

Academic Policies

2018 -- 2019



Department
of
Epidemiology

Gillings School
of Global
Public Health

University
of
North Carolina
at
Chapel Hill

Advising

Honor Code

Degree Requirements

Calendar of Events

Learning Objectives

...and more



IMPORTANT DATES FOR THE 2018 – 2018 ACADEMIC YEAR

DATE	EVENT
Aug 21	First day of classes (Fall 2018)
Aug 27	Last day to register or add a course
Sep 3	Labor Day holiday
Sep 4	Last day to drop a course to have tuition adjusted
3rd week of Sept	Spring 2019 course listing available over the web
Sep 21 (8:45-3:00)	Doctoral Qualifying Exam – Substantive Components
Oct 2	Last day to apply for December graduation
Oct 12	University Day
Oct 17 5pm-Oct 22 8am	Fall Recess
1 st week of Nov	Registration begins for Spring 2019 term
TBA	Pre-payment or Financial Aid proof period begins for Spring 2019 registration
Nov 21	Last day to drop a course
Nov 21-23	Thanksgiving Holiday
Nov 26	Final signed copies of master's papers and reports of master's papers due to Student Services Office by 4:00 pm for December graduation candidates
	Electronic submission of dissertations due to Graduate School by 4:00 pm for December graduation candidates
Dec 5	Last day of classes
Dec 6	Reading day
Dec 8	Last day to register for Master's Comprehensive Exam
Dec 7-8	Exams
Dec 10-11	Exams
TBA	Tuition and fees due for Spring 2019 term
Dec 12	Reading day
Dec 13-14	Exams
Dec 16	December commencement
Jan 8	Master's Comprehensive Exam
Jan 9	First day of classes (Spring 2019)
Jan 15	Last day to register or add a course
Jan 21	Martin Luther King holiday
TBA	Last day to drop a course to have tuition adjusted
TBA	Last day to apply for May graduation
Mar 8 -17	Spring Recess
TBA	Final signed copies of master's papers and reports of master's papers due to Student Services Office by 4:00 pm for May graduation candidates
	Electronic submission of dissertations due to Graduate School by 4:00 pm for May graduation candidates
TBA	Last day to drop a course
Apr 12	Last day to register for Methods Component of Doctoral QE
Apr 19	Spring Holiday
Apr 26	Last day of classes
Apr 26	MSCR Master's Comprehensive Exam will be distributed at 9:00 am
Apr 29	MSCR Master's Comprehensive Exam is due by 5:00 pm
April 29-30	Exams
May 1	Reading day
May 2-3	Exams
May 4	Reading day
May 6-7	Exams
May 10 (8:45-3:00)	Doctoral Qualifying Examination – Methods Component
May 11	Doctoral Hooding Ceremony
May 11	SPH Commencement
May 12	University Commencement
Jun 15	Last day to register for September 2019 Substantive Doctoral Qualifying Exam

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
<i>Department Mission.....</i>	<i>1</i>
<i>Departmental Organization.....</i>	<i>2</i>
COURSES OFFERED	3
<i>Methods Courses</i>	<i>3</i>
<i>Substantive Courses</i>	<i>3</i>
<i>Supporting Courses.....</i>	<i>4</i>
<i>Credit Seminars.....</i>	<i>4</i>
<i>Tutorials and Research Sections.....</i>	<i>4</i>
<i>Student Recommended Non-EPID Courses.....</i>	<i>5</i>
<i>Independent Study, Independent Research, and Lab Practice</i>	<i>6</i>
INFORMATION RELEVANT TO ALL EPIDEMIOLOGY STUDENTS.....	7
<i>Academic Calendars</i>	<i>7</i>
<i>Departmental Communication</i>	<i>7</i>
Student E-Mail Accounts.....	7
Listservs	7
<i>The Advising Process.....</i>	<i>7</i>
Advisor Assignments	7
Changing Advisors.....	7
Communication	8
Individual Development Plan.....	8
Process Evaluation	9
Conflict Resolution	9
The University Ombudsperson.....	9
<i>The Honor Code.....</i>	<i>9</i>
<i>Course Registration.....</i>	<i>10</i>
Dropping Courses.....	10
Exemption from Required Courses	10
<i>University Grading Policies.....</i>	<i>11</i>
Grading.....	11
Policy on “IN” Grades.....	11
<i>Departmental Grading Policies</i>	<i>11</i>
Policy on “L” Grades	11
Diagnostics	11
Implementation	12
Conditional advancement for “L” grades	12
Exemption from requirement to retake core methods	12
<i>Progress Assessment.....</i>	<i>12</i>
<i>Audit Policy</i>	<i>13</i>
<i>Statistical Computing.....</i>	<i>13</i>
<i>University Student Travel Policy.....</i>	<i>14</i>
<i>Human Subjects Review</i>	<i>14</i>
INFORMATION SPECIFIC to MPH and MSPH DEGREE STUDENTS.....	15
<i>Competencies for the MPH and MSPH.....</i>	<i>15</i>
<i>Summary of Degree Requirements for the MPH and MSPH.....</i>	<i>16</i>
School of Public Health Core Curriculum	17

Departmental Minimum Course Requirements for MPH (Except Vet MPH) and MSPH Degrees	17
Other Program Requirements	17
<i>Master's Practicum Requirement</i>	17
<i>The Master's Comprehensive Examination</i>	18
Purpose	18
Timing.....	18
Grading.....	19
Report of Outcome.....	19
Appeal of Failing Grade	19
<i>The Master's Paper and Oral Presentation of Master's Research</i>	20
Master's Paper Committee.....	20
Content and Form of the Master's Paper.....	20
Identifying a Master's Paper Topic	21
Master's Paper Proposal.....	21
Human Subjects Review	21
Data Use Agreements.....	22
Schedule for Completing the Master's Paper	22
Format and Submission of the Master's Paper.....	22
Oral Presentation of the Master's Paper Research	23
Master's Paper Report	25
Suggested Milestones and Time Table for Preparation of the Master's Paper.....	25
<i>Application for Graduation</i>	25
<i>Transition of MSPH Students to Doctoral Research</i>	25
Criteria for MSPH Review Meeting.....	26
Procedure	26
<i>Transition from the MPH Track to the PhD Track</i>	26
INFORMATION SPECIFIC TO VETERINARY MPH DEGREE STUDENTS	27
<i>Competencies for the Veterinary MPH</i>	27
<i>Summary of Degree Requirements for the Veterinary MPH</i>	27
Departmental Minimum Course Requirements for the Veterinary MPH.....	27
Other Program Requirements	28
Sample of Elective Courses	28
<i>Master's Paper Committee</i>	29
INFORMATION SPECIFIC TO MSCR DEGREE STUDENTS	30
<i>MSCR (Masters of Science in Clinical Research)</i>	30
<i>Competencies for the MSCR</i>	30
<i>Students</i>	30
<i>Description of the Program</i>	31
<i>Mentors and Advisors</i>	32
<i>Core Courses</i>	32
<i>Approved Electives</i>	33
<i>Typical Schedule (2 Year Program)</i>	36
<i>Master's Practicum Requirement</i>	36
<i>Master's Comprehensive Exam</i>	36
Purpose	36
Timing.....	36
Format	36
Appeal of Failing Grade	37

<i>Master's Paper</i>	37
Master's Paper Committee	37
Content and Form of the Master's Paper	37
Identifying a Master's Paper Topic	37
Human Subjects Review	37
Data Use Agreements	38
Typical Schedule for Completing the Master's Paper	38
Format and Submission of the Master's Paper	38
Master's Paper Report	39
<i>Research Grant Proposal</i>	39
<i>Application for Graduation</i>	39
INFORMATION SPECIFIC TO DOCTORAL DEGREE STUDENTS	41
<i>Expectations of a Doctoral Student</i>	41
<i>Competencies for the PhD</i>	41
<i>Summary of Requirements for the PhD</i>	42
Required Core Methods Courses	43
Additional Courses	43
On-Site Doctoral Studies Policy	43
Other Degree Requirements	44
Scientific Writing	44
<i>Minor Programs</i>	45
<i>Teaching Requirement</i>	45
Roles and Responsibilities	45
Options for Satisfying the Teaching Requirement	45
Training and Development	46
<i>Doctoral Practicum Requirement</i>	46
Requirement Details	46
Options for Satisfying the Practicum Requirement	47
Format	47
Report of Completion	47
<i>The Intradepartmental Review (IDR)</i>	47
<i>Preliminary Doctoral Written Examination: The Doctoral Qualifying Exam</i>	48
Purpose	48
Content and Structure of the Qualifying Examination	48
Expected Competencies	49
Planning	49
Timing	49
Administration	50
Format	50
Grading	51
Report of Outcome	51
Appeal of Failure	52
<i>The Dissertation Committee</i>	52
<i>The Preliminary Oral Examination</i>	53
<i>Research Area Questions</i>	54
<i>Admission to Candidacy</i>	54
<i>The Doctoral Dissertation</i>	54
Human Subjects Review	55
Data Use Agreements	55
Standards and Expectations for Doctoral Research in the Department of Epidemiology	56

Publication Requirement	56
Implementation	56
Authorship Expectations from Doctoral Research	57
Format of the Dissertation	58
Data Source.....	58
Breadth	59
Time Line and Interaction with the Doctoral Committee	59
Submission of Doctoral Dissertations.....	60
<i>Application for Graduation</i>	<i>60</i>
<i>Final Defense of the Dissertation.....</i>	<i>60</i>
<i>Submission of the Dissertation to the Graduate School.....</i>	<i>61</i>
<i>Submission of the Dissertation to the Student Services Office.....</i>	<i>61</i>

RESEARCH PROGRAM AREA LEARNING OBJECTIVES..... 62

APPENDICES

Appendix I: Listservs	63
Appendix II: Sample Timeline for the MPH Program	64
Appendix III: Sample Timeline for the MSPH to PhD Program	66
Appendix IV: Sample Schedules for 2-Year M(S)PH Program & 18-Month MPH	69
Appendix V: Additional Information on BIOS Courses.....	70
Appendix VI: List of EPID Substantive Courses	71
Appendix VII: Guidelines for Choosing Master's Topics.....	72
Appendix VIII: IRB Guidance for Student Research and Class Projects	73
Appendix IX: Publication Practices	75
Appendix X: Sample Title Page for Master's Paper.....	76
Appendix XI: Sample Timeline for the Veterinary MPH Program	77
Appendix XII: Sample Schedule for the Veterinary MPH Program	79
Appendix XIII: Sample Timeline for the MSCR Program	80
Appendix XIV: Sample Schedule for 2-Year MSCR Program.....	82
Appendix XV: Sample Timeline for the PhD Program	83
Appendix XVI: Sample Schedule for the PhD Program	86
Appendix XVII: Guidelines for Choosing Dissertation Topics	87
Appendix XVIII: Sample Table of Contents for Dissertation.....	88
Appendix XIX: Public Health Core Competencies & Cross-Cutting Competencies.....	90
Appendix XX: Degree Specific Competencies- MPH (including MPH Veterinary Epidemiology Concentration) & MSPH Programs.....	104
Appendix XXI: Degree Specific Competencies- MSCR Program.....	109
Appendix XXII: Degree Specific Competencies- PhD Program	112

INTRODUCTION

Academic Policies provides comprehensive information on policies and requirements for Master's and Doctoral programs in the Department of Epidemiology. It is intended for the use of students and advisors and is updated annually. Many forms are referenced throughout this document and can be found at the links below. You need to pay close attention to the instructions in this document regarding which forms you complete and which ones the Student Services Office will complete.

[Department of Epidemiology Forms](#) and [Graduate School Forms](#)

Every effort is made to ensure that the information presented herein and on our website is accurate and complete. However, students should be aware that errors and omissions do sometimes occur; for this reason, minor changes and/or clarifications may be required at a later date.

Use the EPID website (sph.unc.edu/epid) – learn to love it because there's a wealth of information there.

There are several other references with which you need to be familiar. They contain important information about UNC policies and procedures. These references include:

- **The Graduate School Handbook**
Graduate School policies for degree programs- available online at handbook.unc.edu/
You are responsible for adhering to these policies. They are not necessarily re-stated in this document.
- **The Graduate School Theses and Dissertation Guide**
Available online at gradschool.unc.edu/academics/thesis-diss/guide/
- **Connect Carolina**
Go to the UNC web site at connectcarolina.unc.edu/ to enter the Student Portal. From this site you can register, check grades and billing info, print transcripts, update your address, etc. Information about student groups such as the Epidemiology Student Organizations (ESO), GPSF, Minority Student Caucus, and Student Union Board can also be found on UNC, SPH and departmental websites.

Department Mission Statement

Our mission is to improve the public's health by training epidemiologists and by advancing knowledge concerning the causes and prevention of disease and the promotion of health. We strive to creatively integrate substantive knowledge and methods from many fields into epidemiologic research, teaching, and practice, with an ultimate commitment to benefit public health.

Our goals are to:

- Provide the highest quality education to enable scientists and health professionals to advance epidemiology as a discipline and apply their skills to advance scientific knowledge in public and private settings.
- Advance interdisciplinary and multilevel knowledge of health and disease in populations.

- Create and evaluate opportunities to promote health and reduce illness and disability in populations regardless of socioeconomic status (i.e., a diversity goal).
- Innovate and advance the field of epidemiology through the development of epidemiologic methods.
- Partner with public health agencies to improve the health of populations through the training of public health leaders and the application of epidemiologic knowledge by public health practitioners.
- Improve the health of populations in the State of North Carolina and globally.

Department Organization

The Department of Epidemiology is led by Til Stürmer, MD, PhD, chair since March 2018. Dr. Stephanie Engel is Associate Chair of the department. Department faculty as of July 2018 include 39 tenure track faculty (including 7 jointly appointed faculty) and 31 fixed-term faculty. There are 57 staff who help with the central and research administrative aspects of the department. A listing of department faculty and staff can be found here- <https://sph.unc.edu/epid/epid-faculty-and-staff/>. The students have a central organizational group – the Epidemiology Student Organization.

The Department of Epidemiology has two standing committees of its own: Admissions and Graduate Studies. In addition, there is faculty representation to several SPH committees: IRB, Academic Programs Committee, Research, Space, and Academic Promotion and Tenure.

The Admissions Committee is chaired by Dr. Melissa Troester and handles all aspects of the admissions and recruitment process. Membership consists of faculty from the major focus areas, as well as student services staff.

The Graduate Studies Committee provides oversight for the department’s graduate program with respect to overall curriculum development and evaluation, requirements, qualifying examinations, new course and program approval, and other academic matters. Membership consists of departmental faculty representing both methods and substantive areas, student services staff, and is chaired by Dr. Steven Meshnick. In addition, 2 to 3 student representatives are identified by the Epidemiology Student Organization to serve on the committee.

QUESTIONS?	→	Student Services Office
Valerie W. Hudock Assistant to the Chair for Graduate Studies Department of Epidemiology 2106-B McGavran-Greenberg Hall (919) 966-7459 email: vhudock@unc.edu		Jennifer J. Moore Student Services Specialist Department of Epidemiology 2106-C McGavran-Greenberg Hall (919) 966-7458 email: jenjoyce@email.unc.edu

COURSES OFFERED IN THE DEPARTMENT OF EPIDEMIOLOGY

A complete list of courses, along with course descriptions and current syllabi, is available at on the [Courses](#) webpage of the department's website.

I. METHODS COURSES

- EPID 600: Principles of Epidemiology
- EPID 700: SAS and Data Management
- EPID 705: Introduction to Deductive and Probability Logic in Epidemiology
- EPID 710: Fundamentals of Epidemiology
- EPID 711: Clinical Measurement and Evaluation
- EPID 715: Theory and Quantitative Methods in Epidemiology
- EPID 716: Epidemiologic Data Analysis
- EPID 718: Analytic Methods in Observational Epidemiology
- EPID 719: Readings in Epidemiologic Methods
- EPID 722: Epidemiology Analysis of Time-to-Event Data
- EPID 725: Research Planning Workshop
- EPID 726: Epidemiologic Research Methods
- EPID 730: Readings in Methods for Epidemiology
- EPID 731: Systematic Review and Meta-Analysis
- EPID 733: Clinical Trials in Epidemiology
- EPID 801: Data Analysis in Oral Epidemiology
- EPID 804: Design of Clinical Research
- EPID 805: Clinical Research Skills III: Proposal Development – Part 1 (Translational Research Curriculum only)
- EPID 806: Clinical Research Skills IV: Proposal Development – Part 2 (Translational Research Curriculum only)
<http://tracs.unc.edu/index.php/services/education/translational-and-clinical-research-curriculum>

II. SUBSTANTIVE COURSES

- EPID 625: Injury as a Public Health Problem (cross-listed as HBEH 625/MHCH 625)
- EPID 626: Violence as a Public Health Problem (cross-listed as HBEH 626/MHCH 626)
- EPID 735: Cardiovascular Epidemiology
- EPID 737: Advanced Cardiovascular Epidemiology
- EPID 738A: Methods and Applications of Cardiovascular Disease Surveillance
- EPID 738B: Epidemiology of Stroke
- EPID 743: Genetic Epidemiology: Methods and Applications
- EPID 744: Advanced Genetic Epidemiology
- EPID 745: Molecular Techniques for Public Health Research
- EPID 750: Fundamentals of Public Health Surveillance
- EPID 751: Emerging and Re-Emerging Infectious Diseases
- EPID 753: Prevention and Control of Infectious Diseases at the Level of the Community
- EPID 754: Mathematical Modeling of Infectious Diseases
- EPID 755: Introduction to Infectious Disease Epidemiology
- EPID 756: Control of Infectious Diseases in Developing Countries
- EPID 757: Epidemiology of HIV/AIDS in Developing Countries
- EPID 758: Methods and Principles of Applied Infectious Disease Epidemiology
- EPID 759: Methods in Field Epidemiology

- EPID 760: Vaccine Epidemiology
- EPID 765: Methods and Issues in Pharmacoepidemiology
- EPID 766: Epidemiologic Research with Healthcare Databases
- EPID 770: Cancer Epidemiology and Pathogenesis
- EPID 771: Cancer Epidemiology: Survivorship and Outcomes
- EPID 772: Cancer Prevention and Control (cross-listed as HPM 765/HBEH 765)
- EPID 775: Advanced Cancer Epidemiology: Classic and Contemporary Controversies in Cancer Causation
- EPID 780: Occupational Epidemiology
- EPID 785: Environmental Epidemiology
- EPID 786: Community-Driven Research for Environmental Justice
- EPID 787: Advanced Environmental Epidemiology
- EPID 790: Intervention Epidemiology
- EPID 800: Epidemiology of Medical Care
- EPID 802: Clinical Research Skills I: Basics (Translational Research Curriculum only)
- EPID 810: Physical Activity Epidemiology and Public Health (cross-listed as NUTR 810)
- EPID 813: Nutritional Epidemiology (cross-listed as NUTR 813)
- EPID 814: Obesity Epidemiology (cross-listed as NUTR 814)
- EPID 815: Diet and Cancer (cross-listed as NUTR 815)
- EPID 818: Analytical Methods in Nutritional Epidemiology (cross-listed as NUTR 818)
- EPID 825: Social Determinants of Health: Theory, Method & Intervention (cross-listed as HBEH 802)
- EPID 826: Social Epidemiology: Concepts and Measures
- EPID 827: Social Epidemiology: Analysis and Interpretation
- EPID 851: Perinatal Epidemiology (cross-listed as MHCH 851)
- EPID 853: Advanced Topics in Perinatal & Pediatric Epidemiology (cross-listed as MHCH 853)

III. SUPPORTING COURSES

- EPID 742: Integrating Biomarkers in Population-Based Research
- EPID 795: Introduction to Public Health Informatics

IV. CREDIT SEMINARS

- EPID 764: Hospital Epidemiology
- EPID 891: Doctoral Seminar
- EPID 890: MSPH Seminar
- EPID 892: Interdisciplinary Seminar in Health Disparities (cross-listed as MHCH 892)
- EPID 893: Pharmacoepidemiology Seminar
- EPID 894: Infectious Disease Seminar
- EPID 895: Seminar in Oral Epidemiology
- EPID 897: Advanced Seminar in Cardiovascular Research
- EPID 898: Global Health Ethics Seminar
- GRAD 810: Communication in the American Classroom

V. TUTORIALS AND RESEARCH SECTIONS

- EPID 799: Problems in Epidemiology
- EPID 883: Teaching Internship in Epidemiology
- EPID 886: Readings in Epidemiology
- EPID 889: Topics in Epidemiology
- EPID 900: Epidemiology Practice (Master's Practicum)
- EPID 905L: Epidemiology Laboratory Practice
- EPID 910: Research in Epidemiology

EPID 992: Master's Paper
EPID 994: Doctoral Dissertation

VI. STUDENT RECOMMENDED NON-EPID COURSES

BIOL 445 Cancer Biology
BIOS 511 Introduction to statistical Computing and Data Management
BIOS 664 Sample Survey Methodology
BIOS 665 Analysis of Categorical Data
BIOS 667 Applied Longitudinal Data Analysis
BIOS 767 Longitudinal Data Analysis
DPOP 806 Pharmaceutical Policy
ENVR 468 Advanced Functions of Temporal GIS
GEOG 541 GIS in Public Health
GRAD 704 Effective Presentation Skills
HBEH 753 Qualitative Research Methods
HBEH 815/6 Foundations of Health Behavior I and II
HPM 757 Health Reform: Political Dynamics and Policy Dilemma
JOMC 560 Medical and Science Journalism
MBA 822 Negotiations
PATH 713/714L Molecular and Cellular Pathophysiological Basis of Disease: Mechanisms of Disease
PATH 715/716L Molecular and Cellular Pathophysiological Basis of Disease: Systemic Pathology
PLAN 491 Introduction to GIS
PSYC 846 Multilevel Modeling
PUBH 741/2 Quantitative Methods for Health Care Professionals I and II

INDEPENDENT STUDY, INDEPENDENT RESEARCH, AND LAB PRACTICE REGISTRATION:

Independent study, independent research, and field training are options available to the advisor and the trainee to introduce individualized and flexible learning opportunities into a student's training path. The distinctive features that define each of these are listed below:

Readings in Epidemiology (EPID 886) is a course organized between faculty and one student (or fewer than five students) with defined learning objectives, an evaluation, and credit hours to meet a student's training objectives outside/beyond the established courses and seminars. This independent study activity can include review of the substantive and/or methodologic knowledge base in a particular area, and/or their application. This course is not intended to support research hours. Students who wish to register for this course must also complete an [Independent Study Learning Agreement](#).

Independent Research (EPID 910) provides a mechanism for training opportunities based on active participation in research with faculty. It is based on defined learning objectives for this activity, their evaluation, and a pre-established number of credit hours. The student's time is allocated primarily to an active role in research activities as part of a research team, as opposed to a review of the scientific background and/or knowledge base pertinent to the research.

Independent research is a training activity for academic credit. Remuneration as a research assistant for the student's participation in a research project related to this learning activity is an option, to the degree that the objectives and responsibilities for the independent research and the research assistant activity are specified and do not overlap. Both the learning activity and its objectives, as well as the funding implications, must be discussed explicitly at the outset of this activity and established in writing.

Epidemiology Practice (EPID 900) provides credit for the required Master's practicum experience. The Master's practicum provides students with the opportunity to apply their academic training to experientially address master's competencies in the context of public health practice. All students will register under the faculty practicum coordinator.

Epidemiology Lab Practice (EPID 905L) is any learning activity conducted off-campus, designed to support the student's training goals. Such activities are either formal training activities listed on the curriculum or designed specifically for the student with approval by the advisor, specifying learning objectives, number of credit hours, an evaluation, and the student's responsibilities.

A student's participation in independent study, independent research, or lab practice requires approval by the supervising faculty.

INFORMATION RELEVANT TO ALL EPIDEMIOLOGY STUDENTS

ACADEMIC CALENDARS



Students will frequently need to consult the [Academic Calendar](#) to be aware of all pertinent deadlines, holidays, etc. University calendars (including registration deadlines, drop dates, final exam schedules) are available online at registrar.unc.edu/AcademicCalendar/index.htm.

DEPARTMENTAL COMMUNICATION

Student E-Mail Accounts

Much of the communication between students and the Student Services Office, faculty and other offices/individuals on campus will be through email. Each student is provided with a departmental email account upon enrollment. These email addresses are made available to UNC faculty, staff and other students. Frequently, students have other email accounts on campus and elsewhere; however, you should be aware that **your UNC account is the one that will be used for communications from faculty and staff.**

Communications to the entire list of students will take place via an email listserv. The address for sending messages to this list is: epidstudents@unc.edu. All student accounts have automatically been subscribed to this listserv, as well as to the epidsems@unc.edu listserv for seminar announcements.

Since UNC email is the primary mode of communicating information to students, it is imperative that your email be checked regularly. Students are held responsible for information disseminated via email, including summers and holidays.

Listservs (electronic mailing lists)

Several other listservs are available for student use. Within the EPID department, job announcements for research and teaching assistantships are sent to the "epidjobs" listserv. Information on seminars, doctoral defenses, master's presentations, etc. is disseminated via the "epidsems" listserv. All students are automatically subscribed to the "epidstudents" "epidsems," and "epidjobs" listservs. Details on the listservs are presented in Appendix I.

THE ADVISING PROCESS

Advisor Assignments

When a student is offered admission to the EPID program, an advisor assignment is made based on factors such as mutual interests and faculty advising load. Within the student and faculty population, there is great diversity in work styles. While in most instances the original assignment will prove to be a satisfactory and fulfilling relationship, there are many reasons why these first matches may not always be the best pairing to meet the needs of the student. For this reason, there may be times when the student and/or the advisor feel that the student's needs may be better served by another advisor. Change is encouraged to facilitate the best possible advising experience.

Changing Advisors

Changing advisors is a fairly common occurrence. Once the student identifies a new faculty member who is willing to serve as advisor, the student asks the faculty member to sign an [Advisor Assignment/Change form](#) indicating that s/he has agreed to advise the student. This form is then filed

with the Student Services Office. A student who is considering a change in advisors is encouraged to discuss the situation with the current advisor. If for any reason the student is not comfortable doing this, s/he should consult someone from the Student Services Office about how to proceed, depending on the specific circumstances. When a change in advisors is made, the student should notify the now-prior advisor as a matter of courtesy. However, if this proves to be a problem, the Student Services Office should be asked to assist.

