

Graduate Student & Advisor Handbook: Biology and Fisheries, Wildlife and Conservation Biology



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(Last revised December 2020)

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This information has been compiled as a reference guide for both graduate students and their advisors, to provide general information and policies concerning graduate study in the degree programs associated with the Biology Graduate Program and the CALS-Fish, Wildlife and Conservation Biology Graduate Program.

Programs of Study

All new students admitted to a graduate program are assigned a faculty member as their graduate advisor at the time of admission.

Inter-departmental degrees:

Master of Biology, Non-thesis (MR)

Master of Science, Biology (M.Sc.)

Master of Fisheries, Wildlife and Conservation Biology, Non-thesis (MR)

Master of Science, Fisheries, Wildlife and Conservation Biology (M.Sc.)

Doctor of Philosophy, Biology (Ph.D.)

Doctor of Philosophy in Fisheries, Wildlife and Conservation Biology (Ph.D.)

Students may transfer from one degree program to another after one semester and after securing permission from the Director of Graduate Programs and the Graduate School. Request to change program must be submitted in writing and signed by the student. The program change can only be requested during a semester when a student is enrolled in classes. Also, a student may be admitted to only one degree program at any given time.

Concentrations in Biology:

For students in the Biology Graduate Program (M.Sc. and Ph.D. options), they must select a concentration. The concentrations are: Aquaculture and Aquatic Sciences, Molecular, Cellular and Developmental Biology, Ecology and Evolution, Forensic Sciences, and Physiology and Behavior. Each concentration has specific course requirements as outlined in Appendix 1. We recommend that students consult with their faculty mentors before selecting a concentration; concentrations can be changed at each time, with permission from the faculty mentor and the DGP. For students whose research does not fit within one of these concentrations, they can select Integrative Biology as their concentration and work with their faculty mentor and advisory committee to develop their curriculum.

Other Opportunities:

In addition to the campus faculty, arrangements can also be made for students to work with adjunct faculty members at various research installations. New affiliations can be arranged if they do not currently exist. Some of the present opportunities that exist are:

1. National Marine Fisheries Services-Beaufort, NC
2. North Carolina State Museum of Natural History-Raleigh, NC
3. North Carolina Museum of Natural Sciences-Raleigh, NC
4. North Carolina Wildlife Resources Commission-Raleigh, NC
5. National Institute of Environmental Health Sciences-RTP
6. Environmental Protection Agency-Research Triangle Park

Centers on NC State Campus:

There are a variety of Centers on NC State campus that offer unique opportunities for graduate students. We encourage students to get involved with Centers that will further their educational and research goals. While this is not an exhaustive list, some Centers that students have been involved in are listed below. Please look at relevant Center websites to find out more information.

1. W. M. Keck Center for Behavioral Biology
2. Center for Geospatial Analytics
3. Genetic Engineering and Society Center
4. Office of Public Science
5. USGS Southeast Climate Adaptation Science Center

Diversity, Equity, and Inclusion

The Biology and FWCB Graduate Programs welcome and encourage participation from faculty and students regardless of race, religion, gender orientation, sexual orientation, age, or disability status. Our faculty and students are not only part of our programs but also part of home departments and colleges at

NCSU. Each of our participating departments and colleges have diversity statements and initiatives that we support and follow. Fostering diversity, equity and inclusion (DEI) is central to recruiting, retaining and training scientists with the diversity of cultures, backgrounds and experiences that we will need to find solutions to the biological problems our research, teaching and outreach programs aim to address. The diversity statements of two of our participating departments, Applied Ecology and Biological Sciences, are featured below:

“The Department of Applied Ecology welcomes students, collaborators, and colleagues regardless of race, religion, gender identification, sexual orientation, age or disability status. The more diverse our department is the better we are; only diverse research teams are capable of solving the global environmental challenges faced by a diverse society. We are committed to self-evaluation, encouraging ongoing conversations and building an inclusive community, and have programs in place to produce meaningful outcomes. We also believe that actions speak louder than words, and we hope that you will be a part of our process to identify and undo structural racism in our institutions and research fields, and our progress towards anti-racism and equality.”

