# Table of Contents

**Welcome:** ........................................................................................................................................... 5  
From the Department Chair ......................................................................................................................... 5  
From the Graduate Coordinator and Co-Coordinator .................................................................................. 6  
**General Information** ................................................................................................................................. 7  
Departmental Mission Statement .................................................................................................................. 7  
Department of Epidemiology and Biostatistics By-Laws ............................................................................. 7  
Departmental Personnel ............................................................................................................................... 7  
Graduate School Policies ............................................................................................................................... 7  
Graduate School Forms ................................................................................................................................... 8  
Calendars and Deadlines ............................................................................................................................... 8  
Admissions ....................................................................................................................................................... 8  
Registration ..................................................................................................................................................... 8  
Enrollment Policy ............................................................................................................................................. 8  
Time Limitations ............................................................................................................................................ 9  
Health Services .............................................................................................................................................. 9  
Health Insurance ............................................................................................................................................ 9  
Non-Discrimination and Anti-Harassment Policy ......................................................................................... 9  
Campus Emergencies – UGA Alert .................................................................................................................. 9  
Academic Honesty Policy ............................................................................................................................. 9  
UGA Family Education Rights and Privacy Act (FERPA) .......................................................................... 9  
Source for UGA Policies and Procedures .................................................................................................... 10  
Performance Review of Graduate Students ................................................................................................. 10  
Advising ........................................................................................................................................................ 10  
**Degree Specific Information** ..................................................................................................................... 11  
**MS in Biostatistics** ................................................................................................................................. 11  
Goals of the Program ..................................................................................................................................... 11  
Curriculum .................................................................................................................................................... 11  
M.S. Competencies ........................................................................................................................................ 12  
Admission Pre-Requisites ............................................................................................................................ 12
Goals of the Program .............................................................................................................. 12

Dissertation Approval and Defense ......................................................................................... 12

Dissertation Planning ............................................................................................................... 13

Admission to Candidacy .......................................................................................................... 14

Dissertation Prospectus and Proposal .................................................................................... 14

Comprehensive Exam ............................................................................................................ 15

Qualifying Exam .................................................................................................................... 15

Program of Study .................................................................................................................. 16

Advisement ............................................................................................................................. 16

Thesis ...................................................................................................................................... 16

Sample Program of Study ...................................................................................................... 17

Electives in Biostatistics, Epidemiology and Statistics .......................................................... 18

Required Core Courses in Biostatistics and Statistics (20 credit hours) .......................... 18

Required Core Courses in Epidemiology and Public Health (7 credit hours) ............... 19

Curriculum ............................................................................................................................. 19

PhD Competencies ............................................................................................................... 19

Admission Pre-Requisites ..................................................................................................... 19

Ph.D. Requirements .............................................................................................................. 20

Coursework ........................................................................................................................... 20

Required Core Courses in Biostatistics and Statistics (33 credit hours) ....................... 20

Required Core Courses in Epidemiology and Public Health (8 credit hours) ............. 21

Electives in Biostatistics, Epidemiology and Statistics ....................................................... 21

Sample Program of Study .................................................................................................... 22

Grade Average ....................................................................................................................... 23

Advisory Committee ............................................................................................................ 23

Programs of Study ............................................................................................................... 23

Qualifying Exam .................................................................................................................. 24

Comprehensive Exam .......................................................................................................... 24

Dissertation Prospectus and Proposal .................................................................................. 25

Admission to Candidacy ....................................................................................................... 25

Dissertation Planning ............................................................................................................ 26

Dissertation Approval and Defense ...................................................................................... 27

PhD in Epidemiology ............................................................................................................ 28

Goals of the Program ............................................................................................................ 28
Curriculum ........................................................................................................................................................................28
Ph.D. Competencies ....................................................................................................................................................................29
Admission Pre-Requisites ..............................................................................................................................................................30
Ph.D. Requirements .......................................................................................................................................................................30
Coursework ....................................................................................................................................................................................30
Required Courses ..........................................................................................................................................................................31
Elective Courses .............................................................................................................................................................................31
Non-standard Courses .....................................................................................................................................................................31
Selecting a major professor .............................................................................................................................................................31
Doctoral Advisory Committee ..........................................................................................................................................................32
Changing Major Professor or Committee Members ..................................................................................................................32
Program of Study .............................................................................................................................................................................33
Comprehensive/Qualifying Exam ..................................................................................................................................................33
  Written Exam ...............................................................................................................................................................................33
  Oral Exam ....................................................................................................................................................................................34
Dissertation Proposal Defense .........................................................................................................................................................35
Advancement to Candidacy ............................................................................................................................................................35
Dissertation Research ......................................................................................................................................................................36
Dissertation Writing .........................................................................................................................................................................36
Dissertation Final Defense ..............................................................................................................................................................37
Dissertation Submission ..................................................................................................................................................................38
Graduation .......................................................................................................................................................................................38
Example timelines for Epidemiology PhD program ....................................................................................................................39
Welcome to the College of Public Health at the University of Georgia and the Department of Epidemiology and Biostatistics! We are very pleased that you chose our department as your home for graduate education. Our faculty is diverse, and we offer many exciting career opportunities in epidemiology and biostatistics and provides excellent training to prepare graduate students for both academic and professional careers in Public Health.

The Department of Epidemiology and Biostatistics has an exciting, rapidly growing research program in the areas of methods (including spatial statistics, infectious disease modeling, survival analysis), infectious disease epidemiology, methods for tuberculosis control, AIDS international training and research program, clinical, operational and health services research, clinical epidemiology and translational research, chronic diseases and cancer epidemiology/prevention and control, medical screening, global health, food safety epidemiology, epidemiology of zoonoses in domestic animal-human interface, antimicrobial drug resistance of food borne pathogens, community-based research, occupational health, reproductive and developmental health, maternal and child health, environmental health, and health disparities. The department's research portfolio includes methodological issues in Biostatistics such as point process models for event history data, spatial epidemiology and statistics, environmental statistics, analysis of high dimensional massive data, bioinformatics, data mining, functional data analysis, multiple testing, survival analysis, joint modeling of survival and longitudinal data and covariate measurement error models.

The department also has a strong tradition of significant collaboration with public and private health agencies and institutions including strong collaborative ties with the Centers for Disease Control and Prevention (CDC), the Georgia Department of Public Health and its Regional District offices, the Archway Partnership Program, College of Veterinary Medicine- Population Sciences, The Biomedical and Health Sciences Institute and the Faculty of Infectious Disease, and the Center for Global Health.

We are here to foster your success. My door is always open, so please come by if there are questions or you may need our assistance.

José F. Cordero, MD, MPH
Patel Distinguished Professor in Public Health
Head, Department of Epidemiology and Biostatistics
From the Graduate Coordinator and Co-Coordinator

Welcome to the department of Epidemiology and Biostatistics at UGA!

As of Fall 2016, our department offers the following graduate degrees: MS and PhD in Biostatistics and PhD in Epidemiology. These programs are fully housed within and administered by our department. The College of Public Health (CPH) offers the MPH and DrPH degrees. While those students can choose Biostatistics or Epidemiology as concentrations, these programs are administered by the college and not our department. Separate student handbooks for the MPH and DrPH are maintained by CPH. The handbook you are reading only applies to our MS and PhD degrees.

The graduate school at UGA is the final decision maker regarding all issues involving graduate education. The departmental graduate coordinator (GC) is the liaison between graduate students and the graduate school. Each department has a single GC. This person is responsible for all official paperwork. Since our department offers degrees in two disciplines, we have in addition to the GC a co-coordinator (CC). This person is always chosen from the complementary discipline (e.g. if the GC has their main expertise in Biostatistics, the CC will be from the Epidemiology side, and reverse). The CC handles issues related to the graduate education related to their subject of expertise.

The GC and CC are supported by a staff person in the department who handles the majority of paperwork related to graduate education. This person should be your first point of contact for most questions. The staff person currently responsible for anything related to graduate education in the department is Sara Ervin (scervin@uga.edu).

This handbook covers all 3 degrees offered through the department, namely the MS and PhD in Biostatistics and the PhD in Epidemiology. Some information applies equally to all programs. Some information is program-specific and described in the section for the specific program.

You are expected to be fully informed regarding anything pertaining to your graduate education. This means reading the parts of this document which pertain to your degree, as well as all the outside sources this document refers to. Ignoring to follow all of these rules could lead to major consequences. We are here to help you, but there is no hand-holding in graduate school. You are expected to be a fully informed, self-directed individual. In that respect, do not hesitate to ask if you have any questions with regards to your degree.

Andreas Handel
Associate Professor
Associate Department Head & Graduate Coordinator
Main focus area: Epidemiology

Stephen Rathbun
Professor
Program Director Biostatistics
General Information

NOTE: The following pages contain information that applies to all graduate programs administered by our department.

Departmental Mission Statement
The Department of Epidemiology and Biostatistics trains public health professionals and researchers in the use of epidemiological principles and biostatistical methods and conducts innovative research to address existing and emerging public health issues.

We are a community of scholars dedicated to integrating epidemiological and biostatistical research, teaching, and service by collaborating with one another and colleagues in other disciplines, students, and community partners. We are committed to examining and evaluating our actions as we express our commitment to the larger population we serve, who look to us for technical expertise and advocacy, and who support us in conducting our work.

In all of our work, we strive to express the values we hold to be at the heart of our professional commitment including: honesty, compassion, quality, impact, diversity, and social justice and we strive to balance and to act as role models for one another, our students and colleagues, and to the community at large.