Communication

The advisor/advisee relationship benefits from good communication. Establishing expectations of both the faculty member and the student at the outset of the advisor/advisee relationship is a major component of good communication. Listed below are some suggestions for topics for discussion between advisor and advisee, beginning at the first meeting:

- preferred method of communication (telephone, email, walk-in, sign-up at door, schedule appointment with secretary)
- frequency of meetings
- responsibility for initiation of meetings
- how the advisor will communicate which of his/her suggestions are recommendations and which are requirements
- how much course planning should be done with the advisor (i.e., is it necessary to meet with the advisor prior to registration for courses)
- who will be responsible for ensuring that the student has met all degree requirements
- to what extent the advisor will assist in identifying funding opportunities
- to what extent the advisor will assist in identifying master's paper and/or dissertation topics
- what the advisee's expectations are in terms of faculty involvement in identifying topics and funding opportunities
- what the advisor's expectations are in terms of professional development opportunities (i.e., manuscript review, proposal writing, data analysis, literature reviews, presentations at meetings, etc.)
- how often the student and advisor should meet to assess the student's progress, and in what manner that assessment will be made
- how often the student and advisor should meet to assess the appropriateness of the advisor/advisee match, and in what manner that assessment should be made

Individual Development Plan

The Graduate Studies Committee encourages faculty to work with their advisees to complete an Individual Development Plan (IDP) at the start of each academic year. An IDP template is available on the [Faculty Resources](#) webpage. Students are encouraged to prepare a draft IDP and then meet with their advisor to discuss and refine it. Topics for inclusion on the IDP include:

- perceived strengths and weaknesses
- progress made in the previous academic year (i.e., courses, presentations, degree milestones)
- plans for the upcoming academic year
- remediation plan (in cases of Qualifying Exam failure)
- progress toward thesis
- steps taken toward post-graduation career plans (e.g., CV preparation, networking, job search)

Process Evaluation

It is recommended that the advisor and advisee regularly assess the advising relationship to evaluate the appropriateness of the match and to identify areas where improvement can be achieved. Students and advisors are encouraged to discuss openly the concerns of either party and to try to negotiate solutions to any problems.

Conflict Resolution

Most differences can be resolved through open communication and should be addressed early on by the relevant parties. In the event that the student or faculty member feels that intervention is needed by a third party, s/he is encouraged to first seek the assistance of the Student Services Office in dealing with the problem issue(s). If a mutually satisfactory plan for resolving differences cannot be developed, the student or faculty member has several available resources. Any matter of concern, academic or personal, may be addressed departmentally with the Director of Graduate Studies (Dr. Steven Meshnick) and/or the Chair (Dr. Andrew Olshan). If a student wishes to seek assistance outside of the department, resources include the SPH Assistant Dean for Student Affairs (Charletta Sims Evans) and the Graduate School's Associate Dean for Student Affairs (Leslie Lerea). [Campus Health](#) also provides assistance for medical concerns, including mental health services and wellness programs. Students, as well as faculty, should feel free to seek support and assistance whenever necessary without fear of negative repercussions. The Department of Epidemiology is committed to making every effort to ensure that students have a successful experience and have the necessary resources to address any challenges to that success.

The University Ombudsperson

In the event that a student's concerns are not satisfactorily resolved by utilizing the aforementioned resources, s/he may consult with the [University Ombuds Office](#). The ombuds office is a place where all Carolina staff, faculty, students, and administrators are welcome to come and talk about any campus issue, concern, problem, or dispute. It is confidential, impartial, informal, and independent of any other department or group on campus. Permanent records are not kept and sides are not taken. The ombuds serves as a neutral party to solve problems and resolve conflicts and work to achieve fair outcomes for all parties using mediation and other conflict resolution strategies.

Examples of topics that might be brought to the ombudsperson include, but are not limited to: interpersonal difficulties, communication problems, health and safety issues, discrimination, harassment, appropriate ways to frame and discuss issues, ethical behavior, and accessing other University resources.

THE HONOR CODE (studentconduct.unc.edu)

The Instrument of Student Judicial Governance (instrument.unc.edu) is the definitive document on student conduct and the judicial system. In an effort to ensure academic integrity, this document stipulates that students must sign a pledge on all written work. **The pledge reads “On my honor, I have neither given nor received unauthorized aid on this assignment.”** Instructors may allow the option of simply writing on your work “Pledge” and signing your name. **When in doubt about instructor expectations regarding teamwork on projects, crediting the work of others, using previously submitted work, etc., ask the instructor to clarify.** Faculty members are bound by University regulations to report to the Student Attorney General any suspicion of a violation of the Honor Code. Private action by faculty regarding suspected or admitted Honor Code violations is prohibited by faculty policy. If you have any concerns or questions regarding the Honor Code you should contact the Office of the Dean of Students (919-966-4042; deanofstudents.unc.edu) or the Office of Student Conduct (919-962-0805).

Many violations of the Honor Code occur due to an improper or insufficient understanding of procedures and expectations rather than an attempt to deceive. When in doubt, it is imperative that students consult with instructors or other appropriate resources. Even though ignorance is often the cause, it does not excuse the act of Honor Code infringement.

Areas that are frequently troubling include the following:

- submission of work previously submitted and graded for another course (It is the nature of some courses to build upon work previously submitted. Always check with the instructor before doing so.)
- failure to properly cite own work from previously developed materials. (You must cite yourself if re-using your own writing for another purpose.)
- cultural differences in understanding the Honor Code (Some cultures view the word-for-word copying of another's work to be not only acceptable, but desirable, even without appropriate source identification. International students in particular may need to seek guidance from campus resources.)
- lack of a clear understanding of plagiarism (What constitutes plagiarism can vary from discipline to discipline. Refer to the Graduate School policy on academic integrity and ethics, found on the Graduate School's website- gradschool.unc.edu/academics/resources/ethics.html. An additional source of clarification is The Writing Center's handout, which can be found at writingcenter.unc.edu/handouts/plagiarism/).

COURSE REGISTRATION

For information about online course listing and registering for classes, please refer to the Office of the Registrar website at registrar.unc.edu/ The following section highlights questions frequently asked of Student Services. Details and further information can be found in the Graduate School Handbook.

Dropping Courses

Graduate students may drop courses using the registration system during the first two weeks of classes. After the second week of classes and before the end of the twelfth week of classes, graduate students must obtain a Registration/Drop/Add Form from EPID Student Services (see the University Registrar's Calendar for the Last Day for Graduate Students to drop courses). In most cases, Student Services will sign off as the advisor. Registration changes requested after the last day for graduate students to drop courses require approval of the Graduate School.

Important: Students receiving tuition awards must remain in the same tuition credit bracket (0-2.9; 3-5.9; 6-8.9; 9 or more) throughout the semester. Any registration changes after the "last day to add" may result in a tuition change that is not covered by the in-state tuition award. Consult with Student Services before making changes.

Exemption from Required Courses

Exemption from any course requirement is on the basis of equivalent work. A student seeking exemption from, or substitution for, a School of Public Health core requirement must submit for approval the School of Public Health's Core Course Exemption/Substitution Application Form (<http://sph.unc.edu/students/academic-and-policies/>). To be exempted from a departmental requirement, the student submits a departmental exemption request form to the Student Services

Office. The petition must first be signed by the student's advisor and should describe clearly the equivalent experience. These forms are online at sph.unc.edu/epid/epid-student-central/

Exemptions are not granted for substantive courses. We expect our students to meet the substantive epidemiology course requirements by choosing topical areas, and course levels within a program area, that complement the knowledge base that they bring to the program.

UNIVERSITY GRADING POLICIES

Grading

The graduate school operates on the HLP system. Graduate students enrolled in courses numbered 400 or above must receive one of the following grades:

Graduate Permanent Grades

H High Pass

P Pass

L Low Pass

F Fail

Special Grading Symbols

F* Fail-Administratively Assigned; equivalent to F

NG No grade assigned

Temporary Grades

AB Absent from final examination

IN Work incomplete (converts to an F* if not resolved by last day of classes for same term one year later)

Policy on "IN" Grades

'IN' or an incomplete grade is given when a student took the final exam but did not complete some other course requirement. An IN will revert to an F*(administratively assigned grade) unless the grade is replaced with a permanent grade by the last day of classes for the same term one year later (or by another deadline stipulated in writing by the course instructor). However, if the grade is changed, the IN grade does not stay on the student's academic record. The student is responsible for ensuring that the grade change occurs and should correspond with the course department and follow up with faculty accordingly.

DEPARTMENTAL GRADING POLICIES

Policy on "L" Grades

A grade of P is the lowest acceptable grade in core methods courses (EPID 705, EPID 710, EPID 715, EPID 716, EPID 718, EPID 722, EPID 725 and EPID 726). A grade of L in one of these courses requires re-taking the course if the student is to continue in the program.

Diagnostics

It is each student's responsibility to assess his/her performance in courses and the need for remedial action. For this, students are encouraged to seek help from their advisor, course instructors or others,

as needed. In addition, a grade of L in an Epidemiology core methods course requires that a meeting among the student, the advisor, the course instructor, and Student Services take place within two weeks. The purpose of the meeting is to ascertain the factors associated with the poor performance and to implement the steps described below. Student Services will notify the student's advisor of the L grade. The advisor is then responsible for initiating this meeting at the earliest convenience of all involved. A grade of L often reflects the need for an adjustment in workload, study habits, or other activities rather than a lack of aptitude. Many students go on from L grades in core courses to have great success in the remainder of their academic program and future careers.

Implementation

Students who receive a grade of L in a core methods course must re-take the course and receive a minimum grade of P, unless exempted below. The student is expected to retake the course – or to be granted an exemption by the Graduate Studies Committee (GSC) – within one year of taking the core methods course that resulted in an L grade. If this timeline is not met the student must ask his/her advisor to present an alternative time line to the GSC.

Conditional advancement to a higher-level course for a student who receives a grade of L in a core methods course

Students who receive a grade of L in a core methods course may advance to the pertinent higher-level methods course in epidemiology (prior to re-taking the course in which they received an L) only if approved by the instructor of the higher-level course and endorsed by the student's advisor. These exceptions will be rare.

Exemption from the requirement to re-take a core methods course

For EPID 705, 710, 715, 716, and 718, a high performance in the higher-level course (above the 85th percentile) allows the student to submit a request to the GSC to be exempted from having to re-take the lower level course graded as 'low pass' (L).

PROGRESS ASSESSMENT

The purpose of tracking student progress is the early identification of possible problems so that they may be remediated in a timely fashion. It is expected that the student will take ownership of his/her education by seeking assistance if any of the criteria identified below exist. A student interested in receiving assistance should contact EPID Student Services. With the student's input, they will identify a mentoring committee (including at least one GSC member) to assist in resolving stumbling blocks to success in the program. This committee may or may not include the advisor, depending on the student's preferences.

Helping students resolve conceptual misunderstandings, improve methodologic skills, prioritize their responsibilities, and address obstacles to their progress early in their training improves long-term success in the program and in the student's career. Remediation activities would consist of completing a plan to address weaknesses and/or other identified obstacles. The plan would be developed by the student in conjunction with members of the Graduate Studies Committee and advisor. This arrangement may include tutoring, re-taking or auditing a core methods course (or portions of it), a project designed to augment specific skills, or other agreed-upon activities. For students further along, remediation may consist of re-prioritization of responsibilities or other agreed-upon steps to ensure milestones (e.g., IDR) are met.

Indicators that a progress assessment meeting is advisable:

1. When a student receives 6 or more credits of “L”.
2. When a student fails his/her first qualifying examination, methods or substantive (or master’s comprehensive exam, if relevant).
3. When a student fails his/her doctoral proposal defense.
4. MSPH/PhD students in their 4th academic year without having presented their MSPH paper.
5. PhD students in their 4th academic year without having completed their IDR.

The list above is not exhaustive. At any time, a faculty member may identify students thought to be in jeopardy and ask GSC to convene a meeting. However, the faculty member should first set up a meeting with the student to discuss his/her concerns.

Although this process may create some anxiety among students, it is important to remember that the intention is be a proactive step to ensure that all students will succeed in the program. It is not intended to label students as weak or inferior in any way. There are many factors (personal and financial, as well as academic) that contribute to slower progress and/or subpar performance. The role of the Graduate Studies Committee is to assist students in successfully negotiating our challenging program.

AUDIT POLICY

Students may audit courses at the discretion of the professor. As a general rule, faculty are receptive to auditors provided space is available in the classroom. Recitation (lab) sections are typically not open to auditors.

As per the University Registrar’s policies, “Auditors do not write papers, take quizzes or examinations, request review of written work, and do not participate in class discussions unless otherwise directed by the course instructor. Auditors will appear on the instructor’s class roll but may not request grades.”

Auditors must submit an add form, available from Student Services Office and can make the audit request only after the end of the official registration period.

Per the Graduate School Handbook, “students may later enroll in and receive academic credit for a previously audited course; however, **retroactive academic credit for an audited course is not permitted.**”

STATISTICAL COMPUTING AND DATA MANAGEMENT

Competence in statistical computing and data management is a requirement of the program. Statistical computing using SAS is a component of several of the methods courses, and is required for one’s own research, as well as for many research assistantships. Various training resources are available for students without prior experience. Some of these are:

- EPID 700: SAS and Data Management (3 credits)
- BIOS 511: Introduction to Statistical Computing and Data Management (4 credits)
- Non-credit short courses offered by the UNC Odum Institute for Research in Social Sciences (www.odum.unc.edu/odum/home2.jsp)

An exemption exam is offered in August for those students not enrolling in EPID 700 or BIOS 511.

Adequacy in statistical computing is assessed as part of the intradepartmental review discussion for doctoral students.

UNIVERSITY STUDENT TRAVEL POLICY

UNC students planning to travel internationally to fulfill academic requirements (conduct research, participate in practice experiences, or in any way fulfill an academic requirement), must adhere to the University's Travel Policy. For travel requirements see: <http://sph.unc.edu/global-health/global-travel-toolkit/>

HUMAN SUBJECTS REVIEW

All students – without exception - must complete training in the protection of human research subjects. The website for this training is <https://research.unc.edu/human-research-ethics/getting-started/training/> Students should select training in either Group 1 or Group 2. Group 3 does not suffice.

Students may obtain a copy of their CITI training verification online at https://acap.research.unc.edu/research_training/?event=administration.certificates.pgCertSelectTraining.

The “Responsible Conduct of Research” course offered by the N.C. Translational and Clinical Research Sciences (TraCS) Institute during the summer can be taken in lieu of the CITI training. This course is typically announced via email by the TraCS program.

INFORMATION SPECIFIC TO MPH and MSPH DEGREE STUDENTS

COMPETENCIES FOR THE MPH AND MSPH

MPH

The MPH program enrolls students who have a terminal professional degree (such as MD, DDS, DVM) or an academic degree (PhD). The program is designed to add to their existing expertise a knowledge of the concepts and skills of epidemiology, to strengthen their research capabilities, to develop their understanding of public health concepts and the population perspective, and to enable them to be more sophisticated readers of clinical and epidemiological studies. Competencies guide our curriculum planning process and serve as a measure against which student achievement is assessed. The master's competencies in the Department of Epidemiology fully meet with core competencies set out by the **ASPH Education Committee**.

Upon satisfactory completion of the MPH degree program the student will be able to:

1. Apply the core competencies in public health as set forth in the learning objectives for the School of Public Health core curriculum;
2. Discuss the major obstacles and challenges to public health in the nation and the world, contrast the clinical and population perspectives on improving public health, and articulate the role of epidemiology in preserving and improving public health;
3. Explain fundamental epidemiological concepts, such as natural history, prevalence, incidence, relative risk, attributable risk, direct standardization, standardized mortality ratio, cohort, case-control, precision, bias, confounding, and effect modification and recognize these concepts even when they are referred to with different terminology;
4. Discuss basic issues in the definition, classification, and detection of pathologic states as these issues arise in the study of diseases in populations and the problems such issues present for disease surveillance and comparative studies; natural history and spectrum of disease, when is a condition the disease, operational classification, changing definition with greater understanding, limitations on accuracy of cause of death designation, among others;
5. Define, compute, and interpret epidemiological measures of prevalence, incidence, association, and impact;
6. Explain and apply methods of standardization or adjustment for factors such as age or sex, and discuss the advantages and limitations of different methods of standardization;
7. Explain major epidemiological descriptive and analytic study designs, the epidemiological measures that can be estimated from each, and their relative strengths and limitations;
8. Explain major categories of bias, recognize the potential for their occurrence in specific study situations, and propose measures to assess and/or reduce their influence on the measures of major interest;

9. Present the concepts, purpose of and problems in the evaluation of diagnostic tests, and of interpretation in surveillance for acute and chronic diseases and other factors important for public health;
10. Explain the concept of the multifactorial nature of disease and how the observed association between one factor and disease can be affected by the distribution of other independent and non-independent risk indicators, and be able to control for these influences in situations involving multiple risk indicators;
11. Prepare computer files of raw epidemiological data, and analyze, present, summarize, and interpret epidemiological data and parameters presented in tables, figures, and graphs. Analyses may employ statistical tests and confidence intervals based on means, rates, proportions, and ratios for contingency table analyses involving the control of one or two categorical variables or for modeling analyses employing linear or linear logistic regression;
12. Weigh the evidence in favor of and against the likelihood that an association observed in epidemiological studies is causal;
13. Apply the above knowledge in critically reading epidemiological and clinical studies;
14. Write a thesis-equivalent that demonstrates proficiency in critically reading the epidemiological literature, and in analyzing, reporting, and interpreting epidemiological data.

MSPH

The MSPH degree is required for students admitted to the PhD program without a prior master's degree in a relevant area. The program provides them with knowledge of the concepts and skills of epidemiology to serve as a foundation for building competencies to become an independent public health investigator. Like the MPH program, the MSPH program develops the students' understanding of public health concepts and the population perspective and enables them to become sophisticated readers of clinical and epidemiological studies. In contrast to the MPH program, the MSPH program assumes that graduates' primary area of expertise will be in the field of epidemiology, rather than in some other profession. The MSPH degree in the field of epidemiology is not considered a terminal degree and is not intended to provide sufficient preparation for assuming leadership in the practice of epidemiology.

Because the content in regard to concepts and skills of epidemiology and public health are the same for the two masters' degrees, competencies for the MSPH and MPH degrees are very similar (and are not repeated here). The only exceptions are criteria #13 and #14 where an allowance is made for the fact that students in the MSPH degree program don't possess a specific area of professional expertise as in the case of students in the MPH degree program.

SUMMARY OF DEGREE REQUIREMENTS/SCHEDULES/TIMELINES FOR THE MPH AND MSPH

For a checklist of degree milestones, go to the 'Degree Audit Checklists' section of the [Students](#) page of the department's website. and select 'Milestones in the Life of an MPH or MSPH Student.'

For a sample timeline for the MPH degree program, see Appendix II. (See Appendix XI for the Veterinary MPH program's timeline.)

For a sample timeline for the MSPH to PhD degree program, see Appendix III.

School of Public Health Core Curriculum

Students in the MPH degree program develop core public health competencies as described in the Gillings Schoolwide Handbook.

Departmental Minimum Course Requirements for MPH (except Vet MPH) and MSPH Degrees:

[Be sure to use the [Degree Audit](#) form to monitor your requirements.]

- EPID 705: Introduction to Logic and Probability Logic in Epidemiology
- EPID 710: Fundamentals of Epidemiology [EPID 711 may be substituted by clinicians]
- BIOS 600*: Principles of Statistical Inference **Or** BIOS 550: Elements of Probability and Statistical Inference I **Or** BIOS 662: Intermediate Statistical Methods
- BIOS 545*: Principles of Experimental Analysis **Or** BIOS 663: Intermediate Linear Models
- EPID 715: Theory and Quantitative Methods in Epidemiology
- EPID 716: Epidemiologic Data Analysis
- EPID 718: Analytic Methods in Observational Epidemiology
- One epidemiology course (minimum), minimum of 2 credits, in a substantive research area**
- One of the following (MSPH students may not substitute EPID 733 or EPID 805/806):
 - ◊ EPID 805 and 806: Clinical Research Skills III: Proposal Development-Part 1 and Clinical Research Skills IV: Proposal Development-Part 2 (for those enrolled in the Translational Research Curriculum)
 - ◊ EPID 733: Clinical Trials in Epidemiology
 - ◊ Additional substantive EPID course(s)- minimum of 2 credits total
- Competency in statistical computing and data management; may be satisfied by:
 - ◊ EPID 700: SAS and Data Management
 - ◊ BIOS 511: Introduction to Statistical Computing and Data Management, or
 - ◊ Prior experience using SAS (exemption exam required)
- EPID 900: Epidemiology Practice (supervised practicum: 4 credit hour minimum)
- EPID 992: Master's Paper (3 credit hour minimum)

Other Program Requirements

- Completion of a minimum of 42 credit hours
- Comprehensive written examination (offered every January)
- Oral presentation of master's research
- Completion of an acceptable Master's Paper

A sample schedule for the two-year masters program can be found in Appendix IV.

*See Appendix V for additional information regarding BIOS courses.

**See Appendix VI for courses that serve to satisfy the requirements for a course in a substantive research area.

MASTER'S PRACTICUM REQUIREMENT

The practicum provides students an opportunity to apply knowledge and skills being acquired through their coursework and further develop and demonstrate attainment of program competencies.

For information about the Master's Practicum, please refer to the online **MPH and MSPH Practicum Guidelines** which can be found on the [Students](#) page of the departmental website. All relevant requirements are contained in that document. **Please follow the guidelines carefully.**

THE MASTER'S COMPREHENSIVE EXAMINATION

The Master's Comprehensive Examination is a formal requirement of the Graduate School and is covered by the campus Honor Code. The student must be registered at the time of the examination.


Past examinations, with their answer keys, can be found by clicking on the 'Exams' link on the [Students page](#) on the departmental website.

Registration deadline for 2019 offering:	December 8, 2018
Examination date:	January 8, 2019, from 8:45 am – 1:00 pm
Students informed of outcome:	by letter in mailbox within 2 weeks of exam.
Registration link:	https://unc.az1.qualtrics.com/jfe/form/SV_87Cx DzTNYKMm7Hv

Purpose:

The Master's Comprehensive Examination is intended to provide an opportunity to demonstrate mastery of basic epidemiologic concepts and methods and to diagnose any major areas of deficiency. A passing score on the examination is a requirement both for the MPH and the MSPH degrees.

Timing:

 The examination is given each January. **Master's students are expected to take the exam in the second year of the program after completing EPID 718.** A student who does not earn a passing score may take the examination a second time, when it is next offered.

A maximum of 4 hours is allowed for the examination. The format is generally short answer (true-false, multiple choice, and open-ended questions). A medical dictionary will be available from EPID Student Services upon request. A student may bring into the examination:

- a calculator,
- a laptop for using a spreadsheet application ONLY,
- a foreign language dictionary, and
- not more than two pages of the student's own notes (this can be one two-sided page, or two one-sided pages)

The examination emphasizes mastery of the basic curriculum in epidemiologic concepts and methods, such as are covered in EPID 705, EPID 710, EPID 711, BIOS 600, EPID 715, EPID 716, BIOS 545, and EPID 718, as well as in substantive courses and seminars. Familiarity with material normally covered during the first three semesters of the program is expected. Some degree of substantive knowledge may be needed, since epidemiologic concepts and methods are applied in a biomedical or biobehavioral context. However, substantive knowledge itself is not a focus of the examination.

The examination will be based on a single published article each year. The article will not be known to the students in advance.

Most questions vary from year to year. Some are consistent, such as questions asking for concise descriptions of the study purpose, design and rationale. The best way to prepare for the exam is to review past exams, peruse back issues of relevant journals, select articles, and construct possible questions and try to answer them.

Submission of an exam is final. Students should review their exams carefully prior to submitting them to EPID Student Services. **A student may terminate the exam prior to submission with no penalty.**

Grading

The Master's Comprehensive Exam will be assigned a score from 0-100% by the examining committee. Examination answers are graded by a member of the examining committee without knowledge of the student's identity. In cases where there is some question about the appropriate grade for an answer, the primary grader consults with another faculty member. The overall score is the sum of the points awarded for the answers to each of the approximately 20-25 questions on the examination, divided by the total points available. The examining committee may add an upward adjustment if deemed appropriate to shift the score distribution. A Pass on the Master's Comprehensive Exam requires a score of 70%.

Report of Outcome

Within 2 weeks of the examination, notification of the outcome is communicated to the student by the Master's Comprehensive Examination Committee of the Graduate Studies Committee.

A student who fails the examination is required to consult with her/his advisor and conduct an in-depth review of diagnostic information related to his/her performance and any additional feedback or advice from the Master's Comprehensive Examination Committee. Following this review, the student submits a brief report to the Graduate Studies Committee, with a copy to the advisor, assessing the reasons for the sub-standard performance and outlining an itemized plan for remedial action, which should include an Individual Development Plan (IDP). This analysis and plan are due to Student Services within one month of the report of the examination outcome unless a longer time is agreed to by the Chair of the Graduate Studies Committee. A reply from the Graduate Studies Committee will ordinarily be provided following the next scheduled GSC meeting after receiving the student's plan. Unless a different timing is recommended by the Graduate Studies Committee, the student must obtain a grade of Pass the next time Master's Comprehensive Examination is offered in order to remain in the master's program.

Appeal of Failure

An appeal of a failing report is considered by the Graduate Studies Committee.

An appeal must be submitted to Student Services within 3 weeks of receiving the official notice of the examination grade. Appeals must be in the form of a written justification and should be presented in such a way that the appeal can be considered without revealing the identity of the student involved. The appeal should be self-contained (other than references to standard textbooks or examination materials).

Students are expected to decide on their own whether to appeal an examination outcome. The examination can be discussed with the advisor or other faculty members. Appeals are regarded as part of the examination, and therefore subject to the Honor Code. The appeal must be the student's own work and be accompanied by a signed pledge. To preserve anonymity, the pledge will be separated from the appeal itself and retained in EPID Student Services.

The GSC will select an Appeal Committee to serve on an ad hoc basis. The student may suggest that the GSC consult with a particular faculty member; however, the GSC is not required to do so.

The Appeals Committee will review the appeal materials without knowledge of the student's identity. To preserve anonymity, all communication between the student and the Committee will take place through the Student Services Office until the appeal has been decided. The Appeal Committee will bring the results of its review to the next scheduled GSC meeting for discussion. In reaching its decision the Committee will award full credit to answers that are judged to be equally as good as those originally proposed.

The GSC will review the appeal results and reach a final decision. The GSC decision is final with respect to the substantive issues. The final GSC decision will be communicated to the student within 6 weeks of submission of the appeal. The student may appeal to the Department Chair only on grounds of alleged irregularities in procedure.

THE MASTER'S PAPER and ORAL PRESENTATION OF MASTER'S RESEARCH

The Master's Paper is a thesis substitute and is a major requirement for both the MPH and the MSPH degrees. The purpose of this capstone experience is to provide students an opportunity to synthesize, integrate and apply knowledge and skills learned in coursework and other learning experiences and require students to demonstrate attainment of program competencies. Students are challenged to apply epidemiologic principles and methods to a specific clinical or public health issue. In carrying out the project, the student will be expected to select a scientifically relevant, feasible topic, review the body of epidemiological knowledge on the issue, formulate an informative study question and its associated hypothesis(es), and analyze a dataset to evaluate the study question. Master's Papers are filed with EPID Student Services and are available for student and faculty reference. The research is also presented orally in an appropriate forum.