“The mission of the Department of Biological Sciences’ DEI Committee is to: Help establish the department as an environment that welcomes diverse perspectives and backgrounds, promotes equitable treatment of students, faculty, and staff, and ensures that full participation in learning, mentoring, research, and engagement is accessible to all. As individuals, we will work to continually learn and respond to feedback by making changes that improve the environments in our classrooms, labs, and offices. As a department, we will pursue systemic changes that remove barriers to inclusion in learning, scholarship, engagement and outreach, technological and managerial innovation, and service.”

Master’s Degrees

MASTER OF BIOLOGY (NON-THESIS, MR)

This professional degree does not require a thesis and is considered a “terminal” degree which does not provide research training leading to a Doctoral degree. Students in this degree program normally do not continue further graduate work. However, many students continue onto professional schools (medical, veterinary, and dental). The Plan of Work is submitted at the end of the coursework in the final semester before graduation. The student’s faculty advisor is the sole member of the committee.

A Plan of Work must consist of a minimum of 36 hours:

- a. 30 of the 36 credit hours must be regular courses at the 500-800 level
- b. No more than 6 credit hours or fewer than 4 credit hours in Special Problems (INB631) can be included in the 36-hour minimum
- c. Research hours (INB695) cannot be substituted for INB631

- d. The Master of Biology Plan of Work does not include a minor
- e. The Plan of work must include one graduate level ethics course (such as PHI816, Introduction to Research Ethics; or FW730; or equivalent). AEC502 (Introduction to Biological Research) is optional and is not required.
- f. No more than 6 credit hours of 400 level courses may be included and those may not be AEC/BIO courses
- g. You must complete 18 credit hours of graded course-work on your Plan of Work

RECOMMENDATIONS:

1. While teaching experience for graduate students at the Master's level is considered valuable and is encouraged, any requirement for teaching experience is at the discretion of the faculty advisor.

MASTER OF SCIENCE IN BIOLOGY (M.SC.)

This research-oriented degree is designed to prepare the graduate to enter a position in research, research and management, or in preparation for study at the doctoral level. The candidate is expected to conduct independent research and submit a thesis in partial fulfillment of degree requirements.

The Advisory Committee for a Master of Science in Biology degree consists of a major advisor and at least two other Graduate Faculty members. It is not required to have a representative from a different curriculum. This advisory committee must be appointed by the end of the student's second semester, and can be changed if the student's research direction changes.

The Advisory Committee and the student develop a specific Plan of Work. The advisory committee, the Director of Graduate Programs, and the Graduate School must approve this plan of work and the student's thesis. Continuing financial support for graduate students requires that a Plan of Work be submitted by the end of the second semester for students in the Master's degree. Changes can be made to the Plan of Work after it has been submitted.

A Plan of Work for a Master of Science in Biology must consist of a minimum of 30 hours:

- a. 20 of the 30 credit hours must be regular 500-800 level courses
- b. The Plan of Work must include AEC502 (Introduction to Biological Research) and one graduate level ethics course (such as PHI816, Introduction to Research Ethics; or FW 730; or equivalent).

- c. The Plan of Work must include required courses based on the Concentration selected. Required coursework for each concentration is listed in Appendix 1.
- d. 6 credit hours of research credit (INB695) are to be included in the 30-hour limit (up to but not more than 6 research credits are to be included in the plan of work)
- e. Up to 6 credit hours of temporary courses (INB/AEC/BIO624, 824) can be included in the 30 hour total
- f. No more than 6 credit hours of 400 level courses may be included and those may not be AEC/BIO courses
- g. A minor is optional; if one is included, at least 9 credit hours of the Plan of Work are to be taken to meet a specific or interdisciplinary minor. The interdisciplinary minor includes at least three courses from outside the student's major department or program and courses from two or more areas. One committee member must represent the minor area.
- h. You must complete 18 credit hours of graded course-work on your Plan of Work

Master of Science in Biology students are required to present a seminar summarizing their research in conjunction with the Final Exam. The seminar will be open to all faculty, graduate students, and guests.

RECOMMENDATIONS:

- 1. While teaching experience for graduate students at the Master's level is considered valuable and is encouraged, any requirement for teaching experience is at the discretion of the student's advisory committee.
- 2. Students are expected to carry their research results to publication, both in scientific literature and in popular outlets where appropriate.