Department of Epidemiology and Biostatistics By-Laws
The Department of Epidemiology and Biostatistics is governed by a set of By-Laws that were written and approved by faculty in the department. These By-Laws specify internal policies and procedures that apply to faculty and comport with UGA guidelines. The by-laws are available on the departmental webpage.

Departmental Personnel
To learn about the faculty and staff of our department, please visit the department’s webpage for the most up-to-date information. (If you spot errors or outdated information on the webpage, please let us know).

Graduate School Policies
The University of Georgia Graduate School policies govern the administration of the graduate degrees. See http://www.grad.uga.edu for information on specific academic procedures and regulations. In case of conflicts between departmental policies and those of the graduate school/university, the latter are to be followed.
As a current student, you are expected to know of and abide by all the rules and policies specified by the graduate school. You should read all information available under the “Current Students” on the graduate school webpage carefully!

**Graduate School Forms**

There are plenty of forms that will need to be filled out and signed through your graduate studies. Consult the graduate school webpage, check all the forms and make sure you get each of them done in a timely manner. Note that your advisor might or might not be familiar with all the forms the grad school requires. Do not rely on him/her to tell you what to do. It’s your job to make sure all these forms are done correctly and on time. If in doubt, ask the graduate coordinator.

**Calendars and Deadlines**

The academic calendar is maintained by the Registrar’s office at UGA and available here: [http://www.reg.uga.edu/calendars](http://www.reg.uga.edu/calendars). Please consult the academic calendar for important dates during the year including the start of school, add-drop dates, dates for early registration, examination periods, graduation dates, etc. The graduate school maintains additional calendars with deadlines pertaining to specific aspects of graduate education. Consult those as well. It is your responsibility to initiate any required paperwork well in advance to ensure all deadlines can be met.

**Admissions**

All students seeking admission to one of the departmental graduate programs need to satisfy the requirements specified by UGA’s graduate school. Consult the graduate school webpage for that information. Additional requirements for each specific program are described in the program-specific sections of this document.

**Registration**

Students register via computer using UGA’s student management and registration system. For detailed information concerning procedures and timelines for registration, please check the webpage of the Registrar’s office: [http://www.reg.uga.edu/registration](http://www.reg.uga.edu/registration)

**Enrollment Policy**

Graduate students must register for at least 3 credit hours for two of the three semesters during the academic year, with some exceptions for some UGA employees. If you cannot enroll for two of three semesters, you should seek a leave of absence. More details regarding enrollment policies are found on the graduate school webpage in the “Graduate Enrollment Policy” section.
**Time Limitations**
All requirements except the dissertation and final oral examination must be completed within a period of 6 years. For more details, check the “Degree Requirements” information on the graduate school webpage for your specific degree.

**Health Services**
UGA has a comprehensive Health Center, which provides a broad range of services to the UGA community for mental and physical health and wellness. To learn more about available resources, visit the University Health Center website: [http://www.uhs.uga.edu](http://www.uhs.uga.edu).

**Health Insurance**
UGA currently has a voluntary and a mandatory health insurance plan. To learn more about these plans and to determine if you are required to have health insurance (very likely), see the details here: [http://www.hr.uga.edu/student-health-insurance](http://www.hr.uga.edu/student-health-insurance).

**Non-Discrimination and Anti-Harassment Policy**
The University of Georgia is committed to maintaining a fair and respectful environment for living, work and study. The Equal Opportunity Office is responsible for ensuring such an environment and to follow all laws. To learn more about these issues and available resources, please see the EOO website: [https://eoo.uga.edu/](https://eoo.uga.edu/)

**Campus Emergencies – UGA Alert**
The UGA Alert system is meant to inform the UGA community of any kind of emergencies in a timely manner. Learn more, sign up or update your information on their website: [http://www.ugaalert.uga.edu/](http://www.ugaalert.uga.edu/)

**Academic Honesty Policy**
Every student must agree to abide by UGA’s academic honesty policy and procedures known as “A Culture of Honesty”. Details on the honesty policy, including explanations of what consist of violations and the consequences for such violations can be found here: [https://ovpi.uga.edu/academic-honesty](https://ovpi.uga.edu/academic-honesty)

**UGA Family Education Rights and Privacy Act (FERPA)**
The federal Family Educational Rights and Privacy Act (FERPA) affords students certain rights with respect to their education records. UGA abides by FERPA rules. To read more about these rules, see here: [http://www.reg.uga.edu/ferpa_privacy_act](http://www.reg.uga.edu/ferpa_privacy_act)
Note: if you set certain FERPA restrictions in the system, this might have consequences that you don’t want. For instance, it means that your advisor would legally not be allowed to write a letter of recommendation for you, since they would not be allowed to even acknowledge that you were a student with them. So be careful with those settings. They can be changed in the system you use to manage your records. If you have any questions, ask.

Source for UGA Policies and Procedures
For a comprehensive list of all University policies and procedures go to http://www.uga.edu/inside/policies.html

Performance Review of Graduate Students
The GC and/or CC meet with each student at least once per semester to discuss and review progress toward degree completion. This review will include course grades, performance on qualifying exams, progress with dissertation research, and participation in the program activities. The GC/CC and Major Professor of the student determine whether progress is satisfactory or not satisfactory based on performance. If progress is unsatisfactory, the student will plan a course of action with their advisor and Graduate Coordinator to improve their progress. If the student demonstrates unsatisfactory progress a second year, he/she may be withdrawn from the program.

The graduate school independently tracks student performance based on GPA and places students on warning or probation, with eventual dismissal, if grades are below the required GPA. See the graduate school webpage for more information.

Advising
Upon first entering any of the programs, the main advisor for the student will be the GC, with discipline specific input from the CC. Once the student has identified a faculty under whom they plan to do their thesis work, this faculty becomes the student’s major professor. The major professor will serve as the student’s main advisor and mentor until graduation. Various documents required for the different steps of the degree program most often need signatures from both the major professor and the GC (and sometimes additional persons). Check the forms.
Degree Specific Information

The following pages contain information that are specific to each degree.

**MS in Biostatistics**

**Goals of the Program**
Motivated by the unique ethical challenges posed by working with human subjects and by the complexity of human, biological and public health systems, biostatistical research involves the development of new and innovative statistical methods for analyzing biomedical and public health data. Biostatisticians can design efficient public health surveys, clinical trials, and biomedical experiments that minimize the number of subjects exposed to inferior treatments, and maximize the amount of information obtained from the study subjects while securing the privacy of sensitive human-subjects data. Biostatisticians seek to develop new and innovative statistical methods for efficient analysis of the resulting data, yielding scientifically-defensible conclusions regarding the impact of risk factors and medical therapies on disease, quality life and health of human populations.

The primary objective of the M.S. program in biostatistics is to train students in the application and evaluation of core biostatistical methods for application in public health and biomedicine. Student completing the program are trained in core biostatistical methods, design of experiments and public health surveys, statistical computing, biostatistical consulting, probability, and mathematical statistics.

**Curriculum**
The M.S. degree in Biostatistics will be awarded in recognition of in-depth knowledge and comprehensive understanding of Biostatistics. In this program, students will acquire expertise in biostatistics by taking and passing a series of core and elective courses, and completing a thesis under the direction of a faculty mentor. Expertise in biostatistics will be demonstrated by passing a written examination. Proficiency in research will be demonstrated by successful completion of a Master's Thesis, whose content is deemed to be publishable in peer-reviewed biostatistics, epidemiology and public health journals. As part of this requirement, students will form a thesis committee, complete the thesis research project, and write and defend the final thesis for the committee and other members of the academic community at the University. The student is guided through the experience by a research advisor (mentor) and Advisory Committee.

The program requires 36 credits to complete the M.S. degree in Biostatistics. This program will include 27 credits of core courses in Biostatistics, Statistics and Epidemiology, 6 credits of approved electives, and 3 hours of thesis research.
The M.S. degree in Biostatistics will be granted in recognition of proficiency in research, breadth and soundness of scholarship, and thorough knowledge of field of Biostatistics, as assessed by the faculty of the Department and not upon completion of any definite amount of work prescribed in advance.

**M.S. Competencies**

The Department of Epidemiology and Biostatistics embraces competency-based education as set forth by the Association of Schools of Public Health. Students receiving a M.S. in Biostatistics should meet the following competencies:

1. Demonstrate a command of core biostatistical techniques, including their computation, theoretical underpinnings, and their application in public health and biomedicine.
2. Consult with investigators in public health and biomedicine on the design of clinical trials, case-control studies, public health surveys, and other experimental and observational studies.
3. Conduct research critically evaluating extant and new statistical methods using appropriate computational tools.
4. Communicate effectively with investigators in public health and biomedical research.
5. Demonstrate and practice ethical research as it pertains to data management, analysis, and interpretation.
6. Critically review the statistical content of the public health and biomedical literature.

**Admission Pre-Requisites**

Applicants must satisfy the requirements specified by the graduate school. Applicants may have training in any discipline including but not limited to mathematics, public health, the biological or physical sciences, psychology, sociology, business, statistics or biostatistics. While a degree in mathematics or the statistical sciences is not required, applicants should have taken courses in differential, integral and multivariate calculus. A course in linear algebra is also encouraged.

