

## Fall 2020 Course Descriptions as of 04/05/2020 08:11 PM

Information in Browse Course Catalog is subject to change. Information is term specific. Please refer to the appropriate term when searching for course content. Key to Course Descriptions may be found at: [http://rcs.registrar.arizona.edu/course\\_descriptions\\_key](http://rcs.registrar.arizona.edu/course_descriptions_key).

### Epidemiology (EPID)

#### **EPID 309: Introduction to Epidemiology** (3 units)

**Description:** This course will introduce students to basic principles and methods used in epidemiology. The course will include basic research designs, estimating outcome measures, and establishing cause and effect and effectiveness of interventions to prevent and cure disease.

**Grading basis:** Regular Grades

**Career:** Undergraduate

**Course Components:** Lecture Required

**Equivalent to:** CPH 309

**Course typically offered:**

Main Campus: Fall, Spring

Online Campus: Fall

**Enrollment requirement:** MATH 112 or higher.

#### **EPID 399: Independent Study** (1 - 4 units)

**Description:** Qualified students working on an individual basis with professors who have agreed to supervise such work.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Undergraduate

**Course Components:** Independent Study Required

**Repeatable:** Course can be repeated a maximum of 99 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

Online Campus: Fall, Spring, Summer

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 399H: Honors Independent Study** (1 - 4 units)

**Description:** Qualified students working on an individual basis with professors who have agreed to supervise such work.

**Grading basis:** Regular Grades

**Career:** Undergraduate

**Course Components:** Independent Study      Required

**Repeatable:** Course can be repeated a maximum of 99 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

**Enrollment requirement:** Student must be active in the Honors College.

**Honors Course:** Honors Course

**Honors Course:** Honors Course

**EPID 411: Health and Disease Across Time and the World** (3 units)

**Description:** This is a course that introduces students to human variation and corresponding global trends in disease prevalence, and how these trends may be driven by evolutionary, historical, genetic, cultural, and environmental factors. Topics include human evolutions; current and past disease prevalence; geographical distribution of disease; demographic and epidemiological transitions; origins of health disparities; genetics and epigenetics.

**Grading basis:** Regular Grades

**Career:** Undergraduate

**Course Components:** Lecture      Required

**Course typically offered:**

Main Campus: Spring

**Recommendations and additional information:** A previous course in the biological sciences is highly recommended.

**Field trip:** None

**EPID 450: Health Data Acquisition and Assessment** (3 units)

**Description:** Students learn how to identify and acquire medical and health data, assess quality, and integrate data from multiple sources. Students gain knowledge of how data collection procedures influence data quality and techniques for combining health datasets. Students gain skills by completing applied projects to collect, access and work with existing health data.

**Grading basis:** Regular Grades

**Career:** Undergraduate

**Course Components:** Lecture      Required

**Also offered as:** BIOS 450

**Course typically offered:**

Main Campus: Fall

**Enrollment requirement:** EPID 309 and BIOS 376

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**Description:** This course teaches students basic programming approaches for mapping large disparate health data to analyzable formats. Students will also gain data processing skills including version control, assessment for missing data, errors, and outliers. Students will develop hands-on skills including batch processing, and data aggregation and learn how to create and manage a database using REDCap. Students will also learn what data visualization is, and how they can use it to better present and understand health data.

Main Campus: Fall

**Enrollment requirement:** EPID 309 and BIOS 376

**Description:** This course bridges the concepts learned in introduction to epidemiology and biostatistics courses to teach students the skills to identify and implement the appropriate statistical methods to answer public health and biomedical research questions based on study and sampling designs. Students apply these skills to large public health and biomedical databases. Students learn how to present their results graphically and through the use of social media (e.g. YouTube) to communicate findings to lay audiences.

Main Campus: Spring

**Enrollment requirement:** EPID 309 and BIOS 376

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 453: Health Data Science Practice** (3 units)

**Description:** This course will provide a culminating research experience that tests all competencies through a hands-on semester-long project-based research course. This course will allow students to immerse themselves in a health data science project in public health and biomedical science. This project will entail a review of the current evidence-base for their specific research question and use the data scientist skills developed in the previous courses to assess and analyze public health data and communicate findings to the public.