While work on the Master's Paper may progress over multiple semesters, the final paper and accompanying documentation should be submitted in the semester the student is completing the degree requirements. **No further degree coursework is permissible after the submission of the Master's Paper.**

Master's Paper Committee

Development of the master's paper is supervised by a committee consisting of a master's paper advisor and a second reader. **At least one must have a primary appointment (neither adjunct nor clinical) in the Department of Epidemiology.** The composition of this committee should be decided at the time of initial planning for the project.

Content and Form of the Master's Paper

In the master's paper the student should demonstrate proficiency in the subject matter(s) pertinent to the study question of the Master's paper and competency in the application of epidemiological concepts and methods as relevant to the topic of the Master's paper. The scope of Master's paper project and the depth of its conceptual, methodologic and analytic treatment are gauged by the standards of a publication of the paper in the peer-reviewed literature. Submission of the Master's paper for publication is not required, but encouraged.

The Master's Paper is a thesis substitute that demonstrates command of epidemiologic principles and methods, by means of a research project focused on a specific clinical or public health issue, and based on extant data resources. **The Master's Paper requires a proposal approved by both members of the Master's Paper committee, completion of an analytic project, and preparation of a scientific report.** Following approval by the two committee members, the completed Master's Paper is submitted

to the Department as a scientific report formatted as a manuscript for publication following the guidelines below. The Master's paper proposal does not have to be submitted to the Student Services Office.

Identifying a Master's Paper Topic

Selecting an appropriate topic can sometimes be a stumbling block for students. Although the advisor will assist in topic identification, it is the student's responsibility to initiate the process by offering some preliminary ideas to the advisor. Appendix VII provides suggestions for defining the topic.

Master's Paper Proposal

In implementing this aspect of the Master's program, the student is expected to select a scientifically relevant, feasible topic, based on a fully developed rationale that addresses its scientific and/or public health merits as reflected in the Master's Paper proposal. Also included in the proposal are the hypothesis(es) to be tested, the proposed study design and its rationale, an analysis plan, and an outline of the potential interpretation of the anticipated result(s). A proposal template is available online through the Department's web site.

Exceptions to the above requirements may be proposed with approval by the student's academic advisor, but must be approved by the Graduate Studies Committee.


Human Subjects Review

Please refer to section relevant to all students for specific IRB training requirements [above](#).

All proposed master's paper research must be submitted to the School of Public Health Institutional Review Board (IRB) as soon as the project has been approved by the advisor and reader (see above). This applies to all proposals, whether sponsored or not sponsored. While practice in the context of training is not subject to review by IRB, generalizable research conducted by students and/or faculty is subject to a determination whether review by the IRB is required. This determination is the purview of the IRB. Since the master's paper is a research activity that takes place under the leadership of the student with support from an advisor, safeguarding the ethical conduct of this research activity is a responsibility shared by the student.

Guidance for any IRB action required for student research can be found here ohre.unc.edu and guidance for any IRB action required for student research is also in the "*IRB Guidance for Student Research and Class Projects*" document found on their [IRB Guidance Information](#) web page. (Refer to Appendix VIII.) Registration of Master's paper proposals and dissertation proposals follows the rules for IRB action presented on the website referred to above. The student is listed as the lead investigator for the research activity and a faculty advisor is identified who holds ultimate responsibility for ensuring that this project complies with all University, regulatory, and fiscal requirements.

Depending on the data and research environment of the Master's paper project it may not be possible or desirable for student research to be subsumed under an existing IRB approval extended to the lead investigator of a "parent study" that supports a student's research. *The decision about what is reasonable and whether the student's proposed research meets this Institution's guidelines for ethical conduct of research involving human subjects is made by the IRB.* Students should consult with their advisors in preparing IRB applications.

 **Upon receipt of IRB exemption or approval, the student must complete the [Verification of IRB Compliance](#). A copy of the IRB committee's decision must be attached to the form. In addition, the title page of the Master's Paper must reflect the date of IRB approval (or exemption).**

See web site at ohre.unc.edu for information and online submission of applications.

Data Use Agreements

If data are used for the master's paper that are not publicly available, the IRB and the Department require a data use agreement form. A sample form is available online through the [Department of Epidemiology Forms](#) webpage. This form should be signed by the Principal Investigator of the study that provides access to the data, or the person legally authorized to release it.

Schedule for Completing the Master's Paper

A schedule for the completion of the Master's Paper should be completed and approved by both committee members. In preparing the schedule the student should take any potential conflicts into account.

Sufficient time should be allowed for the following:

- a thorough first review of the entire paper by both committee members;
- revision time required by the student;
- a second review by the committee members, at least four weeks prior to anticipated date for final approval of the complete, revised Master's paper, to permit final modifications that may be requested.

The following is offered as an example of such a time schedule:

8 weeks prior to the anticipated date for final approval, the completed major paper is received by the committee members. At this time the student should arrange an appointment with each member to discuss their critique of the paper and revisions desired. The appointment would optimally be 2 or 3 weeks after the committee members have received the complete draft.

4 weeks prior to the anticipated date for final approval, the final draft of the Master's Paper is received by the committee members. Final comments and suggested revisions are provided to the student within two weeks so that final revisions can be made.

1 week prior to the anticipated date for final approval, the finished Master's Paper is received by both committee members so that they can read the final product and verify that all revisions have been made satisfactorily.

In preparing this schedule, the student should note Graduate School deadlines for the desired graduation date. (registrar.unc.edu/academic-calendar/).

Format and Submission of the Master's Paper





The Master's Paper is submitted to the Department in the format of a manuscript submitted for publication. There are no space limits, nor other constraints to demonstrating mastery of the subject, the sophistication of the analytic treatment, and the discussion of the results. These specifications apply unless both members of the Master's Paper Committee agree on an alternate.

If the Master's Paper is submitted for publication, it is recommended that the student follow the authorship guidelines promulgated by the International Committee of Medical Journal Editors (ICMJE), which are posted at www.icmje.org. IRB approval status as well as financial disclosures of the authors

should be mentioned. For the latter, criteria for financial disclosure can be consulted at N Engl J Med 2002; 346(24):1901-2, Jun 13, 2002- www.nejm.org/doi/full/10.1056/NEJMe020074.

At present, there is not a departmental requirement for publication of the master's paper, although publication by students is strongly encouraged. Students choosing to publish their Master's paper research should refer to Appendix IX for publication practices.

The master's paper is not a thesis, but rather a "thesis substitute." Thus, many of the formal thesis requirements do not apply. Specifically, there is no final examination, defense of the master's paper, or fee, and the paper itself is not filed with the Graduate School.

-  • **Formatting Guidelines:** Use Arial or Times New Roman font; use a type size of 11 or 12; page numbers centered on the bottom of the page in a footer; margins of left margin of at least 1¼ inch; other margins at least one inch. "The Graduate School Thesis and Dissertation Guide" does not apply since this is not a formal thesis.
-  • **Funding sources should be acknowledged on the title page in a statement such as: "This research was supported in part by a grant from [name of institution]."** Disclosure statements must also be added within the document, as applicable to potential conflicts of interest related to individual authors' commitments and project support. If there are none, this should be specified, e.g., "the author(s) have no conflicts to declare."
-  • **One copy of the Master's paper is submitted to EPID Student Services** in accordance with the University schedule. This is the official copy and must carry the signatures of both members of the student's master's committee on the title page, **as well as date of IRB approval.** Copies of the final paper can be given to the members of the student's committee, if desired.
-  • The cover of the paper must be labeled with the student's name and the title of the paper. **Students need to follow the exact format of the sample cover page found in Appendix X** (be sure to substitute the degree title that applies to you, not necessarily the one used in the sample).
- Once the master's paper is complete, a "Report of Approved Substitute for Master's Thesis" form must also be filed with EPID Student Services. Please see the "Master's Paper Report" section below.

Students must be registered for 3 credit hours of EPID 992 at the time the master's paper is turned in. Students should not submit their master's papers until the semester they are completing all degree coursework and are planning to graduate.

Master's papers are kept in EPID Student Services and are available to students and faculty for reference.


Oral Presentation of the Master's Paper Research

Presentation of the Master's paper at a seminar, scientific, or professional meeting is required. The leaders of each program area are responsible for providing an adequate forum for this presentation for Master's students in the program. Students not affiliated with a program area work with their advisor to identify an equivalent opportunity for presentation of the Master's paper. The student's master's paper committee is responsible for verifying that the requirement has been met satisfactorily.

Guidelines for the presentation are as follows:

- a. The student must be primarily responsible for preparation for the presentation. For example, presentation of slides prepared by a co-investigator is not allowed if the presentation is to fulfill the Master's requirement.
- b. The topic must be epidemiological.
- c. The audience must be knowledgeable in both epidemiology and the substantive area, so that a meaningful, probing discussion is possible.

The forum for a Master's presentation could be a program area seminar or affiliated program seminar series (e.g., Translational Research Curriculum). In some instances, presentation at a regional, national, or international meeting would meet this requirement. Individually scheduled presentations could be held at any time throughout the fall and spring semesters. Use of the Wednesday afternoon seminar period (3:30-4:30 p.m.) is particularly encouraged for this purpose, on dates when no seminar or department meeting is scheduled. In general, individual presentations during the summer are discouraged.

 The student and committee are responsible for scheduling and announcing the presentation to achieve an appropriate forum. Audience attendance should be encouraged by prominent announcements of student presenters, research topics, and advisors. **The presentation must be announced via the 'epidsems' listserv (epidsems@unc.edu) at least one week in advance. The announcement should include student name, title of presentation, indication that this is a master's presentation, name of advisor, date, time, and location.** Program areas are encouraged to issue specific invitations to colleagues outside the department, citing the paper titles.

To reserve the EPID conference room, email Chandra Caldwell at ccaldwel@email.unc.edu. To reserve a room in the SPH, go to sph.unc.edu/resources/rooms/.

The following sequence is recommended:

1. Student prepares preliminary draft of the masters' presentation and provides to each of the two readers at least two weeks prior to the anticipated date of master's paper presentation.
2. Student discusses draft presentation with each of the two readers. Suggestions are provided.
3. Master's paper presentation (as work in progress, not as a final defense).

At least one of the two readers attends the presentation, provides feedback to the student and signs the [Master's Paper Oral Presentation](#) form indicating that this step has been completed satisfactorily (or otherwise). If neither reader can be present at the presentation, it is the responsibility of the primary reader to identify a substitute among the faculty. If the presentation is not satisfactory, a meeting of the two readers and the student is required prior to proceeding with the masters' paper.

4. Student completes master's paper **after the oral presentation** and submits it to both readers at least one month prior to the date established by the Graduate School for completion of masters' programs in the pertinent semester. **(Graduate School completion deadlines can be found at gradschool.unc.edu/academics/resources/graddeadlines.html)**
5. Student responds to comments from both readers and submits final version of masters' paper to both readers according to the schedule previously established with both readers (but at least two weeks prior to the date of completion of masters' program established by the Graduate School).

- In order for the readers to approve a masters' paper, a meeting of the student and the two readers may be needed. Such a meeting may be requested by either of the two readers or the student, but is not required.

Master's Paper Report



When the master's paper has been completed and approved by the student's committee AND the work has been presented in an appropriate forum, a **"Report of Approved Substitute for a Master's Thesis"** must be completed by the student and signed by the advisor. This report completes the student's master's degree program and must be submitted to EPID Student Services along with the final, signed, bound copy of the Master's Paper. This form can be found at: <http://gradschool.unc.edu/forms/>. It is filed with the Graduate School and verifies completion of this requirement. The report and paper should be submitted during the student's last semester.

Suggested Milestones and Time Table for Preparation of the Master's Paper

<u>Milestone</u>	<u>Suggested Time Table*</u>
1. Selection of Topic	1st Year, Summer, 1st session
2. Literature Review	1st Year, Summer, 2nd session
3. Data Analysis or Synthesis of Issues	2nd Year, Fall & Spring
4. Oral Presentation	2nd Year, Spring
5. Final Draft	2nd Year, Spring
6. Completion of Paper	2nd Year, Spring

* This timetable is appropriate for students enrolled in the standard two-year master's program. MPH students who must work within a shorter time frame will need to carefully plan their program with their advisor(s) in order to ensure fulfilling all requirements within the time allowed.

APPLICATION FOR GRADUATION



To be eligible for graduation in a given semester a Master's student must apply for the degree early in that semester. Students need to apply for graduation in ConnectCarolina at their Student Center under "Academics" and choose "Apply for Graduation." Deadlines for applying for graduation can be found at gradschool.unc.edu/academics/resources/graddeadlines.html. If a student fails to graduate in the term applied for, s/he must re-apply; no prior application will suffice.

MSPH students applying for graduation must also schedule their review meeting (see below).

TRANSITION OF MSPH STUDENTS TO DOCTORAL RESEARCH

Doctoral students who are required to first obtain the MSPH must complete all requirements for the master's degree, including the master's comprehensive examination and master's paper, before proceeding with doctoral research (i.e., registering for dissertation research hours- EPID 994). Before the end of the semester students are planning to complete their MSPH requirements, they are required to hold an MSPH Review Meeting with relevant faculty to review their progress and discuss their transition to doctoral coursework and research.

This meeting must be held before students graduate with the MSPH degree. Consult with EPID Student Services to determine the deadline for your review committee meeting.

Criteria for MSPH Review Meeting

- The student has identified a doctoral advisor. In addition to the established function of an academic advisor, the doctoral advisor assists the student in identifying a doctoral research topic, may serve as the chair of the doctoral committee or assist in identifying a chair, and helps in developing the doctoral research proposal until the chair of the doctoral committee has been identified.
- All masters-level degree requirements have been met satisfactorily or are in progress toward satisfactory completion.
- * At least one satisfactory, complete draft of the Master's Paper has been submitted to the master's advisor and second reader.

Procedure

The student arranges the MSPH review committee to discuss the review request. This committee should consist of three faculty members, to include the master's advisor if this person is different than the doctoral advisor and is chaired by the prospective doctoral advisor. The third member of the committee is selected from the members of the Graduate Studies Committee (names available from EPID Student Services) and should not be one of the advisors. If the master's and doctoral advisors are the same, the student should identify an additional faculty member to serve on the committee, ideally someone who has had extensive interaction with the student. If the doctoral advisor is an adjunct or clinical member of the faculty, the student must identify a chairperson who has a primary appointment in the Department of Epidemiology to serve on the promotion committee.

In advance of the review committee meeting, the student should provide (in no particular format) the following materials to the committee members:

- * Coursework results, including numeric grades for EPID 710, EPID 715, EPID 716 and H/P/L grade for EPID 718 (all available from EPID Student Services)
- * Master's examination results (available from EPID Student Services)
- * Summary of Master's paper progress
- * Names of faculty with whom the student has worked
- * Statement of dissertation plans as they appear at that time
- * Student's CV
- * Copy of student's transcript (You can print your "Course History" in your MyUNC Student Center.)
- * [Form](#)- "MSPH Review Form"

A copy of the complete review packet must be submitted to EPID Student Services.

TRANSITION FROM THE MPH TRACK TO THE PhD TRACK

Students are admitted for the MPH degree with the assumption that it will be a terminal degree. Those who are interested in continuing for the PhD must apply for admission to the PhD program through The Graduate School. The faculty and admissions committee review the application with the pool of doctoral applicants for that year and a recommendation is forwarded to The Graduate School.

INFORMATION SPECIFIC TO VETERINARY MPH DEGREE STUDENTS

COMPETENCIES FOR THE VETERINARY MPH

The MPH with a Veterinary Epidemiology Concentration is designed to provide graduate training for veterinarians interested in pursuing public health service-oriented careers with local, state, federal and international public health and animal health agencies. Courses are taken at both NCSU and UNC. The program is designed to provide students with a portfolio of problem-solving and analytic skills that will facilitate work competence and career advancement in public services and veterinary medicine. The master's competencies in the Department of Epidemiology fully meet with core competencies set out by the **ASPH Education Committee**.

See standard MPH section for the list of specific competencies.

SUMMARY OF DEGREE REQUIREMENTS/SCHEDULE/TIMELINE FOR THE VETERINARY MPH

All information in the standard MPH degree description applies except as stipulated below.

For a checklist of degree milestones, go to the 'Degree Audit Checklist' section of the [Students](#) webpage and select 'Milestones in the Life of an MPH (Vet) Student.'

For a sample timeline for the Veterinary MPH degree program, see Appendix XI.

Departmental Minimum Course Requirements for the Veterinary MPH:

[Be sure to use the [Degree Audit](#) form to monitor your requirements.]

Courses taken at North Carolina State are indicated with "NCSU"; all others are courses taken at UNC.

- EPID 705: Introduction to Logic and Probability Logic in Epidemiology
- EPID 710: Fundamentals of Epidemiology
- NCSU ST 511: Experimental Statistics for the Biological Sciences (BIOS 600: Principles of Statistical Inference may be substituted)
- NCSU ST 512: Experimental Statistics, SAS-based Data Analysis, Regression, Linear Modeling (BIOS 545: Principles of Experimental Analysis may be substituted)
- EPID 715: Theory and Quantitative Methods in Epidemiology
- EPID 716: Epidemiologic Data Analysis
- EPID 718: Analytic Methods in Observational Epidemiology
- NCSU CBS 595 (005): Population Medicine Forum (to be taken each semester)
- NSCU TOX 715: Environmental Toxicology (ENVR 600: Environmental Health may be substituted)
- 6 Elective Hours from the list below
- Competency in statistical computing and data management; may be satisfied by:
 - ◊ EPID 700: SAS and Data Management
 - ◊ BIOS 511: Introduction to Statistical Computing and Data Management, or
 - ◊ Prior experience using SAS (exemption exam required)
- EPID 900: Epidemiology Practice (supervised practicum: 4 credit hour minimum)
- EPID 992: Master's Paper (3 credit hour minimum)

Other Program Requirements

- Completion of a minimum of 56 credit hours
- Comprehensive written examination (offered every January)
- Oral presentation of master's research
- Completion of an acceptable Master's Paper

A sample schedule for the Veterinary MPH program can be found in Appendix XII.

Sample of Elective Courses (other courses considered on a case-by-case basis)

<i>Food Safety</i>			
NCSU	FSA 520	Pre-Harvest Food Safety	3
NCSU	FSA 530	Post-Harvest Food Safety	3
NCSU	FSA 540	Food Safety and Public Health	3
<i>Geographic Information Systems</i>			
NCSU	GIS 510	Introduction to Geographic Information Systems	3
NCSU	GIS 530	Principles of Geographic Information Systems	3
UNC	GEOG 445	Medical Geography	3
UNC	GEOG 450	Population Geography	3
NCSU	GIS 520	Advance Geospatial Analysis	3
NCSU	MEA/GIS	Geospatial modeling and Analysis	3
<i>Community Preparedness and Disaster Management</i>			
UNC	HPM 420	Community and Public Health Security - Disasters, Terrorism and Emergency Management	3
<i>Global Health</i>			
UNC	PUBH510	Interdisciplinary Perspectives in Global Health	3
UNC	HPM664	Globalization and Health (HPM 664/MCH 664)	3
<i>Field Epidemiology</i>			
UNC	EPID750	Fundamentals of Public Health Surveillance	3
UNC	EPID758	Principles and Methods of Applied Infectious Disease Epidemiology	3
UNC	EPID759	Methods in Field Epidemiology	3
<i>Trade Policy</i>			
NCSU	ST 506	Sampling Animal Populations	3
NCSU	ST 520	Statistical Principles of Clinical Trials and Epidemiology	3
NCSU	VPH580	Veterinary Production Epidemiology	3
NCSU	VPH554	Trade and Agricultural Health-on-line	3
NCSU	VPH555	Public Health, Sustainable Development and Gender in A Global Context	3
NCSU	VPH675	Supervised Public Health Research	1 - 7
NCSU	VPH/ FW 720	Epidemiology of Wildlife Diseases	3
NCSU	CBS/VPH 784	Principles of Analytic Epidemiology	3

Master's Paper Committee

Development of the master's paper is supervised by a committee consisting of a master's paper advisor and a second reader. **At least one must have a primary appointment (neither adjunct nor clinical) in the Department of Epidemiology and the other should be from the veterinary faculty at North Carolina State University.** The composition of this committee should be decided at the time of initial planning for the project.

INFORMATION SPECIFIC TO MSCR DEGREE STUDENTS

For a checklist of MSCR degree milestones, go to the 'Degree Audit Checklist' tab of the [Students](#) webpage and select 'Milestones in the Life of an MSCR Student.'

For a sample timeline for the MSCR degree program, see Appendix XIII.

MSCR (Masters of Science in Clinical Research)

Competencies for the MSCR

The MSCR program is an interdisciplinary research degree program housed within the Department of Epidemiology in the School of Public Health. The program is designed to develop the skills necessary for a successful career as a principal investigator and collaborator in clinical research. Competencies guide our curriculum planning process and serve as a measure against which student achievement is assessed. Listed below are the degree-specific competencies for the MSCR program:

- 1) Clinical research study design: Identify testable research hypotheses; develop appropriate study designs with minimal bias; identify appropriate target populations.
- 2) Fundamentals of data analysis: Develop appropriate data analysis plans for research hypotheses; implement basic statistical analyses including multivariable regression; understand sample size and power calculations.
- 3) Grant proposal development: Develop a proposal for clinical/translational research suitable for submission to the National Institutes of Health or research foundation.
- 4) Interdisciplinary collaboration: Demonstrate knowledge of team science; develop skills for collaboration with research methodologists, including biostatisticians.
- 5) Project oversight and management: Demonstrate skills to implement a research project, including hiring of appropriate team members, developing and managing budget, overseeing project, ethics approvals, and regulatory reviews.
- 6) Oral and written presentation: Effectively present research findings orally to peers, lay persons, and the media; Write clearly and succinctly for scientific publication and research proposals.
- 7) Professional development: Demonstrate knowledge of the academic research environment, sources of research support, and professional advancement. Demonstrate the use of strategies to improve professional effectiveness, such as time management, leadership skills, and management skills.

Students

The program is designed for persons planning a career as a clinical or translational investigator who will assume leadership roles in research projects and research teams. Applicants must have completed training in a primary substantive research or clinical area. The MSCR is intended to complement the substantive training in these primary substantive areas. **Applicants must have a doctoral level professional degree (M.D., Pharm.D., Ph.D., D.D.S., nurses with Ph.D., D.V.M. etc.) or extensive health professions experience (R.N.'s, P.A's). At the time of enrollment in the MSCR, participants will simultaneously be residents, clinical fellows, post-doctoral fellows, or junior faculty at UNC or Duke University.** We anticipate that each student will already be affiliated with a "home academic program", reflecting the funding source (e.g. T32 or K12 funding), training program (e.g. post-doctoral fellowship) or department. The program will be limited to 24 students per year.

Description of the Program

The program is designed to be completed over 2 academic years. **The program requires a minimum of 36 credit hours** and is consistent with requirements in the Department of Epidemiology. Students must be registered for classes in a minimum of three semesters.

The program is intended for a broad range of clinical and translational researchers. Core courses in the curriculum will address issues pertinent to all areas of clinical and translational research. To accommodate the special needs of different areas in clinical and translational research, participants will select at least two courses that pertain to their particular research area. Examples of areas include:

- 1) Translational ("Bench to Bedside") – Persons with experience in basic science who are intending to continue work that will have a strong component of basic science
- 2) Clinical Trials – Persons with a specific career interest in the conduct of traditional clinical trials
- 3) Comparative Effectiveness Research (CER) – Persons with primary interest in comparisons of the benefits and harms of treatment alternatives (pharmacoepidemiology), diagnostic tests, care delivery models, and/or policies for decision-making using non-experimental or experimental (pragmatic/large simple trials) designs
- 4) Health Services/Population Studies – Persons with primary interest in health services and population studies, including health services interventions, health behavior and health policy

Students will take 2-3 courses from the approved list of electives found below in the Approved Electives section. Students interested in taking a course that is not on the approved list and having it count toward the MSCR degree should send an email request to Dr. Laura Loehr, MSCR Program Leader, lloehr@email.unc.edu and ask her to review the course for possible approval. Please include the course syllabus with the request.

The program will rely heavily on experiential learning, in addition to didactic sessions. Assignments in the core courses will be geared toward practical study-related issues. Whenever possible, large classes will include small group sessions to provide greater opportunity for faculty interaction.

The core and elective courses, in combination with a Masters Paper, will provide nearly all of the 36 course credit hours required for the degree (minimum 34 core credit hours). Some students will need additional elective credit hours to complete the degree requirements. These elective credits may be selected from any course relevant to the student's career goals and must be approved by the student's Department of Epidemiology advisor or the Program Director.

Manuscripts and grants are the "currency" of clinical research. Consequently, the program will require two significant products. A Masters Paper will be required of all students. The paper will be original work in the form of primary data collection and analysis, secondary data analysis, or systematic review (or meta-analysis) of previously conducted studies. The Masters Paper will be supervised by the student's mentor from their clinical or research program and an advisor in the Department of Epidemiology. Content of Masters Papers will be approved by the core faculty of the program. The Master's Paper is expected to be of publication quality at the time of completion.

In addition to the Masters Paper, students will be expected to complete a grant proposal targeted to an NIH or foundation funding source. The proposal may be for a career development award or an investigator-initiated research grant. The research proposal will be developed within the context of EPID 805/806.

Clinical and translational research is conducted in multidisciplinary, collaborative teams. The program is designed to give these future investigators the skills to succeed in the current environment of clinical and translational research. Collaboration will be fostered through formal and informal group exercises,

peer review of colleagues' work, and group discussions of ongoing research. Participants will develop the skills to design sophisticated clinical and translational research studies, in combination with the skills to conduct and lead the research projects.

Mentors and Advisors

In addition to the designated advisor in the Department of Epidemiology, we expect all participants in the MSCR to have mentorship in their home departments or training programs (e.g. their clinical department, research department, or other program). At least one mentor/advisor must have experience in clinical research. We will involve the mentors directly in the student's training, within coursework and the Master's Paper. For example, in the EPID 805/806 sequence, mentors will be expected to give meaningful feedback on the proposals as they are being developed, along with the advice and guidance of the course faculty. A clear mentor relationship will be a requirement for enrollment in EPID 805/806.

SUMMARY OF DEGREE REQUIREMENTS/SCHEDULE/TIMELINE FOR THE MSCR

For a checklist of degree milestones, as well as a sample schedule and timeline, go to the [Students](#) page of the department's website.

