total credits. 3 total completions.  
Grading Status: Letter grade.
EPID 799B. Special Studies in Epidemiology II. 2 Credits.
Experimental course to be offered by faculty to determine the need and demand for the subject. Topics will be chosen by faculty based on current public health issues. Two credits option.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics; 6 total credits. 3 total completions.
Grading Status: Letter grade.

EPID 799C. Special Studies in Epidemiology III. 3 Credits.
Experimental course to be offered by faculty to determine the need and demand for the subject. Topics will be chosen by faculty based on current public health issues. Three credits option.

Rules & Requirements
Repeat Rules: May be repeated for credit; may be repeated in the same term for different topics; 9 total credits. 3 total completions.
Grading Status: Letter grade.

EPID 801. Data Analysis in Oral Epidemiology. 2-3 Credits.
Required preparation, basic knowledge of SAS. Permission of the instructor. Data analysis project in oral epidemiology: data cleanup, file construction, analysis. For three credit hours, student also completes multivariate analysis with linear, logistic regression. Project to result in publishable paper. Two to three seminar hours a week.

Rules & Requirements
Grading Status: Letter grade.

EPID 804. Design of Clinical Research Studies. 4 Credits.
Permission required for nonmajors. Clinical research majors only. The goals of this course are to develop a strong fundamental understanding of the design of clinical research studies; to understand selection of study populations, exposure and outcome measurement, and choice of appropriate measures; to understand ethical oversight, project management and quality control.

Rules & Requirements
Requisites: Prerequisite, EPID 711, PUBH 741 or equivalent; Corequisite, PUBH 742 or equivalent.
Grading Status: Letter grade.

EPID 810. Physical Activity Epidemiology and Public Health. 3 Credits.
This course provides an overview of major issues in physical activity measurements, population distribution, correlates, impacts (physically and economically), and public health recommendations. Interventions, including relevant theories, will be reviewed. Three lecture hours per week.

Rules & Requirements
Requisites: Prerequisite, EPID 600.
Grading Status: Letter grade.
Same as: NUTR 810.

EPID 814. Obesity Epidemiology. 3 Credits.
Examines epidemiology research on the causes, consequences, and prevention of obesity. Emphasis on methodological issues pertinent to obesity research.

Rules & Requirements
Requisites: Prerequisites, BIOS 545, EPID 715, 716 and NUTR 812 or NUTR 813.
Grading Status: Letter grade.
Same as: NUTR 814.

EPID 818. Analytical Methods in Nutritional Epidemiology. 3 Credits.
Skills and techniques to study how dietary exposures, physical activity, and anthropometric status relate to disease outcomes. Focus is hands-on data analysis using STATA, and interpretation of results from statistical analysis.

Rules & Requirements
Requisites: Prerequisites, BIOS 545, EPID 600 or 710, and NUTR 813.
Grading Status: Letter grade.

EPID 823. Integrating Social and Biological Perspectives on Human Health. 3 Credits.
Student will learn key theories and methodological approaches for how social processes, socio-spatial organization, and social inequality are associated with health patterns, changes, and disparities; theories/approaches for studying human health from a biological perspective; and strategies using integrated social and biological research perspectives and address advantages and challenges.

Rules & Requirements
Grading Status: Letter grade.

EPID 826. Introduction to Social Epidemiology. 2 Credits.
This course provides an overview of key concepts, methods and findings in research on social determinants of population health. Classes will consist of a didactic presentation followed by in-class group work modules and large group summary discussion.

Rules & Requirements
Requisites: Pre- or corequisite, EPID 600.
Grading Status: Letter grade.

EPID 827. Social Epidemiology: Design and Interpretation. 2 Credits.
Approaches to social epidemiologic research, with a focus on study design and interpretation of analytic techniques common in social epidemiology. Topics include causal inference for socially patterned exposures, racial equity research, and place effects on health.

Rules & Requirements
Requisites: Prerequisite, EPID 710; corequisite, EPID 715 or 716.
Grading Status: Letter grade.

EPID 851. Reproductive and Perinatal Epidemiology. 3 Credits.
Epidemiology of reproductive and perinatal health outcomes, including infertility, fetal loss, preterm birth, birthweight, congenital malformations, and infant mortality. Includes current knowledge regarding epidemiology of these outcomes and discussion of methodologic issues. Three lecture hours per week.