**Grading basis:** Regular Grades

**Career:** Undergraduate

**Course Components:** Lecture Required

**Also offered as:** BIOS 453

**Course typically offered:**

Main Campus: Fall

**Field trip:** none

**Enrollment requirement:** EPID 309, BIOS 376, EPID 450, BIOS 451, BIOS 452

**EPID 479: Infections and Epidemics** (3 units)

**Description:** This course will take a multidisciplinary approach to examining the impact of infectious diseases on human populations, with an emphasis on relevant epidemiologic concepts.

**Grading basis:** Regular Grades

**Career:** Undergraduate

**Course Components:** Lecture Required

**Course typically offered:**

Main Campus: Spring

**Recommendations and additional information:** BIOS/CPH 376 Introduction to Biostatistics or equivalent (recommended).

**Enrollment requirement:** Prerequisite or concurrent enrollment in EPID/CPH 309.

**EPID 491: Preceptorship** (1 - 6 units)

**Description:** Specialized work on an individual basis, consisting of instruction and practice in actual service to a department, program, or discipline. Teaching formats may include seminars, in-depth studies, laboratory work, and patient study.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Undergraduate

**Course Components:** Independent Study Required

**Repeatable:** Course can be repeated a maximum of 2 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

Online Campus: Fall, Spring, Summer

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 492: Directed Research** (1 - 6 units)

**Description:** Individual or small group research under the guidance of faculty.

**Grading basis:** Regular Grades

**Career:** Undergraduate

**Course Components:** Independent Study      Required

**Repeatable:** Course can be repeated a maximum of 2 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

Online Campus: Fall, Spring, Summer

**EPID 493C: Global Experience in Public Health** (1 - 3 units)

**Description:** This course provides a family or community focused public health experience in an international or under-served location working with a local governmental or non-governmental agency to improve the health and well-being of a vulnerable population. The course emphasizes an in-depth, field-based experience.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Undergraduate

**Course Components:** Independent Study      Required

**Repeatable:** Course can be repeated a maximum of 2 times.

**Also offered as:** BIOS 493C, EHS 493C, HPS 493C, PHP 493C, PHPM 493C

**Course typically offered:**

Main Campus: Fall, Spring, Summer

Online Campus: Fall, Spring, Summer

**Home department:** Health Promotional Services

**EPID 495: Special Topics in Epidemiology** (1 - 3 units)

**Description:** This course addresses a unique topic in epidemiology that is appropriate for undergraduate students. The course will emphasize a specialized aspect of epidemiology not routinely offered in the general curriculum.

**Grading basis:** Regular Grades

**Career:** Undergraduate

**Course Components:** Colloquium      Required

**Repeatable:** Course can be repeated a maximum of 2 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

**Enrollment requirement:** Admission to the undergraduate Public Health major and EPID 309, Introduction to Epidemiology.

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 497S: Skin Cancer Prevention in the Community Setting (1 - 2 units)**

**Description:** This hybrid inter-professional course is designed to provide students in the healthcare disciplines with knowledge, resources, strategies and opportunities to communicate basic skin cancer prevention information to the public.

**Grading basis:** Regular Grades

**Career:** Undergraduate

**Course Components:** Workshop Required

**Co-convened with:** CPH 597S

**Course typically offered:**

Main Campus: Fall, Spring

**Recommendations and additional information:** HPS/CPH 350.

**EPID 498H: Honors Thesis (3 units)**

**Description:** An honors thesis is required of all students graduating with honors. Students ordinarily sign up for this course as a two-semester sequence. The first semester the student performs research under the supervision of a faculty member; the second semester the student writes an honors thesis.

**Grading basis:** Regular Grades

**Career:** Undergraduate

**Course Components:** Independent Study Required

**Repeatable:** Course can be repeated a maximum of 3 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

Online Campus: Fall, Spring, Summer

**Enrollment requirement:** Student must be active in the Honors College.

**Honors Course:** Honors Course

**Honors Course:** Honors Course

**Writing Emphasis:** Writing Emphasis Course

**EPID 499: Independent Study (1 - 4 units)**

**Description:** Qualified students working on an individual basis with professors who have agreed to supervise such work.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Undergraduate

**Course Components:** Independent Study Required

**Repeatable:** Course can be repeated a maximum of 99 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

Online Campus: Fall, Spring, Summer

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 499H: Honors Independent Study** (1 - 4 units)

**Description:** Qualified students working on an individual basis with professors who have agreed to supervise such work.