**M.S. Requirements**

In the course of completing the requirements for the M.S. in Biostatistics, the student will fulfill the requirements as stipulated by the Graduate School [http://gradschool.uga.edu/academics/masters_req.html](http://gradschool.uga.edu/academics/masters_req.html).

**Coursework**

To complete the M.S. in Biostatistics, students will complete a total of 36 credits, including 27 credits of core courses in Biostatistics, Statistics and Epidemiology, 6 credits of approved electives, and 3 hours of thesis research.
Required Core Courses in Biostatistics and Statistics (20 credit hours)

The in-depth knowledge required to appropriately and effectively apply biostatistical methods to public health and biomedical data requires competency in the theory upon which those methods were developed. STAT 6510 and STAT 6520 are designed to provide students with the necessary theoretical foundations. To leave their options open, students who wish to consider the possibility of perusing a PhD in Biostatistics are encouraged to enroll in STAT 6810 and STAT 6820 instead.

The BIOS 8010-8020 sequence exposes students to a range of biostatistical methods commonly applied to public health and biomedical data. An integrative approach is taken, under which the theoretical foundations of each method is considered, as well as its application to data. It is our intent to include some theory in these applied courses so that students may comprehend the role that theory plays in the development of new biostatistical methods by observing its role in the development of extant methods.

BIOS 7400 is required to provide students data-base management and computing skills needed to effectively apply biostatistical methods in public health and biomedical applications.

Students are to BIOS 8200 Biostatistical Consulting I for 2 credit hours. This course provides students with experience in biostatistical consulting by providing opportunities to collaborate with other investigators in public health and biomedicine. Here, they will consider the practical aspects of designing clinical trials, public health surveys and other experimental studies. Oral and written communications skills will be developed. Ethical guidelines for biostatistical consulting, and data analysis will be explored.

Core Courses in Biostatistics and Statistics for M.S. in Biostatistics

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 7400</td>
<td>3</td>
<td>Research Data Management and Computing</td>
</tr>
<tr>
<td>BIOS 8010</td>
<td>3</td>
<td>Regression and ANOVA</td>
</tr>
<tr>
<td>BIOS 8020</td>
<td>3</td>
<td>Linear and Generalized Linear Models</td>
</tr>
<tr>
<td>BIOS 8200</td>
<td>2</td>
<td>Biostatistical Consulting I</td>
</tr>
<tr>
<td>STAT 6510</td>
<td>3</td>
<td>Mathematical Statistics I</td>
</tr>
<tr>
<td>STAT 6520</td>
<td>3</td>
<td>Mathematical Statistics II</td>
</tr>
<tr>
<td>BIOS</td>
<td>3</td>
<td>At least one of the following: Survival Analysis (BIOS 6380) Clinical Trials (BIOS 8220)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>20</strong></td>
<td></td>
</tr>
</tbody>
</table>
Required Core Courses in Epidemiology and Public Health (7 credit hours)

The College of Public Health requires that all students receiving degrees within the college should be exposed to the full range of public health disciplines, approaches, and institutions. To meet this requirement, students are to take one semester of the public health seminar for one credit. Further exposure and more in depth exposure is provided by the required course in epidemiology and requiring students to take a course in one of the remaining three disciplines of public health. Epidemiology involves the application of biostatistical methods to describe risk factors for disease. Courses in epidemiology provide a more in-depth consideration of the science that underlies the application of those methods than courses in biostatistics.

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPIP 7010</td>
<td>3</td>
<td>Introduction to Epidemiology 1</td>
</tr>
<tr>
<td>EPIP 7100</td>
<td>1</td>
<td>Current Topics in Epidemiology Seminar Series</td>
</tr>
<tr>
<td>EPIP 7110</td>
<td>3</td>
<td>At least one of the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fundamentals of Environmental Health Science (EHSC 7010)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Introduction to Health Policy and Management (HPAM 7010)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social and Behavioral Foundations in Public Health (HPRB 7010)</td>
</tr>
<tr>
<td>Total</td>
<td>7</td>
<td></td>
</tr>
</tbody>
</table>

Electives in Biostatistics, Epidemiology and Statistics

The student may choose electives from among all 8000 level courses in Statistics and Biostatistics in addition to BIOS 6380 and BIOS 7400. Students with an interest in the application of biostatistical methods in epidemiology may also select among 8000 level courses in Epidemiology. The following is a sample of suggested elective courses in biostatistics. Each course is for 3 credit hours.

- BIOS 6380 Survival Analysis
- BIOS 8100 Case Studies in Nonlinear Biostatistics
- BIOS 8110 Categorical Data Analysis
- BIOS 8120 Applied Nonparametric Biostatistical Methods
- BIOS 8130 Multivariate Design
- BIOS 8140 Multilevel and Hierarchical Models
- BIOS 8150 Spatial Epidemiology
- BIOS 8220 Clinical Trials
- EPIP 8010 Cohort Study Design, Implementation and Analysis
- EPIP 8020 Case Control Design, Implementation and Analysis
- EPIP 8040 Clinical Trial Design, Implementation and Analysis
- EPIP 8250 Biomarkers
- STAT 6240 Sampling and Survey Methods
Sample Program of Study

This is a typical sequence of courses for the first two years. In addition to the courses listed here, students should complete 1 semester of EPID 7100 Epidemiology Seminar within the first two years, and 1 semester of BIOS 8920 Biostatistics Seminar.

Sample Program of Study for M.S. in Biostatistics

<table>
<thead>
<tr>
<th>YEAR</th>
<th>FALL</th>
<th>SPRING</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>BIOS 8010 Regression and ANOVA (3 hrs.)</td>
<td>BIOS 8020 Linear and Generalized Linear Models (3 hrs.)</td>
</tr>
<tr>
<td>Year 1</td>
<td>STAT 6510 Mathematical Statistics I (3 hrs.)</td>
<td>STAT 6520 Mathematical Statistics II (3 hrs.)</td>
</tr>
<tr>
<td></td>
<td>EPID 7010 Introduction to Epidemiology I (3 hrs.)</td>
<td>BIOS 7400 Research Data Mngt &amp; Computing (3 hrs.)</td>
</tr>
<tr>
<td></td>
<td>Public Health Course (3 hrs.)</td>
<td>BIOS 8220 or elective (3 hrs.)</td>
</tr>
<tr>
<td>Year 2</td>
<td>BIOS 8200 Biostatistical Consulting I (2 hrs.)</td>
<td>BIOS 6380 or elective (3 hrs.)</td>
</tr>
<tr>
<td></td>
<td>BIOS 6380 or elective (3 hrs.)</td>
<td>Elective (3 hrs.)</td>
</tr>
<tr>
<td></td>
<td>BIOS 7300 Thesis research (3 hrs.)</td>
<td>BIOS 7300 Thesis research (3 hrs.)</td>
</tr>
</tbody>
</table>

Grade Average

To be eligible for graduation, students must comply with graduate school rules. Specifically, a student must maintain a 3.0 (B) average on the graduate transcript and a 3.0 (B) average on the program of study. Further information, including which courses count towards computation of the GPA, can be found on the graduate school website.

Qualifying Exam

After completing the first year of coursework, students are to sit for the qualifying examination, which will cover the material in first-year core courses, BIOS 8010-8020, and STAT 6810-6820. Students may pass at the Ph.D. level, pass at the Master’s level, or fail the examination. Students failing the exam have one opportunity to retake it. Students passing at the Ph.D. level may have the option to directly pursue a Ph.D. degree with approval of the graduate coordinator.
Advisement
Upon entering the program, students are advised by the department’s GC and/or CC, depending on discipline. By the end of the first semester of residence, students must identify a departmental faculty as their main advisor and form an advisory committee. The master’s advisory committee must consist of a minimum of three members. The chair and at least one other member must be members of the graduate faculty of the University of Georgia and the Department of Epidemiology and Biostatistics. The third member may be a member of the graduate faculty or a person holding one of the following ranks at the University of Georgia: professor, associate professor, assistant professor. The third member can also be a non-UGA faculty member with a PhD or equivalent doctoral degree. No more than one non-UGA committee member may be appointed as a voting member. If there are more than three members on the committee, a majority of graduate faculty members must be maintained. Co-major Professors count as one graduate faculty member. The committee will be recommended to the dean of the Graduate School by the graduate coordinator after consultation with the student and faculty members involved.

Program of Study
A student must complete a program of study which constitutes a logical whole and is compatible with the curriculum outlined in the above. A minimum of 3 hours of BIOS 7300 must be listed on the program of study. No grade below C will be accepted on the program of study. To be eligible for graduation, a student must maintain a 3.0 (B) average on the graduate transcript and a 3.0 (B) average on the program of study.

The typed program of study must be submitted on the proper form with approval by the student's major professor, the departmental graduate coordinator, and the dean of the Graduate School. This step should be completed by Friday of the second full week of classes of the semester in which degree requirements are completed. Exception: If degree requirements will be completed during summer term, the program of study will be due by Friday of the first full week of classes in that semester.

Thesis
A candidate must submit a thesis which shows independent judgment in developing a problem from primary sources. The thesis shall be written under the direction of the chair of the student's master’s advisory committee. The chair is responsible for mentoring the student through the steps and procedures of the research project. Other members of the Dissertation Committee should be engaged by the student as the need arises. The thesis must be approved by the chair of the student's master’s advisory committee, who will distribute copies to the remaining members of the advisory committee and schedule a final examination. The committee members must have three weeks to read and evaluate the completed thesis. Written assent of two of the three committee members will be required before a thesis will be approved as ready for a final defense. A candidate must register for at least three semester hours of BIOS 7300.