Rules & Requirements
Requisites: Co-requisites, BIOS 600 and EPID 600; Equivalent experience for students lacking the co-requisites.
Grading Status: Letter grade.
Same as: MHCH 851.
EPID 853. **Advanced Topics in Perinatal and Pediatric Epidemiology. 2 Credits.**
Critical review of current topics in, and methods for, perinatal and pediatric epidemiology.

**Rules & Requirements**
**Requisites:** Prerequisites, EPID 710 and 851; Permission of the instructor for master’s level students.
**Grading Status:** Letter grade.
**Same as:** MHCH 853.

EPID 883. **Teaching Experience in Epidemiology. 1-4 Credits.**
Open to EPID majors, second-year or above. Provides epidemiology majors with supervised experience in teaching and course preparation. Students act as assistants in departmental courses. Two to eight seminar hours a week.

**Rules & Requirements**
**Grading Status:** Letter grade.

EPID 886. **Readings in Epidemiology. 1-3 Credits.**
Permission of the instructor required. Independent reading and tutorial guidance in special areas of epidemiology.

**Rules & Requirements**
**Grading Status:** Letter grade.

EPID 889. **Topics in Epidemiology Seminar. 1 Credits.**
EPID majors only. Topics are chosen to reflect emerging issues in the field, as well as those that meet the interests of the students and faculty in the department.

**Rules & Requirements**
**Requisites:** Prerequisite, EPID 710.
**Repeat Rules:** May be repeated for credit; may be repeated in the same term for different topics.
**Grading Status:** Letter grade.

EPID 891. **Epidemiology Doctoral Seminar. 2 Credits.**
Exposes students to issues and debates in the philosophy of science, the object of knowledge in epidemiology, and the place of epidemiology in public health.

**Rules & Requirements**
**Grading Status:** Letter grade.

EPID 893. **Pharmacoepidemiology Seminar. 1 Credits.**
This is a weekly seminar to explore current problems in pharmacoepidemiology. It supplements the introductory course, EPID 765. Required preparation, basic knowledge of epidemiology and biostatistics. May be repeated. One seminar hour a week.

**Rules & Requirements**
**Repeat Rules:** May be repeated for credit; may be repeated in the same term for different topics.
**Grading Status:** Letter grade.

EPID 894. **Infectious Disease Seminar. 1 Credits.**
Required preparation, introductory epidemiology and biostatistics. Detailed review of selected topics in infectious disease epidemiology. May be repeated for credit.

**Rules & Requirements**
**Repeat Rules:** May be repeated for credit; may be repeated in the same term for different topics.
**Grading Status:** Letter grade.

EPID 895. **Seminar in Oral Epidemiology. 1 Credits.**
Explores conceptual and methods issues in conducting epidemiologic investigations of oral conditions, specifically caries, periodontal disease, and oral cancer (topics rotate semesters).

**Rules & Requirements**
**Requisites:** Prerequisite, EPID 710.
**Grading Status:** Letter grade.

EPID 897. **Advanced Seminar in Cardiovascular Research. 1-3 Credits.**
Permission of the instructor. Review of substantive and methodological research in cardiovascular and cerebrovascular diseases. May be repeated for credit. Two to six seminar hours a week.

**Rules & Requirements**
**Repeat Rules:** May be repeated for credit; may be repeated in the same term for different topics.
**Grading Status:** Letter grade.

EPID 900. **Epidemiology Practice. 4 Credits.**
Designed to give epidemiology majors a supervised field experience in population health research.

**Rules & Requirements**
**Repeat Rules:** May be repeated for credit.
**Grading Status:** Letter grade.

EPID 905L. **Epidemiology Laboratory Practice. 0.5-9 Credits.**
Permission of the instructor. Students work individually with a faculty member on supervised laboratory research and skills development. May be repeated for credit. Two to 18 laboratory hours a week.

**Rules & Requirements**
**Grading Status:** Letter grade.

EPID 910. **Research in Epidemiology. 1-9 Credits.**
Permission of the instructor. Independent investigation in consultation with an instructor who must assign or approve the subject of research. Credits vary according to the effort and rigor of the research.

**Rules & Requirements**
**Repeat Rules:** May be repeated for credit; may be repeated in the same term for different topics.
**Grading Status:** Letter grade.

EPID 992. **Master’s (Non-Thesis). 3 Credits.**

**Rules & Requirements**
**Repeat Rules:** May be repeated for credit.

EPID 994. **Doctoral Research and Dissertation. 3 Credits.**

**Rules & Requirements**
**Repeat Rules:** May be repeated for credit.