Core Courses*

Course #	Course Name	Cred	S	Description/Content
<i>Study Design and Analysis (18 hours)</i>				
EPID 711	Clinical Measurement & Evaluation	3	F Y1	Epidemiological and clinical measures; Study design; Bias and confounding; Diagnostic tests
PUBH 741	Quantitative Methods for Health Care Professionals	4	F Y1	Concepts of statistical testing; Tests for continuous variables; Tests for categorical variables; Linear regression; Logistic regression; Survival analysis
EPID 804	Design of Clinical Research	4	S Y1	Pilot and exploratory studies; Surveys; Case control; Cohort; Clinical trials; Large simple/pragmatic trials; Experimental clinical studies; Medical decision making; Administrative database secondary analyses; Exposure and outcome measurement; Quality control
EPID 733	Clinical Trials in Epidemiology	3	S Y1	Design; Implementation and analysis of clinical trials
PUBH 742	Quantitative Methods for Health Care Professionals	4	S Y1	Application of regression techniques in clinical research
<i>Required introduction to Public Health Concepts (3 hours)</i>				
SPHG 600/FLO	Introduction to Public Health	3	F/S Y1 or Y2	Introduction to public health including history, key concepts and terms
<i>Proposal development/Grant writing; Project Oversight and Management (4 hours)</i>				
EPID 805	Clinical Research Skills - III	2	F Y2	Grant writing/proposal development; Project implementation and oversight; Critique of grant proposals
EPID 806	Clinical Research Skills - IV	2	S Y2	Grant writing/proposal development; Project implementation and oversight; Critique of grant proposals

Professional Development; Oral and Written Presentation of Study Results (5-8 hours)

EPID 802	Clinical Research Skills - I	2	F Y1	Research question development; Abstract/ manuscript writing; Presentations; Reviewing manuscripts; Professional development
EPID 992	Masters Paper	3-6	Y2	Preparation of master's paper in manuscript format. Ideal is paper for publication.

Approved Elective Courses*

Course #	Course Name	Cred	S	Description/Content
Courses within EPID				
EPID 715 & 716	Theory and Quantitative Methods in Epidemiology & Epidemiologic Data Analysis	4 & 2	S	An in-depth treatment of basic concepts and skills in epidemiologic research, including problem conceptualization, study design, research conduct, data analysis and interpretation. Requires EPID 705 as prerequisite, and permission of instructor.
EPID 735	Cardiovascular Disease Epidemiology	3	F	Review of the main causes of cardiovascular disease morbidity and mortality, and their population determinants. Topics include epidemiologic methods, risk factors, strategies for prevention, and a student research project.
EPID 742	Biomarkers in Population Research	2	F	Collection and analysis of biospecimens with incorporation into epidemiological, biomedical, and social science frameworks
EPID 743	Genetic Epidemiology: Methods And Applications	3	S	Concepts and methods of genetic epidemiology, including segregation analysis, linkage analysis, and gene-environment interaction. Includes whole genome approaches
EPID 765	Methods and Issues in Pharmacoepidemiology	3	S	Study of the effects and uses of medications in human populations
EPID 766	Epidemiology Research with Healthcare Databases (with permission of instructor)	3	S	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. (May require SAS skills)
EPID 771	Cancer Epidemiology Methods	3	F	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.
EPID 772	Cancer Prevention and Control Seminar	3	F	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

EPID 790	Intervention Epidemiology	2	F	Methods for evaluating interventions with focus on infectious diseases and injury control. Covers ecologic & time series designs, community-level trials, case-control studies of interventions, and fundamentals of randomized controlled trials.
EPID 853	Advanced Perinatal and Pediatric Epidemiology	3	S	Methodological issues, including study design and analytic considerations, in the context of perinatal and pediatric research

Courses outside of EPID

CRP 259	Decision Sciences in Clinical Research	2	F	The use of simulation models of disease natural history, epidemiology, and clinical care as tools for exploring basic scientific questions, study design, clinical decision making, and cost-effectiveness analysis. (Offered at Duke)
DPET 830	Development and Clinical Investigations of Drugs	2	F	Preclinical drug safety evaluation, preclinical pharmacology, design of protocols for Phases I-IV, FDA guidelines for clinical study, preparation of study plan, statistics in clinical trials, data analysis,
DPET 832	Pharmacogenomics	2	S	Applications of pharmacogenomics to development of new medications
DPET 833	Experimental Design Considerations in Clinical Research	2	S	Common study designs and their implementation
DPET 855	Principles of Pharmacokinetics	3	F	Pharmacokinetic theory, mathematical model development
DPOP 803	Social and Behavioral Aspects of Pharmaceutical Use	2	S	This course will draw on medical sociology and health psychology to familiarize students with core theories, research, measures, and design issues relevant to conducting social/behavioral research surrounding pharmaceutical use.
DPOP 804/ HPM 804	Introduction to Healthcare Database Research	3	F	Course will provide foundational knowledge for using administrative health care claims and other relational data for health services research. Students will learn to: manage large databases in SAS, identify key variables in administrative data, and design and implement a study protocol.
ENVR 442	Biochemical and Molecular Toxicology	3	S	Biochemical and molecular actions of toxicants and assessment of cellular and molecular effects
GNET 742 & 744	Intro to Unix & Perl Programming for Biomedical Researchers & Sequence, Protein Structure and Genome-Wide Data Analysis	1/1	S	Genome databases; sequence retrieval, alignment and analysis, and macromolecular structure retrieval, visualization and analysis; microarrays and next-generation sequencing. Both 742 & 744 must be completed for track credit.
HBEH 715/ PUBH 715	Communication for Health-Related Decision Making	2	S	Foundation and skills to understand and improve decision making that affects people's health, including theoretical basis
HPM 496	Seminar in Comparative Effectiveness Research	3	F/S	Readings in comparative effectiveness research. 3 credit option is required

HPM 510	Global Perspectives on Ethical Issues in Health Policy and Management	3	S	A comparison of the ethical approaches to health system issues in various countries, such as the different perspectives on informed consent, refusal of treatment, physician-assisted suicide, and reproductive health
HPM 620	Implementing Health Informatics Initiatives	3	S	Implementation of informatics programs and projects in health organizations to facilitate information use for quality or efficiency improvement
HPM 650	Pharmaceutical Research, Development, and Marketing	3	F	Discovery, development, and marketing of pharmaceuticals
HPM 757	Health Reform: Political Dynamics and Policy Dilemmas	3	S	Current trends in the health care system, the dilemmas confronting public and private insurance programs as health care costs increase, options for reform and covering the uninsured, the political history of health reform
HPM 762	Quality of Care	3	F	This course will review: (1) the current state of the quality of health care in the United States; (2) approaches to assess quality of health care, and (3) strategies that have been implemented or proposed to improve the quality of health care.
HPM 766	Cancer Care Quality	3	F	Overuse, underuse, and misuse of care across the cancer care continuum.
HPM 767	Disseminating Evidence and Innovation in Cancer Care	3	S	Concepts, theories, and methods of disseminating and implementing evidence-based interventions to improve quality in cancer care; Methods for conducting rigorous research on dissemination and implementation.
HPM 772	Economic Evaluation of Health Care Technologies; Policy Analysis and Technology Assessment	3	F	Cost-effectiveness, health policy analysis
PATH 723	Translational Pathology & Laboratory Medicine	2	S	Translating basic science into clinically applicable diagnostics and therapies to improve human disease outcomes
PATH 725	Cancer Pathobiology	3	S	An interdisciplinary approach draws from epidemiology, genetics, molecular biology, and clinical medicine to investigate cancer etiology, pathogenesis, prevention, and treatment
PSYC 701	Brain & Behavior I	3	F	Biological basis of behavior with an emphasis on pain mechanisms
PUBH 711	Critical Issues in Global Health	3	F	Examines complex tapestry of social, economic, political, and environmental factors that affect global health;
PUBH 712	Global Health Ethics	3	S	Theoretical and practical aspects of public health ethics. Develop students analytical skills to evaluate ethical issues related to public health policy, prevention, treatment, and research
PUBH 714	Monitoring and Evaluation of Global Health Programs	3	Su	Basic concepts and practices in M&E;formative research, stakeholder engagement, conceptual frameworks, data collection methods, indicator development, survey and focus group design, performance monitoring and designs for outcomes, impacts and efficiency

PUBH 750	Strategies of Prevention for Clinicians	4	F	Integration of epidemiology and health behavior to prevent disease in the population
PUBH 767	Team Leadership in Research Navigation	3	S	Leadership skills for research

* Required hours = 6+

Typical Schedule (2-year program)

Fall, Year 1 (12 credits)

PUBH 741 (BIOS) – 4 credits
 EPID 711 – 3 credits
 EPID 802 – 2 credits
 SPHG 600 – 3 credits

Spring, Year 1 (13-15 credits)

PUBH 742 (BIOS) – 4 credits
 EPID 733 – 3 credits
 EPID 804 – 4 credits
 Elective(s) – 2-4 credits

Fall, Year 2 (4-6 credits)

EPID 805 – 2 credits
 Elective(s) – 2-4 credits

Spring, Year 2 (7-9 credits)

EPID 806 – 2 credits
 Elective(s) – 2-4 credits
 EPID 992 – Master's Paper – 3 credits

MASTER'S PRACTICUM REQUIREMENT

The MSCR does not currently require a formal practicum. However, all participants in the MSCR are expected to participate in research activities with their research mentor and/or other research supervisors.

THE MASTER'S COMPREHENSIVE EXAMINATION

The Master's Comprehensive Examination is a formal requirement of the Graduate School and is covered by the campus Honor Code. The student must be registered at the time of the examination.

Purpose:

The Master's Comprehensive Examination is intended to provide an opportunity to demonstrate mastery of basic clinical research concepts and methods and to diagnose any major areas of deficiency. A passing score of 70% on the examination is a requirement for the MSCR degree.

Timing:

The Master's Comprehensive Examination is offered in May of each year. For the 2018-2019 academic year, the exam will be distributed on **April 26, 2019 at 9:00 am and is due on April 29, 2019 by 5:00 pm**. Generally, students are expected to complete the examination at the end of their first year of study.

Format:

The examination is offered as a take home examination. Students may use textbooks and class notes in completing the examination. The examination is typically based on a single clinical research article. The article will not be provided to students prior to the exam.

Appeal of Failing Grade:

Please see the section on Appeal under the MPH and MSPH Comprehensive Examination. Identical procedures apply to the MSCR.

THE MASTER'S PAPER

The Master's Paper is a thesis substitute and is a major requirement for the MCSR degree. The purpose of this capstone experience is to provide students an opportunity to synthesize, integrate and apply knowledge and skills learned in coursework and other learning experiences and require students to demonstrate attainment of program competencies. Students are challenged to apply their clinical research training to a specific clinical issue and to demonstrate scientific writing skills.

The paper is filed with EPID Student Services and is available for student and faculty reference.

While work on the Master's Paper may progress over multiple semesters, the final paper and accompanying documentation should be submitted in the semester the student is completing the degree requirements. **No further degree coursework is permissible after the submission of the Master's Paper.**

Master's Paper Committee

Development of the master's paper is supervised by a committee consisting of a master's paper advisor and a second reader. It is expected that one reader will be the student's mentor from their "home" department or program. The other reader will typically be the student's assigned academic advisor.

Content and Form of the Master's Paper

In carrying out the project, the student will be expected to select a scientifically relevant, feasible topic; review the medical literature; formulate an informative study question; and complete the relevant data analysis to address the study question. Master's papers may address a wide variety of clinical issues, from pharmacokinetics to health behavior, depending on the student's needs and interests. Formalized systematic reviews and meta-analyses are acceptable as Master's papers. Submission of the Master's paper for publication is expected, but not a formal requirement.

Following approval by the two committee members, the completed Master's Paper is submitted to the Department as a scientific report formatted as a manuscript for publication. The Master's paper also requires a specific cover page and binding.

Identifying a Master's Paper Topic

Selecting an appropriate topic can sometimes be a stumbling block for students. Although the advisor will assist in topic identification, it is the student's responsibility to initiate the process by offering some preliminary ideas to the advisor.

Human Subjects Review

Please refer to section relevant to all students for specific IRB training requirements [above](#).

All proposed master's paper research must be submitted to the Public Health or Biomedical Institutional Review Board (IRB) as soon as the project has been approved by the advisor and reader (see above). This applies to all proposals, whether sponsored or not sponsored. Since the master's paper is a research activity that takes place under the leadership of the student with support

from an advisor, safeguarding the ethical conduct of this research activity is a responsibility shared by the student.

Please note that even if a research activity has been approved previously, whether at UNC or elsewhere, specific IRB approval for the Master's paper must be obtained.

Guidance for any IRB action required for student research can be found here ohre.unc.edu and guidance for any IRB action required for student research is also in the "*IRB Guidance for Student Research and Class Projects*" document found on their [IRB Guidance Information](#) web page. (Refer to Appendix VIII.) Registration of Master's paper proposals and dissertation proposals follows the rules for IRB action presented on the website referred to above. The student is listed as the lead investigator for the research activity and a faculty advisor is identified who holds ultimate responsibility for ensuring that this project complies with all University, regulatory, and fiscal requirements.

Upon receipt of IRB exemption or approval, the student must complete the [Verification of Compliance with Institutional Review Board Requirements form](#). A copy of the IRB committee's decision must be attached to the form. In addition, the title page of the Master's Paper must reflect the date of IRB approval (or exemption).

See web site at ohre.unc.edu.

Data Use Agreements

If data are used for the master's paper that are not publicly available, the IRB and the Department require a data use agreement. A sample form is available online through the [Department of Epidemiology Forms](#) webpage. This form should be signed by the Principal Investigator of the study that provides access to the data, or the person legally authorized to release it.

Typical Schedule for Completing the Master's Paper

Sufficient time should be allowed for the following:

- a thorough first review of the entire paper by both committee members;
- revision time required by the student;
- a second review by the committee members, at least three weeks prior to anticipated date for final approval of the complete, revised Master's paper, to permit final modifications that may be requested.

In preparing this schedule, the student should note Graduate School deadlines for the desired graduation date. (registrar.unc.edu/academic-calendar/).

Format and Submission of the Master's Paper

The master's paper is not a thesis, but rather a "thesis substitute." Thus, many of the formal thesis requirements do not apply. Specifically, there is no final examination, defense of the master's paper, or fee, and the paper itself is not filed with the Graduate School.

- **Formatting Guidelines:** Use Arial or Times New Roman font; use a type size of 11 or 12; page numbers centered on the bottom of the page in a footer; margins of left margin of at least 1¼ inch; other margins at least one inch. The Graduate Schools handbook, "A Guide to the Preparation and Submission of Theses and Dissertations," does not apply since this is not a formal thesis.

- **Funding sources should be acknowledged on the title page in a statement such as: "This research was supported in part by a grant from [name of institution]." Disclosure statements must also be added within the document, as applicable to potential conflicts of interest related to individual authors' commitments and project support. If there are none, this should be specified, e.g., "the author(s) have no conflicts to declare."**
- **One copy of the Master's paper is submitted to the Student Services Office** in accordance with the University schedule. This is the official copy and must carry the signatures of both members of the student's master's committee on the title page, as well as date of IRB approval. Copies of the final paper are also given to the members of the student's committee, if desired.
- The cover of the paper must be labeled with the student's name and the title of the paper. Students need to follow the exact format of the sample cover page found in Appendix X.
- Once the master's paper is complete, a "Report of Approved Substitute for Master's Thesis" form must also be filed with the Student Services Office. Please see the "Master's Paper Report" section below.

Students must be registered for 3 credit hours of EPID 992 at the time the master's paper is turned in. Students should not submit their master's papers until the semester they are completing all degree coursework and are planning to graduate.

Master's papers are kept in EPID Student Services and are available to students and faculty for reference.

Master's Paper Report

When the master's paper has been completed and approved by the student's committee, a "**Report of Approved Substitute for a Master's Thesis**" must be completed by the student and signed by the advisor. **This report completes the student's master's degree program and must be submitted to EPID Student Services along with the final, signed, and bound copy of the Master's Paper.** This form can be found at: <http://gradschool.unc.edu/forms/>. It is filed with the Graduate School and verifies completion of this requirement. **The report and paper should be submitted during the student's last semester.**

RESEARCH GRANT PROPOSAL

All MSCR students are required to complete a research grant proposal. This proposal may be for a career development award or an investigator-initiated research grant. Most proposals will be in the form of an NIH grant. However, foundation grant proposals are also acceptable. Although not a formal requirement of the program, it is strongly encouraged that the research grant proposals are submitted to a funding agency. The research proposal will be developed in the context of EPID 805/6.

APPLICATION FOR GRADUATION

To be eligible for graduation in a given semester a Master's student must apply for the degree early in that semester. Students need to apply for graduation in ConnectCarolina at their Student Center under "Academics" and choose "Apply for Graduation." Deadlines for applying for graduation can be found at gradschool.unc.edu/academics/resources/graddeadlines.html. **If a student fails to graduate in the term applied for, s/he must re-apply; no prior application will suffice.**

A sample schedule for MSCR program can be found in Appendix XIV.

Questions related to curriculum aspects of the program should be directed to Dr. Laura Loehr, MSCR Program Leader, lloehr@email.unc.edu. Questions related to administrative aspects of the program should be addressed to Valerie, vhudock@unc.edu, or Jennifer, jenjoyce@email.unc.edu.

INFORMATION SPECIFIC TO DOCTORAL DEGREE STUDENTS

EXPECTATIONS OF A DOCTORAL STUDENT

It's not just about the smarts, it's about the commitment!

Being a doctoral student isn't just about checking off the required courses, taking some exams and writing that lengthy document. To be successful as a doctoral student, one needs to immerse him/herself in the environment. Full participation in the richness of the offerings of this program is expected. A successful doctoral student learns to think independently; to network effectively; to seek out resources; and to collaborate with peers, faculty, staff, and a myriad of colleagues (some new, perhaps some already known) in and outside the discipline.

A successful doctoral student commits him/herself to every undertaking, even those that are less exciting or seem less relevant at the time. The true scholar attends seminars, seeks out opportunities to present at conferences, to publish papers (often unpaid), to mentor junior students, and to collaborate on a variety of projects.

As a doctoral student, you have a responsibility to your colleagues, as well as to yourself. Graduate school is not a solitary experience. Ultimately, you reflect on yourself, but also on your peers, the department, the School of Public Health, and the university at large. You want to reflect the best of what the program and school have to offer.

Challenge yourself to go above and beyond! Maximize your opportunities for professional development. Take your courses seriously. It's not about the grades, but the content. Use exams and projects as opportunity to test yourself and recognize areas where you are not yet proficient. Use courses, seminars and other resources to gain an in-depth understanding of the field.

Make the commitment now!

COMPETENCIES FOR THE PhD

The PhD program presupposes a foundation of knowledge of concepts and skills of epidemiology, an understanding of public health concepts and the population perspective, and the ability to read with sophistication reports of clinical and epidemiological studies. The PhD program assumes that graduates' professional identity and primary area of expertise will be in epidemiology, though the student may possess a prior area of professional expertise (such as medicine, nursing, or pharmacy).

The PhD program is designed to equip persons to function as independent researchers in academia, research institutes, government, or industry. While graduates often seek additional experience by way of postdoctoral training, a graduate of the PhD program is prepared to function as a faculty member of a graduate program in a university or in a position in a public health organization, government or industry, or multi-disciplinary setting of comparable independence and responsibility.

The competencies of the doctoral program in Epidemiology (listed below) guide our curriculum planning process and serve as a measure against which student achievement is assessed. The competencies should be read in relation to the School's mission. They fully meet the competencies set out for doctoral education at the UNC School of Public Health.

Upon satisfactory completion of the PhD degree program the student will be able to:

1. Identify, critically review, and synthesize the relevant body of scientific literature, identifying gaps and important questions, constructing specific research questions, and considering the perspectives of relevant community stakeholders.
2. Design epidemiologic studies - including appropriate study populations, strategies of data collection, data collection instruments, ethical data collection procedures - to identify or monitor public health problems, investigate etiologic and preventive relations, predict health outcomes, and provide epidemiologic input for program evaluation.
3. Develop detailed protocols for collecting epidemiologic data by means such as questionnaires, biomarkers, interviews, medical records, data systems and other data sources, with adequate consideration of ethical and privacy considerations, data management principles, data security, quality control, and oversight.
4. Develop detailed data analysis plans and conduct data analyses for epidemiologic data such as data collected from individuals and data systems, including datasets made available by governmental and other organizations, to address research questions and estimate relevant population parameters, taking account of data quality, measurement error, potential for bias, including confounding.
5. Work in interdisciplinary teams and contribute results from epidemiologic research to an integration with findings from other scientific literature (biological, psychological, sociological) and other substantive information (e.g., community needs and concerns)
6. Understanding how epidemiological research relates to improving population health.
7. Develop skills in teaching epidemiology and in presenting oral and written reports and explanations to professional, student, and lay audiences; providing comments, questions, and suggestions to colleagues presenting epidemiologic research or methods in written and oral form; and responding professionally and effectively to comments and questions from editors, peer reviewers, and readers/students/listeners.

SUMMARY OF DEGREE REQUIREMENTS/SCHEDULES/TIMELINES FOR THE PhD

The PhD in Epidemiology is the academic doctoral degree. It is a research degree, centered on a major research project within a broad public health orientation and seeking to integrate related disciplines. The program averages three to five years following a master's or other advanced degree. Coursework and preliminary examinations normally require two years, with the remainder of the time devoted to the research and completion of the dissertation. The Department specifies degree requirements within a framework prescribed by the Graduate School.

For a checklist of doctoral degree milestones, go to the 'Degree Audit Checklist' section of the [Students](#) webpage and select 'Milestones in the Life of a PhD Student.'

For a sample timeline for the PhD degree program, see Appendix XV.

Required EPID Core Methods Courses

- EPID 705: Introduction to Logic and Probability Logic in Epidemiology
- EPID 710: Fundamentals of Epidemiology [EPID 711 may be substituted by clinicians]
- BIOS 600: Principles of Statistical Inference **Or** BIOS 550: Elements of Probability and Statistical Inference I **Or** BIOS 662: Intermediate Statistical Methods [PUBH 741 may be substituted by those in the Translational Research Curriculum]
- BIOS 545: Principles of Experimental Analysis **Or** BIOS 663: Intermediate Linear Models [PUBH 742 may be substituted by those in the Translational Research Curriculum]
- EPID 715: Theory and Quantitative Methods in Epidemiology
- EPID 716: Epidemiologic Data Analysis
- EPID 718: Analytic Methods in Observational Epidemiology
- EPID 722: Epidemiologic Analysis of Time-to-Event Data
- EPID 725: Research Planning Workshop
- EPID 726: Epidemiologic Research Methods

Additional Courses

- SPHG 600/FLO: Introduction to Public Health (required for all students who do not hold a prior MPH or MSPH degree)
- Substantive epidemiology courses: minimum of two courses; consisting of 1.) a minimum of 2 credits in the student's program area of study **and** 2.) a minimum of 2 credits in an area (or areas) outside of student's program area of study (i.e., one 2 credit course, or two 1 credit courses). See Appendix VI for a list of specific courses.
- Higher level biostatistics course/s as determined with advisor and specified by intradepartmental review committee (e.g., BIOS 664, BIOS 665, BIOS 667, etc.)
- Other coursework as stipulated by program area guidelines (Refer to relevant focus area at sph.unc.edu/epid/epidemiology-research/).
- Other coursework as determined with advisor and specified by intradepartmental review committee.
- EPID 994: Dissertation research hours, minimum of a total of six credit hours required (At minimum, three credits when defending proposal and three credits at final defense. Additional credit hours as needed.)

See Appendix V for additional information regarding BIOS courses.

See Appendix VI for a list of substantive epidemiology courses.

On-Site Doctoral Studies Policy

Doctoral students are strongly encouraged to complete their doctoral studies on-site, such that they can freely participate in planned (e.g., seminars, journal clubs, peer group meetings, etc.) and impromptu activities with the local community of scholars. This is not to discourage valuable off-site experiences, such as internships, practicums, study site visits, or data collection; rather, this is to discourage relocation outside commuting distance to the UNC campus before completion of doctoral studies.

Off-site doctoral studies may be permissible after successful completion of the following: (i) Graduate School residency requirements, (ii) Epidemiology qualifying examinations, (iii) dissertation proposal defense, and (iv) written approval by the advisor and a majority of the doctoral research committee.

Doctoral students should be aware of the following: (i) NIH training grants do not allow off-site doctoral studies, (ii) some Epidemiology faculty members will not work with off-site students, and (iii) periodic return trips to UNC will be required to meet with your advisor and committee members. Time to completion of the doctoral degree is often longer for off-site students.

Other Degree Requirements

- One semester teaching experience in epidemiology (see Teaching Requirement section for list of approved courses)
- Practicum requirement demonstrating experience in a minimum of two study implementation activities as determined with advisor
- Competence in statistical computing and data management; may be satisfied by:
 - ◊ EPID 700: SAS and Data Management
 - ◊ BIOS 511: Introduction to Statistical Computing and Data Management, or
 - ◊ Prior experience using SAS (exemption exam required prior to beginning fall term)
- Competence in scientific writing
- Intradepartmental Review planning session
- Other requirements as specified by advisor (e.g., some may require two papers submitted, attendance at journal clubs and/or seminars, etc.)
- Other requirements as specified by program area (follow link to your specific area of focus-sph.unc.edu/epid/epidemiology-research/)
- Preliminary Doctoral Examinations:
 - Written examination: Doctoral Qualifying Examination- Methods and Substantive Components
 - Oral Examination: On the dissertation proposal primarily
- Specific written questions on research area (at discretion of student's dissertation committee)
- Submission of a minimum of one manuscript from dissertation research to an external peer review mechanism (see pages 63-64)
- Doctoral Dissertation
- Final Defense of Dissertation

Doctoral students plan coursework beyond the core requirements in consultation with the advisor and the intradepartmental review committee. Doctoral students are expected to take some higher-level biostatistics course(s). Additional substantive epidemiology courses are strongly recommended.

Students proceeding from the master's program in this department complete many of the doctoral course requirements during the master's phase. These courses will already be part of the student's record. No formal waiver is necessary.

A sample schedule for the PhD program can be found in Appendix XVI.

Scientific Writing

Clarity of expression is one of the elements evaluated in all written work, particularly in the doctoral written examinations and the dissertation. Some training possibilities for students who believe they might benefit from additional experience in this area are:

- The Writing Center (writingcenter.unc.edu): provides free individual tutorials and online resources to help students improve writing skills. They are located in the Student Academic Services Building. Make an appointment online <http://writingcenter.unc.edu/appointments/>
- Duke University Continuing Education: courses in scientific writing offered from time to time-- request catalog by calling 684-6259.
- Work with an editor or study group.
- Consult textbooks and style books. Two useful references (among many others available) are:
 1. Robert A. Day, How to Write and Publish a Scientific Paper, 5th ed., Phoenix (Oryx Press, 1998) - www.coltech.vnu.edu.vn/~hanv/graduate/howtowrite.pdf
 2. Kate L. Turabian, Manual for Writers of Term Papers, Theses, and Dissertations, 8th ed., Chicago (University of Chicago Press, 2013)

MINOR PROGRAMS

A minor is not a requirement of the doctoral program, but may sometimes be desirable. Provisions for minor programs are given in the [Graduate School Handbook](#):

The minor must comprise at least 15 credit hours. All credits must be for courses listed (or cross-listed) in programs other than that of the major, and cannot also be counted toward the major. A minor may consist of a set of related courses, some of which are listed by one program and some of which are listed by another. In most cases, the minor would not include courses from more than two programs. Only one program name will be listed as granting the minor, and the director of graduate studies in the minor program must agree to accept any courses from outside the minor program offerings.

