Carolina Health Informatics Program PhD Handbook

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Statement of Purpose

The purpose of the Carolina Health Informatics Program's doctoral program is to prepare graduates to contribute to the field of biomedical and health informatics studies through research, teaching and exposure to practical BMHI challenges. The doctoral program prepares scholars for careers involving research and instruction as well as leadership roles in industry. The doctoral program provides students with research experience, familiarity with BMHI concepts, theories and methods. In addition, the program allows participation in an active research community as well as exposure to the thriving BMHI industry in the RTP, NC area.

Admissions Process

CHIP's PhD program attracts students with diverse backgrounds in public health, pharmacy, dentistry, IT (information systems or computing), and clinical practices (MD or RN) who are seeking advanced training for a broad range of research and leadership roles in academic, corporate, non-profit and government settings. The main career paths envisioned for graduates with a PhD in Health Informatics include: academic research and scholarship; research scientist in non-academic setting; and leadership positions, including CIO/CRO or similar in public and private health care organizations and key health policy development roles in government agencies.

Applicants should have a GPA of 3.0 or greater for all academic pursuits, GRE scores above the 50th percentile on all sections of the test and, if applicable, a minimum TOEFL score of 90.

International Students

An international student is a student who is attending UNC-Chapel Hill without U.S. Citizenship or is not a Legal Permanent Resident of the United States.

There are many resources on campus to help guide international students through the complexities that may accompany their transition to the United States. UNC Global International Student and Scholar Services (ISSS) is an excellent resource for international students to seek guidance with issues including arrival planning and visas.

Academic Background

Applicants must have at least a bachelor's degree and should have a strong interest in biomedical and health informatics. Previous research experience or a master's degree pertaining to BMHI is strongly encouraged.

Degree Requirements

Curriculum Overview

The CHIP PhD program is diverse through its interdisciplinary course work and research driven projects. With the guidance of advisers, graduate students will develop a course structure that will meet the following requirements for the PhD program:

I. 55 total credit hours
   - 21 credit hours of Pillar course work
   - 12 credit hours of electives*
   - 6 credit hours of doctoral research credit*
   - * Additional research and dissertation and/or elective credit hours can be completed to fill the gap to accumulate the 55-credit hours required for the degree

II. Completion of a comprehensive written examination
III. Completion of a comprehensive oral examination based on the written examination
IV. Admission into candidacy
V. Completion and defense of dissertation proposal
VI. Completion and defense of dissertation

Click Here to view a timeline of PhD program milestones and deadline. Each of the above requirements is explained in a dedicated section elsewhere in this handbook.

Note: Coursework can be transferred in from previous degrees. Up to 18 credit hours can be transferred into the health informatics doctoral degree program. The recommendation to grant transfer credit will be made on a case-by-case basis and will require the approval of the UNC Graduate School.

Note: students are required to consult and keep current with the rules and policies of the Graduate School of UNC-CH with respect to doctoral study, candidacy, dissertation defense and other topics.

Graduate Good Standing and Grading

Students are required to be registered whenever degree progress is being made or University resources (including faculty time) are being used to appropriately reflect work being done. Academic programs and students should be aware that students who lapse enrollment lose official student status and recognized University affiliation. Additional information regarding the Graduate School registration policies is available here.

All master's and doctoral programs administered through The Graduate School operate under the same grading system. The graduate grading scale in use at UNC-Chapel Hill is unique in that it cannot be converted to the more traditional ABC grading scale. Graduate students do not carry a numerical GPA.

A student may become ineligible to continue studies at UNC-Chapel Hill and The Graduate School for academic reasons and student code violations. For more information, please refer to the Graduate School Handbook Eligibility policy.

In accordance with UNC-Chapel Hill's grading policy, course grades will be given on the H, P, L, F scale. If a student receives an F grade in any course, or nine credits hours of an L grade, they will immediately become academically illegible.

H High Pass

P Pass

L Low Pass

F Fail

Coursework (Core Pillars)

The coursework for the PhD program is customizable and can be designed to fit each student's interests and level of experience in various areas. The core of the doctoral coursework will be taken for five different "pillars" which form the structure of CHIP's curriculum: Core & Frontier; Tools & Infrastructure; Research Methods; Project Management & Leadership; and Implementation Science & Research.