MASTER OF FISHERIES, WILDLIFE, AND CONSERVATION BIOLOGY (FWCB) (NON-THESIS)

This professional degree is designed to prepare the graduate to enter a position in management, administration, or education. The professional degree normally is not pursued in preparation for a doctoral degree. The candidate will be expected to obtain an internship to gain experience in the field of concentration, and submit a professional paper in partial fulfillment of degree requirements.

- 1. A Plan of Work must consist of a minimum of 36 hours:

- a. 30 of the 36 hours must be regular 500-800 level courses
- b. No more than 6 credit hours, or fewer than 4 credit hours, of Special Problems (FW 631; INB 631) are to be included in the 36-hour minimum
- c. No more than 2 credit hours, or less than 1 credit hour, of Seminar (FW602 or AEC502) are to be included in the Plan of Work. Seminar courses do not need to be FW/AEC courses.
- d. No more than 6 credit hours of 400 level courses may be included and those may not be AEC/FW courses
- e. The Master of FWCB Plan of Work does not include a minor
- f. Research hours (FW695; INB695) are not to be included on a Plan of Work
- g. You must complete 18 credit hours of graded course-work on your Plan of Work

Preparation of a professional paper for submission to the advisory committee is required in advance of the final exam. Credit for the professional paper may be given under Special Problems courses.

A final seminar presentation is required summarizing the professional paper, either in conjunction with the Final Exam or at a programmatic seminar. If given in conjunction with the Final Exam, the seminar will be open to all faculty, graduate students, and guests.

MASTER OF SCIENCES IN FISHERIES, WILDLIFE, AND CONSERVATION BIOLOGY

This research-oriented degree is designed to prepare the graduate to enter a position in research or research and management. The Master of Science degree also is pursued in preparation for subsequent study at the doctoral level. The candidate will be expected to undertake independent research and submit a thesis in partial fulfillment of degree requirements.

A Plan of Work must consist of a minimum of 30 hours:

- a. 24 of the 30 credit hours must be regular 500-800 level courses
- b. 6 credit hours of research (FW695; INB695) are to be included in the 30 hours
- c. No more than 2 credit hours, or less than 1 credit hour, of Seminar (FW602 or AEC502) are to be included in the Plan of Work. Seminar courses do not need to be FW/AEC courses.

- d. No more than 6 credit hours of 400 level courses may be included and those may not be AEC/FW courses
- e. At least 9 credit hours on the Plan of Work are taken to meet a specific or interdisciplinary minor. This minor includes at least three courses from outside the student's major department or program and courses from two or more. One committee member must represent the minor.
- f. You must complete 18 credit hours of graded course-work on your Plan of Work

Students are required to present a final seminar for summarizing the thesis research, either in conjunction with the Final Exam or at a programmatic seminar. If given in conjunction with the Final Exam, the seminar will be open to all faculty, graduate students and guests.

RECOMMENDATIONS:

- 1. While teaching experience for graduate students at the Master of Science level is considered valuable and is encouraged, any requirement for teaching experience is at the discretion of the advisory committee.
- 2. Students are expected to carry their research results to publication, both in scientific literature and in popular outlets where appropriate.

CO-MAJORS AND TRANSFER CREDITS (LIMITED TO 12 CR. HRS)

Co-majors: Graduate students wishing to co-major must obtain approval from both programs. Co-majors must meet all requirements for majors in both programs. A representative from each program must also be included on the student's advisory committee. A student may not co-major in two different degree levels, i.e., a Master's in one discipline and a PhD in another.

One degree is awarded and the co-major is noted on the transcript. Enrolled co-majors will be classified in only one program for record purposes. Students may co-major at the Master's level in programs with identical degrees, although the degrees do not necessarily have to have identical requirements (e.g. two Master of Science programs, one with a thesis requirement and one without).

Transfer credit: No more than 12 credit hours of Master's work, which have been completed with a grade of "B" or better, may be considered for transfer, provided they have been completed in a graduate or post-baccalaureate classification at an accredited Graduate school. Exceptions are allowed for transfer from foreign institutions if the Department or program provides the Graduate School with adequate documentation that: (1) the course is relevant to the degree, (2) the course had appropriate content, (3) the level of instruction resulting in student competencies at least comparable to those of students taking the

equivalent course at NCSU, and (4) the course was taught by faculty who are qualified to teach at the Master's degree level.