**Grading basis:** Regular Grades

**Career:** Undergraduate

**Course Components:** Independent Study      Required

**Repeatable:** Course can be repeated a maximum of 99 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

Online Campus: Fall, Spring, Summer

**Enrollment requirement:** Student must be active in the Honors College.

**Honors Course:** Honors Course

**Honors Course:** Honors Course

**EPID 509: Evolution of Infectious Disease** (3 units)

**Description:** Causes and consequences of evolutionary change in pathogens. Evolutionary principles, vertebrate immunity, molecular epidemiology, evolution of virulence, evolution of antimicrobial resistance, predicting epidemics, impacts of infectious disease on host evolution, HIV evolution. Graduate-level requirements include a term paper and an in-class presentation on the same topic.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:** Lecture      Required

**Equivalent to:** CPH 509, MCB 509, VSC 509

**Also offered as:** ACBS 509, ECOL 509

**Co-convened with:**

**Home department:** Ecology & Evolutionary Biology

**Interdisciplinary Interest Area:** MCB - Molecular & Cell Biology

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**Description:** This course introduces you new tools and techniques used in healthcare related data sciences. Topics include: Basic knowledge of large clinical databases focusing on medical records, Cohort definition and extraction, Intro to SQL, Linux basic, Collaborative research using Git/GitHub, High performance computing and cloud computing, Shiny, Docker, TidyVerse, Basic predictive modeling, Select tool from data science for example spark (distributed analysis), TensorFlow.

**Career:** Graduate

**Also offered as: BIOS 511**

Main Campus: Fall

**Field trip:** none

**EPID 513: Statistical Genetics for Quantitative Measures (3 units)**

**Description:** This course provide the student with the statistical tools to describe variation in quantitative traits, particularly the decomposition of variation into genetic, environmental, and gene by environment interaction components. Covariance (resemblance) between relatives and heritability will be discussed, along with the topics of epistasis, oligogenic and polygenic traits, complex segregation analysis, methods of mapping quantitative trait loci (QTL), and estimation procedures. Microarrays have multiple uses, each of which will be discussed and the corresponding statistical analyses described.

**Career:** Graduate

**Equivalent to:** EPI 513, EPID 513, GENE 513

**Course typically offered:**

Main Campus: Fall

**Recommendations and additional information:** A basic genetic principles course as ANS 213, GENE 433, GENE 533, or GENE 545. A current course on basic statistical principles as GENE 509C or MATH 509C. A course in linear models as MATH 561 and in statistical inference mathematics.

**Home department:** School of Animal & Comparative Biomedical Sciences

**-CC** represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.



**EPID 514: Methods in Urban Planning** (4 units)

**Description:** This course explores the practical methods used in urban planning from policy analysis to survey development and administration to comprehensive plan making. While many of your initial classes discuss theory and purpose (the why) and others emphasize products and applications (the what), this class provides skill-building in the connecting those two things (the how). Students will be expected to read texts that describe the purpose of various planning analyses, examine the supporting data and research, and explore common approaches to achieving various goals. This class emphasizes the physical practice of finding/making data, doing analysis, and documenting for various public and semi-public audiences "limiting" lecture time" in lieu of practice and doing. As such, students will investigate a variety of urban planning problems and questions by completing tasks such as: analyzing and summarizing research and white-paper reports, searching for and acquiring data, analyzing and graphically displaying data, and documenting results in both inform and formal ways. A portion of this class emphasizes data, methods, and tools used specifically to support comprehensive plan making (e.g., population forecasting, demographic analysis, housing analysis, growth impact analysis, impact fee estimation).

**Grading basis:** Regular Grades

**Career:** Graduate

|                           |         |          |
|---------------------------|---------|----------|
| <b>Course Components:</b> | Lecture | Required |
|---------------------------|---------|----------|

**Also offered as:** GEOG 514, PA 514, PLG 514

**Course typically offered:**

Main Campus: Spring

**Home department:** Planning

**EPID 555: Introduction to Maternal and Child Health Epidemiology (3 units)**

**Description:** Course will cover topical information, publicly available databases, and epidemiological approaches to the investigation of issues in female reproduction, childhood conditions, and women's health.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:**    Lecture                      Required