1. Core & Frontier Pillar

Core and Frontier courses will expose students to the foundational concepts in informatics. This pillar allows students to gain a firm understanding of research challenges and the nature of these challenges. Courses in this pillar will cover advanced data modeling; data management and warehousing; data integration and networking; data presentation and visualization principles; data governance and data ethics. Six (6) credit hours are required.

2. Tools & Infrastructure Pillar

Tools and Infrastructure courses will go beyond the basic concepts and principles covered in core topics. This pillar will offer opportunities for students to gain experience in manipulating wide varieties of data occurring in diverse health care contexts. It will also train students to build new tools and methods for extracting insights from health data. The courses in this pillar will cover advanced training in statistical analysis; data mining; system analysis and design; data interpretation and data quality. Six (6) credit hours are required.

3. Research Methods Pillar

Research Methods courses will focus on constructing sound research studies concentrated on various aspects of health care. The courses in this pillar will cover gathering research data; analysis of research data; drawing conclusions from research data; presenting research data; and identifying limitations based on gaps present in research data. Three (3) credit hours are required.

4. Project Management & Leadership Pillar

Project Management and Leadership courses examine current techniques and methods on leading and sustaining research projects. Emphasis will be placed on project management skills in the context of developing and maintaining research projects that span a several year period. Three (3) credit hours are required.

5. Implementation Science & Research Translation Pillar

Implementation Science and Research Translation courses emphasize developing research projects with an eye toward the conversion of key outcomes that will have a direct impact on the health care of

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individuals or a community. Coursework in this pillar will cover understanding intellectual property rights; collaboration with stakeholders such as government, for-profit and non-profit organizations; dissemination of research; and ensuring long-term sustainability of outcomes/solution. Three (3) credit hours are required.

Sample Curriculum

Visit the CHIP Doctoral Program Canvas site to view examples of pillar courses CHIP doctoral students have completed.

Publications & Presentations

There is no official requirement for CHIP PhD students to submit to peer-reviewed journals or other scholarly publications. However, students will be expected to actively participate in scholarly writing and dissemination of research through presentations and publications. Likely venues to be targeted will include national conferences such as the AMIA and IEEE meeting and high impact journals such as the Journal of the American Medical Informatics Association.

Doctoral Exam Committee

The primary focus of the doctoral exam committee is to guide the student through the PhD. The committee also administers the comprehensive exam, dissertation proposal, and dissertation defense.

Committee Structure

Summary of committee structure:

- At least 5 members. The advisor(s) count towards this number.
- A majority of the members must be faculty in CHIP (Core Faculty or Affiliated Faculty).
    - Other members should be UNC graduate faculty or can be faculty at other institutions. Members from other institutions– known as External Members, must be nominated as a fixed-term UNC graduate faculty member prior to serving on a doctoral examination committee. Note: CHIP does not pay for members of other institutions to travel to Chapel Hill, except to provide parking vouchers if available.

Designating a Fixed-Term Graduate Faculty External Member on a Doctoral Exam Committee

The CHIP doctoral program coordinator can facilitate the fixed-term graduate faculty nomination process for students. To initiate this process students should submit the following:

1. A current copy of the external members Curriculum vitae (CV)
2. A link to the external members institution/employer directory listing
3. A Unilateral Non-Disclosure Agreement form completed by the external member.

Upon submission of this documentation the CHIP doctoral program coordinator will submit a fixed-term graduate faculty nomination to the Graduate School.

Committee Meetings

A student's faculty advisor typically also serves as the committee Chair. Students will work with their committee chair to arrange committee meetings. If complications emerge, and it is impossible for some or all committee members to be physically present for a meeting, virtual attendance is allowed. Consult the CHIP Doctoral Canvas site for Room Reservation resources and instructions.

Students are responsible for keeping their committee up-to date with their progress and any draft revisions to their comprehensive exam, dissertation proposal and dissertation.

Official Exam Paperwork

Departmental forms and Graduate School forms are required to be completed throughout the doctoral examination process. Submit all doctoral exam paperwork to the CHIP doctoral program coordinator prior to scheduling any oral doctoral exam.