Transfer of graduate credits earned while enrolled in an undergraduate program at NCSU may be considered for transfer to a master's program if (1) the course was 400-level or higher, (2) they earned a B or higher, (3) the course was not counted toward fulfillment of undergraduate degree requirements. Transfer of graduate credit from a previous graduate degree at NCSU can be used in the current master's program if (1) the course was 500 to 700 level, and (2) they earned a B or higher.

FINAL EXAMS & PLANS OF WORK

Master of Science degree programs require a final oral examination administered by the Advisory Committee (note: this does not apply to the Master of Biology Non-thesis degree). The form for scheduling this exam is called [Request to Schedule Master's Oral Examination](#) and is available online. Requests must be submitted to the Graduate School at least two weeks prior to the proposed examination date. This means that the request must be given to the Graduate Services Coordinator at least three weeks prior to the exam to have the exam approved by the Director of Graduate Programs, before forwarding to the Graduate School. Please observe this scheduling deadline; any delays may change your exam date. Note that all requirements for the Master's Degree must be completed within 6 calendar years.

Students who complete the Master of Science degree and expect to enter the Ph.D. program must have demonstrated strong academic performance and ability to perform research on an independent basis. The Advisory Committee, by unanimous consent, decides upon the eligibility of each student to enter the PhD program. Upon recommendation of the Advisory Committee, the Admissions Committee and the Director of Graduate Programs, the Graduate School may approve admission to the PhD program.

TIMELINE FOR REQUIRED DOCUMENTS – MASTER'S PROGRAMS (STARTS FROM MATRICULATION DATE)

1st Semester:

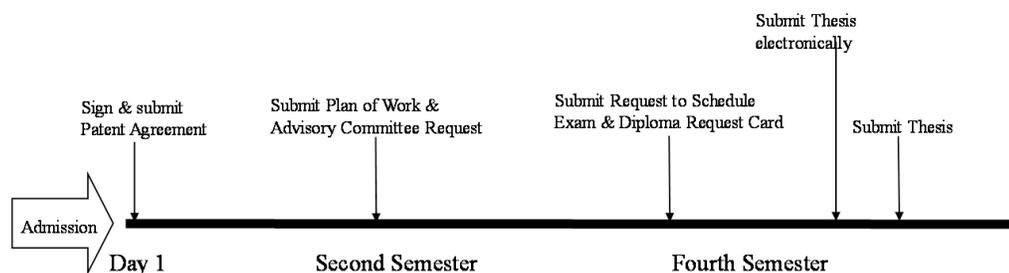
1. Sign Patent Agreement (this will be done in My Pack Portal). This is required the first week of classes. See NC State Policies section of the Graduate Catalog.
2. Outstanding Transcripts submitted to the Graduate School. A transcript that confirms your degree was awarded must be submitted to the Graduate School.

2nd Semester:

1. Submit Advisory Committee and Plan of Work for approval to the Department.

2. Request for Post Baccalaureate studies and/or transfer credit.
3. Request for Co-Major (student must submit a written request to co-major and receive approval from both Departments).
4. Request for Minor. Request for Minor at other institutions.
5. Request for External Committee Members & Technical Consultants (a copy of the CV is needed with this request).

Master's Timeline



Maximum 6 calendar years

Note: Students may not be cleared for graduation or permitted to schedule final oral examinations in a given semester unless the Plan of Work for the degree program (or option within the degree program) is submitted to the Graduate School prior to the first day of classes for that semester. In addition, a student's Plan of Work must be submitted to the Graduate School at least six weeks before a final oral examination will be scheduled for that student.

DOCTORAL DEGREE PROGRAMS (BIOLOGY & FWCB)

ADVISORY COMMITTEE & PLAN OF WORK

The Advisory Committee consists of the major advisor and at least three other Graduate Faculty members; one of the three other Graduate Faculty members must represent another department (and may serve as the minor representative if a minor is included on the Plan of Work). For both your oral preliminary and final exam there will be one additional committee member, the Graduate School Representative (GSR), who is assigned to you by the graduate school when you submit your Plan of Work (see below). Complete appointment of the committee before the end of the second semester. This committee, and the student, prepare a Plan of Work, which includes the subject of the dissertation. The Plan of Work should be completed prior to the end of the third semester of residence.