**Course typically offered:** Online Campus: Summer

**Recommendations and additional information:** EPID/CPH 573A.

**-SA** represents a Student Abroad & Student Exchange offering

-**CC** represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 573A: Basic Principles of Epidemiology (3 units)**

**Description:** Course will introduce students to the basic concepts and principles of epidemiology and how these concepts are applicable for their own particular interests and careers in epidemiology related fields.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:**    Lecture                      Required

**Repeatable:** Course can be repeated a maximum of 2 times.

**Equivalent to:** CPH 573A, EPI 573A, EPI 596A, PHL 573A

**Course typically offered:**

Main Campus: Fall, Spring

Online Campus: Fall

**Recommendations and additional information:** Epidemiology major or minor, MPH major, or consent of instructor.

**EPID 573B: Epidemiologic Methods (3 units)**

**Description:** This course will increase the student's understanding of research methods in epidemiology and provide practice for the epidemiology student to design research studies and review other epidemiologic research designs.

**Grading basis:** Regular Grades

**Career:** Graduate

|                           |         |                |
|---------------------------|---------|----------------|
| <b>Course Components:</b> | Lecture | Required       |
|                           | Seminar | May Be Offered |

**Equivalent to:** CPH 573B, EPI 573B, PHL 573B

**Course typically offered:**

Main Campus: Spring

Online Campus: Fall

**Recommendations and additional information:** EPID 573A, BIOS/EPID 576A; prerequisite or concurrent registration, BIOS/EPID 576B.

**EPID 573C: Advanced Epidemiology** (3 units)

**Description:** An advanced course in quantitative issues that arise in the planning, analysis, and interpretation of epidemiologic research studies. Students must also know how to use a statistical software package (eg. STATA).

**Grading basis:** Regular Grades

**Career:** Graduate

|                           |         |          |
|---------------------------|---------|----------|
| <b>Course Components:</b> | Lecture | Required |
|---------------------------|---------|----------|

**Equivalent to:** CPH 573C, EPI 573C, PHL 573C

**Course typically offered:**

Main Campus: Fall

**Recommendations and additional information:** EPID 573A, EPID 573B, BIOS/EPID 576A, BIOS/EPID 576B and advanced standing.

**-SA** represents a Student Abroad & Student Exchange offering

**-CC** represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 573D: Analysis of Public Health Data** (3 units)

**Description:** This course focuses on how public health data are used for epidemiologic investigations and prevention programs and develops skills and strategies for the analysis and presentation of public health data; using epidemiological and biostatistical principles to analyze public health data through descriptive statistics, stratified analyses, regression and other basic approaches.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:** Lecture Required

**Course typically offered:** Online Campus: Fall

**Recommendations and additional information:** EPID/CPH 573A, BIOS/EPID/CPH 576A and BIOS/EPID/CPH 576B. Recommended when possible: EPID / CPH 573B. Ability to utilize a statistical package - Epi info or R or SAS student version.

**EPID 579: Applied Infectious Disease Epidemiology** (3 units)

**Description:** Applications in Infectious Disease Epidemiology for master students. This course focuses on developing practical skills in the investigation of outbreaks, development and implementation of infectious disease surveillance and the administration of infectious disease control and prevention.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:** Lecture Required

**Course typically offered:** Online Campus: Spring

**Recommendations and additional information:** EPID/CPH 573A, Basic Principles of Epidemiology; EPID/CPH 573B, Epidemiological Methods; BIOS/EPID/CPH 576A, Biostatistics in Public Health; Ability to utilize a Statistical package - STATA, SAS or Epi Info

**EPID 580: Integrated Public Health Learning Experience** (1 unit)

**Description:** An analysis of public health cases that integrates core public health knowledge and competencies to determine the best systems, policies and programs for decreasing morbidity and premature mortality.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:** Lecture Required

**Also offered as:** BIOS 580, EHS 580, HPS 580, PHP 580, PHPM 580

**Course typically offered:**

Main Campus: Fall, Spring, Summer

Online Campus: Fall, Spring, Summer

**Recommendations and additional information:** Students must have completed or concurrently finishing their core public health courses and have completed at least 21 total units of course work.