Responsibilities of Student

Students are responsible for working with their advisor to determine the best committee members to fulfill Graduate School and CHIP requirements. Students are then responsible for communicating with prospective committee members and arranging committee member tenure on their committees.

Students are responsible for notifying the CHIP doctoral program coordinator when organizing their doctoral exam committee, and each member's role (Chair, CHIP faculty, non-CHIP faculty, and external member (if applicable). Changes to committee composition should be made in consultation with a student's faculty advisor, and paperwork must be submitted to the doctoral program immediately. Changes to a doctoral committee are not permitted once a student successfully defends the dissertation proposal.

Responsibilities of Faculty Advisor(s) & Committee Chair

Advisors are responsible for advising their students on appropriate committee members for student's committees. When appropriate, advisors may need to reach out to potential committee members to introduce the student and their project.

Faculty advisors serving as committee chair are also responsible for working with the student to arrange committee meetings and keeping the committee up to date with the work of the student.

Responsibility of Committee Members

Committee members are responsible for providing guidance for student's research, comprehensive exam, dissertation proposal, and dissertation research.

Committee members are responsible for understanding student's work and providing critical feedback. Committee members must also put every effort forward to attend meetings and keep up to date with the student's work.

Doctoral Examinations

CHIP doctoral students must successfully complete three doctoral examinations– the Comprehensive Exam, Dissertation Proposal, and the Final Dissertation and Defense.

Comprehensive Examination

The Comp Exam is comprised of two parts– a written exam and an oral exam. Each component is described below.

Comprehensive Written Exam

The purpose of the written examination is to develop a manuscript which will evaluate the core topic of the doctoral student's research interest through a broad lens. The manuscript will be a distinct scholarly product, not a dissertation proposal. The written exam will make a comprehensive and in-depth argument for why the core topic chosen by the doctoral student deserves a new study. The scope of the comprehensive paper will be an in-depth review of the literature around the core topic. A Dissertation Diagram is available **here**.

To encourage the development of the doctoral student's research focus, the written comprehensive exam can be viewed as the first iteration, as to what will later develop into, the literature review in the final dissertation. **Click Here** to view an example of a literature review. The structure of the exam should include past findings, limitations, and potential new research proposals. Key facets that should be covered in the written exam are:

1. What are the critical informatics dimensions associated with the core topic of the paper?
2. What are the critical health / wellness dimensions associated with the core topic?
3. What are the measures and methods used in the past to determine the association between the informatics dimensions and the health dimensions associated with the core topic?
4. What were the major findings and observations?
5. What were the major limitations associated with past studies associated with the core topic (both methodological and outcome/result level limitations should be discussed)?

Examples of recent written Comprehensive Examinations from CHIP doctoral students:

> "*Electronic Health Records Interoperability Research Needs Assessment: A Systematic Review*" (CHIP Doctoral Student Adam Lee, 2020).
>
> "*Improving Management of Individual Patients with Leukemia*" (CHIP doctoral student, Vincent N. Carrasco, MD MSIS, 2020).

Written Exam Guidelines

Doctoral Students may begin working on their comprehensive exam during the semester in which they complete the course work for their pillar requirements. Doctoral students will not be allowed to register for course credit for their comprehensive exam until they have completed the Doctoral Exam Report Form.

Comprehensive exam coursework will be taken under the guidance of the doctoral student's advisor. For course credit, students shall enroll in CHIP 994 under the Program Director, Dr. David Gotz (Advisor- Dr. Gotz, Professor of Information Science in the School of Information and Library Science; Course number- CHIP 994). Students should ensure that Dr. Gotz stays up to date on relevant progress updates but the majority of advising will take place under the guidance of the student's official advisor.

There are no official requirements for the length comprehensive exam or number of articles that should be included in the written exam. The length and scope of the exam will vary depending on a number of factors, including if and when the last systematic review of the core topic was conducted and the very nature of the topic itself. Doctoral students are expected to produce a review that adequately covers all the facets provided above.

JAMIA systematic reviews are the standard for CHIP students. Other, non-JAMIA, systematic reviews can be referenced and cited in the written exam as well.