Graduate School Representative: When a Plan of Work is submitted, the Graduate School will appoint a GSR for Doctoral candidates. It is the student's responsibility to contact the GSR assigned when scheduling the preliminary and final exams. The GSR will attend both the oral preliminary and oral final exam but is not considered a full member of the committee.

A minimum of 72 credit hours is required to receive a doctoral degree. Students cannot take 400-level or lower courses or 900-level courses to satisfy the 72 credit hours.

- a. For a student who has a master's degree from a university other than NC State, a maximum of 18 hours of relevant graduate credit from the master's degree may be applied toward this minimum.
- b. If working on a master's degree at NC State continues for a doctoral degree without a break in time, up to 36 credit hours of required course work taken while in master's status may be used to meet minimum requirements for the doctoral degree.
- c. Doctoral students must have a minimum of 10 hours of research credit (INB893-INB895; FW893-FW895).
- d. Inclusion of a minor on the Plan of Work is optional; if one is included, 9-10 hours of the total credits are taken in the minor, whether in a specific field or interdisciplinary. The interdisciplinary minor includes at least three courses from outside the student's major department or program and courses from two or more areas. One of the committee members must represent the minor field.
- e. FWCB students are required to take FW730, Ethics in Fisheries, Wildlife, and Conservation Biology (2 credits) and AEC502 (Introduction to Biological Research) (or equivalent). If a FWCB student has a MS degree and has taken a class equivalent to AEC502, they can opt out of AEC502 with permission from their advisor and the DGP.

- f. Biology students are required to take AEC502 (Introduction to Biological Research) and one graduate level ethics course (such as PHI816, Introduction to Research Ethics; or FW730; or equivalent). If a Biology student has a MS degree and has taken a class equivalent to AEC502, they can opt out of AEC502 with permission from their advisor and the DGP.
- g. For Biology students, the Plan of Work must also include required courses based on the Concentration selected. Required coursework for each concentration is listed in Appendix 1.

The PhD program in Biology and FWCB no longer requires a student to show proficiency in a foreign language. However, at the discretion of the Advisory Committee, the student may be required to demonstrate a reading knowledge of one or more foreign languages or proficiency in an appropriate area of study such as mathematical modeling, computer programming, etc. etc. The latter area is selected by the Advisory Committee and approved by the Director of Graduate Programs.

PRELIMINARY COMPREHENSIVE EXAMINATIONS

After the second year of graduate study and not later than one semester before the final oral defense examination, each doctoral student is required to take the preliminary comprehensive examinations. The examinations consist of two parts: written examinations and an oral examination. The chair of the Advisory Committee decides the format and requirements of the written exam. Requirements for written examinations in the minor field are left to the discretion of the minor department. The written portion may be conducted by each member of the advisory committee preparing a set of questions for the student's response. Answers to each set are returned to the appropriate member for grading.

The questions involved may cover any phase of the course work taken by the student during graduate study or any subject logically related to an understanding of the subject matter in the major and minor areas of study. The questions are designed to measure the student's mastery of the subject matter and the adequacy of preparation for research. Failure to pass the written preliminary examinations terminates the student's work at this institution, subject to departmental and/or school policies with respect to re-examination.

The Advisory Committee must provide evidence to the Graduate Services Coordinator that departmental written preliminary exams have been successfully completed before the preliminary oral exam can be scheduled. Upon satisfactory completion of the written portion of the preliminary examinations and after completion of course work relevant to the examination, authorization for the preliminary oral examination is requested from the Graduate School. The form for scheduling this exam is called [Request for Approval to Schedule Doctoral Oral Examination](#) and is available online. Requests must be to the Graduate School at least two weeks prior to the proposed examination date. This means that the request must be given to the Graduate Services Coordinator at least three weeks prior to the exam for Director of Graduate Programs approval, before forwarding to the Graduate School.