**Home department:** Public Health and Practice

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 585: Public Health Fundamentals for Researchers (3 units)**

**Description:** The fundamental principles of public health are presented for students in any graduate academic program. The course explores theoretical aspects of public health and provides practical application designed to improve understanding and performance of researchers in public health settings. Mastery of course objectives will provide academic graduate students with a clear working knowledge of public health basics.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Lecture Required

**Also offered as:** BIOS 585, EHS 585, HPS 585

**Course typically offered:**

Main Campus: Spring

**Recommendations and additional information:** Completion of an undergraduate degree in a field related to public health.

**Field trip:** The class will have two required field trips: (1) Evening in Tucson to attend Board of Health meeting; (2) One trip on Saturday to Nogales AZ address globalization issues.

**Home department:** Community, Environment & Pol

**EPID 591: Preceptorship (1 - 6 units)**

**Description:** Specialized work on an individual basis, consisting of instruction and practice in actual service to a department, program, or discipline. Teaching formats may include seminars, in-depth studies, laboratory work, and patient study.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Independent Study Required

**Repeatable:** Course can be repeated a maximum of 2 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

**Field trip:** none

**EPID 593C: Global Experience in Public Health (1 - 3 units)**

**Description:** This course provides a population focused public health experience in an international or under-served location working with a local governmental or non-governmental agency to assess and to improve people's health and well-being. The course emphasizes an in-depth field-based experience.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Independent Study Required

**Repeatable:** Course can be repeated a maximum of 2 times.

**Also offered as:** BIOS 593C, EHS 593C, HPS 593C, PHP 593C, PHPM 593C

**Course typically offered:**

Main Campus: Fall, Spring, Summer 1 and 2

**Recommendations and additional information:** Permission of instructor.

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 594: Practicum (1 - 5 units)**

**Description:** The practical application, on an individual basis, of previously studied theory and the collection of data for future theoretical interpretation.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Independent Study Required

**Repeatable:** Course can be repeated a maximum of 99 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

**EPID 596D: Public Health Experience - Student Epidemiology Response Team (1 - 3 units)**

**Description:** This course is designed to give public health & epidemiology graduate students "real world" experience in working in public health and to expose them to local and state public health issues. The course will cover all the basics of outbreak investigations as run by state and county health departments in Arizona. While the main focus will be on communicable diseases, many of the topics covered will be applicable to most disease investigations. Training will occur both at the university and off-site at state and county health department offices.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Seminar Required

**Repeatable:** Course can be repeated a maximum of 4 times.

**Equivalent to:** CPH 596D

**Course typically offered:**

Main Campus: Fall, Spring

**Recommendations and additional information:** EPID 573A, BIOS/EPID 576A.

**EPID 597S: Skin Cancer Prevention in the Community Setting (1 - 2 units)**

**Description:** This hybrid inter-professional course is designed to provide students in the healthcare disciplines with knowledge, resources, strategies and opportunities to communicate basic skin cancer prevention information to the public. Graduate-level requirements include creation and presentation of an additional outreach activity that targets a skin cancer vulnerable population.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:** Workshop Required

**Co-convened with:** CPH 497S

**Course typically offered:**

Main Campus: Fall, Spring

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 599: Independent Study (1 - 6 units)**

**Description:** Qualified students working on an individual basis with professors who have agreed to supervise such work. Graduate students doing independent work which cannot be classified as actual research will register for credit under course number 599, 699, or 799.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Independent Study Required

**Repeatable:** Course can be repeated a maximum of 99 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

**EPID 606: Changing Health Policy: Cultural Understanding & Epi Analysis (4 units)**

**Description:** Students will develop the skills to work in another culture by discovering how culture influences health, finding existing data, analyzing and interpreting it in appropriate cultural contexts to form policy.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:** Lecture Required

**Equivalent to:** CPH 606

**Course typically offered:**

Main Campus: Spring

**Recommendations and additional information:** EPID 573A. Concurrent registration, PHPM/CPH 574 and HPS/CPH 577.

**EPID 609: Evaluating Public Health Literature (1 unit)**

**Description:** Concepts for the critical analysis of the scientific literature within public health and the broader field of medicine are reviewed. Topics including understanding the research stream, study design, statistical methodology, and the accurate presentation of results are addressed.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:** Lecture Required

**Repeatable:** Course can be repeated a maximum of 3 times.

**Also offered as:** BIOS 609, EHS 609, HPS 609, PHPM 609

**Course typically offered:**

Main Campus: Fall, Spring

**Home department:** Health Promotional Services

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 613: Special Topics in Epidemiology** (1 - 4 units)