Examples of systematic reviews:

- Brandon M Welch, Kensaku Kawamoto; Clinical decision support for genetically guided personalized medicine: a systematic review, Journal of the American Medical Informatics Association, Volume 20, Issue 2, 1 March 2013, Pages 388–400, **https://doi.org/10.1136/amiajnl-2012-000892**
- K Ann McKibbon, Cynthia Lokker, Steven M Handler, Lisa R Dolovich, Anne M Holbrook, Daria O'Reilly, Robyn Tamblyn, Brian J Hemens, Runki Basu, Sue Troyan, Pavel S Roshanov; The effectiveness of integrated health information technologies across the phases of medication management: a systematic review of randomized controlled trials, Journal of the American Medical Informatics Association, Volume 19, Issue 1, 1 January 2012, Pages 22–30, **https://doi.org/10.1136/amiajnl-2011-000304**

The comprehensive exam is not a traditional systematic review, but rather a comprehensive view of the core research topic.

The core research topic of the written exam must be approved by the doctoral student's advisor. The doctoral student's committee should be notified about the core research topic, but approval is not required. Approval from the director of the program is not necessary.

Comprehensive Oral Exam

The primary purpose of the comprehensive oral exam is to evaluate whether the student has processed the major points discussed in the comprehensive exam paper. It is also an opportunity for a student's committee to ask any clarifying questions over points made in the comprehensive exam paper.

The advisor must ensure that all committee members are satisfied with the state of the comprehensive written exam before scheduling the oral exam. Doctoral students will keep committee members up-to date with the developments of their comprehensive exam so that the committee will be prepared to address the core research topic during the oral exam.

Format for the Comprehensive Oral Examination

The typical length of the oral defense is 1 to 1.5 hrs. At the beginning, the student should provide a brief, 15 to 20 min., presentation touching on the key areas covered in the comprehensive exam. The floor will then be opened for the committee members to ask follow-up questions on the scope, key observations, related research, and gaps in past research identified by the student in the comprehensive written exam.

The goal here is NOT TO TEST the MEMORIZATION ability of the student in terms of being able to regurgitate content verbatim from the comprehensive exam paper. Rather, the goal is to assess if the student grasped the core issues, past research findings, some of the major methods, and gaps in research discussed in the comprehensive exam paper.

A related goal is to ask clarifying questions and to ensure all the committee members accurately understand what the student expressed in the comprehensive paper.

The Q&A portion of the oral exam may last 45 min to an hour. After the Q&A period, the committee chair will request the student to leave the room temporarily and seek feedback from all the committee members before making their final judgment of the exam (Pass or Fail). If all the members reach a decision (pass or fail), then the student will be requested to re-enter the room and the judgement will be conveyed to the student.

A student passes an examination only after the approval of a majority of the examining committee members.

Note - on rare occasions, a committee member may insist that the comprehensive paper be revised based on findings revealed during the oral exam, before agreeing on a pass. In such a case the committee chair will request the student to make the change and upon revision, evaluate the change in consultation with the committee member who raised the issue. If the requesting committee member is satisfied by the change, the committee member will be requested to sign off. A repeat of the oral defense is usually not required to evaluate such revision requests.

It is permissible for the committee chair to request questions from the committee prior to the oral exam and pass on the questions to the student. It is up to committee members to voluntarily offer these questions. Committee members may come up with new or additional questions during the oral exam.

Doctoral students who fail to pass the oral examination will be allowed a single re-take within one academic year time frame. The re-take may or may not require revisions to the submitted exam. Students who do not pass the comprehensive examination on their second attempt will not be allowed to continue in the program.

Required Documentation for Comp Exam

Students must inform the CHIP doctoral program coordinator that an oral doctoral examination has been scheduled via the **Notification of Scheduled Examination form**. Submitting this completed form signifies your Oral Examination has been scheduled, and that the CHIP doctoral program coordinator should supply the committee with the required Graduate School forms needed to certify their judgement (pass or fail) of your oral exam.

Immediately after the examination has been given, results should be sent to the Program Coordinator on the **Doctoral Exam Report Form Part I & Part II**. Part I of the form certifies completion of the written examination, and Part II certifies completion of the oral examination. The Committee Chair should certify the completion of both examinations upon successful completion of the student's oral examination.

The Committee Chair should submit all paperwork to CHIP Program Coordinator.