One complete formatted copy of the thesis must be electronically submitted to the Graduate School no later than four weeks prior to graduation for a format check. All requirements for the
thesis must be completed no later than two full weeks prior to graduation. Instructions for typing the thesis may be obtained at http://gradschool.uga.edu/academics/thesis/index.html.

A final oral examination of the thesis is required of all candidates for the M.S. in Biostatistics. The final examination will be administered by your Advisory Committee, with your major professor serving as chair. All members of the Advisory Committee must be present for the entire examination period. An abstention is not an appropriate vote for the defense of the thesis or the final exam. Thesis approval can have no more than one dissenting vote.

The Graduate School must receive the Final Defense Approval form and an electronic submission of the corrected thesis no later than two weeks prior to graduation. All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation.

You must enroll for a minimum of 3 hours of credit during the semester in which you complete your degree requirements unless additional stipulations are required by other units of the university.
PhD in Biostatistics

Goals of the Program
Motivated by the unique ethical challenges posed by working with human subjects and by the complexity of human, biological and public health systems, biostatistical research involves the development of new and innovative statistical methods for analyzing biomedical and public health data. Biostatisticians can design efficient public health surveys, clinical trials, and biomedical experiments that minimize the number of subjects exposed to inferior treatments, and maximize the amount of information obtained from the study subjects while securing the privacy of sensitive human-subjects data. Biostatisticians seek to develop new and innovative statistical methods for efficient analysis of the resulting data, yielding scientifically-defensible conclusions regarding the impact of risk factors and medical therapies on disease, quality life and health of human populations.

The goals of our program in Biostatistics are to:
1. Advance the discipline of Biostatistics through the development of new and innovative biostatistical methods with applications in Public Health and Biomedicine
2. Improve the quality of public health and biomedical investigations through the use of sound study design and the appropriate application of state-of-the-art biostatistical methods.
3. Create the next generation of epidemiologists who can respond to the challenges in public health in the future, educate future students in the field, and provide service to the community
4. Serve the larger communities in which we live and work, by using our special skills and knowledge.

Curriculum
The degree of Doctor of Philosophy in Biostatistics will be awarded in recognition of in-depth knowledge and comprehensive understanding of Biostatistics together with a demonstrated ability to perform independent research contributing new and innovative biostatistical methods. In this program, students will acquire expertise in biostatistics by taking and passing a series of core and elective courses, and completing a dissertation under the direction of a faculty mentor. Expertise in biostatistics will be demonstrated by passing written and oral comprehensive examinations. Proficiency in independent research will be demonstrated by successful completion of a doctoral dissertation, whose content is deemed to be publishable in peer-reviewed biostatistics journals. As part of this requirement, students will form a thesis committee, complete the thesis research project, and write and defend the final thesis for the committee and other members of the academic community at the University. The student is guided through the experience by a research advisor (mentor) and Advisory Committee.

The program requires 71 credits to complete the Ph.D. degree in Biostatistics, including 33 credit hours in required core courses in Biostatistics and Statistics, 8 credit in required courses in
Epidemiology and Public Health, 12 credits of approved electives, and 18 credits of dissertation research.

**PhD Competencies**

The Department of Epidemiology and Biostatistics embraces competency-based education as set forth by the Association of Schools of Public Health. Students receiving a PhD in Biostatistics should meet the following competencies:

1. Demonstrate a command of core biostatistical techniques, including their computation, theoretical underpinnings, and their application in public health and biomedicine.
2. Work independently as a collaborator with public health and biomedical researchers to design clinical trials, case-control studies, public health surveys, and other experimental and observational studies.
3. Conduct and publish original research on the theory and application of biostatistics aimed at developing new and innovative methods for analysis of public health and biomedical data.
4. Communicate effectively with investigators in public health and biomedical research.
5. Teach biostatistics to undergraduate students in public health, biomedicine, and related fields.
6. Demonstrate and practice ethical research as it pertains to data management, analysis, and interpretation.
7. Critically review the statistical literature, and the statistical content of the public health and biomedical literature.

**Admission Pre-Requisites**

Applicants must satisfy the requirements specified by the graduate school. Applicants may have training in any discipline including but not limited to mathematics, public health, the biological or physical sciences, psychology, sociology, business, statistics or biostatistics. While a degree in mathematics or the statistical sciences is not required, applicants should have taken courses in differential, integral and multivariate calculus. A course in linear algebra is also encouraged.

**Ph.D. Requirements**

In the course of completing the requirements for the doctoral degree in Biostatistics, the student will fulfill the requirements as stipulated by the Graduate School.

http://www.uga.edu/gradschool/academics/PhD_req.html

**Coursework**

The proposed program requires 71 credits to complete the Ph.D. degree in Biostatistics, including 33 credit hours in required core courses in Biostatistics and Statistics, 8 credit in required courses in Epidemiology and Public Health, 12 credits of approved electives, and 18 credits of dissertation research. Core courses are aimed at competencies 1-6.
Required Core Courses in Biostatistics and Statistics (33 credit hours)

Biostatistical research involves the development of new and innovative methods for statistical analysis of biomedical and public health data. To carry out that research, students need a solid theoretical foundation so that they can critically review the statistical literature, propose new biostatistical methods, and mathematically evaluate their statistical properties. STAT 6810, STAT 6820, BIOS 8310 and BIOS 8320 are designed to provide students the necessary theoretical foundations.

The BIOS 8010-8040 sequence exposes students to the breadth of biostatistical methods applied to public health and biomedical data. An integrative approach is taken, under which the theoretical foundations of each method is considered, as well as its application to data. It is our intent to include some theory in these applied courses so that students may comprehend the role that theory plays in the development of new biostatistical methods by observing its role in the development of extant methods.

Students are to take 2 semesters of BIOS 8200 Biostatistical Consulting for 2 credit hours each. These courses provide students with experience in biostatistical consulting by providing opportunities to collaborate with other investigators in public health and biomedicine. Here, they will consider the practical aspects of designing clinical trials, public health surveys and other experimental studies. Oral and written communications skills will be developed. Ethical guidelines for biostatistical consulting, and data analysis will be explored.

Modern research in biostatistics often involves the development of new and innovative computational algorithms employing numerical optimization methods, numerical integration, and Monte Carlo techniques. STAT 8060 will provide the necessary education in modern computational tools required for biostatistics research.

Students entering the program with an M.S. in either Biostatistics or Statistics may exempt one or more of the above required core courses under permission of the Department of Epidemiology and Biostatistics. However, such students must replace exempted courses with qualified electives so as to maintain the total number of credit hours required for the degree.

Core Courses in Biostatistics and Statistics for PhD in Biostatistics

<table>
<thead>
<tr>
<th>Course</th>
<th>Credits</th>
<th>Title</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIOS 8010</td>
<td>3 hrs.</td>
<td>Regression and ANOVA</td>
</tr>
<tr>
<td>BIOS 8020</td>
<td>3 hrs.</td>
<td>Linear and Generalized Linear Models</td>
</tr>
<tr>
<td>BIOS 8030</td>
<td>3 hrs.</td>
<td>Longitudinal Data Analysis</td>
</tr>
<tr>
<td>BIOS 8040</td>
<td>3 hrs.</td>
<td>Advanced Biostatistical Methods</td>
</tr>
<tr>
<td>BIOS 8200</td>
<td>2 hrs.</td>
<td>Biostatistical Consulting I</td>
</tr>
<tr>
<td>BIOS 8210</td>
<td>2 hrs.</td>
<td>Biostatistical Consulting II</td>
</tr>
<tr>
<td>BIOS 8310</td>
<td>3 hrs.</td>
<td>Advanced Inference in Biostatistics</td>
</tr>
<tr>
<td>BIOS 8320</td>
<td>3 hrs.</td>
<td>Asymptotic Inference in Biostatistics</td>
</tr>
<tr>
<td>BIOS 9100</td>
<td>2 hrs.</td>
<td>Biostatistics Graduate Seminar</td>
</tr>
<tr>
<td>STAT 6810</td>
<td>3 hrs.</td>
<td>Probability Distributions</td>
</tr>
</tbody>
</table>
Required Core Courses in Epidemiology and Public Health (8 credit hours)

The College of Public Health requires that all students receiving degrees within the college should be exposed to the full range of public health disciplines, approaches, and institutions. To meet this requirement, students are to take two semesters of the public health seminar for one credit each. Further exposure and more in depth exposure is provided by the required course in epidemiology and requiring students to take a course in one of the remaining three disciplines of public health. Epidemiology involves the application of biostatistical methods to describe risk factors for disease. Courses in epidemiology provide a more in-depth consideration of the science that underlies the application of those methods than courses in biostatistics.