**Description:** This course addresses special topics in Epidemiology. The course will study the theoretical development and application of advanced epidemiological methods.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:**    Lecture                      Required

**Repeatable:** Course can be repeated for a maximum of 4 units.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

**Recommendations and additional information:** EPID 573A.

**EPID 615A: Cancer Epidemiology and Prevention (3 units)**

**Description:** An overview of the current issues and methods in cancer epidemiological studies. Issues and methods used in cancer surveillance, international studies, observational studies, and intervention trials will be covered.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:**    Lecture                  Required

**Equivalent to:** CBIO 615A, CPH 615A, EPI 615A, PHL 615A, RONC 615A

**Also offered as: CBIO 615A, RONC 615A**

**Course typically offered:**

Main Campus: Fall (odd years only)

**EPID 615B: Cancer Control** (3 units)

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:**    Lecture                  Required

**Equivalent to:** CPH 615B, EPI 615B, PHL 615B, RONC 615B

**Also offered as: RONC 615B**

**Recommendations and additional information:** EPID 615A, EPID 573A.

**-SA** represents a Student Abroad & Student Exchange offering

**-CC** represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.



**EPID 630: Maternal and Child Health Epidemiology** (3 units)

**Description:** This course will cover methodologic issues in epidemiologic research on reproduction, childhood conditions, and women's health including topical information specific to conditions in each of these areas. The course will also cover National MCH databases and Surveillance Systems. The class will include classroom lectures, discussions and student presentations.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:** Lecture Required

**Equivalent to:** EPID 630

**Course typically offered:**

Main Campus: Fall

**Recommendations and additional information:** EPID 573A, enrolled in the MPH, MS EPI or PhD EPI programs or consent of instructor.

**EPID 640: Psychosocial Epidemiology** (3 units)

**Description:** An advanced graduate seminar that examines psychosocial stress and sociobehavioral factors in disease causation and prevention; with a behavioral epidemiological approach to the study of cancer, coronary heart disease, and HIV disease (stress concept and stress theory, etc.).

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:** Lecture Required

**Equivalent to:** CPH 640, EPI 640, PHL 640

**Recommendations and additional information:** EPID 573A, EPID 573B.

**EPID 645: Nutritional Epidemiology** (3 units)

**Description:** An overview of the current issues and methods in assessing nutritional status in epidemiological studies. Issues and methods used in international studies and of chronic disease nutrition will be covered.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:** Lecture Required

**Repeatable:** Course can be repeated a maximum of 2 times.

**Equivalent to:** CPH 645, EPI 645, NUSC 645, N\_SC 645, PHL 645

**Also offered as:** NSC 645

**Course typically offered:**

Main Campus: Spring

**Recommendations and additional information:** EPID 573A. Statistics helpful.

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.



**Description:** This course will cover general principles and methods that can be applied to accurately measure a wide range of exposures (risk factors) in epidemiology. It covers the methods and quality control approaches for the most commonly used data collection methods in epidemiology. Major topics include methods to quantify the degree of measurement error, ways to reduce misclassification bias, methods to maximize response rates, and ethical issues in the conduct of epidemiologic research. This hands-on part of the course includes questionnaire design, data collection, and descriptive data analysis.

Main Campus: Fall (even years only)

**Home department:** Health Promotional Services

## Main Campus: Spring

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 670: Chronic Disease Epidemiology (3 - 4 units)**

**Description:** Nutritional epidemiology, pharmacoepidemiology, occupational epidemiology and environmental epidemiology.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:** Lecture Required

**Equivalent to:** CPH 670, EPI 670, PHL 670

**Course typically offered:**

Main Campus: Spring

**Recommendations and additional information:** EPID 573A, EPID 573B, BIOS/EPID 576A, BIOS/EPID 576B.

**EPID 671: Social Epidemiology** (3 units)

**Description:** The course covers key concepts in social epidemiology. It explores conceptual frameworks, key literature as well as defines how new disease risk factors and well known exposures are differentially allocated within societies because of social interactions and disparities. The course covers methodologies, including measurement issues and study design in social epidemiology, and finally concludes with strengths and challenges of social interventions as they relate to policy.