Responsibilities of The Student

In general, only a short interval should separate the two examinations. It is the responsibility of the student to work with their advisor to complete their comprehensive exam within a reasonable amount of time. If the timeline is delayed more than one (1) semester, students must meet with Program Coordinator to provide justification for the delay.

Students are responsible for keeping their committee up to date on their comprehensive exam topic and draft revisions.

It is the student's responsibility to address all committee members feedback to the written comprehensive exam and oral comprehensive exam.

Responsibilities of The Faculty Advisor & Committee Chair

The advisor is responsible for guiding the students research topic for the comprehensive exam and assisting the student in gathering appropriate literature for the written portion of the exam.

The advisor/committee chair is responsible for assisting in arranging the oral comprehensive exam and verifying that all committee members have reviewed the written comprehensive exam and returned all relevant feedback to the student.

Should the student fail the oral comprehensive exam, the advisor is responsible for ensuring that the student has made appropriate revisions to the written comprehensive exam and that all committee members are satisfied with the revised comprehensive exam. The Committee Chair is responsible for submitting all portions of the Doctoral Exam Report Form to the CHIP doctoral program coordinator.

Responsibility of Dissertation Committee Members

All committee members should read and evaluate the written comprehensive exam. Written feedback should be provided to the student before the oral examination. Each committee member should prepare questions about the student's written comprehensive exam.

Committee members are responsible for approving the final version of the comprehensive exam. This may require an additional reading of a portion of the exam, or in some cases, all of the written exam if extensive edits are requested.

Committee members are also responsible for ensuring the comprehensive exam is sound in research and level of doctoral ability.

Dissertation Proposal

After successfully passing the comprehensive exam, the student will be required to submit a dissertation proposal which, beyond the systematic review previously completed, should include a methods section, a discussion on potential findings, and a section which anticipates limitations and ethical challenges. The proposal is not a literature review but the submission of a research question that will be the focus of the doctoral student's dissertation. The proposal will focus on the student's chosen methodology to address the research question. The dissertation proposal must also include a thorough justification for the methodology. View Dissertation Diagram **here**.

Ideally, the dissertation proposal and research question will develop out of the research conducted during the comprehensive exam.

The proposal will be reviewed by the doctoral student's dissertation committee. If the committee agrees with the student's dissertation proposal, they will determine a suitable oral defense date for the student. The written portion and the dissertation proposal must be completed within one year after the student successfully completes their comprehensive exams.

When students successfully complete their proposal, they will then be allowed to proceed to the dissertation research project stage. If for any reason, the committee determines oral defense to be

unsatisfactory, students will be given one additional opportunity to successfully defend the proposal; however, the second defense must be held within three months after the initial proposal defense is held.

Dissertation Proposal Format

Chapter I: Introduction (Overview of the Dissertation)

- Problem Statement
- Purpose of the Study
- Research Questions/Hypotheses
- Experimental Design Associated with Hypotheses
- Significance
- Contributions
- Limitations

Chapter II: Background and Related Work*

- Historical Background
- Literature Review
- Review of Theories Related to the Topic
- *The Background section should be exclusively focused on very closely related past research papers that directly intersect with the research question/s or the methodology discussed in the proposal (i.e., a small subset of the papers discussed in the comprehensive paper).

Chapter III: Methodology (Details of Dissertation)

- Research Questions/Hypotheses
- Preliminary Studies (Optional)
- Experimental Design Applied (e.g. data sources, data collection, analysis, evaluation, etc.)

Chapter IV: Timeline

Chapter V: Bibliography

-Columbia University, Department of Biomedical Informatics. "Dissertation Proposal Defense & Dissertation Defense." **www.dbmi.columbia.edu/dissertation-defense** (accessed March 21, 2019)

At the discretion and approval of the doctoral student's advisor, the dissertation proposal should consist of 12 – 30 single-spaced pages with half-inch margins and will be done in Times New Romans, 12-point font.

Example: This dissertation proposal from CHIP PhD graduate, Malvika Pillai (2022), is a good example covering the important sections for the dissertation proposal.

Format of The Dissertation Proposal Defense

Students are encouraged to use the Dissertation-Proposal-Defense-Meeting-Checklist as they prepare to defend the dissertation proposal.