The minor must be approved in advance by the director of graduate studies in both the major and minor programs. When a satisfactory minor has been planned and approved by both programs, a copy of the proposed minor course of study should be signed by the director of graduate studies in the major and minor programs and sent to The Graduate School to become a permanent part of the student's record.

Graduate School policy requires the dissertation committee include at least one faculty member from the minor program.

Students wishing to complete a minor need to [contact the minor department](#) for information on its specific requirements.

TEACHING REQUIREMENT

The teaching experience is a requirement for students admitted into the doctoral program. The purpose of the teaching requirement is to make available to all doctoral students a learning experience in effective communication in their field of scientific work, and a tutored practice in the teaching of epidemiology. These skills and their application are part of the department's goals in the training of an epidemiologist leading to the PhD degree.

The student's advisor(s) is/are responsible for assisting in the development of a plan and timing that best fits the student's training path. The teaching experience may be paid (Teaching Assistant, or TA). For students who are not eligible to receive pay, or who choose not to, the experience may be reflected in credit hours by registering for EPID 883 (Teaching Intern, or TI).

Additional details can be found on the web at [TA Central](#).

Roles and Responsibilities

TAs work with faculty in the preparation of course material, the preparation of the class schedule, the assembly of course-packs, and in the pre-testing of evaluation instruments. During the courses, TAs observe lectures and make themselves available to students for clarification of the concepts and terms used in those lectures; they provide consultation to students for clarification of concepts and to review the exercises used in course materials and/or textbooks; they conduct question-and-answer sessions structured around examples and exercises used in various sections of applied courses; and they make themselves available to answer questions from students in clarification sessions prior to quizzes, tests, and final examinations.

Options for Satisfying the Teaching Requirement

Many of the TA opportunities are for SPHG 712 (Public Health Methods and Measures), one of the courses in the MPH Integrated Core, and EPID 600 (Principles of Epidemiology for Public Health), a

service course for non-majors. TAs for EPID 600 may have the option of assisting with the on-campus version or the distance-learning version. Students who have completed more advanced training may serve as TAs for EPID 700, 705, 710 or EPID 711/PUBH 760 (the introductory level courses for majors), or EPID 715/716, 718, or 722. TAs in the advanced level courses usually serve at the invitation of the primary course instructor; however, the instructors will always welcome an inquiry from students who have a strong interest in a particular course.

Other options for satisfying the teaching requirement are: EPID 790 with Dr. Gower; PUBH 741 and PUBH 742 with Dr. Keturah (Kim) Faurot (faurot@med.unc.edu); and EPID 759 with Dr. Lorraine Alexander (lorraine_alexander@unc.edu).

Training and Development

All TAs complete three types of training as a prerequisite for serving in a Teaching Associate role. An orientation and training session organized by the Center for Teaching and Learning serves as a general preparation on teaching techniques and the skills needed to serve as a discussion leader. Additional, and more extensive training takes place in preparation for each course as a responsibility of the respective course instructor. A series of meetings between the course instructor and the TA(s) takes place to review the course objectives, contents, structure, and the role of the TA in each phase of the course. In this process, faculty remain attentive to the apprenticeship role of the TA(s) and provide guidance in this learning experience which allows the student to assume the role of an associate in teaching under the supervision of the course instructor. Finally, students serving as TAs must complete FERPA (Family Educational Rights and Privacy Act) training. Go to registrar.unc.edu/training/ferpa/ferpa-online-training/ for more information.

Doctoral students who have acquired comparable experience in the teaching of epidemiology prior to entry into the doctoral program may request an exemption from this requirement by documenting their past experience in this respect. Requests for exemptions to the teaching requirement are submitted to the Graduate Studies Committee through EPID Student Services. A request should carry the co-signature of the student's advisor.

International students who plan to TA should first complete GRAD 810, Communication in the American Classroom.

Additional information on TA responsibilities and training, as well as the application process can be found on the web at [TA Central](#).

DOCTORAL PRACTICUM REQUIREMENT

The field conduct of studies and related activities is an integral part of the life of an epidemiologist. Practical aspects of study conduct can include everything from designing questionnaires and subject recruitment to the collection of biologic samples and laboratory analysis. These activities are challenging and require a number of skills and experiences. Moreover, failure to properly conduct studies can waste precious resources and potentially invalidate study findings. Because students often conduct their dissertation research based on secondary analysis of data, this requirement will ensure that doctoral students in the Department of Epidemiology have been directly involved in at least two hands-on experiences in the practical conduct of studies.

Requirement Details

All students in the PhD program must demonstrate adequate practical experience in a minimum of two study implementation activities. *Adequate practical experience will be defined as a meaningful field experience, study conduct or implementation activity totaling approximately 80 hours for all activities.*

The student's advisor (not EPID Student Services) will assist with the selection of eligible activities, the time and effort required, and provide the final approval. The advisor is not required to supervise the actual activities. These activities can be part of the dissertation project. Pay is neither required nor prohibited.

Options for Satisfying the Practicum Requirement*

- Development and testing of study protocols
- Staff training and certification
- Subject recruitment
- Questionnaire design and pretesting
- Interviewing
- Working with the community to implement research
- Coding
- Medical or other records abstraction
- Designing and implementing quality control activities
- Biospecimen collection
- Laboratory analysis
- Environmental, occupational, or personal exposure monitoring
- Collection of measurements on study participants
- Other activity as approved with advisor

*Does not include activity that is part of existing course.

Format

No exemptions based on practical experience prior to entrance into the doctoral program will be allowed; the student will have to choose an activity not performed in the past.

Checkpoints: (a) Planning and scheduling of this activity with the advisor, (b) Intradepartmental Review and proposal defense. The deadline is the final defense of the dissertation.

Report of Completion

A brief (1 page) final report is to be turned in to the advisor, along with the [Practicum Verification](#) form for each activity separately. The report should summarize the activities conducted to satisfy the requirement and refer specifically back to the doctoral competencies. Copies of both the report and the verification form are then to be submitted to EPID Student Services.

The Master's Practicum Guidelines do not apply to the doctoral practicum.

THE INTRADEPARTMENTAL REVIEW

The Intradepartmental Review (IDR) is a planning session, bringing together the student and key faculty members in his or her research area for review of the student's progress and to plan the remainder of the work. The IDR is scheduled at a time when the student has completed most or all coursework and has decided on a dissertation area (see Appendix XVII for guidelines on how to choose a topic). Typically, PhD students should have completed the IDR prior to their 4th academic year. MSPH/PhD students should complete the IDR no later than the end of the 4th academic year.

Composition of the intradepartmental review committee is decided in consultation with the doctoral advisor, and consists of three members of the epidemiology faculty. A subject matter expert can be substituted for one member with departmental approval (contact EPID Student Services for approval).

At least one must have a primary appointment (neither adjunct nor clinical) in the Department of Epidemiology.

At least a week before the intradepartmental review the student provides each participant with the following (in no particular format):

- An updated CV
- Information on progress to date, including courses completed, research activities, etc.
- A summary or outline of the proposed dissertation project.
- IRB training certificate in the student's name
- Practicum requirement verification (if complete)
- An item-by-item description of the degree to which the student has met each of the doctoral learning competencies (as listed in Academic Policies on page 48) and those of the program area, if applicable.



A copy of the entire packet given to your Committee must be provided to EPID Student Services.

The student must obtain the [Intradepartmental Review form](#) through the Departmental web site. The form will be completed by the Committee Chairperson during the IDR. During the session, the student and committee plan the training needs and opportunities best suited to the doctoral research identified by the student. The student is responsible for giving a copy of the signed checklist to each member of the IDR committee and filing the original copy with EPID Student Services.

PRELIMINARY DOCTORAL WRITTEN EXAMINATION: THE DOCTORAL QUALIFYING EXAM

Preliminary Doctoral Examinations in the Department of Epidemiology are designed in accordance with Graduate School requirements for a written and an oral examination, together constituting a comprehensive examination of the student's command of his or her field. The student must be registered at the time the preliminary examinations are taken. The examinations are covered by the Honor Code.

Purpose

The written examination is the Doctoral Qualifying Examination. It is a diagnostic tool designed to indicate to the Department whether the student has the substantive knowledge and the methodologic skills to engage in doctoral research and proceed in the doctoral program. The purpose of the examination is to yield diagnostic information on the student's command of several skills and competencies considered necessary for doctoral research.

Content and Structure of the Qualifying Examination

The Doctoral Qualifying Examination is administered in two independently graded portions. The methods component is a standardized test of proficiencies in applying epidemiologic methods at the level of EPID 715/716/718/722. The substantive component consists of topical questions related to the program area declared by the student, prepared (and graded) by a committee established by the program area leader. The two components of the Qualifying Examination are taken independently, but students need to pass both parts prior to the preliminary oral examination. An outline of each part of the Doctoral Qualifying Examination follows.

The **methods component** of the Doctoral Qualifying Examination consists of written responses to questions designed to test the student's ability to apply the concepts and methods covered in the required epidemiology and biostatistics courses. It is administered as an in-class examination, and questions may call for short essay answers; computations and set up of computations; interpretation of

software output; construction, analysis and interpretation of results in tabular form; and analysis of data provided.

The **substantive component** of the Doctoral Qualifying Examination consists of written responses to questions designed to assess the student's command of the topical/programmatic area declared for the intended doctoral research. It is administered as an in-class, closed book examination. Program areas are those defined by the Department of Epidemiology as providing training in a substantive/topical area. The objectives of the substantive portion of the examination are to ascertain:

- (1) the degree of sophistication of the student's knowledge base in the study area,
- (2) his/her awareness of a salient area of research, reflecting familiarity with the current literature,
- (3) the student's ability to apply epidemiologic methods to a topical issue in the study area, and
- (4) the student's ability to identify and discuss the public health implications of a topical issue in the area selected for the proposed doctoral research.

Expected Competencies

To achieve a “pass” level on the Doctoral Qualifying Examination students must demonstrate (a) mastery of and the ability to apply the epidemiologic concepts and methods covered by the core methods curriculum, and (b) a command of the knowledge base, topical issues, and public health applications in the substantive area selected for the proposed doctoral research.

Planning

In the course of a student's Intradepartmental Review (IDR) a time line is identified for the optimal time to take each part of the Doctoral Qualifying Examination, if not already taken.

Students prepare for the **methods component** of the examination by reviewing the pertinent course materials and publications cited in the course materials and textbooks. At the discretion of the examining committee, additional guidelines *may* be provided prior to the exam. Copies of recent exams are not available for review; however, exams from the previous format are posted on the 'Exams' link on the [Students](#) webpage and can serve as good practice opportunities.

To assist students in preparing for the **substantive component** of the Doctoral Qualifying Examination program areas are responsible for providing a “study guide” for students, to include the learning objectives of the program area and recommended readings for developing the minimally necessary expertise in the area (not selected solely for the purpose of addressing specific exam questions).

Previous guidelines and past examinations for substantive component are posted online on the [Students](#) webpage. Click on the “Exams” link.

Timing

Given the qualifying nature of this examination, the Doctoral Qualifying Examination should be taken before work on doctoral research is begun. Both the Methods and Substantive components must be completed satisfactorily for a student to continue in the doctoral program.

The methods component of the qualifying exam will be offered on May 10, 2019 (registration deadline April 12) for the 2018-19 academic year. It should be taken after completion of EPID 722. The student is required to consult with the advisor before registering for the methods component of the doctoral qualifying examination, to confirm the student's readiness to take the examination at that time.

The substantive component of the Doctoral Qualifying Examination is offered during the fall semester (late September or early October). Special interest area examinations (i.e., genetic, physical activity, etc.) are also scheduled at that time. **For the 2018-2019 academic year, substantive exams are scheduled for September 21, 2018, from 8:45 am – 3:00 pm. The registration deadline was June 8, 2018.** [Registration for the 2019 substantive exams (held in Fall 2019) will be opened in May 2019.] EPID Student Services will email an announcement to the listserv when registration is open.

The program area director will make study guidelines available through EPID Student Services no later than three months prior to the date of the examination.

The substantive component of the Qualifying Examination should be taken after a student has selected a topical/programmatic area for the doctoral research and has completed the relevant courses defined in the learning objectives of each program area (typically fifth semester), but it can be taken before the methods component. The student's advisor should be actively engaged in the student's decision about when to take the substantive component. However, no documentation of completed requisites is needed for a student to register for the substantive component of the Doctoral Qualifying Examination.

Administration

The **methods component** of the Doctoral Qualifying Examination is prepared by the Doctoral Qualifying Examination Committee of the Graduate Studies Committee, drawing on other faculty as needed. For each examination, a faculty committee is established, with responsibility for developing, testing, and grading the examination. The committee includes at least one member of the GSC.

For the **substantive component** of the Doctoral Qualifying Examination the program area director forms a committee of faculty members, at least one of whom will have a primary appointment in the Department of Epidemiology. Inclusion of adjunct faculty of the Department is permissible and desirable. The program area director is responsible for providing study guidelines in advance.

To be examined in areas that are not established program areas, the student must file a request through EPID Student Services justifying the need for a “special interest” examination. (With the exception of the oral epidemiology program, such requests are rarely approved.) If approved by the Graduate Studies Committee, the student's advisor will form an *ad hoc* examining committee. At least one of these must have a primary appointment in the Department of Epidemiology. *The advisor plays an important role in selecting the questions, but does not take part in grading.* However, to aid in standardization of the examination across program areas, special interest area questions require prior approval of the Graduate Studies Committee.

This *ad hoc* committee does not constitute a dissertation committee - since approval of both parts of the Qualifying Examination is a requisite for setting up a doctoral committee - but it can serve as the core around which the dissertation committee is subsequently established. The *ad hoc* committee is responsible for grading its questions and for providing diagnostic feed-back to the student. The latter is channeled through the Doctoral Qualifying Examination committee of the Graduate Studies Committee and EPID Student Services.

Format

The methods component is an in-class exam, designed to be completed within a four-hour time period. However, a total of six hours will be allowed. Students must bring a pocket calculator or laptop (for using a spreadsheet application ONLY) and may bring only the following written material: Rothman KJ, Greenland S. Lash TL. Modern Epidemiology. Third edition. Philadelphia: Lippincott Williams & Wilkins, 2008. Annotations from coursework are allowable, but annotations for the purpose of the exam are not. The exam will be 20-25 questions, some of which may be clustered in multi-part questions

based on a table, figure, abstract, or scenario. All items are to be answered, and their point values will sum to 100.

The substantive component of the Doctoral Qualifying Examination is administered as an in-class, closed book examination. Page limits are defined for each question, and the full examination is designed to be answered in three to five hours. The time limit for this part of the Doctoral Qualifying Examination is six hours. Two pages of notes (personally prepared, one piece of paper, two sides) of the student's choice, a foreign language dictionary, and a calculator are allowed. The student will be given three questions to answer. The examining committee may: (1) ask the student to choose two of the three; (2) require the student to answer all three and the best two grades will be submitted; or (3) specify for the student one question to answer and allow the student to choose which of the two remaining questions to answer.

Submission of an exam is final. Students should review their exams carefully prior to submission to EPID Student Services. **For either component, a student may terminate the exam prior to submission with no penalty.**

Copies of past qualifying exams are online at sph.unc.edu/epid/epid-student-central/.
Click on the "Exams" tab.

Grading

An overall grade of Pass on the Doctoral Qualifying Examination requires a Pass on both the Methods component and the Substantive component.

The Methods component will be assigned a score from 0-100% by the examining committee. Examination answers are graded by a member of the examining committee without knowledge of the student's identity. In cases where there is some question about the appropriate grade for an answer, the primary grader consults with another faculty member. The overall score is the sum of the points awarded for the answers to each of the approximately 20-25 questions on the examination, divided by the total points available. The examining committee may add an upward adjustment if deemed appropriate to shift the score distribution. A Pass on the Methods component requires a score of 70%.

For the Substantive component, each of the two questions chosen is typically graded by one member of the examining committee, if possible without knowledge of the student's identity. In cases where there is some question about the appropriate grade for an answer, the primary grader consults with another faculty member. A Pass on the Substantive component requires a Pass on each of the two questions answered by the student.

Report of Outcome

Within 3 weeks of the examination (either part), notification of the outcome is communicated to the student by the Doctoral Qualifying Examination Committee of the Graduate Studies Committee.

A student who fails either component of the examination is required to consult with her/his advisor and conduct an in-depth review of diagnostic information related to his/her performance and any additional feedback or advice from the Doctoral Qualifying Examination Committee. Following this review, the student submits a brief report to the Graduate Studies Committee, with a copy to the advisor, assessing the reasons for the sub-standard performance and outlining an itemized plan for remedial action, which should include an Individual Development Plan (IDP). This analysis and plan are due to EPID Student Services within one month of the report of the examination outcome unless a longer time is agreed to by the Chair of the Graduate Studies Committee. A reply from the Graduate Studies Committee will

ordinarily be provided following the next scheduled GSC meeting after receiving the student's plan. Unless a different timing is recommended by the Graduate Studies Committee, the student must obtain a grade of Pass the next time that component of the Doctoral Qualifying Examination is offered in order to remain in the doctoral program.

Appeal of Failure

An appeal of a failing report is considered by the Graduate Studies Committee.

An appeal must be submitted to EPID Student Services within 3 weeks of receiving the official notice of the examination grade. Appeals must be in the form of a written justification and should be presented in such a way that the appeal can be considered without revealing the identity of the student involved. The appeal should be self-contained (other than references to standard textbooks or examination materials).

Students are expected to decide on their own whether to appeal an examination outcome. The examination can be discussed with the advisor or other faculty members. Appeals are regarded as part of the examination, and therefore subject to the Honor Code. The appeal must be the student's own work and be accompanied by a signed pledge. To preserve anonymity, the pledge will be separated from the appeal itself and retained in EPID Student Services.

The GSC will select an Appeal Committee to serve on an ad hoc basis. The student may suggest that the GSC consult with a particular faculty member; however, the GSC is not required to do so.

The Appeals Committee will review the appeal materials without knowledge of the student's identity. *To preserve anonymity, all communication between the student and the Committee will take place through EPID Student Services until the appeal has been decided.* The Appeal Committee will bring the results of its review to the next scheduled GSC meeting for discussion. In reaching its decision the Committee will award full credit to answers that are judged to be equally as good as those originally proposed.

The GSC will review the appeal results and reach a final decision. The GSC decision is final with respect to the substantive issues. The final GSC decision will be communicated to the student within 6 weeks of submission of the appeal. The student may appeal to the Department Chair only on grounds of alleged irregularities in procedure.

THE DISSERTATION COMMITTEE

The Dissertation Committee is established after both components of the doctoral qualifying exam have been passed. The Dissertation Committee is composed of five or more members, a majority of whom must be "regular" members of the University of North Carolina Graduate School Faculty from the Department of Epidemiology. All tenured and tenure track faculty at the ranks of assistant, associate and full professor are automatically "regular" members of the Graduate Faculty (this includes tenure track faculty School of Medicine, School of Pharmacy, other SPH Departments, etc.). Per Graduate School guidelines, "other persons may be appointed to the Graduate Faculty for "fixed" term membership; these appointees may include: faculty emeriti, clinical or research professors, scholars from other institutions, independent scholars, and practitioners." Confirmation of any individual's status can be obtained online at gradschool.unc.edu/policies/faculty-staff/faculty/

At least three committee members must be "regular" faculty of the Department of Epidemiology. Research track faculty, adjunct faculty, and committee members from outside the UNC-CH system will need to email to epidemiology@unc.edu an electronic copy of their current CV so that they can be nominated for a fixed-term appointment with the Graduate School for the purpose of serving on

committees. Be sure to confirm status online as noted above as there are research track faculty in Epidemiology who have special approval as “regular.”

Committee members from outside the UNC-CH system DO NOT have to be given adjunct appointments to serve on a student’s committee. The role of the Committee Chairperson is to follow the student's progress throughout the dissertation process and to ensure that all departmental policies and expectations are adhered to. For this reason, **the Committee Chairperson must be someone whose primary appointment is in the Department of Epidemiology. Graduate School policy requires that the Committee Chairperson be a “regular” member of the Graduate Faculty.**

The Committee should also include a biostatistician or someone who can function in that capacity. Inclusion of members from outside the department is encouraged when their point of view is warranted by the research question. Such members may be drawn from any of the disciplines bearing on the study of the distribution and determinants of human health and disease. A student who is minoring in another program must have a faculty member from that program on his/her committee.

Dissertation committees should be comprised of the people best suited to serve the student on project needs. If necessary, exceptions to policy can be made. The student, in conjunction with the committee chair, must submit a written justification to EPID Student Services. The Department will petition the Graduate School for an exception. Please consult with EPID Student Services for a sample petition.

Committee members are proposed by the student and approved by the dissertation advisor using the [“Request for Doctoral Dissertation Committee Approval” form](#). The student submits this form to EPID Student Services for departmental approval. EPID Student Services then completes and submits the Graduate School’s “Report of Doctoral Committee Composition” form. **The Committee composition must be constituted and submitted for approval at least 2 weeks prior to the Preliminary Oral Examination.**



THE PRELIMINARY ORAL EXAMINATION

Off-site doctoral work is acceptable ONLY after a successful defense of the doctoral proposal, inclusive of an off-site work plan and a timeline approved by the doctoral committee. (See full policy under “Summary of Degree Requirements/Schedules/Timelines for the PhD.”)

The Preliminary Oral Examination is the second of the preliminary doctoral examinations. It is held after the Qualifying Examination has been passed, at a time when the student’s dissertation committee determines that the dissertation proposal has reached a suitable stage, and in accord with Graduate School regulations. The Graduate School policy requires that by the time of the second preliminary examination the student must have fulfilled all required coursework and the minimum residence requirements for the doctorate or will fulfill these by the end of the semester in which the examination is taken. **A student must be registered for 3 credits of EPID 994 at the time of the preliminary oral examination.**

The purpose of the preliminary oral examination is to review a structured proposal of the student’s doctoral research that includes its objectives, hypotheses, and work plan, submitted for formal approval by the doctoral dissertation committee. **The content and format of the dissertation proposal is defined by the student and the doctoral advisor/doctoral committee chair** at an early stage of this process. At a minimum, the doctoral research proposal includes a comprehensive statement of the background and critical assessment of the literature, a statement of objectives and their rationale, the study hypothesis(es) and design, and a proposal plan of analysis. Formal approval of the dissertation proposal and pertinent supporting materials by the doctoral committee takes place during the oral examination. Sample proposals are available online at sph.unc.edu/epid/sample-proposals/.



The preliminary doctoral examination includes a presentation by the student of the proposed doctoral research. Discussion of the proposal during the preliminary doctoral examination is not constrained by the contents of the proposal. Members of the doctoral committee are free to pose questions on any substantive or methodologic subject related to the proposed doctoral work, a minor program, or aspects of another program or curriculum which is transferred into the candidate's doctoral program.

Also, during this examination the committee should review and discuss manuscript authorship issues with the student.



The student should submit a draft of the proposal to each committee member well in advance of the date planned for the examination, to allow time for review and comment. **The committee must approve the proposal before the student may proceed with the doctoral research.** After the approval of the proposed research, the "Report of Approval of Dissertation Project" and the "Report of Oral Examination" are signed by committee members. These forms are obtained from the Student Services Office and should be returned after the examination. **Do not print these forms from the Graduate School website. They are multi-use forms that have already been filled out and printed by the Student Services Office.**

Following the oral examination, the student must submit a tentative schedule for completion of the dissertation to each committee member.

RESEARCH AREA QUESTIONS

Significant weaknesses in the dissertation proposal or in the level of preparation of the candidate may result in a failed examination, which can be repeated as defined in the Graduate School Handbook. If the deficiencies are less severe and lead the doctoral committee to require supplementary or remedial work, written questions can be identified during the preliminary doctoral examination for completion by the candidate on a pre-established timeline (including a review procedure by Chair and Committee). These research area questions are not part of the preliminary examinations, but serve as a means to clarify or amplify specific issues identified during the oral examination. Any such questions are considered part of the student's program.

ADMISSION TO CANDIDACY

Admission to candidacy for the doctorate is a certification that the student has completed all requirements for the degree except for the dissertation and/or defense

The student must have completed all course work required by the program and the dissertation committee, completed all minor program requirements if a minor has been declared, passed both the doctoral oral and written examinations, submitted an acceptable dissertation proposal, and completed research area questions if these have been assigned by the dissertation committee.

THE DOCTORAL DISSERTATION

The purpose of this capstone experience is to provide students an opportunity to synthesize, integrate and apply knowledge and skills learned in coursework and other learning experiences and require students to demonstrate attainment of program competencies. According to Graduate School policy, the doctoral dissertation "is expected to be of such scope, independence, and skillful presentation as to indicate that the candidate has acquired a command of the subject, has the demonstrated ability to contribute fresh knowledge or a fresh outlook to the subject, and has mastered the research methodology of the discipline."

The student is expected to consult with members of the dissertation committee at frequent intervals throughout the progress of the research and is **required under Graduate School policy to submit a**

progress report to each member of the committee at least once a year. More frequent reporting is desirable and may be specified by an individual committee.

The Graduate School requirements for dissertation format are specified in the publication, [The Graduate School Thesis and Dissertation Guide](#). **Formatting is challenging. Start your formatting when you start your writing!** A video with UNC dissertation formatting instructions can be found here: <https://m.youtube.com/watch?v=YVLDnWWOEVO>

Human Subjects Review

Please refer to section relevant to all students for specific IRB training requirements [above](#).

All proposed doctoral research must be submitted to the School of Public Health Institutional Review Board (IRB) as soon as the project has been approved by the doctoral committee. This applies to all proposals, whether sponsored or not sponsored. While practice in the context of training is not subject to review by IRB, generalizable research conducted by students and/or faculty is subject to a determination whether review by the IRB is required. This determination is the purview of the IRB. Since the dissertation is a research activity that takes place under the leadership of the student with support from an advisor, safeguarding the ethical conduct of this research activity is a responsibility shared by the student.

Guidance for any IRB action required for student research can be found here ohre.unc.edu and guidance for any IRB action required for student research is also in the “*IRB Guidance for Student Research and Class Projects*” document found on their [IRB Guidance Information](#) web page. (Refer to Appendix VIII.) Registration of Master’s paper proposals and dissertation proposals follows the rules for IRB action presented on the website referred to above. The student is listed as the lead investigator for the research activity and a faculty advisor is identified who holds ultimate responsibility for ensuring that this project complies with all University, regulatory, and fiscal requirements.