Table 2. Core Courses in Epidemiology and Public Health for PhD in Biostatistics

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPID 7010</td>
<td>3</td>
<td>Introduction to Epidemiology 1</td>
</tr>
<tr>
<td>EPID 9100</td>
<td>2</td>
<td>PhD Epidemiology Seminar</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>At least one of the following:</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Fundamentals of Environmental Health Science (EHSC 7010)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Introduction to Health Policy and Management (HPAM 7010)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Social and Behavioral Foundations in Public Health (HPRB 7010)</td>
</tr>
<tr>
<td>Total</td>
<td>8</td>
<td></td>
</tr>
</tbody>
</table>

Electives in Biostatistics, Epidemiology and Statistics

Students may choose electives from among all 8000 level courses in Statistics and Biostatistics. Students with interests in Bioinformatics or Epidemiology may select from 8000 level courses in those two programs. The following is a sample of suggested elective courses:

- BINF 8210 Computational Methods in Bioinformatics
- BINF 8211 Advanced Methods for Biological Data Analysis
- BINF 8940 Applied Genome Analysis
- BIOS 8100 Case Studies in Nonlinear Biostatistics
- BIOS 8110 Categorical Data Analysis
- BIOS 8120 Applied Nonparametric Biostatistical Methods
- BIOS 8130 Multivariate Design
- BIOS 8220 Clinical Trials
- EPID 8010 Cohort Study Design, Implementation and Analysis
- EPID 8020 Case Control Design, Implementation and Analysis
Sample Program of Study

This is a typical sequence of courses for the first two years. In addition to the courses listed here, students should complete 2 semesters of PBHL 8200 Public Health Seminar within the first two years, and 2 semesters of BIOS 8920 Biostatistics Seminar by their third year. In subsequent years, students complete electives to meet their degree requirements.

Sample Program of Study for PhD in Biostatistics

<table>
<thead>
<tr>
<th>YEAR</th>
<th>FALL</th>
<th>SPRING</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1</td>
<td>BIOS 8010 Regression and ANOVA</td>
<td>BIOS 8020 Linear and Generalized Linear Models</td>
</tr>
<tr>
<td></td>
<td>STAT 6810 Probability Distributions</td>
<td>STAT 6820 Statistical Inference</td>
</tr>
<tr>
<td></td>
<td>Public Health Course</td>
<td>EPID 7010 Introduction to Epidemiology I</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>Elective</td>
</tr>
<tr>
<td>Year 2</td>
<td>BIOS 8030 Longitudinal Data Analysis</td>
<td>BIOS 8040 Advanced Biostatistical Methods</td>
</tr>
<tr>
<td></td>
<td>BIOS 8310 Advanced Inference in Biostatistics</td>
<td>BIOS 8320 Asymptotic Inference in Biostatistics</td>
</tr>
<tr>
<td></td>
<td>BIOS 8200 Biostatistical Consulting</td>
<td>BIOS 8200 Biostatistical Consulting</td>
</tr>
<tr>
<td></td>
<td>EPID 9100 PhD Epidemiology Seminar</td>
<td>EPID 9100 PhD Epidemiology Seminar</td>
</tr>
<tr>
<td></td>
<td>STAT 8060 Computing Techniques in Statistics I</td>
<td>Elective</td>
</tr>
<tr>
<td>Year 3</td>
<td>BIOS 8920 Biostatistics Seminar</td>
<td>BIOS 8920 Biostatistics Seminar</td>
</tr>
<tr>
<td></td>
<td>Elective</td>
<td>BIOS 9000 Doctoral Research</td>
</tr>
<tr>
<td></td>
<td>BIOS 9000 Doctoral Research</td>
<td>BIOS 9000 Doctoral Research</td>
</tr>
<tr>
<td>Year 4</td>
<td>BIOS 9000 Doctoral Research</td>
<td>BIOS 9000 Doctoral Research</td>
</tr>
</tbody>
</table>
Grade Average
To be eligible for graduation, students must comply with graduate school rules. Specifically, a student must maintain a 3.0 (B) average on the graduate transcript and a 3.0 (B) average on the program of study. Further information, including which courses count towards computation of the GPA, can be found on the graduate school website.

Advisory Committee
By the end of the first year of residence, students must form an advisory committee. The PhD advisory committee must consist of a minimum of four members. The chair and at least two, but no more than three members must be selected from either the Department of Epidemiology and Biostatistics, or the Department of Statistics. In keeping with the interdisciplinary objectives of the Ph.D. program in Biostatistics, at least one member of the advisory committee should not belong to either of the above departments. The committee must also consist of a minimum of three graduate faculty members. Provisional graduate faculty may serve in the same capacity as regular graduate faculty but cannot serve as chair or co-chair of the committee. Additional voting members may be appointed to the committee, including no more than one non-UGA faculty, who must hold the terminal degree in Biostatistics or Statistics. If there are more than three members, there must be greater than 50% graduate faculty representation. The committee will be recommended to the dean of the Graduate School by the graduate coordinator after consultation with the student and faculty members involved.

The advisory committee, in consultation with the student, is charged with planning the student's program of study. It is also charged with approving the program of study, arranging the comprehensive written and oral examinations, approving a subject for the dissertation, approving the completed dissertation, and approving the student's defense of his or her research. The committee should advise the student of required research skills and other requirements.

Departmental recommendations for the advisory committee, and any replacements, shall be determined by procedures approved by a majority of the graduate faculty of the department.

Programs of Study
A preliminary program of study, developed by the major professor and the doctoral student and approved by a majority of the advisory committee, will be submitted to the graduate coordinator by the end of the student's first year of residence. The program of study should consist of 16 or more hours of 8000- and 9000-level courses in addition to research, dissertation writing, and directed study. No grade below C will be accepted on the program of study. To be eligible for graduation, a student must maintain a 3.0 (B) average on the graduate transcript and a 3.0 (B) average on the program of study.
The program of study for a student who bypasses the master’s degree must contain 4 semester hours of University of Georgia courses open only to graduate students in addition to 16 semester hours of 8000 and 9000 level courses. Doctoral research (9000), independent study courses, and dissertation writing (9300) may not be counted in these 20 hours.

A final typed program of study will be submitted to the Graduate School prior to notification of the comprehensive examination. This program of study must be submitted on the proper form for approval by the advisory committee, the graduate coordinator, and the dean of the Graduate School. The final program of study must show all graduate courses relevant to the doctoral program and not just courses satisfying the minimum degree requirement. Courses from the master's degree and courses taken at other universities should be listed in the “Relevant Master's or Other Graduate Degree Courses” section of the program of study form. The program of study must carry a minimum of 30 hours of course work, three hours of which must be dissertation writing (9300).

The department should evaluate carefully and fully each doctoral student's progress and qualifications at the end of the first year of study in order to advise the student whether or not to continue in the program.

**Qualifying Exam**

After completing the first year of coursework, students are to sit for the qualifying examination, which will cover the material in first-year core courses, BIOS 8010-8020, and STAT 6810-6820. Students may pass at the Ph.D. level, pass at the Master’s level, or fail the examination. Students passing at the M.S. level will meet with the graduate coordinator and their advisor to discuss whether they should retake the exam or be encouraged to complete a Master’s Thesis and graduate with an M.S. degree after they complete their second year. Student failing to the exam at the Ph.D. level in their second attempt can complete a Master’s Thesis and graduate with an M.S. in Biostatistics provided that they have passed at the Master’s level in at least one of their two attempts.

**Comprehensive Exam**

To be admitted to candidacy for the Ph.D. in Biostatistics, students must first pass a written comprehensive examination covering the material in BIOS 8010-8040 and BIOS 8310-8320. Students failing the comprehensive examination will have one opportunity to retake the exam. With approval from the graduate coordinator, students failing the exam second time may complete a Master’s Thesis and graduate with an M.S. in Biostatistics. After the written examination is completed, students will schedule an oral examination to be given by the advisory committee. This oral examination may cover any of the courses in the core curriculum as well as elective courses relevant to their research topic.

The oral comprehensive examination is open to all members of the faculty and shall be announced by the Graduate School. It is the student’s responsibility to inform the graduate coordinator at least 3 weeks before the date of the scheduled examination date and location. The oral comprehensive examination is separate from the proposal defense. Only once a student has
successfully passed all portions of the comprehensive exam may they continue to present their proposal.

**Dissertation Prospectus and Proposal**

The major professor and Advisory Committee shall guide you in planning your dissertation. To inform your Advisory Committee of your research you will write a Dissertation Prospectus, and then give a presentation to your Advisory Committee in which you propose your planned research. The Dissertation Prospectus is an essay on your proposed dissertation research. This essay should review the pertinent literature, present any new preliminary results you have obtained, and give a clear indication of the direction of proposed research for your dissertation. The essay should demonstrate concise professional writing and should not exceed 30 standard pages of typescript (single-spaced, and in 12-point font).

When your major professor certifies that your Dissertation Prospectus is satisfactory, it must be formally considered by the Advisory Committee in a meeting with you. This meeting is an oral examination during which you present to your Advisory Committee your literature review and preliminary research results, and describe how you intend to complete your dissertation. Your Advisory Committee examines you on the proposed research, considers its feasibility, and advises you accordingly. In rare situations, it is possible that you will be advised to seek another, hopefully related, research topic. Note that this formal consideration may not take the place of the oral Comprehensive Examination, by specific directive of the Graduate School. Instead, this proposal defense is separate from the oral portion of the comprehensive exam and should only be scheduled once the comprehensive exam has been passed.

Approval of the Dissertation Prospectus, and of your presentation of its content, signifies that members of the Advisory Committee believe that you have proposed a satisfactory plan for your research study. Approval of the Prospectus requires the agreement of the Advisory Committee with no more than one dissenting vote as evidenced by their signing an appropriate form, which, together with the approved Prospectus, is filed with the Graduate Coordinator.

Once a student has passed their comprehensive exam and successfully presented their dissertation proposal, they may apply for admission to candidacy as explained next.