The student must be enrolled in 3 credits of 994 hours the semester of their Dissertation Proposal Defense.

Each member of a student's dissertation committee must be present during this defense– either virtually or in person. The typical length of the dissertation proposal defense is 1 to 1.5 hrs. At the beginning, the

student should provide a presentation touching on the key areas covered in the methodology section of the dissertation proposal. The floor will then be opened for the committee members to ask follow-up questions on the dissertation proposal.

The primary goal is to determine whether the student has developed adequate methodology to address the research question and whether the student has grasped the issues surrounding their chosen dissertation research topic. The Secondary goal is for committee members to ask clarifying questions to accurately understand what the student aims to produce in the dissertation research.

The Q&A portion of the oral exam may last 45 min to an hour. After the Q&A period, the committee chair will request the student to leave the room temporarily and seek feedback from all the committee members. If all the members reach a judgment (pass or fail), the student will be asked to re-enter the room and the judgment will be conveyed to the student.

A student passes an examination only after the approval of a majority of the examining committee members.

Note – A graduate student who fails either a written or oral examination may not take the examination a second time until at least three months after the first attempt. The student should work with the academic program to identify areas needing additional emphasis and to establish an action plan to prepare for taking the exam a second time. A student who fails an examination for the second time becomes academically ineligible to continue in the Graduate School.

Immediately after the examination has been given, results should be sent to the CHIP Doctoral Program Coordinator on the **Dissertation Proposal Committee Form**.

Required Documentation for Dissertation Proposal

Students must inform the CHIP doctoral program coordinator that an oral doctoral examination has been scheduled via the **Notification of Scheduled Examination form**. Submitting this completed form signifies your Oral Examination has been scheduled, and that the CHIP doctoral program coordinator should supply the committee with the required Graduate School forms needed to certify their judgement (pass or fail) of your oral exam.

Upon successful completion of the dissertation proposal defense, each dissertation committee member must sign **Section II of the Graduate School's Doctoral Committee and Dissertation Project Form**. This form must be submitted to the CHIP Doctoral Program Coordinator.

Responsibilities of Student

It is the responsibility of the student to work with their advisor to develop their dissertation proposal within 1 semester of passing their comprehensive exam. If the timeline is delayed more than one (1) semester, students must meet with the Program Coordinator to provide a justification for the delay.

Students are responsible for keeping their committee up to date on their dissertation proposal status and draft editions. It is also the student's responsibility to address any feedback provided by the committee on the dissertation proposal.

Responsibilities of Advisor(s) & Committee Chair

The advisor is responsible for assisting the student in developing their dissertation proposal.

The advisor/committee chair is responsible for assisting in arranging the dissertation proposal defense, verifying that all committee members have reviewed the dissertation proposal and returned all feedback to the student prior to the defense.

Should the student fail the dissertation proposal defense, the advisor is responsible for contacting the Program Coordinator and meeting with the relevant parties to determine the next steps.

Responsibility of Dissertation Proposal Committee Members

All committee members should read and evaluate the written dissertation proposal. Written feedback should be provided to the student before the oral defense. Each committee member should prepare questions about the student's research and the dissertation proposal.

Committee members are responsible for approving the final version of the dissertation proposal. This may require an additional read of a portion of the dissertation proposal, or in some cases, all of the proposal if extensive edits are requested.

Admission to Candidacy

Admission to candidacy recognizes the achievement of a significant milestone in the career of a doctoral student and signifies that the only outstanding requirement for the degree is the dissertation. The student is then designated ABD—all but dissertation. Students will be designated as ABD after they have passed both the doctoral written and oral comprehensive examinations, have submitted an acceptable dissertation proposal, and have completed all courses required by the program.

Graduate School Required Documentation

After passing the dissertation proposal defense, students should complete the Application for Admission to Candidacy Form and submit it to the CHIP doctoral program coordinator. The form will be reviewed and approved by the CHIP program director prior to being submitted to the Graduate School. The ABD/Advanced to Candidacy milestone in ConnectCarolina will be marked 'complete' once the form is processed by the Graduate School.