Depending on the data and research environment of the dissertation project it may not be possible or desirable for student research to be subsumed under an existing IRB approval extended to the lead investigator of a “parent study” that supports a student’s research. *The decision about what is reasonable and whether the student’s proposed research meets this Institution’s guidelines for ethical conduct of research involving human subjects is made by the IRB.* Students should consult with their advisors in preparing IRB applications.



Upon receipt of IRB approval, the student must complete the [Verification of Compliance with Institutional Review Board Requirements form](#). A copy of the IRB committee’s decision must be attached to the form.

. See web site at ohre.unc.edu for information and online submission of applications.

Data Use Agreements

If using data that is not publicly available, the IRB Committee requires a data use agreement. This form is available online through the [Department of Epidemiology Forms](#) webpage. This form should be submitted to the study’s Principal Investigator.

Standards and Expectations for Doctoral Research in the Department of Epidemiology

The research question for a dissertation in Epidemiology can be substantive, methodologic, or theoretical. In any case, it should have a demonstrable potential for advancing the state of knowledge or practice. Standards for an adequate doctoral dissertation are expressed by expectations for a high level of achievement in the following areas:

1. **Originality** is expected in doctoral research. It may be achieved through innovation in theory, methods or substantive content, or by creative application of existing theory or knowledge to a new problem. Research that replicates findings of others without this kind of innovation, while often a worthwhile contribution, is not sufficiently original to satisfy the expectations for the dissertation.
2. **Depth** in the definition and treatment of the research topic is a requirement for doctoral-level research. It implies both technical competence and intellectual sophistication. Depth is to be gauged by the doctoral committee against standards of work publishable in peer-reviewed communications.
3. **Scholarship**. The dissertation should be competent in scholarship, as well as in scientific technique. The problem should be introduced, the study justified, and the results discussed in such a way as to place the work in its academic context. That is, the dissertation should demonstrate familiarity with the work of others, awareness of important developments and controversies, and an ability to critically synthesize and convey such knowledge.
4. **Writing Skills**. Competence in scientific writing is among the evaluation criteria for the doctoral dissertation.

Publication Requirement

The program leading to the Doctor of Philosophy in the Department of Epidemiology is research oriented, and the candidate's doctoral research is expected to make a scientifically meaningful contribution to methodology and/or substantive knowledge. Peer review in assessing whether these standards have been met is the responsibility of the doctoral committee, acting in the capacity of an internal review body.

Peer reviewed communication of research findings is both a yardstick by which the merit of scientific work is measured, and a mandate for scientists in the field of public health. The acquisition of the skills that will enable a scientist to implement these expectations should be an integral part of the doctoral training in epidemiology.

A mentored application of new skills is the preferred and most effective mode of learning and is applied to as many components of the doctoral training in the department of Epidemiology as is feasible. The publication of research findings and encountering external peer review should be first experienced in the didactic and supportive environment of a training program. Postponing these experiences until after graduation can be a significant hurdle to career development.

Implementation

As part of the doctoral research proposal approved by the doctoral committee, a minimum of two manuscripts intended for publication must be proposed. The choice of topics and an outline of the scope of the manuscripts are prepared with input from the doctoral advisor and are approved by the doctoral committee.

The doctoral committee, or the doctoral advisor and at least one member of the doctoral committee, serve as an internal peer review group for the final drafts of these manuscripts.

Completion of the doctoral program requires that one manuscript be submitted to an external peer review mechanism approved by the doctoral advisor. Unless an exception is requested by the doctoral advisor, the default external peer review mechanisms are a scientific journal or a publication/scientific peer review group established by a parent study that has sponsored the doctoral research. Verification of submission is required prior to the final defense by completing the [“Verification of Submission of Dissertation Manuscripts” form](#). Review of the manuscript by a co-author who is not a member of the doctoral committee does not substitute for external peer review.

Neither completion of peer review by a journal nor acceptance for publication is required prior to scheduling the doctoral defense. Timely submission of manuscripts resulting from the doctoral research process is encouraged, to give the candidate an opportunity to receive external peer review comments and to experience the interaction with external peers and journal editors. Rejection of a manuscript by a journal (or equivalent external peer-review process) does not preclude a successful completion of the doctoral program. Conflicts that may emerge between recommendations from external peer reviewers and the doctoral committee are resolved by the doctoral committee, according to the academic requirements of the doctoral program. The doctoral committee is the only, and final, arbiter of the acceptability of the doctoral dissertation.

If doctoral research is proposed that does not lend itself to publication according to the process outlined above, an alternative pathway to publication needs to be approved at the time of the Preliminary Oral Doctoral Examination, to provide an equivalent learning opportunity to this student. If in the opinion of the doctoral committee the analytic results of the doctoral research do not merit publication, this committee develops an alternative to meet the expectations of the doctoral program and to make available to the student the experience of the publication process.

Authorship Expectations from Doctoral Research

The doctoral candidate is expected to assume the role of lead investigator for his/her doctoral research, exercising these responsibilities and decision-making prerogatives with guidance from the dissertation committee Chair. Consistent with this role, the doctoral student is expected to serve as lead author on publications that originate from doctoral research, unless an alternative is stipulated at the time of the doctoral dissertation proposal defense as required by access to data or resources. Under these circumstances, the student’s record should indicate in writing his/her agreement with the data use specifications as well as the advisor’s endorsement. Service on the doctoral committee does not confer authorship to faculty; contributions to a publication that deserve authorship recognition should be measured individually. Authorship recommendations from the scientific editors of the major health sciences journals serve as the guidelines for this process, as summarized in JAMA 1993; 269:2282-2286 and the instructions to authors provided by the major journals.

Assuming lead authorship responsibility and its roles is part of the career development competencies acquired as part of the doctoral training. The doctoral advisor is responsible for assisting the candidate in negotiating authorship issues, particularly in the case of multi-site collaborations, and for studies that have established publication and authorship policies. Guidelines to assist in this process are found in JAMA 1997; 278:579-85, and others.

If the doctoral research is conducted in collaboration with another institution, scientist(s) or agency supplying the data, negotiations should take place early in the planning of the doctoral research and no later than at the time of the defense of the doctoral dissertation proposal. Expectations of authorship for all publications resulting from the doctoral work should be made explicit as part of such negotiations. Such negotiations should include the student, the doctoral

advisor, and the collaborating scientist(s). A written confirmation or understanding of the agreement should follow these negotiations. (Refer to Appendix IX for publication practices.)

It is recommended (not required) that the doctoral advisor and at least one member of the doctoral committee be willing to assume co-author roles on each of the two manuscripts, to guarantee full involvement and timely critical input.

Format of the Dissertation

The traditional dissertation format is a single document with no page limit. Despite its greater length, less careful and time-consuming editing is typically required than for journal publication. However, it has the disadvantages of being time-consuming to read and difficult to reduce to publishable proportions. In the preferred format, often referred to as a “manuscript dissertation,” the results chapters are prepared as manuscripts ready to be submitted for external peer review. This collection of related manuscripts is preceded by two or three chapters that present a unified review of the literature, the study questions, their rationale, the corresponding hypotheses, and the general methods common to the results chapters/manuscripts. Although each manuscript has its own discussion section, a common discussion is included as the last chapter of this type of dissertation. This format is attractive in many ways and is encouraged. Although more demanding in the writing stage, the use of this format will result in a shorter, more readable dissertation, and more importantly, it leads more quickly to its submission for publication.

The “manuscript dissertation” is strongly recommended by the Department and is used almost without exception. A minimum of two manuscripts must be prepared by the student, in collaboration with members of the doctoral committee in supporting roles. These manuscripts must be of a quality sufficient to have the potential to be published in a first rate, peer-reviewed journal. *Even if a monograph style is chosen as the format for the dissertation, a minimum of two manuscripts must be prepared by the student, one of which needs to be submitted for external review prior to the defense.* Exceptions to the format should be specifically applied for (to the advisor).

While the actual manuscripts are formatted as stand-alone documents ready to be submitted for external peer review, for the dissertation they must be integrated into a coherent document that meaningfully links these manuscripts to the aims of the doctoral research. Thus, the complete doctoral dissertation document includes the following elements (all but an introduction are required).

1. Abstract
2. Introduction
3. Critical review of the literature
4. Specific aims or statement of the study questions, and their rationale
5. Hypotheses to be tested
6. Study design, population, measurements/instruments, and quality assurance
7. Analytic approach
8. Results (manuscripts)
9. Overall discussion and interpretation of findings (with reference to overall aims of the doctoral research)

See Appendix XVIII for a sample Table of Contents for a dissertation. For details on table of contents, pagination, typeface, etc., consult [The Graduate School Thesis and Dissertation Guide](#).

Data Source

The source of data or study material for dissertation research is determined by the study question. Primary data collection and secondary analysis of existing data may be acceptable, as determined in collaboration with the advisor.

Breadth

Innovation rather than breadth is a requirement for the dissertation research question. The dissertation may be narrowly focused on a specific problem, if it has the potential to advance the state of the science in a substantive, methodologic, or public health area. However, consideration of the wider implications of the research question and results in the Introduction and Discussion portions of the dissertation is expected.

Time Line and Interaction with the Doctoral Committee

1. The doctoral committee convenes with the student at least on three occasions. These meetings are required, formal milestones in the student's doctoral research and preparation of a doctoral dissertation. They are

- i. Preliminary oral examination (defense of the doctoral research proposal).
- ii. One or more interim meetings.

At least one interim meeting of the committee is held approximately six months prior to final defense (a minimum of four months prior to final defense) to review progress and to provide input from the full committee for the remaining stages of the doctoral research and publication process leading to the final defense. The interim meeting includes a presentation by the candidate to the committee. A majority of the committee must convene on the UNC campus; off-site members of the committee may participate via a mutually agreeable conferencing medium. Exemptions from the requirement to hold an interim meeting of the doctoral committee due to exceptional circumstances require approval by Graduate Studies Committee.

The purpose of the interim meeting is to provide an opportunity for the student to obtain direct consultation with the entire committee prior to completion of the doctoral research process and the dissertation. Issues to be addressed in the interim meeting include reaching consensus on the scope, completeness, and time line of the dissertation, clarifying outstanding issues of analysis and interpretation, and to set up a dissertation close-out schedule. At that time, the Chair of the doctoral committee also asks each committee member to identify any concerns regarding the status of the doctoral research. Following this meeting a brief summary of the decisions and recommendations is distributed by the student and the committee chair to the full committee and a "[Documentation of Interim Doctoral Committee Meeting and Dissertation Close-out Schedule](#)" is submitted by student to EPID Student Services.

- iii. Final doctoral defense.

A final defense may not be scheduled without a prior interim meeting of the committee. In addition, the announcement of the final defense may not be made without prior permission of EPID Student Services. This is to ensure that all administrative tasks have been satisfied prior to the defense.

2. Notification of final defense.

The dissertation close-out schedule, signed by the advisor and the student, constitutes the notification of final defense, and is filed with EPID Student Services.

The student submits the final dissertation document to the committee one to two months prior to the final defense. **Failure to meet this timeline may result in the need to reschedule the doctoral defense.** The student contacts each member of the committee at that point to establish a schedule that allows (a) time for each committee member to read the dissertation, (b) time for the student to meet with each committee member if needed, and (c) an opportunity for the student and advisor to rehearse the defense presentation.

3. Responsibilities of the Committee Members

The student must provide adjuncts or committee members from other departments with a copy of the departmental policies available online at sph.unc.edu/epid/epid-policies-handbook/. At the preliminary oral examination, the committee Chair will review the process described above, the roles and expectations, and the time line. The student is then authorized to proceed with the proposed doctoral research.

Submission of Doctoral Dissertations

The policy adopted by the Epidemiology faculty for submission of the dissertation follows:



The written dissertation document must be in final form prior to the final defense. This implies that all pages, references, and appendices are in place and that a thoughtful discussion has been completed. The dissertation will have been thoroughly proofread and editorial problems corrected. It is expected that following the defense, substantive changes in the written document will be minimal. Any subsequent retyping should at most involve a few pages. This being the expectation of the student, the implication is that each committee member will have reviewed thoroughly the entire finalized document well in advance of the defense.

REMINDER: Do not use forms from Graduate School for report of defense. These pre-filled forms need to be picked up from the Student Services office before the final defense.

APPLICATION FOR GRADUATION

To be eligible for graduation in a given semester a doctoral student must apply for the degree early in that semester. Students need to apply for graduation in ConnectCarolina at their Student Center under “Academics” and choose “Apply for Graduation.” Deadlines for applying for graduation can be found at gradschool.unc.edu/academics/resources/graddeadlines.html. If a student fails to graduate in the term applied for, s/he must re-apply; no prior application will suffice.

THE FINAL DEFENSE OF THE DISSERTATION

The Final Defense (the final doctoral oral examination) is a formal requirement of the Graduate School. **The student must be registered for 3 credits of EPID 994 at the time it is held, and all committee members are required to be in attendance.** It is the perception of the GSC that dissertation committee meetings tend to operate more smoothly when all members of the committee are present in the same room. For the defense of the dissertation proposal, and for the final dissertation defense, it is highly desirable for all members of the dissertation committee, especially the Chair, to be present in the room. The GSC strongly recommends that no more than one member of the dissertation committee should participate electronically. If the Chair of the committee must participate electronically, high-quality video conferencing (e.g., at the Mayes Center) should be used; and, it is recommended that another committee member, who is physically present, should be delegated to moderate the open session.

Once a date and time have been agreed upon by the student and committee members, the student should arrange for a room for the defense. **The defense must be announced via the epidsems distribution list (epidsems@unc.edu) at least one week in advance.** From this announcement, EPID Student Services will prepare a flyer for posting in the department. The announcement should include student name, title of presentation, indication that this is a doctoral defense, name of advisor, date, time, and location. Program areas are encouraged to issue specific invitations to colleagues outside the department, citing the paper titles.

The announcement of the final defense may not be made without prior permission of EPID Student Services. This is to ensure that all administrative tasks have been satisfied prior to the defense.

To reserve the EPID conference room, email Chandra Caldwell at ccaldwel@email.unc.edu. To reserve a room in the SPH, go to sph.unc.edu/rooms

The final defense includes a presentation of the results of the doctoral research to the doctoral committee, other faculty, and students. This is followed by discussion and criticism of the scientific work presented and the final written document.

The first portion of the Final Defense is open. The candidate presents the research, and a general discussion period follows. Following this open meeting, the student and Committee meet in closed session for a final examination of the work. The final results are reported to the Graduate School after all committee members have signed the "Report of the Final Oral Examination" obtained from EPID Student Services. **The Chair of the dissertation committee should not sign this document until the dissertation is in final form. This form will not be submitted to the Graduate School until all corrections/modifications to the final document have been completed.**

SUBMISSION OF THE DISSERTATION TO THE GRADUATE SCHOOL

The student should consult [The Graduate School Thesis and Dissertation Guide](#) for information on preparation of the dissertation for submission to the Graduate School. These guidelines must be followed in order for the final product to be accepted by the Graduate School.

Dissertations must be submitted to The Graduate School in electronic format. **Refer to The Graduate School webpage [Thesis and Dissertation Resources](#) for specific details.**

SUBMISSION OF THE DISSERTATION TO EPID STUDENT SERVICES

Once a student's dissertation has been approved by The Graduate School, it is the student's responsibility to send a copy of the dissertation in PDF format to the department's Student Services.

RESEARCH PROGRAM AREA LEARNING OBJECTIVES

Each major program area has established guidelines to ensure that the curriculum successfully addresses those issues that are specific to that area of research. This includes identification of learning objectives, methods for satisfying those learning objectives and monitoring of evidence of achievement of the learning objectives. Learning objectives are provided for the following program areas: cancer, cardiovascular disease, environmental/occupational, infectious diseases, injury, pharmacoepidemiology, reproductive/perinatal/ pediatric, and social epidemiology. The learning objectives can be found online at sph.unc.edu/epid/epidemiology-research/. Click on the program area of interest and follow link to “Learning Objectives and Courses.”

Be sure to consult the guidelines relevant to your focus area!

APPENDIX I

DEPARTMENTALLY "OWNED AND OPERATED" E-MAIL MAILING LISTS			
LISTNAME/ PURPOSE	TO SUBSCRIBE, SEND E-MAIL TO THE ADDRESS BELOW...	...WITH THE MESSAGE	TO SEND E-MAIL TO PEOPLE SUBSCRIBED TO THE LIST
EPIDADJ (Global distribution of messages to all local adjunct and clinical Epid faculty)	Contact Sharon Sullivan (sharon_sullivan@unc.edu)		epidadj@unc.edu
EPIDADJDISTANT (Global distribution of messages to all distant adjunct and clinical Epid faculty)	Contact Sharon Sullivan (sharon_sullivan@unc.edu)		epidadjdistant@unc.edu
EPIDFACULTY (Global distribution of messages to all Epid faculty)	Contact Sharon Sullivan (sharon_sullivan@unc.edu)		epidfaculty@unc.edu
EPIDPOSTDOC (Global distribution of messages to all Epid postdocs)	Contact Sharon Sullivan (sharon_sullivan@unc.edu)		epidpostdoc@unc.edu
EPIDSTAFF (Global distribution of messages to all Epid staff)	Contact Sharon Sullivan (sharon_sullivan@unc.edu)		epidstaff@unc.edu
EPIDSTUDENTS (Global distribution of messages to all Epid students)	listserv@unc.edu	subscribe epidstudents yourfirstname yourlastname	epidstudents@unc.edu
EPIDSEMS (To announce upcoming Epid department seminars, doctoral dissertation defenses, master's paper presentations, etc)	listserv@unc.edu	subscribe epidsems yourfirstname yourlastname	epidsems@unc.edu
EPIDJOBS (To assist current Epid students in learning about research assistant and teaching assistant positions)	listserv@unc.edu	subscribe epidjobs yourfirstname yourlastname	epidjobs@unc.edu
EPIDSOCIAL (For non-academic matters of potential interest to students. Students must enroll themselves)	listserv@unc.edu	subscribe epidsocial yourfirstname yourlastname	epidsocial@unc.edu

APPENDIX II

SAMPLE MPH TIMELINE

	YEAR ONE											
	Semester 1					Semester 2					Summer	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
EPID 700												
EPID 705												
EPID 710 or 711												
BIOS 600 or 550 or 662												
¹ Substantive Course or SPH Core Elective												
² Review learning objectives and plans; initiate master's topic discussion with advisor and others												
EPID 715												
EPID 716												
BIOS 545 or 663												
¹ Substantive Course or SPH Core Elective												
¹ Substantive Course or SPH Core Elective												
² Select Master's Topic												
² Literature Review for Master's Paper												
Identify and clean dataset for EPID 718												
² Conduct master's practicum												

YEAR TWO

	Semester 3					Semester 4					Summer	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
EPID 718												
EPID 900												
¹ Substantive Course or SPH Core Elective												
IRB approval for master's paper												
² Data Analysis or Synthesis of Issues for Master's Paper												
EPID 992												
¹ Substantive Course or SPH Core Elective												
Master's Comprehensive Exam												
² Master's Presentation												
² Submit first draft of Master's Paper to committee												
² Submit second draft of Master's Paper to committee												
² Final Master's Paper Submission												
Apply for May Graduation												
Graduation												

¹These courses may be taken wherever they fit student interests

²These are recommended, not absolute, guidelines

APPENDIX III

SAMPLE MSPH to PhD TIMELINE

NOTE: This is an ambitious timeline and should not be taken as absolute. There is much variability when it comes to dissertation work and students will work with their advisors to determine the best timeline for their particular situations.

	YEAR ONE											
	Semester 1					Semester 2					Summer	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
EPID 700												
EPID 705												
EPID 710 [or 711, clinicians only]												
BIOS 600 or 550 or 662												
EPID 890												
¹ Substantive course or SPH core elective												
² Initiate master's topic discussion with advisor and others and develop plan for research and other experience												
Review program learning objectives with advisor, develop "contract"												
EPID 715												
EPID 716												
BIOS 545 or 663												
¹ Substantive course or SPH core elective												
² Select master's topic												
² Literature review for master's paper												
Identify and clean dataset for EPID 718												
² Conduct master's practicum												

YEAR TWO

	Semester 3					Semester 4					Summer	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
EPID 718												
EPID 900												
Upper level BIOS course												
¹ Substantive course or SPH core elective												
IRB approval for master's paper												
² Data analysis or synthesis of issues for master's paper												
EPID 722												
EPID 992												
¹ Substantive course and SPH core elective												
Master's comprehensive exam												
² Master's presentation												
² Submit first draft of master's paper to committee												
² Submit second draft of master's paper to committee												
² Final master's paper submission												
Apply for May graduation												
Apply for promotion												
Methods qualifying exam												
Graduation												
Develop topic for EPID 725/6												
Initiate dissertation topic discussion with advisor and others												

YEAR THREE

	Semester 1					Semester 2					Summer	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
EPID 725												
Electives x 2												
Substantive qualifying exam												
Develop dissertation topic												
EPID 726												
Literature review for dissertation												
Develop dissertation aims												
² Conduct doctoral practicum												
² Satisfy TA requirement												
Intradepartmental review (IDR)												

YEAR FOUR

	Semester 1					Semester 2					Summer	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
EPID 994												
² Data analysis and/or synthesis of issues for dissertation												
Submit proposal draft to committee												
Proposal defense												
Dissertation research												

YEAR FIVE

	Semester 3					Semester 4					Summer	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
EPID 994												
² Submit first draft of dissertation to committee												
² Submit second draft of dissertation to committee												
Interim committee meeting												
Final defense												
Apply for May graduation												
Graduation												

¹These courses may be taken wherever they fit student interests

²These are recommended, not absolute, guidelines

APPENDIX IV

SAMPLE SCHEDULE FOR 2-YEAR M(S)PH PROGRAM

(assumes full-time enrollment of 9 or more hours per semester)

Course #	FALL	# Credits
EPID 705		2
EPID 710 (EPID 711)		5 (3)
BIOS 600		3
Substantive EPID course or SPH core elective		3
EPID 700 (SAS)		3

Course #	SPRING	# Credits
EPID 715		4
EPID 716		3
BIOS 545		3
Substantive EPID course or SPH core elective		3

Course #	FALL	# Credits
EPID 718		3
Substantive EPID course or SPH core elective		3
EPID 900		4

Course #	SPRING	# Credits
EPID 992		3
Substantive EPID course and/or SPH core electives		6

Substantive and SPH core courses can be taken in any order or combination.

Summer registration is not routinely required by the department. However, certain types of funding may require that the student continue as a formally enrolled student throughout the summer terms.

APPENDIX V

Additional Information on BIOS Courses

- BIOS 600, 511, 545, 662, 663, 664, 665, 668 are considered applied courses and should be appropriate for most EPID students.
- BIOS 600 is the intro BIOS course taken by all EPID students.
- BIOS 511 is a very useful SAS computing course.
- BIOS 662 and 663 are essentially required of BIOS PhD students.
- BIOS 550, 660, 661 are more theoretical courses taken by BIOS Masters and PhD students.
- BIOS 757 and 767 are more advanced courses, which may be suitable for very strong EPID students.
- An average to good student in EPID should be able to handle BIOS 600, 511, 545, 664, 665, 668.
- A good to very good EPID student should be able to do well in BIOS 550, 662 and 663.
- An excellent EPID student with a strong background in theoretical statistics should be able to manage in BIOS 660 and 661.
- Outstanding students in EPID with a strong background in both theoretical and applied statistics, or with a previous Masters degree in statistics, should be able to manage in BIOS 765 and 767.
- One possible option for a minor for average to good EPID students is: BIOS 511, 550, 545, 668, 665
- A second option for good to very good to excellent EPID students is: BIOS 511, 550, 662, 663, 667
- A third option for a minor for excellent to outstanding theoretical students is BIOS 550, 660, 661, 662 (or 663), 680.
- A minor in Biostatistics consists of 15 credit hours. For more specific requirements for the BIOS minor, please contact the BIOS department located on the 3rd floor of McGavran-Greenberg building.

APPENDIX VI

List of EPID Substantive Courses

The following courses serve to satisfy the requirements for a course in a substantive research area:*

- EPID 625: Injury as a Public Health Problem
- EPID 626: Intentional Injury
- EPID 627: Unintentional Injury
- EPID 735: Cardiovascular Epidemiology
- EPID 737: Advanced Cardiovascular Epidemiology
- EPID 743: Genetic Epidemiology: Methods and Applications
- EPID 744: Advanced Genetic Epidemiology
- EPID 745: Molecular Techniques for Public Health Research
- EPID 750: Fundamentals of Public Health Surveillance
- EPID 751: Emerging and Re-Emerging Infectious Diseases
- EPID 753: Prevention and Control of Infectious Diseases at the Level of the Community
- EPID 754: Mathematical Modeling of Infectious Diseases
- EPID 755: Introduction to Infectious Disease Epidemiology
- EPID 756: Control of Infectious Diseases in Developing Countries
- EPID 757: Epidemiology of HIV/AIDS in Developing Countries
- EPID 758: Methods and Principles of Applied Infectious Disease Epidemiology
- EPID 759: Methods in Field Epidemiology
- EPID 765: Methods and Issues in Pharmacoepidemiology
- EPID 766: Epidemiologic Research with Healthcare Databases
- EPID 770: Cancer Epidemiology and Pathogenesis
- EPID 771: Cancer Epidemiology: Survivorship and Outcomes
- EPID 772: Cancer Prevention and Control (crosslisted as HPM 765, HBEH 765; HPM administrators)
- EPID 775: Advanced Cancer Epidemiology: Classic and Contemporary Controversies in Cancer Causation
- EPID 780: Occupational Epidemiology
- EPID 785: Environmental Epidemiology
- EPID 786: Community-Driven Research for Environmental Justice
- EPID 790: Intervention Epidemiology
- EPID 800: Epidemiology of Medical Care
- EPID 802: Clinical Research Skills I: Basics (Translational Research Curriculum only)
- EPID 810: Physical Activity Epidemiology and Public Health (crosslisted as NUTR 810, EPID administrators)
- EPID 813: Nutritional Epidemiology (crosslisted as NUTR 813, NUTR administrators)
- EPID 814: Obesity Epidemiology (crosslisted as NUTR 814, NUTR administrators)
- EPID 815: Diet and Cancer (crosslisted as NUTR 815, NUTR administrators)
- EPID 818: Analytical Methods in Nutritional Epidemiology (crosslisted as NUTR 818, NUTR administrators)
- EPID 825: Social Determinants of Health: Theory, Method & Intervention (crosslisted as HBEH 802, HBEH administrators)
- EPID 826: Social Epidemiology: Concepts and Measures
- EPID 827: Social Epidemiology: Analysis and Interpretation
- EPID 851: Perinatal Epidemiology (crosslisted as MHCH 851, EPID administrators)
- EPID 853: Advanced Topics in Perinatal & Pediatric Epidemiology (crosslisted as MHCH 853, EPID administrators)

*Note that not all courses may be active.