**Admission to Candidacy**

The student is responsible for initiating an application for admission to candidacy so that it is filed with the dean of the Graduate School at least one full semester before the date of graduation. This application is a certification by the student's major department that the student has demonstrated ability to do acceptable graduate work in the chosen field of study and that:

1. All prerequisites set as a condition to admission have been satisfactorily completed;
2. The final program of study has been approved by the advisory committee, the graduate coordinator, and the dean of the Graduate School;
3. An average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study (no course with a grade below C may be placed on the final program of study);
4. Written and oral comprehensive examinations have been passed and reported to the Graduate School;
5. The advisory committee, including any necessary changes in the membership, is confirmed and all its members have been notified of their appointment;
6. A dissertation prospectus has been approved;
7. The residence requirement has been met.

After admission to candidacy, a student must register for at least a combined total of ten hours of dissertation or other appropriate graduate credit during the completion of the degree program. Students planning to graduate the same semester they enter candidacy must be admitted to candidacy by the published deadline for candidacy during that semester and register for ten hours. The student must also meet all other deadlines for graduation in that semester. A student must register for a minimum of three hours of credit in any semester when using University facilities, and/or faculty or staff time.

Once a student has been admitted to candidacy, the department has an ethical responsibility to ensure that appropriate faculty mentorship is provided to the candidate for completion of the degree.

**Dissertation Planning**

A student pursuing a PhD in Biostatistics must present a dissertation on some subject connected with Biostatistics. The dissertation must represent originality in research, independent thinking, scholarly ability, and technical mastery of a field of study. The conclusions must be logical, the literary form acceptable, and the contribution to knowledge meriting publication.

Persons who serve on the advisory committee at the time the dissertation research is undertaken must be faculty members knowledgeable in the areas of the student's research. They should be selected irrespective of their departmental affiliation.

The major professor has the primary responsibility for guiding research, but the student should consult all members of the advisory committee to draw upon their expertise in relevant areas.

The major professor and advisory committee shall guide the student in planning the dissertation. The student will prepare a dissertation prospectus. When the major professor certifies that the dissertation prospectus is satisfactory, it must be formally considered by the advisory committee in a meeting with the student. This formal consideration may not take the place of the comprehensive oral examination.

Approval of the dissertation prospectus signifies that members of the advisory committee believe that it proposes a satisfactory research study. Approval of the prospectus requires the agreement of the advisory committee with no more than one dissenting vote as evidenced by their signing
an appropriate form, which, together with the approved prospectus, is filed with the graduate coordinator.

**Dissertation Approval and Defense**

When the major professor is satisfied with the completed dissertation, he or she will certify that it has his or her approval and is ready to be read. The major professor will then distribute copies of the dissertation to the remaining members of the advisory committee and schedule a final oral defense. The graduate coordinator must notify the Graduate School at least two weeks prior to the defense. Subsequently, the Graduate School will announce the time and place of the defense of the dissertation to the University community. The committee members must have three weeks to read and evaluate the completed dissertation.

Written assent of the committee members (other than the major professor) will be required before a dissertation will be approved as ready for a final defense. No more than one dissenting vote may be allowed for the approval of the dissertation. If the advisory committee declines to approve
PhD in Epidemiology

Goals of the Program
The goals of our programs in Epidemiology are to:
1. Improve public health through the application of methods and approaches in Epidemiology
2. Create new knowledge in the field of Epidemiology, with a special emphasis on identifying emerging areas of enquiry, especially those that cross disciplinary boundaries
3. Translate new knowledge in Epidemiology so that it may be implemented and used to improve public health
4. Create the next generation of epidemiologists who can respond to the challenges in public health in the future, educate future students in the field, and provide service to the community
5. Serve the larger communities in which we live and work, by using our special skills and knowledge.

Curriculum
The degree of Doctor of Philosophy in Epidemiology will be awarded in recognition of in-depth knowledge and a comprehensive understanding of the field of Epidemiology together with a demonstrated ability to perform independent research and to communicate clearly the results of such research. In this program, a student will acquire advanced knowledge and expertise in epidemiology by taking and passing a series of core and elective courses and by completing an independent research project under the direction of a faculty mentor. Advanced knowledge will be demonstrated by meeting the requirements of each required and elective course and by passing a written and oral comprehensive examination. Research expertise will be demonstrated through the successful completion and defense of a dissertation research project. As part of this requirement, students will form a dissertation committee, write and defend a dissertation prospectus (i.e., proposal) for the committee, complete the dissertation research project, and write and defend the final dissertation for the committee and other members of the academic community at the University. The student is guided through the experience by a research advisor (mentor) and Advisory Committee.

The program requires a minimum of 55 credits to complete the Ph.D. degree in Epidemiology. This includes at least 30 credits of advanced coursework in Epidemiology and Biostatistics, at least 12 credits of approved electives, a minimum of 10 credits of dissertation research, and at least 3 credits of dissertation writing.

The Ph.D. Epidemiology degree will be granted in recognition of proficiency in research, breadth and soundness of scholarship, and thorough knowledge of field of Epidemiology, as assessed by the faculty of the Department and not upon completion of any definite amount of work prescribed in advance.
Ph.D. Competencies
The Department of Epidemiology and Biostatistics embraces the discipline-specific core competencies and cross-cutting/interdisciplinary competencies set forth by the Association of Schools of Public Health. The following competencies have been identified by the department as fundamental. Every student obtaining the PhD in Epidemiology should be able to:

1. Describe the historical developments in epidemiology and how they provide context for current research and practice
2. Evaluate and synthesize epidemiologic literature to appraise the state of knowledge in an area of public health
3. Articulate research questions in epidemiology that address critical problems in public health
4. Choose valid observational or interventional study designs, data sources, and analytic methods to answer epidemiological questions
5. Apply key sources of epidemiologic data to inform programmatic and research activities
6. Collect, organize, and manage data to ensure data integrity
7. Lead and manage a research team to conduct an epidemiologic study
8. Analyze epidemiologic data using valid statistical or mathematical methods to draw appropriate inferences from the results
9. Develop a causal argument to link exposure to outcome in epidemiology
10. Communicate epidemiologic information to professional and lay audiences
11. Prepare a research proposal for extramural funding
12. Assess ethical and legal principles as they pertain to the collection, maintenance, use, and dissemination of epidemiologic data
13. Write an application to an institutional review board
14. Teach epidemiologic concepts to peers and students
15. Develop a plan to keep current with the epidemiologic literature, in terms of methods and content.

In addition to these core competencies in Epidemiology, there is a set of interdisciplinary and cross-cutting competencies that form the basis for the doctoral level training. These interdisciplinary competencies are: Communications and Informatics; Diversity and Culture; Leadership; Public Health Biology; Professionalism; Program Planning; Systems Thinking. Students are expected to become proficient in the following areas: descriptive epidemiology, biology (a human physiology equivalent with competence in the dissertation disease topic), basic knowledge of the leading public health problems and the history of the discipline, problem conceptualization, study design, data collection and monitoring, data management, data analysis, interpretation, communication, ethics, a substantive area of original research and project management.
Admission Pre-Requisites

Applicants must satisfy the requirements specified by the graduate school. In addition, all students entering the program must have taken courses at the undergraduate or graduate level in mathematics plus one or more courses in biology, biomedical sciences, or social sciences.

To immediately start the course sequence for the PhD Epidemiology program, students need proficiency in the content and material offered in the following basic courses as taught in the College of Public Health: Introduction to Epidemiology (EPID 7010), Epidemiologic Methods (EPID 7020), Introduction to Biostatistics (BIOS 7010), Linear Regression Analysis (BIOS 7020), and at least one other course in Epidemiology (e.g., chronic disease epidemiology, infectious disease epidemiology, environmental epidemiology).

Students who earned an MPH degree or a related degree (e.g., M.S. Epidemiology, M.S. Biostatistics, M.S.P.H.) from an accredited institution or program (or its international equivalent) within the last 5 years can demonstrate proficiency by having completed courses covering the content described above with a grade of B or higher, as indicated on their official transcript.

Students that do not have one of these degrees, or who earned their degree more than 5 years ago, will need to demonstrate strong potential to acquire knowledge of the material covered in the courses listed above rapidly. To do so, the student will need to take additional remedial courses. The GC will decide what remedial courses a student needs to take. The student will need to take these courses first as part of their Plan of Study, before they are allowed to enter the PhD course sequence outlined below. Any remedial course requirements will not count toward the Ph.D. degree but are taken in addition to the required hours for the degree.

Ph.D. Requirements
In the course of completing the requirements for the doctoral degree in Epidemiology, the student will fulfill the requirements as stipulated by the Graduate School.
http://www.uga.edu/gradschool/academics/PhD_req.html

Coursework
To complete the Ph.D. in Epidemiology the student will complete a total of 55 credits beyond the requirements of a master’s degree. Remedial courses as outlined above do not count toward those credits. The student must complete 30 credit hours of required core courses, 12 credit hours of elective courses, a minimum of 10 credit hours of dissertation research (EPID 9000) and 3 credit hours of dissertation writing (EPID 9300). This program represents the minimum number of credits needed to graduate; for all full time students who have enrolled for at least 12 credits, you are advised to register for a full 18 credit hours, either by taking additional courses or by signing up for research or teaching assistant credits as applicable.
**Required Courses**

The required core coursework will strengthen the foundations in epidemiology and provide substantial depth in study design and analysis. It also includes at least three graduate level courses (9 credit hours) in biostatistics, and an ethics course (3 credit hours).