Dissertation & Defense

Timing of Dissertation Research

Doctoral students have a total of 8 years to complete their doctoral degree from semester of first admittance into the program until the semester of their dissertation defense. Reapplication is required if the student goes beyond 8 years. Any student considering reapplication must first schedule a meeting with the program director, program coordinator, and advisor to discuss the student's timeline.

Doctoral students must be enrolled in 3 credits of 994 hours during any semester an action is taken on any doctoral examination. Students must complete the 994 Course Registration form and Learning Contract each semester they intend to enroll in this course.

Students must be enrolled in 994 during the semester of their dissertation defense (final oral defense).

Writing the Dissertation

The Graduate School only accepts dissertation formats produced according to the standards in the **Graduate School's Thesis and Dissertation Guide**. Documents must be prepared in a form consistent

with approved methods of scholarly writing and research. On matters of form, the student should also consult published manuals of style. Sample draft pages of the document may be pre-approved by Graduate School staff before the submission deadline, but final approvals will occur only after the student has submitted the final document.

The Defense (Final Oral Examination)

The final oral defense will be held only after all members of the committee have had adequate opportunity to review a draft of the doctoral dissertation. The dissertation advisor is responsible for determining that the draft is in an appropriate form for committee evaluation. The dissertation advisor should keep all other committee members fully aware of the progress the candidate is making on the dissertation. If substantial revisions are necessary, they should be completed before the final oral defense is scheduled. The dissertation advisor is responsible for informing the committee of their responsibility to conduct a careful review of the dissertation, and ensures *all* committee members are given sufficient time to review, provide feedback, and are aligned in terms of arranging a specific oral defense date.

Candidates will work with their advisor/committee chair to schedule a dissertation defense meeting with their dissertation committee. All committee members are expected to be present at the defense. When necessary, participation via distance-based capabilities is appropriate and should be mutually agreeable to the student and other committee members.

The defense may be open to the public, limited in attendance to the candidate and the committee, or a combination of the two. Questions that relate the dissertation to the field are appropriate.

The defense will begin with a concise presentation from the student over their dissertation research. Then a Q&A session from the committee will commence and will continue until the committee chair deems all appropriate questions have been addressed, and all discussion of the dissertation is complete. After the Q&A period, the committee chair will request the student to leave the room temporarily and seek feedback from all the committee members. After the committee members reach a judgement (pass or fail), the student will be requested to re-enter the room and the judgement will be conveyed to the student. At the time of the final oral defense the committee may require revisions and/or corrections to the student's written dissertation, but these should constitute relatively minor changes agreed to by a majority of the committee members.

A student passes an examination only after the approval of a majority of the examining committee members.

Required Documentation for Dissertation and Final Defense

Students must inform the CHIP doctoral program coordinator that an oral doctoral examination has been scheduled via the **Notification of Scheduled Examination form**. Submitting this completed form signifies your Oral Examination has been scheduled, and that the CHIP doctoral program coordinator should supply the committee with the required Graduate School forms needed to certify their judgement (pass or fail) of your oral exam.

Upon successful completion of the oral dissertation defense the entire committee should sign **Part III of the Doctoral Exam Report Form**. If no revisions or corrections are required to be made to the written dissertation, the entire dissertation committee can also sign **Part IV of the Doctoral Exam Report Form**.

The CHIP doctoral program coordinator will provide instructions to the committee chair to facilitate completing this form. Students are not expected to collect the signatures required for this form.

If revisions and/or corrections to the written dissertation are required, the dissertation committee must wait to complete Part IV of the Exam Report Form until the revisions/corrections are made by the student. Once revised/corrected the committee chair should inform the CHIP doctoral program coordinator to facilitate the completion of Part IV of the Doctoral Exam Report Form–collecting signatures from the entire committee, in addition to checking the box on the form to certify all required edits were made and the final dissertation document is approved for electronic submission. Finally, the completed Doctoral Exam Report Form should be sent to the Program Coordinator for submission to the Graduate School to record completion of the dissertation and defense.

Note - A graduate student who fails either a written or oral examination may not take the examination a second time until at least three months after the first attempt. The student should work with the academic program to identify areas needing additional emphasis and to establish an action plan to prepare for taking the exam a second time.

A student who fails an examination for the second time becomes academically ineligible to continue at the Graduate School.