The oral Preliminary Examination is conducted by the student's advisory committee and a representative from the Graduate School and is open to all graduate faculty members. The Graduate School will notify the student and the examining committee when the exam has been approved. The oral examination is designed to test the student's ability to relate factual knowledge to specific circumstances, to use this knowledge with accuracy and promptness and to demonstrate a comprehensive understanding of the field of specialization and related areas.

A unanimous vote of approval by the members of the advisory committee is required for the student to pass the preliminary oral examination. However, approval may be conditioned on the successful completion of additional work in some particular field(s). All committee actions may be appealed by written application to the Graduate Dean.

Failure to pass the preliminary oral examination terminates the student's work at this institution unless the examining committee recommends a re-examination. No re-examination may be given until at least one full semester has elapsed, and only one re-examination is permitted.

CANDIDACY

A doctoral student is admitted to candidacy upon passing the preliminary examinations without conditions or after fulfilling any conditions specified by the advisory committee.

FINAL ORAL DEFENSE EXAMINATION

The final oral examination is scheduled (1) after the dissertation is complete except for the necessary revisions after the examination, (2) not sooner than one semester or its equivalent after admission to candidacy, and (3) not before all required course work has been completed or is currently in progress. The examination consists of the candidate's defense of the methodology used and the conclusions reached in the research, as reported in the dissertation. It is conducted by an examining committee, which consists of the student's advisory committee and a Graduate School Representative. This examination is open to the University community. A unanimous vote of approval of the advisory committee is required for passing the final oral defense examination. However, approval may be conditioned on the student's meeting specific requirements prescribed by the student's advisory committee. Failure of a student to pass the examination terminates one's work at this institution unless the advisory committee recommends a re-examination. No reexamination may be given until one full semester has elapsed, and only one re-examination is permitted.

The form for requesting permission to schedule the final oral defense examination is the same as that used for the oral preliminary examination (see above). It must be sent to the Graduate School at least two weeks prior to the proposed examination date. In order for the department to meet this deadline by preparing the request and having it signed by all parties involved (certain minors requests have to be counter-signed by the Director of Graduate Programs/coordinators of other programs), it is necessary to have the request to schedule the exam to the Graduate Services Coordinator three weeks before the

scheduled examination date. The Graduate School will not accommodate departmental requests if this date is not met. This two-week period will begin when all the documents are in order. If a request is received without all documents in order, the request will be returned to the department. The following is a checklist to follow before scheduling exams:

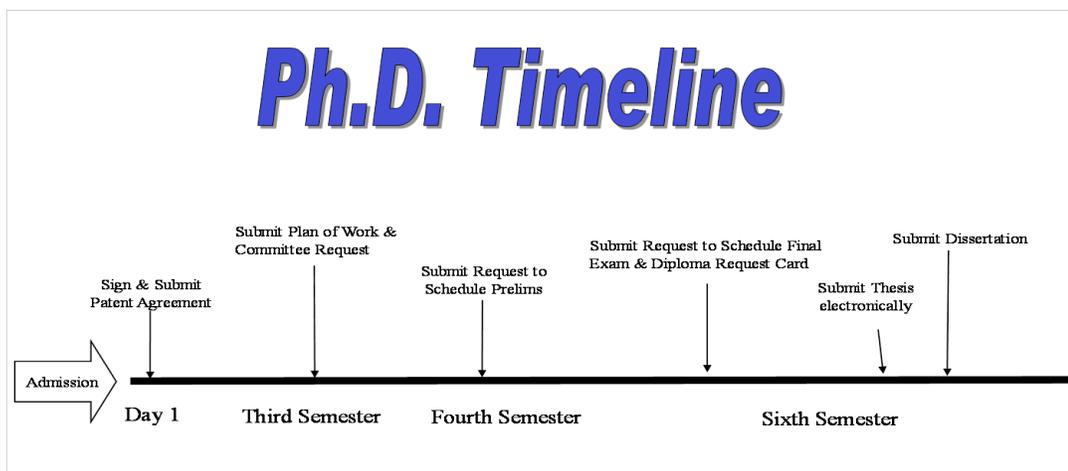
1. A signed Patent Policy Agreement form must be filed with the Graduate School.
2. Student must have a committee appointed and a Plan of Work approved.
3. Student's GPA must be 3.0 or higher.
4. Doctoral residence requirements must be met.
5. Student has completed the second year of study, completed appropriate coursework, and passed language exam if committee requires a language exam. At least four calendar months must elapse between the preliminary oral exam and final oral defense exam.
6. The final oral defense exam is scheduled after the dissertation is completed. This exam consists largely of a defense of the dissertation but may include tests of other knowledge.