APPENDIX VII

Guidelines for Choosing Master's Topics

1. Student and advisor have preliminary meeting to discuss the process of identifying a topic area. The student should bring to this meeting a list which includes: (i) broad areas of interest; (ii) previous experiences which can be used to formulate a thesis plan. The advisor brings a list of: (i) on-going projects or datasets which lend themselves to a master's thesis; (ii) suggestions for ways of identifying topics, including recent journal articles, discussions with adjunct faculty, etc.
2. Student presents list of ideas for master's paper to advisor: 5 - 10 topics are listed based upon interest, readings, ongoing discussion with faculty and other students. Advisor and student discuss these options and other potential topic areas.
3. Advisor and student reach consensus on one or two topic areas. Student writes one paragraph idea statement further exploring each topic area.
4. Advisor and student agree on topic. Student writes detailed outline for the topic.

[Note: It is understood that choice of topic area may require changing of advisors.]

5. Second reader identified by student and advisor.
6. First draft of master's paper presented to advisor.
7. Next draft of master's paper presented to advisor and second reader.
8. Scheduling of master's paper presentation (Note: presentation can be work in progress).
9. Final draft of master's paper approved by advisor and second reader.

APPENDIX VIII

IRB GUIDANCE FOR STUDENT RESEARCH AND CLASS PROJECTS

Federal regulations and university policies require Institutional Review Board (IRB) approval for research with human subjects. This applies whether the research is conducted by faculty or students, by individuals or a group. *Failure to obtain proper approval in advance may jeopardize your data, prevent you from publishing the results, and place you and the university in violation of federal regulations.* At the same time, many class projects are conducted for educational purposes and not as research, and will not require IRB approval. This guidance will help you determine whether you need to get IRB approval before conducting a given activity. Please note that the IRB does not have the option of granting “retroactive”

STUDENT RESEARCH

Student research activities include undergraduate honors theses, master’s theses or projects, doctoral dissertations, or comparable activities. IRB approval is generally required if human subjects are involved, either directly or through use of data about them. The student researcher may apply as Principal Investigator (PI), with a faculty advisor as co-signator. Below are some common scenarios, with variable processing requirements.

All forms and additional guidance are available at <ohre.unc.edu>

- | | |
|--|--|
| <ul style="list-style-type: none">• STUDENT RESEARCH that involves direct interaction with individuals (e.g., in person, or via mail, email, web survey, or telephone), or data from human subjects for which the researchers will have access to identifiers or Protected Health Information (PHI) like medical records (subject to HIPAA regulations). | <p>IRB approval required--submit IRB application form
Submission is required even if the data collection is covered by another IRB application under someone else’s name, UNLESS the student’s use is completely subsumed under that existing study, with nothing new added.</p> <p>Student researcher (PI), co-investigators (if a group) and faculty advisor are required to have current research ethics certification</p> |
| <ul style="list-style-type: none">• STUDENT RESEARCH that is limited to secondary analysis of data, records or specimens that are either publicly available, deidentified or otherwise impossible to be linked to personal identities. This also means that data or records contain no Protected Health Information (PHI) that is subject to HIPAA | <p>Submit form for “Determination Whether Research or Similar Activity Requires IRB Approval.” A data use agreement between the researcher and the data custodian may still be required to verify that the researcher will not have access to identifying codes. It is this “delinking” of data from personal identifiers that allows the IRB to waive review.</p> <p>Research ethics certification of the student(s) is not required by IRB, but may be required by the faculty advisor.</p> |
| <ul style="list-style-type: none">• STUDENT RESEARCH ACTIVITIES using departmental subject pools (e.g., Psychology, Business, Political Science, Journalism and Mass Communication) even when the research activity is conducted for educational purposes as a class requirement | <p>IRB approval required—submit an IRB application form for each activity by an individual or small group</p> <p>Student researcher (PI), co-investigators (if a group) and faculty advisor should have current research ethics certification</p> |

CLASS PROJECTS

Most class projects are conducted for educational purposes and not as research. While some require submission of an **IRB application** or a **determination that IRB approval is not required**, many class projects require neither.

- | | |
|--|--|
| <ul style="list-style-type: none">• CLASS PROJECTS that involve secondary data that include Protected Health Information (PHI) that are subject to HIPAA regulations* | <p>IRB approval required-- When there are several students in the class using datasets that include PHI, a single IRB application may be submitted by the course instructor as PI, listing all students who will have access to PHI. If only one student is using PHI, then an individual IRB application with the student as PI may be submitted.</p> |
|--|--|

*Access to PHI requires a waiver of HIPAA authorization, which requires an IRB application and IRB approval.

The course instructor and those students using PHI

<ul style="list-style-type: none"> • CLASS PROJECTS that involve direct interaction and are undertaken as both an educational experience and as research (e.g., results of these activities will be presented publicly, or otherwise disseminated, or the data will be stored and used by the students or others as research data). <p>Note: Such projects may be very similar to one another. For example, each student may interview one or more persons for a group of oral histories, or conduct telephone surveys as part of a yearly poll, but all in the class follow the same general script or guidelines. If class projects follow different protocols, a table or chart can describe these more individualized activities</p>	<p>must have research ethics certification.</p> <p>IRB approval required -- a single application with the class instructor as PI will generally be sufficient.</p> <p>The PI must have research ethics certification. Considering the sensitivity of the information to be collected, the instructor can require that students complete the CITI online course, or the instructor may provide comparable training, with the approval of the IRB.</p>
<ul style="list-style-type: none"> • CLASS PROJECTS OR PRACTICA that involve direct interaction (e.g., in person, via mail, email, web surveys, or telephone), but where the purpose is training, an educational exercise or professional development, and not research. The project or practicum is not “research” even if students ask people questions as part of learning how to conduct interviews or surveys, take histories, administer assessments, or perform “in-house” evaluations as requested by the practicum site. <p>Exceptions:</p> <ol style="list-style-type: none"> 1. If the intent is to carry out a practicum AND simultaneously collect research data, then an IRB application should be submitted for approval prior to beginning the activity. 2. If a student decides after the completion of a practicum activity to pursue additional activities with the same information for a master’s project or paper, then an IRB application describing secondary data use should be submitted for approval, as above. 	<p>Neither IRB approval nor IRB Determination required -- but may be requested if instructor or students are unsure, or if documentation is required (e.g., for access to participants).</p> <p>Class instructor and department are responsible for providing the necessary training in respecting the privacy of the individuals and the confidentiality of any resulting information, along with training in the relevant professional ethics.</p> <p>Instructor provides information about the assignment for the students to distribute to people who participate in these class projects. List the instructor as the appropriate contact person should questions arise.</p>
<ul style="list-style-type: none"> • CLASS PROJECTS involving secondary data analyses that are assigned and conducted as educational exercises, and that use publicly available data or anonymous data (where there are no identifiers in anyone’s possession) 	<p>Neither IRB approval nor IRB Determination required</p>
<ul style="list-style-type: none"> • CLASS PROJECTS involving secondary data analyses that are assigned and conducted as educational exercises, and that use datasets that include private information and codes that link to identifiers, but the students do not have access to the identifiers 	<p>Neither IRB approval nor IRB Determination Required</p> <p>Class instructor and department are responsible for providing the necessary training in respecting the confidentiality of the data</p>

Class instructors and departments are encouraged to contact the relevant IRB for guidance about various ways to handle topics such as privacy, confidentiality, informed consent, and professional ethics when class projects are part of the course syllabus. IRB chairs and staff can share expertise related to managing risks of deductive disclosure, coercion-free recruiting, informed consent, and special considerations for projects that include potentially vulnerable individuals. These issues may remain even when IRB approval is not required, in which case instructors, advisors, departments and schools play an even greater role in providing the appropriate guidance and oversight.

APPENDIX IX

PUBLICATION PRACTICES

Contributing to the peer-reviewed literature is a scientist's responsibility as well as a measure of the quality of his/her work. Students are encouraged to publish as early as their skills allow and according to the opportunities they can identify during their training. It is an expectation in this department that doctoral research be of publication quality and that doctoral students submit findings from their doctoral research for peer review as part of the publication process.

Publishing is thus an important set of skills to acquire during training and students encounter questions about procedural matters and authorship as part of this training. Because of the diversity of issues to consider in this respect, some specific to particular research projects and affiliated institutions, the Department of Epidemiology does not endorse any particular set of policies related to publishing. Instead, we refer to the outline of recommendations on The Graduate School's Academic Integrity and Ethics webpage (listed below) and to the better professional journals since they include authorship criteria and responsibilities in their instructions for authors. Importantly, students are encouraged to meet with their supervisors early in their training to discuss issues related to publication opportunities, especially authorship. As stated on page 61 in Academic Policies, a successful defense of a doctoral research proposal must include consideration of expectations for publication(s) based on the doctoral research, collaborative and administrative arrangements for this purpose to be transacted by the student as the lead investigator, and authorship roles.

The recommendations from The Graduate School's Academic Integrity and Ethics webpage (gradschool.unc.edu/academics/resources/ethics.html) are as follows:

- An author submitting a paper should never include the name of a co-author without that person's consent. Each co-author should be furnished with a copy of the manuscript before it is submitted. Co-authorship should be offered to (and limited to) anyone who has clearly made a significant contribution to the work.
- Anyone accepting co-authorship of a paper should realize that this action implies a responsibility as well as a privilege. If a potential co-author has serious reservations concerning a publication, the individual should decline co-authorship.
- The senior author or authors of a paper, individually or in concert, should be prepared to identify the contributions of each co-author.
- Simultaneous submission of essentially identical manuscripts to different journals is improper.
- As a general principle, research should be published in the scientific literature before reports of such research are released to the public press.

APPENDIX X

Sample Title Page for Master's Paper (applies to MPH, MSPH, MSCR degrees)

MASTERS PROGRAMS AND SLEEP DEPRIVATION AMONG EPIDEMIOLOGY STUDENTS

by

A. Tired Student

A Master's Paper submitted to the faculty of the University of North Carolina at Chapel Hill in partial fulfillment of the requirements for the degree of Master of Public Health [or Master of Science in Public Health or Master of Science in Clinical Research] in the Department of Epidemiology.

Chapel Hill

2016

Approved by:

John Doe, PhD
Advisor

Jane Doe-Smith, MD, MPH
Reader

Date of IRB Approval: _____

[Funding Source Acknowledgement if appropriate]

APPENDIX XI

SAMPLE VETERINARY MPH TIMELINE

	YEAR ONE											
	Semester 1					Semester 2					Summer	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
EPID 700												
EPID 705												
EPID 710												
ST 511 (NCSU) (alternate: BIOS 600)												
CBS 595 (NCSU)												
¹ NCSU/UNC or SPH Core Elective												
² Review program learning objectives with advisor, develop "contract"												
² Initiate master's topic discussion with advisor and others and develop plan for research and other experience												
EPID 715												
EPID 716												
ST 512 (NCSU) (alternate: BIOS 545)												
CBS 595 (NCSU)												
¹ NCSU/UNC or SPH Core Elective												
² Select Master's Topic												
² Literature Review for Master's Paper												
Identify and clean dataset for EPID 718												
² Conduct master's practicum												
EPID 900												

YEAR TWO

	Semester 3					Semester 4					Summer	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
EPID 718												
VPH 760 (NCSU)												
CBS 595 (NCSU)												
¹ NCSU/UNC or SPH Core Elective												
¹ NCSU/UNC or SPH Core Elective												
IRB approval for master's paper												
² Data Analysis or Synthesis of Issues for Master's Paper												
EPID 992												
¹ NCSU/UNC or SPH Core Elective												
Master's Comprehensive Exam												
² Master's Presentation												
² Submit first draft of Master's Paper to committee												
² Submit second draft of Master's Paper to committee												
² Final Master's Paper Submission												
Apply for May Graduation												
Graduation												

¹These courses may be taken wherever they fit student interests

²These are recommended, not absolute, guidelines

APPENDIX XII

SAMPLE SCHEDULE FOR VETERINARY MPH PROGRAM

Course #	FALL	# Credits
EPID 700		3
EPID 705		2
EPID 710		5
HPM 600		3
CBS 595 (NCSU)		1
ST 511 (NCSU)		3

Course #	SPRING	# Credits
EPID 715		4
EPID 716		3
BIOS 545 (or ST 512)		3
HBEH 600		3
CBS 595 (NCSU)		1
NCSU Elective		3

Course #	FALL	# Credits
EPID 718		3
EPID 900		4
TOX 715		3
CBS 595 (NCSU)		1
NCSU Elective		3

Course #	SPRING	# Credits
EPID 992		3
CBS 595 (NCSU)		1
VPH 713		3
VPH 760		3

APPENDIX XIII

SAMPLE MSCR TIMELINE

	YEAR ONE											
	Semester 1					Semester 2					Summer	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
EPID 711												
EPID 802												
PUBH 741												
¹ SPHG 600												
³ Initiate master's topic discussion with advisor and others												
EPID 733												
EPID 804												
PUBH 742												
² MSCR track course or elective												
Master's Comprehensive Exam												
³ Select Master's Topic												
³ Literature Review for Master's Paper												

YEAR TWO

	Semester 3					Semester 4					Summer	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
EPID 805												
² MSCR track course or elective												
IRB approval for Master's Paper												
³ Data Analysis or Synthesis of Issues for Master's Paper												
EPID 806												
EPID 992												
² MSCR track course or elective (if needed)												
³ Submit first draft of Master's Paper to committee												
³ Submit second draft of Master's Paper to committee												
³ Final Master's Paper Submission												
Apply for May Graduation												
Graduation												

¹This course is not offered every semester

²These courses may be taken wherever they fit student interests

³These are recommended, not absolute, guidelines

APPENDIX XIV

SAMPLE SCHEDULE FOR 2-YEAR MSCR PROGRAM

FALL	
Course #	# Credits
EPID 711	3
EPID 802	2
PUBH 741	4
SPHG 600	3

SPRING	
Course #	# Credits
EPID 733	3
EPID 804	4
PUBH 742	4
MSCR Track Course or elective	2-4

FALL	
Course #	# Credits
EPID 805	2
MSCR Track Course or elective	2-4
MSCR Track Course or elective	2-4

SPRING	
Course #	# Credits
EPID 806	2
EPID 992	3

APPENDIX XV

Sample PhD Timeline

NOTE: This is an ambitious timeline and should not be taken as absolute, or even preferred. There is much variability when it comes to dissertation work and students will work with their advisors to determine the best timeline for their particular situations.

	YEAR ONE											
	Semester 1					Semester 2					Summer	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
EPID 700												
EPID 705												
EPID 710 or 711												
BIOS 600 or 550 or 662												
SPHG 600 (if required)												
¹ Substantive course												
² Initiate dissertation topic discussion with advisor and others and develop plan for research and other experience												
Review program learning objectives with advisor, develop "contract"												
EPID 715												
EPID 716												
BIOS 545 or 663												
¹ Substantive course												
² Select dissertation topic												
² Literature review for dissertation												
Develop topic for 725/726												
Develop dataset for 718												
² Conduct doctoral practicum												

YEAR TWO

	Semester 3					Semester 4					Summer	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
EPID 718												
EPID 725												
Upper level BIOS course												
¹ Substantive course												
² Data analysis or synthesis of issues for dissertation												
EPID 722												
EPID 726												
Elective												
² Select dissertation topic												
² Develop dissertation topic												
² Conduct doctoral practicum												
Methods qualifying exam												
Intradepartmental review (IDR)												

YEAR THREE

	Semester 1					Semester 2					Summer	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
EPID 994												
Substantive qualifying exam												
Submit proposal draft to committee												
Proposal defense												
Dissertation research												
² Satisfy TA requirement												

YEAR FOUR

	Semester 3					Semester 4					Summer	
	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
EPID 994												
² Submit first draft of dissertation to committee												
² Submit second draft of dissertation to committee												
Interim committee meeting												
Final defense												
Apply for May graduation												
Graduation												

¹These courses may be taken wherever they fit student interests

²These are recommended, not absolute, guidelines

APPENDIX XVI

SAMPLE SCHEDULE FOR PhD PROGRAM

(assumes full-time enrollment of 9 or more hours per semester)

IMPORTANT: Students who do not hold a prior master’s degree in a related field will be required to complete the MSPH (Master of Science of Public Health) as part of the requirements toward the PhD. The MSPH requirements are comparable to the MPH requirements and are addressed in Appendix IV. This may add one to two years to the program.

	FALL	
Course #		# Credits
EPID 705		2
EPID 710		5
BIOS 600		3
EPID 700 (SAS)		3

	SPRING	
Course #		# Credits
EPID 715		4
EPID 716		3
BIOS 545		3
Substantive EPID course		3

	FALL	
Course #		# Credits
EPID 718		3
BIOS elective		3
Substantive EPID course		3
EPID 725		1

	SPRING	
Course #		# Credits
EPID 722		4
EPID 726		3
EPID 994		3

SUBSEQUENT FALL SEMESTERS		
Course #		# Credits
EPID 994		3*

SUBSEQUENT SPRING SEMESTERS		
Course #		# Credits
EPID 994		3*

*3 credit hours of EPID 994 constitutes full-time enrollment once all other course requirements have been met. (A student may register for additional courses if desired, but must register for a minimum of 3 hours of dissertation to be considered full-time.)

SPHG 600 is also required for students who do not have a prior MSPH or MPH.

APPENDIX XVII

Guidelines for Choosing Dissertation Topics

PhD students

1. Student presents list of dissertation topics to advisor.
2. Advisor and student discuss these options as topic areas for dissertation.
3. Based upon additional reading by student, scientific merit and feasibility, advisor and student agree on topic area. Student prepares a written outline of this topic.
4. Advisor and student discuss the outline and develop a plan for conduct of the dissertation.
5. Advisor and student discuss options: (i) student writes grant proposal with advisor; (ii) student takes part in on-going funded research project with advisor; (iii) student will analyze secondary data; (iv) advisor identifies potential contacts outside the department with available data.
6. Student and advisor agree on topic and student prepares second draft of outline of dissertation proposal.
7. Student and advisor identify additional dissertation committee members.
8. Student presents second draft of proposal outline to committee and discusses it with each committee member.
9. Student prepares draft of dissertation proposal and discusses it with advisor.
10. Second draft of proposal presented to entire committee and followed up with discussion.
11. Final draft of proposal presented to committee.
12. Student schedules preliminary orals.

APPENDIX XVIII

SAMPLE TABLE OF CONTENTS FOR MANUSCRIPT-STYLE DISSERTATION

Note: This sample does NOT meet The Graduate School's formatting guidelines and is for illustrative purposes only.

TABLE OF CONTENTS

	Page
TITLE PAGE.....	i
ABSTRACT.....	ii
TABLE OF CONTENTS.....	iii
LIST OF TABLES.....	ix
LIST OF FIGURES	x
LIST OF ABBREVIATIONS.....	xi

Chapter

(I) INTRODUCTION (optional).....	(1)
I. REVIEW OF THE LITERATURE	1
A. Conceptual Framework	1
B. Historical Background.....	1
C. Critical review of literature	4
D. Synopsis or Summary.....	5
E. References	6
II. STATEMENT OF SPECIFIC AIMS	9
A. Study Questions/Specific aims	11
B. Hypotheses	12
C. Rationale.....	14
III. METHODS.....	15
A. Overview of Methods.....	16
B. Design.....	18
1. Subject Identification/Sampling.....	18
a. Source Population	19
b. Identification of Cases/Controls.....	20
c. Selection Criteria.....	22

2.	Methods for Proposed Study	24
a.	Classification of Exposure.....	26
1.	Exposure of Interest	27
2.	Exposure Period.....	28
3.	Measurement Characteristics (reproducibility/validity)	29
b.	Classification of Outcome	31
3.	Quality Assurance/Quality Control.....	32
4.	Data Analysis.....	34
5.	References.....	38
IV.	RESULTS.....	41
A.	TITLE OF PAPER 1	47
1.	Introduction	47
2.	Methods.....	48
3.	Results	51
4.	Discussion	56
5.	References	59
B.	TITLE OF PAPER 2.....	61
1.	Introduction	61
2.	Methods.....	62
3.	Results	64
4.	Discussion	67
5.	References	72
V.	CONCLUSIONS	75
A.	Recapitulation of overall study aims, findings and degree to which the goals of the doctoral research have been met	75
B.	Strengths.....	77
C.	Limitations	78
D.	Public Health Implications	79
E.	Future Directions.....	80
VI.	REFERENCES	81
VII.	APPENDICES	85
A.	Informed Consent.....	85
B.	Instruments	86
C.	Permission(s) from Copyright Holder(s).....	87

APPENDIX XIX

Public Health Core Competencies & Cross-Cutting Competencies

Department: Epidemiology

Degree: MPH, MPH (Veterinary Epidemiology Concentration) & MSPH (as part of MSPH-to-PhD degree)

Courses and activities through which public health core competencies and cross-cutting competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Biostatistics								
1. Describe the roles biostatistics serves in the discipline of public health	BIOS 600 ¹ : Principles of Statistical Inference (P)	PUBH 741 ² : Quantitative Methods for Health Care Professionals I (P)						
2. Distinguish among the different measurement scales and the implication for selection of statistical methods to be used based on these directions	BIOS 600 ¹ : Principles of Statistical Inference (P)	PUBH 741 ² : Quantitative Methods for Health Care Professionals I (P)						
3. Apply descriptive techniques commonly used to summarize public health data	BIOS 600 ¹ : Principles of Statistical Inference (P)	PUBH 741 ² : Quantitative Methods for Health Care Professionals I (P)						Master's paper (R)
4. Describe basic concepts of probability, random variation and commonly used probability distributions	BIOS 600 ¹ : Principles of Statistical Inference (P)	PUBH 741 ² : Quantitative Methods for Health Care Professionals I (P)						

Courses and activities through which public health core competencies and cross-cutting competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
5. Apply common statistical methods for inference	BIOS 600 ¹ : Principles of Statistical Inference (P)	PUBH 741 ² : Quantitative Methods for Health Care Professionals I (P)						Master's paper (R)
6. Describe preferred methodological alternatives according to the type of study design for answering a particular research question	BIOS 600 ¹ : Principles of Statistical Inference (P)	PUBH 741 ² : Quantitative Methods for Health Care Professionals I (P)						
7. Apply descriptive and inferential methodologies according to the type of study design for answering a particular research question	BIOS 600 ¹ : Principles of Statistical Inference (P)	PUBH 741 ² : Quantitative Methods for Health Care Professionals I (P)						Master's paper (R)
8. Interpret results for statistical analysis found in public health	BIOS 600 ¹ : Principles of Statistical Inference (P)	PUBH 741 ² : Quantitative Methods for Health Care Professionals I (P)						
9. Develop written and oral presentations based on statistical analyses for public health professionals and educated lay audiences	BIOS 600 ¹ : Principles of Statistical Inference (P)	PUBH 741 ² : Quantitative Methods for Health Care Professionals I (P)						Master's paper (R)
10. Apply basic informatics techniques with vital statistics and public health records. In the description of public health characteristics and in public health research and evaluation	BIOS 600 ¹ : Principles of Statistical Inference (P)	PUBH 741 ² : Quantitative Methods for Health Care Professionals I (P)						Master's paper (R)

Courses and activities through which public health core competencies and cross-cutting competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Environmental Sciences and Engineering								
1. Specify approaches for assessing, preventing and controlling environmental hazards that pose risks to human health and safety	ENVR 600: Environmental Health (P)							
2. Describe the direct and indirect human, ecological and safety effects of major environmental and occupational agents	ENVR 600: Environmental Health (P)							
3. Specify current environmental risk assessment methods	ENVR 600: Environmental Health (P)							
4. Describe genetic, physiologic and psychosocial factors that affect susceptibility to adverse health outcomes following exposure to environmental hazards	ENVR 600: Environmental Health (P)							
5. Discuss various risk management and risk communication approaches in relation to issues of environmental justice and equity	ENVR 600: Environmental Health (P)							
6. Explain the general mechanisms of toxicity in eliciting a toxic response to various environmental exposures	ENVR 600: Environmental Health (P)							
7. Develop a testable model of environmental insult	ENVR 600: Environmental Health (P)							

Courses and activities through which public health core competencies and cross-cutting competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
8. Describe federal and state regulatory programs, guidelines and authorities that control environmental health issues	ENVR 600: Environmental Health (P)							
Epidemiology								
1. Explain the application of epidemiology for informing scientific, ethical, economic and political discussion of health issues	EPID 711 / PUBH 760 ³ : Clinical Measurement/Evaluation (P)	EPID 710 ³ : Fundamentals of Epidemiology (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 716: Epidemiologic Data Analysis (R)	EPID 718: Analytic Methods in Observational Epidemiology (P)			Master's paper (R)
2. Apply the basic terminology and definitions of epidemiology	EPID 711 / PUBH 760 ³ : Clinical Measurement/Evaluation (P)	EPID 710 ³ : Fundamentals of Epidemiology (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 716: Epidemiologic Data Analysis (R)	EPID 718: Analytic Methods in Observational Epidemiology (P)			Master's paper (R)
3. Identify key sources of data for epidemiologic reports	EPID 711 / PUBH 760 ³ : Clinical Measurement/Evaluation (P)	EPID 710 ³ : Fundamentals of Epidemiology (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 716: Epidemiologic Data Analysis (R)	EPID 718: Analytic Methods in Observational Epidemiology (P)			Students must complete at least one substantive-area course (R) Master's paper (R)
4. Calculate basic epidemiology measures	EPID 711 / PUBH 760 ³ : Clinical Measurement/Evaluation (P)	EPID 710 ³ : Fundamentals of Epidemiology (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 716: Epidemiologic Data Analysis (R)	EPID 718: Analytic Methods in Observational Epidemiology (P)			Master's paper (R)