Submission of Completed Dissertation

Completed theses and dissertations must be submitted by the deadlines posted on the Graduation Deadlines website, in final form designed to meet the standards defined in The Graduate School's Thesis and Dissertation Guide. The **Submission Checklist** is a helpful resource guide that outlines all formatting instructions for a successful submission. Documents submitted electronically will not require front page signatures. It is strongly suggested that every document be submitted well before the deadline to ensure ample time for format revisions.

Suggested Dissertation Submission Timeline

1. Writing Dissertation
    - To ensure that all standards are met, consult The Graduate School's Thesis and Dissertation Guide
    - Review and discuss how copyrighting may impact research and writing, including decisions about publishing one's own work. **The University Libraries' Scholarly Communications Office** is a campus resource on scholarly publishing practices.
    - Take advantage of campus resources such as workshops, University Libraries, and the Writing Center.

2. Before Dissertation Defense (final oral defense)
    - Set up account in the **ProQuest ETD Administrator**. Review the site for useful information about the online submission process.
    - Ensure that all committee members have reviewed the final dissertation draft

3. After Defense
    - Students should collect any edits required by committee members.
    - Final approval of all edits and changes must be approved by the committee.

- Submit the completed and approved dissertation to the Graduate School. Follow the checklist and submission instructions in the **Thesis and Dissertation Guide**.
- In addition to uploading a PDF of the dissertation, students should be prepared to provide added information (e.g., abstract, keywords, and subject headings) about the dissertation for indexing and identification purposes.
- After the dissertation has been submitted, students should check email regularly for updates. Make any required revisions promptly.
- Students will receive a final email notifying them that their ETD has been accepted. ProQuest will make the title and abstract of the dissertation available online shortly after graduation. The University Libraries will make the dissertation available within one semester.

Responsibilities of the Student

It is the student's responsibility to work with their advisor to conduct their dissertation research and write their dissertation. Students are expected to follow Graduate School standards defined in **The Graduate School's Thesis and Dissertation Guide**.

Students are expected to keep their committees informed of all dissertation drafts and developments. Students are also responsible for updating the Program Coordinator about their dissertation timeline.

Under the guidance of their advisor, students are responsible for addressing all appropriate changes and edits committee members suggest to their dissertation research and final draft.

Students are responsible for submitting their completed dissertation to the Graduate School and for applying to graduate in the appropriate semester through ConnectCarolina. Students are also responsible for addressing all **Important Graduation Dates** for the semester they intend to graduate in.

Responsibilities of the Advisor(s) & Committee Chair

The responsibilities of the advisor include guiding the doctoral student's dissertation research project and dissertation development. The advisor should be aware of all dissertation development, concerns, and if applicable, delays. The advisor is encouraged to reach out to the program with any questions or concerns about the dissertation process.

It is the advisor's responsibility to determine when the student's dissertation has reached a point of completion that it can be shared with the committee. The advisor is responsible for ensuring that the student addresses all appropriate concerns and revisions to the dissertation draft, submitted by the committee before the dissertation defense.

Once the advisor deems the dissertation complete, it is the responsibility of the advisor/committee chair to assist the student in arranging the dissertation oral defense with the committee. During the defense, the advisor/committee chair will be responsible for running the defense.

The advisor is responsible for ensuring that any edits or suggestions made by the committee during the defense are completed by the student and agreed to by a majority of the committee before the student submits the dissertation to the Graduate School.

Responsibilities of the Other Dissertation Committee Members

All committee members should read and evaluate the dissertation. Written feedback should be provided to the student before the oral defense. Each committee member should prepare questions about the student's research and the dissertation.

Committee members are responsible for approving the final version of the dissertation. This may require an additional read through of some, or all, of the dissertation if extensive edits are requested.

Preparing for Graduation

The following tasks and paperwork should also be completed during a student's final semester, by the given deadline specified for each.

Apply to Graduate

All candidates must apply to graduate through their ConnectCarolina accounts. Full instructions can be found at the University Registrar's Applying for Graduation site. Students should follow the Important Graduation Dates schedule set by the Office of the University Registrar.

Program Certification of Degree Requirements

Students should submit a Program Certification of Degree Requirement Form to the CHIP doctoral program coordinator upon successful submission to the ProQuest ETD Administrator site.