<table>
<thead>
<tr>
<th>Course</th>
<th>Credit Hours</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EPID 8010</td>
<td>3</td>
<td>Cohort Study Design, Implementation, and Analysis</td>
</tr>
<tr>
<td>EPID 8020</td>
<td>3</td>
<td>Case Control Designs, Implementation, and Analysis</td>
</tr>
<tr>
<td>EPID 8040</td>
<td>3</td>
<td>Clinical Trial Designs, Implementation, and Analysis</td>
</tr>
<tr>
<td>EPID 8050</td>
<td>3</td>
<td>Integrating Research Designs</td>
</tr>
<tr>
<td>EPID 8030</td>
<td>3</td>
<td>Teaching Practicum</td>
</tr>
<tr>
<td>EPID 7700</td>
<td>3</td>
<td>Biomedical Ethics and Research Integrity in Epidemiology†</td>
</tr>
<tr>
<td>EPID 9100</td>
<td>3 x 1</td>
<td>PhD Seminar (usually first 3 semesters)</td>
</tr>
<tr>
<td>BIOS</td>
<td>9</td>
<td>At least 3 advanced biostatistics courses (mainly 7000 or 8000 level)</td>
</tr>
</tbody>
</table>

† or equivalent course

**Elective Courses**

The program will include 12 credits of elective courses that will allow the student to pursue specialized interests and add depth or breadth to their experience. Students may choose from elective courses in specialty areas of Epidemiology or from courses outside of the Department, as long as the course is approved by the academic advisor and is included in the Plan of Study. As relevant courses are developed in the Department, College and University, they will be made available to the students for electives. In general, courses need to be at the 8000 level. Please check online for current EPID or BIOS course offerings.

**Non-standard Courses**

Under certain circumstances, students might want or need to deviate from the usual required and elective courses. This is only possible with prior approval of the GC and major professor. Any course replacing one of the standard ones suggested above needs to be an advanced graduate level course and the total minimum number of credits needs to be maintained.

**Selecting a major professor**

**Before the end of their first year**, a student will have to identify a member of the departmental faculty (who also needs to have appointment as graduate faculty) with whom they plan on doing their thesis research work. This will be the student’s Major Professor/Advisor. The student’s Major
Professor serves to advise and mentor the student throughout the program. The student and major professor select an advisory/dissertation committee. Please see the graduate school’s webpage under PhD Requirements for details on the rules regarding composition of the advisory committee. In addition to those rules, the following rules apply:

**Doctoral Advisory Committee**

By the end of their first year, a student and their major professor need to decide on an advisory/dissertation committee. The committee must consist of a minimum of 4 members. Additional voting members may be appointed to the committee, including no more than one non-UGA faculty, who must hold the terminal degree in their field of study. If there are more than three members, there must be greater than 50% graduate faculty representation. The committee will be recommended to the dean of the Graduate School by the graduate coordinator after consultation with the student and faculty members involved. The student’s main advisor is generally the chair of the committee. The following rules apply to the committee:

- At least three members of the Advisory Committee must have graduate faculty status, including the chair.
- At least three members must be from the Department of Epidemiology and Biostatistics.
- At least one member’s primary affiliation must be from outside of the Department and can be from outside UGA.
- No more than one committee member can be a non-UGA faculty, who holds a terminal degree in their field of study. This person must be nominated by the Graduate Coordinator and approved by the Dean of the Graduate School. The person’s vita and a letter of justification must be sent to the Dean.
- If the student decides to have a five-member committee, at least three of them should be from the department and at least three must have graduate status.

The advisory committee, in consultation with the student, is charged with planning the student’s program of study. It is also charged with approving the program of study, arranging the comprehensive written and oral examinations, approving a subject for the dissertation, approving the completed dissertation, and approving the student’s defense of his or her research. The committee should advise the student of required research skills and other requirements.

Once the student has settled on the committee members, the student should file the *Doctoral Advisory Committee* form with the Graduate Coordinator who will forward it to the Graduate School. The *Doctoral Advisory Committee* form should be submitted to the graduate school by the end of the first year in residence.

**Changing Major Professor or Committee Members**

It is possible for a student to change their major professor and/or members of their advisory committee. To do so, the student needs to file a new *Doctoral Advisory Committee* form with the GC. The GC will consult with all involved parties (previous and new committee members), and if the GC considers the request for a change appropriate, will forward it to the graduate school. The
persons listed on this form must be the same ones signing off on a student’s admission to candidacy and dissertation. Therefore always make sure this form is up-to-date.

**Program of Study**

A preliminary program of study, developed by the major professor and the doctoral student and approved by a majority of the advisory committee, will be submitted to the graduate coordinator by the end of the student’s first year of residence. The signed Preliminary Doctoral Program of Study (PDPS) must be submitted to the Graduate Coordinator. The program of study should consist of 16 or more hours of 8000- and 9000-level courses in addition to research, dissertation writing, and directed study. No grade below C will be accepted on the program of study.

A final program of study will be submitted to the Graduate School prior to notification of the comprehensive examination. This program of study must be submitted on the proper form for approval by the advisory committee, the graduate coordinator, and the dean of the Graduate School. The final program of study must show all graduate courses relevant to the doctoral program and not just courses satisfying the minimum degree requirement. Courses from the master’s degree and courses taken at other universities should be listed in the “Relevant Master’s or Other Graduate Degree Courses” section of the program of study form. The program of study must carry a minimum of 30 hours of course work, three hours of which must be dissertation writing (9300).

**Comprehensive/Qualifying Exam**

The doctoral Comprehensive or Qualifying Examination will be taken after completing the core doctoral level courses (EPID 7700, EPID 8010, EPID 8020, EPID 8040, EPID 8050), usually at the end of the second year in the program. The intent of the Qualifying Exam is to measure potential for doctoral research and to assess the student’s basic technical and professional knowledge. The Qualifying Exam consists of a written and an oral part, further explained below.

Students are allowed to retake part or all of the comprehensive examination once. If the student fails a part of the examination more than once, the department will drop the student from the PhD program.

**Written Exam**

**In-class part of written exam**

The in class portion of the written Examination will cover study design, research methods, statistical analysis of epidemiologic data, and other advanced topics. The examination will require a full understanding of the basic material taught in the pre-requisite courses (EPID 7010, EPID 7020, BIOS 7010), and all required advanced courses in Epidemiology (e.g., EPID 7700, EPID
8010, EPID 8020, EPID 8040, EPID 8050). The exam will consist of approximately 50 multiple-choice, matching, or short answer questions. It will be closed-book and closed-notes.

**Take Home part of written exam**
The take home portion of the written Examination may be taken only after taking the in-class exam. The Take-Home exam is designed to test the student’s ability to synthesize their knowledge of epidemiology and to deal with real-world medical and public health problems. This examination may cover all aspects of epidemiology, including questions on topics not specifically taught in the program. It is expected that students have acquired the skills to evaluate and respond to a broad range of epidemiologic problems - not just those topics covered by formal courses or problems within their discipline. Part II may cover, but not be limited to, the following areas: cardiovascular disease, cancer, infectious diseases, neuro-psychiatric disease, pharmaco-epidemiology, maternal child health, environmental epidemiology, international health, theoretical epidemiology. We expect the student to have comprehensive knowledge of study design, epidemiologic methods, and biostatistics including topics such as survey design, measurement, clinical trials, data analysis, and ethics. We also expect students to demonstrate the ability to integrate advanced epidemiologic content to create a cohesive document on questions relating to these topics. The Take-Home exam will be given over 1 week.

The written exam will be graded by members of the faculty and coordinated by the GC or a person designated by the GC to do so. The results from the written exam will be passed on to the student’s advisory committee.

**Oral Exam**
After completing the written exam, both the In-Class and Take-Home portions, the student will be required to complete an oral examination administered by the student’s Advisory Committee. This oral examination will test the student’s understanding of complex epidemiologic concepts and how they are applied to solve real-world problems. This part of the exam will be scheduled after the written exams and before the defense of the Ph.D. prospectus.

The oral comprehensive examination is open to all members of the faculty and shall be announced by the Graduate School. **It is the student’s responsibility to inform the graduate coordinator at least 3 weeks before the date of the scheduled examination date and location.** The oral comprehensive examination is separate from the proposal defense. Each member of the advisory committee will cast a written vote of pass or fail on the written and oral parts of the examination. To pass each part of the examination, the agreement of the advisory committee is achieved with no more than one dissenting vote. An abstention is not an appropriate vote for the comprehensive examination. The results of both examinations will be reported to the Graduate School within two weeks following the oral examination.

Once a student has successfully passed all portions of the comprehensive exam may they continue to present their proposal.
Dissertation Proposal Defense

A student pursuing this degree must present a dissertation on some subject connected with his or her major field of study. The dissertation must represent originality in research, independent thinking, scholarly ability, and technical mastery of a field of study. The conclusions must be logical, the literary form acceptable, and the contribution to knowledge meriting publication. The spectrum of possible research projects is broad, and may consist of primary data collection or use of existing databases. The choice of research topic will be determined by the student’s scientific interests, availability and content of research opportunities, availability of research funding, and the influence of her/his research advisor and Dissertation Committee.