Courses and activities through which public health core competencies and cross-cutting competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
5. Evaluate the strengths and limitations of epidemiologic reports	EPID 711 / PUBH 760 ³ : Clinical Measurement/Evaluation (P)	EPID 710 ³ : Fundamentals of Epidemiology (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 716: Epidemiologic Data Analysis (R)	EPID 718: Analytic Methods in Observational Epidemiology (P)			Students must complete at least one substantive-area course (R) Master's paper (R)
6. Draw appropriate inferences from epidemiologic data	EPID 711 / PUBH 760 ³ : Clinical Measurement/Evaluation (P)	EPID 710 ³ : Fundamentals of Epidemiology (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 716: Epidemiologic Data Analysis (R)	EPID 718: Analytic Methods in Observational Epidemiology (P)			Students must complete at least one substantive-area course (R) Master's paper (R)
7. Communicate epidemiologic information to lay and professional audiences	EPID 711 / PUBH 760 ³ : Clinical Measurement/Evaluation (P)	EPID 710 ³ : Fundamentals of Epidemiology (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 716: Epidemiologic Data Analysis (R)	EPID 718: Analytic Methods in Observational Epidemiology (P)			Oral presentation of master's paper (P) Master's paper (P)
8. Comprehend basic ethical and legal principles pertaining to the collection, maintenance, use and dissemination of epidemiologic data	EPID 711 / PUBH 760 ³ : Clinical Measurement/Evaluation (P)	EPID 710 ³ : Fundamentals of Epidemiology (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 716: Epidemiologic Data Analysis (R)	EPID 718: Analytic Methods in Observational Epidemiology (P)			Master's paper (R)
9. Identify the principles and limitations of public health screening programs	EPID 711 / PUBH 760 ³ : Clinical Measurement/Evaluation (P)	EPID 710 ³ : Fundamentals of Epidemiology (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 716: Epidemiologic Data Analysis (R)	EPID 718: Analytic Methods in Observational Epidemiology (P)			Students must complete at least one substantive-area course (R)

Courses and activities through which public health core competencies and cross-cutting competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Health Behavior and Health Education								
1. Describe the role of social and community factors in both the onset and solution of public health problems.	HBEH 600: Social and Behavioral Sciences in Public Health (P)							
2. Identify the causes of social and behavioral factors that affect health of individuals and populations.	HBEH 600: Social and Behavioral Sciences in Public Health (P)							
3. Identify basic theories, concepts and models from a range of social and behavioral disciplines that are used in public health research and practice.	HBEH 600: Social and Behavioral Sciences in Public Health (P)							
4. Apply ethical principles to public health program planning, implementation and evaluation.	HBEH 600: Social and Behavioral Sciences in Public Health (P)							
5. Specify multiple targets and levels of intervention for social and behavioral science programs and/or policies.	HBEH 600: Social and Behavioral Sciences in Public Health (P)							

Courses and activities through which public health core competencies and cross-cutting competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
6. Identify individual, organizational and community concerns, assets, resources and deficits for social and behavioral science interventions.	HBEH 600: Social and Behavioral Sciences in Public Health (P)							
7. Use evidence-based approaches in the development and evaluation of social and behavioral science interventions.	HBEH 600: Social and Behavioral Sciences in Public Health (P)							
8. Describe the merits of social and behavioral science interventions and policies.	HBEH 600: Social and Behavioral Sciences in Public Health (P)							
9. Describe steps and procedures for the planning, implementation and evaluation of public health programs, policies and interventions.	HBEH 600: Social and Behavioral Sciences in Public Health (P)							
10. Identify critical stakeholders for the planning, implementation and evaluation of public health programs, policies and interventions.	HBEH 600: Social and Behavioral Sciences in Public Health (P)							

Courses and activities through which public health core competencies and cross-cutting competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Health Policy and Management								
1. Identify the main components and issues of the organization, financing, and delivery of health services in the U.S.	HPM 600: Introduction to Health Policy and Management (P)							
2. Discuss the policy process for improving the health status of populations.	HPM 600: Introduction to Health Policy and Management (P)							
3. Describe the legal and ethical bases for public health and health services.	HPM 600: Introduction to Health Policy and Management (P)							
4. Apply quality and performance improvement concepts to address organizational performance issues.	HPM 600: Introduction to Health Policy and Management (P)							
5. Use "systems thinking" for resolving organizational problems.	HPM 600: Introduction to Health Policy and Management (P)							
6. Use the principles of program planning, development, budgeting, management and evaluation to organizational and community initiatives.	HPM 600: Introduction to Health Policy and Management (P)	HBEH 600: Social and Behavioral Sciences in PH (P)						

Courses and activities through which public health core competencies and cross-cutting competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
7. Communicate health policy and management issues using appropriate channels and technologies.	HPM 600: Introduction to Health Policy and Management (P)							
Communication and Informatics								
1. Demonstrate effective written and oral health communication skills appropriately adapted to professional and lay audiences with varying knowledge and skills in interpreting health information.	EPID 786: Community-Driven Epidemiology and Environmental Justice (P) (elective)	EPID 827: Social Epidemiology: Concepts and Measures (P) (elective)	EPID 710: Fundamentals of Epidemiology (R)	EPID 718: Analytic Methods in Observational Epidemiology (R)	BIOS 600: Principles of Statistical Analysis (R) ENVR 600: Environmental Health (R)	HBEH 600: Social and Behavioral Science in PH (R)	HPM 600: Introduction to Health Policy and Management (R)	Master's practicum (P) Master's paper (P)
2. Use information technology tools effectively in core public health functions such as retrieval of institutional and online public health data and dissemination of public health information.	EPID 700 ⁴ : SAS and Data Management (P)	EPID 710 ³ : Fundamentals of Epidemiology (P)						
3. Engage in collective information sharing, discussion and problem solving.	EPID 710: Fundamentals of Epidemiology (P)	EPID 716: Epidemiologic Data Analysis (R)	EPID 718: Analytic Methods in Observational Epidemiology (R)	EPID 786: Community-Driven Epidemiology and Environmental Justice (P) (elective)				Substantive area seminars and journal clubs (R) (elective) Master's practicum (P) Master's paper (P)

Courses and activities through which public health core competencies and cross-cutting competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Diversity & Cultural Competency								
1. Demonstrate awareness of and sensitivity to the varied perspectives, norms and values of others based on individual and ethnic/cultural differences (e.g., age, disability, gender, race, religion, sexual orientation, region and social class).	HBEH 600: Social and Behavioral Sciences in Public Health (P)	EPID 786: Community-Driven Epidemiology and Environmental Justice (P) (elective)	EPID 826: Introduction to Social Epidemiology (P) (elective)	EPID 827: Social Epidemiology: Concepts and Measures (P) (elective)	EPID 710: Fundamentals of Epidemiology (R)			Master's practicum (P)
2. Show effective and productive skills in working with diverse individuals including co-workers, partners, stakeholders, and/or clients.	HBEH 600: Social and Behavioral Sciences in Public Health (P)	EPID 710: Fundamentals of Epidemiology (R)	EPID 718: Analytic Methods in Observational Epidemiology (R)					Master's practicum (P)
3. Develop, implement, and/or contribute to effective public health programming and conduct research that integrates: (1) knowledge levels of health access among individuals and within communities, and (2) culturally-appropriate methods for conducting practice or research.	HBEH 600: Social and Behavioral Sciences in Public Health (P)	EPID 786: Community-Driven Epidemiology and Environmental Justice (P) (elective)	EPID 826: Introduction to Social Epidemiology (R) (elective)	EPID 827: Social Epidemiology: Concepts and Measures (R) (elective)				Master's practicum (P) Master's paper (P)

Courses and activities through which public health core competencies and cross-cutting competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Leadership								
1. Demonstrate basic team building, negotiation, and conflict management skills.	EPID 716: Epidemiologic Data Analysis (R)	EPID 718: Analytic Methods in Observational Epidemiology (R)						Master's practicum (P)
2. Create a climate of trust, transparency, mutual cooperation, continuous learning, and openness for suggestion and input with co-workers, partners, other stakeholders, and/or clients.	EPID 718: Analytic Methods in Observational Epidemiology (R)							Substantive area seminars and journal clubs (R) (elective) Master's practicum (P)
3. Exercise productive organizational, time-management and administrative skills.	EPID 710: Fundamentals of Epidemiology (P)	EPID 718: Analytic Methods in Observational Epidemiology (R)						Individual Development Plans made in conjunction with advisors (P) (elective) Master's practicum (P) Master's paper (P)

Courses and activities through which public health core competencies and cross-cutting competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
4. Develop knowledge of one's individual strengths and challenges, as well as mechanisms for continued personal and professional development.	EPID 718: Analytic Methods in Observational Epidemiology (R)							Individual Development Plans made in conjunction with advisors (P) (elective) Master's practicum (P) Master's paper (P)
Professionalism & Ethics								
1. Review, integrate, and apply ethical and/or legal principles in both personal and professional interactions, as well as public health practice and/or research.	EPID 786: Community-Driven Epidemiology and Environmental Justice (P) (elective)	HBEH 600: Social and Behavioral Sciences in PH (R)						Master's practicum (P) Master's paper (P)
2. Apply evidence-based concepts in public health decision-making.	BIOS 600: Principles of Statistical Inference (P)	EPID 710: Fundamentals of Epidemiology (P)	HBEH 600: Social and Behavioral Sciences in PH (P)					Master's practicum (P)
3. Appreciate the need for lifelong learning in the field of public health.	EPID 710: Fundamentals of Epidemiology (P)							Substantive area seminars and journal clubs (R) (elective) Master's practicum (P) Master's paper (P)

Courses and activities through which public health core competencies and cross-cutting competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
4. Consider the effect of public health decisions on social justice and equity.	EPID 826: Introduction to Social Epidemiology (P) (elective)	EPID 786: Community-Driven Epidemiology and Environmental Justice (P) (elective)	EPID 827: Social Epidemiology: Concepts and Measures (R) (elective)	HBEH 600: Social and Behavioral Sciences in PH (R)	HPM 600: Introduction to Health Policy and Management (R)			
Program Planning								
1. Discuss social, behavioral, environmental, and biological factors that contribute to specific individual and community health outcomes.	HBEH 600: Social and Behavioral Sciences in Public Health (P)	EPID 786: Community-Driven Epidemiology and Environmental Justice (P) (elective)	EPID 826: Introduction to Social Epidemiology (P) (elective)	EPID 718: Analytic Methods in Observational Epidemiology (R)	EPID 827: Social Epidemiology: Concepts and Measures (R) (elective)	ENVR 600: Environmental Health (R)	HPM 600: Introduction to Health Policy and Management (R)	
2. Identify needed resources for public health programs or research.	EPID 786: Community-Driven Epidemiology and Environmental Justice (P) (elective)	EPID 826: Introduction to Social Epidemiology (P) (elective)	EPID 827: Social Epidemiology: Concepts and Measures (R) (elective)	ENVR 600: Environmental Health (R)	EPID 710: Fundamentals of Epidemiology (R)	HBEH 600: Social and Behavioral Sciences in Public Health (R)	HPM 600: Introduction to Health Policy and Management (R)	Substantive area seminars and journal clubs (R) (elective)
Systems Thinking								
1. Identify characteristics of a system.	HPM 600: Introduction to Health Policy and Management (P)	ENVR 600: Environmental Health (P)						Master's practicum (R)

Courses and activities through which public health core competencies and cross-cutting competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
2. Respond to identified public health needs within their appropriate contextual setting.	EPID 786: Community-Driven Epidemiology and Environmental Justice (P) (elective)	ENVR 600: Environmental Health (R)	HBEH 600: Social and Behavioral Sciences in PH (R)	HPM 600: Introduction to Health Policy and Management (P)				Master's practicum (R)

P=Primary, R=Reinforcing

¹ EPID MPH students are required to take a higher level BIOS course in addition to BIOS 600, usually the course taken is BIOS 545.

² Up until the 2016-17 academic year, EPID MPH students who are clinicians had the option of taking PUBH 741 & PUBH 742 as an alternative to BIOS 600 & BIOS 545 to satisfy the Biostatistics requirement.

³ EPID MPH students who are clinicians have the option of taking EPID 711/PUBH 760 instead of EPID 710.

⁴ Students have the option of taking BIOS 511 instead of EPID 700.

APPENDIX XX

Degree Specific Competencies- MPH (including MPH Veterinary Epidemiology Concentration) & MSPH Programs

Department: Epidemiology

Degree: MPH, MPH (Veterinary Epidemiology Concentration) & MSPH (as part of MSPH-to-PhD degree)

Courses and activities through which the degree specific competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Discuss the major obstacles and challenges to public health in the nation and the world, contrast the clinical and population perspectives on improving public health, and articulate the role of epidemiology in preserving and improving public health	EPID 710: Fundamentals of Epidemiology (P)	EPID 711 / PUBH 760 ¹ : Clinical Measurement/ Evaluation (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)					
Explain fundamental epidemiological concepts, such as natural history, prevalence, incidence, relative risk, attributable risk, direct standardization, standardized mortality ratio, cohort, case - control, precision, bias, confounding, and effect modification and recognize these concepts even when they are referred to with different terminology	EPID 710: Fundamentals of Epidemiology (P)	EPID 711 / PUBH 760 ¹ : Clinical Measurement/ Evaluation (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 718: Analytic Methods in Observational Epidemiology (P)				Students must complete at least one substantive-area course (R)

Courses and activities through which the degree specific competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Discuss basic issues in the definition, classification, and detection of pathologic states as these issues arise in the study of diseases in populations and the problems such issues present for disease surveillance and comparative studies; natural history and spectrum of disease, when is a condition the disease, operational classification, changing definition with greater understanding, limitations on accuracy of cause of death designation, among others	EPID 710: Fundamentals of Epidemiology (P)	EPID 711 / PUBH 760 ¹ : Clinical Measurement/ Evaluation (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 718: Analytic Methods in Observational Epidemiology (P)				Students must complete at least one substantive-area course (R) Substantive area seminars and journal clubs (R) (elective)
Define, compute, and interpret epidemiological measures of prevalence, incidence, association, and impact	EPID 710: Fundamentals of Epidemiology (P)	EPID 711 / PUBH 760 ¹ : Clinical Measurement/ Evaluation (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 718: Analytic Methods in Observational Epidemiology (P)				Students must complete at least one substantive-area course (R)
Explain and apply methods of standardization or adjustment for factors such as age or sex, and discuss the advantages and limitations of different methods of standardization	EPID 710: Fundamentals of Epidemiology (P)	EPID 711 / PUBH 760 ¹ : Clinical Measurement/ Evaluation (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)					

Courses and activities through which the degree specific competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Explain major epidemiological descriptive and analytic study designs, the epidemiological measures that can be estimated from each, and their relative strengths and limitations	EPID 710: Fundamentals of Epidemiology (P)	EPID 711 / PUBH 760 ¹ : Clinical Measurement/ Evaluation (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 718: Analytic Methods in Observational Epidemiology (P)				Students must complete at least one substantive-area course (R) Substantive area seminars and journal clubs (R) (elective) Master's paper (R)
Explain major categories of bias, recognize the potential for their occurrence in specific study situations, and propose measures to assess and/or reduce their influence on the measures of major interest	EPID 710: Fundamentals of Epidemiology (P)	EPID 711 / PUBH 760 ¹ : Clinical Measurement/ Evaluation (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 718: Analytic Methods in Observational Epidemiology (P)				Students must complete at least one substantive-area course (R) Substantive area seminars and journal clubs (R) (elective) Master's paper (R)
Present the concepts, purpose of and problems in the evaluation of diagnostic tests, and of interpretation in surveillance for acute and chronic diseases and other factors important for public health	EPID 705: Introduction to Deductive and Probability Logic in Epidemiology (P)	EPID 710: Fundamentals of Epidemiology (P)	EPID 711 / PUBH 760 ¹ : Clinical Measurement/ Evaluation (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)				Students must complete at least one substantive-area course (R)

Courses and activities through which the degree specific competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Explain the concept of the multifactorial nature of disease and how the observed association between one factor and disease can be affected by the distribution of other independent and non-independent risk indicators, and be able to control for these influences in situations involving multiple risk indicators	EPID 710: Fundamentals of Epidemiology (P)	EPID 711 / PUBH 760 ¹ : Clinical Measurement/ Evaluation (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 718: Analytic Methods in Observational Epidemiology (P)				Students must complete at least one substantive-area course (R)
Prepare computer files of raw epidemiological data, and analyze, present, summarize, and interpret epidemiological data and parameters presented in tables, figures, and graphs. Analyses may employ statistical tests and confidence intervals based on means, rates, proportions, and ratios for contingency table analyses involving the control of one or two categorical variables or for modeling analyses employing linear or linear logistic regression	EPID 710: Fundamentals of Epidemiology (P)	EPID 711 / PUBH 760 ¹ : Clinical Measurement/ Evaluation (P)	EPID 716: Epidemiologic Data Analysis (P)	EPID 718: Analytic Methods in Observational Epidemiology (P)	BIOS 600 ² : Principles of Statistical Inference (P)	PUBH 741 ³ : Quantitative Methods for Health Care Professionals I (P)	EPID 700 ⁴ : SAS and Data Management (P)	Master's paper (R)

Courses and activities through which the degree specific competencies are met								
Competencies	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Weigh the evidence in favor of and against the likelihood that an association observed in epidemiological studies is causal	EPID 710: Fundamentals of Epidemiology (P)	EPID 711 / PUBH 760 ¹ : Clinical Measurement/ Evaluation (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)					Students must complete at least one substantive-area course (R)
Apply the above knowledge in critically reading epidemiological and clinical studies	EPID 710: Fundamentals of Epidemiology (P)	EPID 711 / PUBH 760 ¹ : Clinical Measurement/ Evaluation (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)					Students must complete at least one substantive-area course (R) Substantive area seminars and journal clubs (R) (elective) Master's paper (R)
Write a thesis-equivalent that demonstrates proficiency in critically reading the epidemiological literature, and in analyzing, reporting, and interpreting epidemiological data	EPID 992: Master's Paper (P)							

P=Primary, R=Reinforcing

¹ EPID MPH students who are clinicians have the option of taking EPID 711/PUBH 760 instead of EPID 710.

² EPID MPH and MSPH students are required to take a higher level BIOS course in addition to BIOS 600, usually the course taken is BIOS 545.

³ Up until the 2016-17 academic year, EPID MPH students who are clinicians had the option of taking PUBH 741 & PUBH 742 as an alternative to BIOS 600 & BIOS 545 to satisfy the Biostatistics requirement.

⁴ Students have the option of taking BIOS 511 instead of EPID 700.

APPENDIX XXI

Degree Specific Competencies- MSCR Program

Department: Epidemiology
Degree: MSCR

Courses and activities through which the degree specific competencies are met								
Competencies ¹	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Clinical research study design: Identify testable research hypotheses; develop appropriate study designs with minimal bias; identify appropriate target populations.	EPID 711/ PUBH 760: Clinical Measurement /Evaluation (P)	EPID 733 ² : Clinical Trials in Epidemiology (R)	EPID 804: Design of Clinical Research (P)	PUBH 741: Quantitative Methods for Health Care Professionals I (P)	PUBH 742: Quantitative Methods for Health Care Professionals II (P)			Master's Paper (P)
Fundamentals of data analysis: Develop appropriate data analysis plans for research hypotheses; implement basic statistical analyses including multivariable regression; understand sample size and power calculations.	EPID 711/ PUBH 760: Clinical Measurement /Evaluation (P)	EPID 733: Clinical Trials in Epidemiology (R)	EPID 805: Clinical Research Skills III: Proposal Development - Part 1 (P)	PUBH 741: Quantitative Methods for Health Care Professionals I (P)	PUBH 742: Quantitative Methods for Health Care Professionals II (P)			Master's Paper (P)
Grant proposal development: Develop a proposal for clinical/translational research suitable for submission to the National Institutes of Health or research foundation.	EPID 804: Design of Clinical Research (P)	EPID 805: Clinical Research Skills III: Proposal Development - Part 1 (P)	EPID 806: Clinical Research Skills IV: Proposal Development - Part 2 (P)					

Courses and activities through which the degree specific competencies are met								
Competencies ¹	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Interdisciplinary collaboration: Demonstrate knowledge of team science; develop skills for collaboration with research methodologists, including biostatisticians.	EPID 804: Design of Clinical Research (P)							
Project oversight and management: Demonstrate skills to implement a research project, including hiring of appropriate team members, developing and managing budget, overseeing project, ethics approvals, and regulatory reviews.	EPID 804: Design of Clinical Research (P)	EPID 805: Clinical Research Skills III: Proposal Development - Part 1 (P)	EPID 806: Clinical Research Skills IV: Proposal Development - Part 2 (P)					
Oral and written presentation: Effectively present research findings orally to peers, lay persons, and the media; Write clearly and succinctly for scientific publication and research proposals.	EPID 802: Clinical Research Skills I: Basic (P)	EPID 804: Design of Clinical Research (P)	EPID 805: Clinical Research Skills III: Proposal Development - Part 1 (P)	EPID 806: Clinical Research Skills IV: Proposal Development - Part 2 (P)	PUBH 741: Quantitative Methods for Health Care Professionals I (P)	PUBH 742: Quantitative Methods for Health Care Professionals II (P)		Master's Paper (P)

Courses and activities through which the degree specific competencies are met								
Competencies ¹	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Professional development: Demonstrate knowledge of the academic research environment, sources of research support, and professional advancement. Demonstrate the use of strategies to improve professional effectiveness, such as time management, leadership skills, and management skills.	EPID 802: Clinical Research Skills I: Basic (P)							Master's Paper (R)

P=Primary, R=Reinforcing

¹ Note that the NIH CTSA's, which were the stimulus for the development of the MSCR, also have developed a really long list of competencies that we use loosely, but not specifically. This short version is our primary guidance.

² This course was an elective but was made a required course starting in the 2016-17 academic year.

APPENDIX XXII

Degree Specific Competencies- PhD Program

Department: Epidemiology
Degree: PhD

Courses and activities through which the degree specific competencies are met								
Competencies ¹	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Be conversant with the principles of ethical conduct in research involving human subjects. (ETHICS)	EPID 710: Fundamentals of Epidemiology (R)	EPID 725: Research Planning Workshop (P)	EPID 726: Epidemiologic Research Methods (P)					Substantive area seminars and journal clubs (R) (elective)
Design, conduct, supervise and evaluate data collection protocols for observational or experimental studies in population or clinical settings. (DATA COLLECTION)	EPID 725: Research Planning Workshop (P)	EPID 726: Epidemiologic Research Methods (P)						Students must complete two 40-hour practicums to engage in experiences not gained by their thesis. (R)
Apply data management skills in quantitative data analysis, including quality control, documentation, and data security procedures. (DATA MANAGEMENT)	EPID 700: SAS and Data Management (P)	EPID 716: Epidemiologic Data Analysis (P)						Students must complete two 40-hour practicums to engage in experiences not gained by their thesis. (R)
Apply epidemiologic methods to study design and analysis. (METHODS)	EPID 710: Fundamentals of Epidemiology (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 716: Epidemiologic Data Analysis (P)	EPID 718: Analytic Methods in Observational Epidemiology (P)	EPID 722: Epidemiologic Analysis of Time-to-Event Data (P)	EPID 725: Research Planning Workshop (P)	EPID 726: Epidemiologic Research Methods (P)	Substantive area seminars and journal clubs (R) (elective) Dissertation (R)

Courses and activities through which the degree specific competencies are met								
Competencies ¹	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Interpret and synthesize data from epidemiological studies. (SYNTHESIZE DATA)	EPID 710: Fundamentals of Epidemiology (P)	EPID 715: Theory and Quantitative Methods in Epidemiology (P)	EPID 716: Epidemiologic Data Analysis (P)	EPID 718: Analytic Methods in Observational Epidemiology (P)	EPID 722: Epidemiologic Analysis of Time-to-Event Data (P)	EPID 725: Research Planning Workshop (P)	EPID 726: Epidemiologic Research Methods (P)	Students must complete at least two substantive-area courses, at least one outside their program area ² from a list of approved courses. See supplementary table. (P) Substantive area seminars and journal clubs (R) (elective) Dissertation (R)
Present the findings of an epidemiological investigation to scientific or lay audiences. First author a scientific manuscript that is not part of the student's dissertation research. It is strongly encouraged that this competency be met early in the program. (SCIENTIFIC COMMUNICATION)	EPID 725: Research Planning Workshop (P)	EPID 726: Epidemiologic Research Methods (P)						Substantive area seminars and journal clubs (R) (elective) Dissertation defense (R)
Teach epidemiology concepts. (TEACHING & SCIENTIFIC COMMUNICATION)								Students required to serve as TA for a core methods course (i.e., 600, 710, 711, 715/716, 718, 722). (P)

Courses and activities through which the degree specific competencies are met								
Competencies ¹	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Participate in peer review of scientific manuscripts and research proposals. (REVIEW AND SYNTHESIZE)	EPID 725: Research Planning Workshop (P)	EPID 726: Epidemiologic Research Methods (P)						Substantive area seminars and journal clubs (R) (elective) Dissertation (R)
Identify researchable study questions and methods that will advance scientific knowledge about a topic of public health, disease prevention, or clinical significance and address its impact. (IDENTIFY RESEARCH QUESTIONS AND METHODS)	EPID 722: Epidemiologic Analysis of Time-to-Event Data (P)	EPID 725: Research Planning Workshop (P)	EPID 726: Epidemiologic Research Methods (P)					Students must complete at least two substantive-area courses, at least one outside their program area ² from a list of approved courses. See supplementary table. (P) Dissertation (R)
Design and carry out a research project that contributes new knowledge in a substantive or methodological area of population health that is of public health significance. (CONTRIBUTE NEW KNOWLEDGE)								Students must complete a dissertation, typically in the form of two scholarly papers. (P)

Courses and activities through which the degree specific competencies are met								
Competencies ¹	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Course Number and Name	Other Learning Experiences
Apply knowledge of physiology and pathophysiologic processes in studying a specific exposure or health outcome. (SUBSTANTIVE EXPERTISE)								Students must complete at least two substantive-area courses, at least one outside their program area ² from a list of approved courses. See supplementary table. (P)
Apply knowledge of contextual and population science processes in studying a specific exposure, preventative measure, or health outcome. (SUBSTANTIVE EXPERTISE)								Students must complete at least two substantive-area courses, at least one outside their program area ² from a list of approved courses. See supplementary table. (P)
Apply multi- and interdisciplinary approaches in their research, with the aim of advancing health or preventing disease. (COLLABORATION AND TRANSLATION)	EPID 725: Research Planning Workshop (P)	EPID 726: Epidemiologic Research Methods (P)						Students must complete at least two substantive-area courses, at least one outside their program area ² from a list of approved courses. See supplementary table. (P)
								Dissertation (R)

P=Primary, R=Reinforcing

¹ These are updated PhD core competencies which were adopted and put into effect starting with the Fall 2016 semester.

² Epidemiology program areas include: Cancer, Cardiovascular, Environmental/Occupational, Genetic, Injury, Infectious diseases, Pharmacoepidemiology, Reproductive/Perinatal/Pediatric, and Social.

Supplementary Table: Epidemiology program areas have two or more sequenced courses

EPID program area	Sequenced courses
Cancer	EPID 770, 771, 775
Cardiovascular	EPID 735, 889, 897
Environmental/Occupational	EPID 785, 799B
Genetic	EPID 743, 744
Injury	EPID 625, 626, 627
Infectious diseases	EPID 751, 755, 894
Reproductive/Perinatal/Pediatric	EPID 851, 853
Pharmacoepidemiology	EPID 765, 766, 893
Social	EPID 799A, 826, 827