**Grading basis:** Regular Grades

**Career:** Graduate

|                           |         |          |
|---------------------------|---------|----------|
| <b>Course Components:</b> | Lecture | Required |
|---------------------------|---------|----------|

**EPID 675: Clinical Trials and Intervention Studies (3 units)**

**Description:** A fundamentals course on issues in the design, operation and analysis of controlled clinical trials and intervention studies. Emphasis on randomized long-term multicenter trials.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:** Lecture Required

**Equivalent to:** CPH 675, EPI 675

**Also offered as: BIOS 675**

**Course typically offered:**

Main Campus: Spring (odd years only)

**Home department:** Epidemiology and Biostatistics

**-SA** represents a Student Abroad & Student Exchange offering

-**CC** represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 676: Spatial Epidemiology** (3 units)

**Description:** This course familiarizes students with spatial analysis emphasizing epidemiologic and public health applications.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:**      Lecture                              Required

**Course typically offered:**

Main Campus: Spring (odd years only)

**Recommendations and additional information:** BIOS/EPID/CPH 576A or GEOG/PLG 557 or equivalent, or permission by instructor.

**EPID 677: Principles of Genetic Association Studies** (3 units)

**Description:** Lectures, forum discussions, and laboratory activities. Topics: selection of appropriate study design for association studies; understanding basic molecular genetics with particular focus on the genetic code; selection of candidate genes; genotype analysis; temporal sequence in genetic association studies; importance of longitudinal data in genetic association studies; genotype versus haplotype analysis; selection of haplotype tagging SNPs; use of genetic software.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:**      Lecture                              Required

**Equivalent to:** CPH 677

**Also offered as:** GENE 677

**Course typically offered:**

Main Campus: Spring

**Recommendations and additional information:** EPID 573A, BIOS/EPID 576A.

**EPID 678: Principles of Public Health and Health Informatics** (3 units)

**Description:** This is an introductory course to public health informatics including public domain health data sources. The course will examine main public health databases and provide an overview on the concept, history, science, application, and significance of public health informatics.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:**      Lecture                              Required

**Repeatable:** Course can be repeated a maximum of 4 times.

**Course typically offered:**

Main Campus: Spring (even years only)

**Recommendations and additional information:** EPID 573A, BIOS/EPID 576A.

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 679: One Health Applications and Practice** (3 units)

**Description:** One Health focuses on the interconnectedness of health among human, animal and environmental systems. This course will explore current One Health applications and practice which are used by various disciplines. Students in this course will participate in a variety of in class and field experiences, as well as work individually and with multidisciplinary teams to address existing and emerging local and global public health challenges.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:** Lecture Required

**Recommendations and additional information:** EPID 660 or ACBS 570.

**Field trip:** Field trips will vary each year and will likely be part of a project with the state health department.

**EPID 687: Theory of Linear Models** (3 units)

**Description:** Theory of linear models including full-rank models and less than full rank fixed effects models. Topics will include distributional properties of quadratic forms, estimation methods, tests of hypothesis and confidence intervals as well as an introduction to computational aspects.

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:** Lecture Required

**Equivalent to:** EPID 687, STAT 687

**Also offered as:** BIOS 687, STAT 687

**Course typically offered:**

Main Campus: Fall (even years only)

**Recommendations and additional information:** MATH 566.

**Home department:** Epidemiology and Biostatistics

**EPID 691: Preceptorship** (1 - 6 units)

**Description:** Specialized work on an individual basis, consisting of instruction and practice in actual service to a department, program, or discipline. Teaching formats may include seminars, in-depth studies, laboratory work, and patient study.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Independent Study Required

**Repeatable:** Course can be repeated a maximum of 2 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

**Field trip:** none

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 696A: Epidemiology Seminar (1 unit)**

**Description:** This is a seminar course which consists of presentations given by diverse speakers on a range of topics that may not be available through other courses. Topics may include research methodologies; research ethics; mentoring; epidemiology and the law; the results of research and issues in specific areas such as injury epidemiology, TB control, medical genetics, and infectious diseases; and practical issues of a research career such as finding funding, consulting, career development, and issues in study management. This is also the forum in which MS and PhD epidemiology students will present their results.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Seminar Required