In consultation with the Major Professor and Committee, the student will identify an area of research and prepare a written proposal. This proposal will include research goals and aims, background and rationale, literature review, detailed description of methods proposed, and an analytic strategy. The prospectus must also include consideration of ethical issues involved in the research. Once the prospectus has been read and approved by the Dissertation Committee, the student will notify the graduate coordinator of his or her plans to present the prospectus in a public setting. The proposal defense meeting is separate from, and may not take the place of the comprehensive oral examination. A proposal defense may only be scheduled once a student has successfully passed all parts of their comprehensive examination.

Approval of the dissertation prospectus signifies that members of the advisory committee believe that it proposes a satisfactory research study. Approval of the prospectus requires the agreement of the advisory committee with no more than one dissenting vote as evidenced by their signing an appropriate form, which, together with the approved prospectus, is filed with the graduate coordinator.

Advancement to Candidacy

The student is responsible for initiating an application for admission to candidacy so that it is filed with the dean of the Graduate School within one semester of successfully defending the dissertation prospectus and at least one full semester before the date of graduation. This application is a certification by the Department of Epidemiology and Biostatistics that the student has demonstrated the ability to do acceptable graduate work in the chosen field of study and that:

- All prerequisites set as a condition to admission have been satisfactorily completed;
- Research skills requirements have been met;
- The final program of study has been approved by the advisory committee, the graduate coordinator, and the dean of the Graduate School;
• An average of 3.0 (B) has been maintained on all graduate courses taken and on all completed courses on the program of study (no course with a grade below C may be placed on the final program of study);
• Written and oral comprehensive examinations have been passed and reported to the Graduate School;
• The advisory committee, including any necessary changes in the membership, is confirmed and all its members have been notified of their appointment;
• A dissertation prospectus has been approved;
• The residence requirement has been met.

After admission to candidacy, a student must register for a minimum combined total of 10 hours of dissertation or other appropriate graduate credit during the completion of the degree program (usually EPID 9000 and/or EPID 9300). The student must also meet all other deadlines for graduation in that semester. A student must register for a minimum of three hours of credit in any semester when using University facilities, and/or faculty or staff time.

Once a student has been admitted to candidacy, the Department has an ethical responsibility to ensure that appropriate faculty mentorship is provided to the candidate for completion of the degree.

Dissertation Research
Once the student has been admitted to candidacy, the student should complete the research under the supervision of the Major Professor. The Major Professor is responsible for mentoring the student through the steps and procedures of the research project. Other members of the Dissertation Committee should be engaged by the student as the need arises. The student should arrange to meet regularly (at least twice a year) with the Dissertation Committee members during the conduct of the research project to provide an update on progress.

After admission to candidacy, students must take at least 10 credit hours of dissertation research (EPID 9000) AND at least 3 credit hours of Dissertation Writing (EPID 9300) in the semester of graduation. A student must register for a minimum of three hours of credit in any semester when using University facilities, and/or faculty or staff time. NOTE: It is likely that substantially more than 10 hours of Dissertation Research will be needed to complete the research project.

Dissertation Writing
After the student has completed the proposed research project, the student must write and submit the Ph.D. dissertation to the Major Professor for approval. Students are expected to write a dissertation that represents a significant contribution of new knowledge to the field. Specific dissertation requirements may be dictated by the Dissertation Committee and the graduate
school, including format and content. The dissertation document must contain an Introduction, Literature Review, description of methods, Results, Discussion and Conclusion. Whether the dissertation is formatted as a single document or multiple journal-style manuscripts will be left to the discretion of the Dissertation Committee, subject to the rules of the graduate school. At least a portion of the dissertation must be suitable for publication.

When the Major Professor is satisfied with the completed dissertation, he or she will certify its approval and ask the student to distribute copies of the dissertation to the remaining members of the Dissertation Committee. The committee members must have three weeks to read and evaluate the completed dissertation. The dissertation must be of sufficient scope and depth to meet the expectations of the Dissertation Committee members. Written assent of the committee members (other than the major professor) will be required before a dissertation will be approved as ready for a final defense. No more than one dissenting vote may be allowed for the approval of the dissertation and scheduling of the final defense. If the advisory committee declines to approve the dissertation as ready for the final defense, the Research Advisor will notify the student and advise regarding further research and/or corrections.

**Dissertation Final Defense**

Once the Dissertation Committee has approved the dissertation, the Research Advisor will notify the student to schedule a final oral defense. The date and time of the oral defense will be set by the Research Advisor and the committee members, in consultation with the student. **The student must notify the graduate coordinator at least three weeks prior to the defense date;** the graduate coordinator will inform the graduate school. Subsequently, the Graduate School will announce the time and place of the defense of the dissertation to the University community.

The student must give an oral presentation that summarizes the major findings of the research project and respond to questions from the public audience and the committee members. The defense of the dissertation will be chaired by the student's Research Advisor and attended by all members of the Dissertation Committee simultaneously for the entire examination period. Attendance of committee members through video conference is permissible. The public portion of the defense is open to all members of the University community.

To pass the dissertation defense, the Research Advisor must approve the defense and other committee members must agree to pass the student. One dissenting vote in the committee is allowed, as long as the dissenting vote is not cast by the Research Advisor. The committee will indicate approval in writing with signatures on all appropriate forms provided by the University.

Once the written dissertation has been approved by the Dissertation Committee, the dissertation must be submitted to the Graduate School for final approval no later than two weeks prior to graduation. Dissertations which are not submitted by this deadline must be defended again and approved by the advisory committee before they will be considered by the Graduate School for final approval.
**Dissertation Submission**

Once the student has successfully defended their dissertation and made any changes requested by the committee, a complete formatted copy of the dissertation must be electronically submitted to the Graduate School for a format check no later than four weeks prior to graduation.

The Graduate School must receive the Final Defense Approval form and an electronic submission of the corrected dissertation no later than two weeks prior to graduation. This official copy of the dissertation will be electronically submitted by the Graduate School to the main library for archiving.

A graduate student may not submit a dissertation to the Graduate School for format checking or the dean's approval between the last day of classes and late registration of the following term.

**Graduation**

An application for graduation must be filed with the Graduate School no later than Friday of the second full week (the first full week for summer) of classes in the semester of the anticipated graduation date. Application forms may be obtained from the graduate school website.

All requirements for the degree must be completed and reported to the Graduate School no later than one week prior to graduation. A student must enroll for a minimum of three hours of credit the semester in which graduation requirements are completed unless additional stipulations are required by other units of the university.
Example timelines for Epidemiology PhD program

To assist in planning, an example timeline is provided below. Most students will follow this plan. Any major deviations should be discussed with the GC and/or major professor as soon as possible. The following sample program applies to students entering with an MPH or equivalent degree who do not have any remedial requirements. For students entering the program without an MPH or equivalent, or for students who have gaps in their knowledge which precludes them from taking the outlined sequence of courses, additional coursework will be required, e.g. EPID/BIOS 7010 and EPID/BIOS 7020. After completion of the remedial courses, students enter the outlined sequence. Note that while some courses should be taken in order (8010, 8020, 8040 and 8050) and 9100 should be taken in the first 3 semesters, the timing of other courses is more flexible.

<table>
<thead>
<tr>
<th>YEAR</th>
<th>FALL</th>
<th>SPRING</th>
<th>SUMMER</th>
</tr>
</thead>
</table>
| 1    | Cohort Study EVID 8010 (3)  
      | Required BIOS 1 (3)  
      | Epidemiology Elective 1 (3)  
      | Research Ethics EVID 7700 (3)  
      | PhD Seminar EVID 9100 (1)  
      | Research or class credits as applicable (5) | Case Control EVID 8020 (3)  
      | Epidemiology Elective 2 (3)  
      | Teaching Practicum EVID 8030 (3)  
      | PhD Seminar EVID 9100 (1)  
      | Research or class credits as applicable (8) | Research or coursework as available. |
| 2    | Randomized Trials EVID 8040 (3)  
      | BIOS Selective 2 (3)  
      | Epidemiology Elective 3 (3)  
      | PhD Seminar EVID 9100 (1)  
      | Research or class credits as applicable (8) | Integrating Designs EVID 8050 (3)  
      | Epidemiology Elective 4 (3)  
      | BIOS Selective 3 (3)  
      | Research or class credits as applicable (11) | Research or coursework as available.  
      | Take Qualifying Exams. |
| 3    | Dissertation Research EVID 9000 (18) | Dissertation Research EVID 9000 (18) | Research |
| 4    | Dissertation Research EVID 9000 (18) | Dissertation Research EVID 9000 (15)  
      | Dissertation Writing EVID 9300 (3) | Research |

By the end of the 1\textsuperscript{st} year, the student must have identified a major professor, an advisory committee, and submitted the forms “\textit{Doctoral Advisory Committee}” and “\textit{Preliminary Doctoral Program of Study}” to the GC. The forms are available from the graduate school website.

By the end of the 2\textsuperscript{nd} year, the student needs to submit the “\textit{Final Doctoral Program of Study}” prior to taking the comprehensive exam. The student should take all parts of the comprehensive exams. If the student has successfully passed the exam they can continue with the next steps (see below). If a student does not pass the exam he/she can re-take all or parts as soon as they are offered again.

By the end of the 3\textsuperscript{rd} year – preferably as soon as possible after passing the comprehensive exam – the student needs to defend their proposal prospectus. After successful defense of the proposal, the student submits the form “\textit{Admission to Candidacy}” to the GC.

By the end of the 4\textsuperscript{th} year the student should have finished their dissertation, passed their PhD defense, and submitted all forms and documents required for graduation to the GC and graduate school.