**Repeatable:** Course can be repeated a maximum of 9 times.

**Equivalent to:** CPH 696A

**Course typically offered:**

Main Campus: Fall, Spring

**EPID 696B: Cancer Prevention and Control Seminar (1 unit)**

**Description:** This course is a seminar series. Students will be expected to attend all class sessions, to participate in class discussions and to take a turn in presenting. Topics will include basic translation research as applied to cover Prevention and Control.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Seminar Required

**Repeatable:** Course can be repeated a maximum of 9 times.

**Equivalent to:** CPH 696B

**Course typically offered:**

Main Campus: Fall, Spring

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 696T: Clinical and Translational Research Seminar** (1 unit)

**Description:** This is a seminar course which consists of presentations & discussions given by diverse speakers on clinical and translational research that may not be available through other courses. Presentation topics may cover research methodologies, research ethics, health disparity, aging, pediatric health, mentoring, and practical issues of a research career such as finding funding, consulting, career development, and issues in study management. This is also the forum in which graduate students from the field related to clinical and translational research may present their research design and finding.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Seminar Required

**Repeatable:** Course can be repeated a maximum of 2 times.

**Course typically offered:**

Main Campus: Fall

**Recommendations and additional information:** This course is restricted to graduate students in health related fields including public health, medicine, pharmacy, nursing and the biological or social sciences.

**EPID 699: Independent Study** (1 - 6 units)

**Description:** Qualified students working on an individual basis with professors who have agreed to supervise such work. Graduate students doing independent work which cannot be classified as actual research will register for credit under course number 599, 699, or 799.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Independent Study Required

**Repeatable:** Course can be repeated a maximum of 99 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

**EPID 796A: Doctoral Seminar in Epidemiology** (1 unit)

**Description:** This doctoral seminar will be to explore advanced concepts and methods in Epidemiology. The presentations and discussions will focus on these challenges in epidemiological research by both the doctoral students and their faculty mentors.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Seminar Required

**Repeatable:** Course can be repeated a maximum of 4 times.

**Course typically offered:**

Main Campus: Fall

**Recommendations and additional information:** EPID 573A, EPID 573B, EPID 573C, BIOS/EPID 576A, BIOS/EPID 576B, BIOS/EPID 576C; Epidemiology doctoral student (major or minor) passed qualitative exam, completed minimum of 40 epidemiology units.

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 799: Independent Study** (1 - 6 units)

**Description:** Qualified students working on an individual basis with professors who have agreed to supervise such work. Graduate students doing independent work which cannot be classified as actual research will register for credit under course number 599, 699, or 799.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Independent Study Required

**Repeatable:** Course can be repeated a maximum of 99 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

**EPID 896C: Advanced Epidemiology** (3 units)

**Grading basis:** Regular Grades

**Career:** Graduate

**Course Components:** Seminar Required

**Recommendations and additional information:** EPID 573A, EPID 573B, BIOS/EPID 576A, BIOS/EPID 576B and advanced standing.

**EPID 900: Research** (1 - 9 units)

**Description:** Individual research, not related to thesis or dissertation preparation, by graduate students.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Independent Study Required

**Repeatable:** Course can be repeated a maximum of 99 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

**EPID 909: Master's Report** (1 - 12 units)

**Description:** Individual study or special project or formal report thereof submitted in lieu of thesis for certain master's degrees.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Independent Study Required

**Repeatable:** Course can be repeated for a maximum of 12 units.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

Online Campus: Fall, Spring, Summer

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.

**EPID 910: Thesis** (1 - 6 units)

**Description:** Research for the master's thesis (whether library research, laboratory or field observation or research, artistic creation, or thesis writing). Maximum total credit permitted varies with the major department.

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Independent Study      Required

**Repeatable:** Course can be repeated a maximum of 99 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

**EPID 920: Dissertation** (1 - 9 units)

**Description:** Research for the doctoral dissertation (whether library research, laboratory or field observation or research, artistic creation, or dissertation writing).

**Grading basis:** Alternative Grading: S, P, F

**Career:** Graduate

**Course Components:** Independent Study      Required

**Repeatable:** Course can be repeated a maximum of 99 times.

**Course typically offered:**

Main Campus: Fall, Spring, Summer

-SA represents a Student Abroad & Student Exchange offering

-CC represents a Correspondence Course offering

**May Be Offered** Departments may offer this component in some semesters. See the Schedule of Classes for term-specific offerings.