The Departments require Doctoral students to present a final seminar summarizing the dissertation research, either in conjunction with the Final Exam or at a programmatic seminar. If given in conjunction with the Final Exam, the seminar will be open to all faculty, graduate students and guests.

Doctoral students are required to have teaching experience; therefore, they must TA at least one semester.

Most forms associated with the doctoral degree can be found on the Graduate School Web Page:

<https://grad.ncsu.edu/faculty-and-staff/forms/graduate-school-forms/>



Completion maximum time 10 calendar years

Note: Students will not be cleared for graduation or permitted to schedule preliminary or final oral examinations in a given semester unless the Plan of Work for the degree program (or option within the degree program) in which they plan to graduate is submitted to the Graduate School prior to the first day of classes for that semester. In addition, a student's Plan of Work must be submitted to the Graduate School at least six weeks before a preliminary or final oral examination will be scheduled for that student.

RESIDENCE CREDIT REQUIREMENTS

Residence credit is determined by the number of semester hours of graduate work carried during a regular semester.

Master of Science One full academic year (2 semesters)

PhD Two Residence Credits (See Catalog)

9 or more credit hours = 1 residence credit

6-8 credit hours = 2/3 residence credit

6 credit hours = 1/3 residence credit

ACADEMIC STANDING

Courses numbered 500-599 & 700-799 are assigned letter grades (A, B, C, D or F) with +/- grading. In order to receive graduate degree credit, a minimum grade of C- is required. Courses numbered 600-699 & 800-899 are graded S/U. S/U grades are not used in computing the GPA; however, a student who receives a U in any course will not receive credit for that course and may be required to repeat it.

The grade of Incomplete (IN) may be given in any course at the discretion of the instructor. A student who receives an IN must complete the unfinished work to have the Incomplete converted to a final grade by the end of the next semester in residence. Otherwise, the IN will automatically convert to No Credit (NC).

Except in the case of inter-institutional registration, grades on courses transferred from another institution will not be included in computing the GPA.

Graduate students are placed on academic probation if they accumulate between nine and 18 credit hours and have a GPA of less than 3.0. A student's graduate study is terminated if 18 or more credit hours are earned with a GPA of less than 3.0. In the case of program termination, no further registration in a graduate classification will be permitted. Under extenuating circumstances, the student will be reinstated upon the written recommendation of the department and approval by the Graduate Dean. Departments have the prerogative of recommending the termination of a student's graduate admission at any time. A student on academic probation is not eligible for appointment to a graduate fellowship or assistantship.

Note: it is particularly important to watch out for this problem during the first semester or two of study, particularly if few courses with letter grades are taken. For example, a first-semester student taking two S/U-graded courses and earning a B- in a letter-graded course would be put on probation.

Grades	Grade Points
A+	4.33
A	4
A-	3.66
B+	3.33
B	3
B-	2.66
C+	2.33
C	2
C-	1.66
D+	1.33
D	1
D-	0.66
F	0

CONTINUOUS REGISTRATION POLICY

After a student is admitted to the Graduate School and enrolls for the first time, they are required to maintain continuous registration (i.e., be enrolled each semester, excluding summer sessions, until graduation or until their graduate program has been terminated). The following caveats and exceptions apply:

1. A student in good academic standing who must interrupt their graduate program for good reason may request a leave of absence from graduate study for a definite period of time, normally not to exceed one year. The student should initiate the request with the Graduate Services Coordinator after consulting the chair of their advisory committee and have the form endorsed by the Director of Graduate Programs before submitting it to the Graduate School. The Graduate School should receive the request at least one month prior to the first day of the term involved.
2. All students who take their final oral examination or submit their thesis or dissertation to the Graduate School during either summer session must be registered for either the first or second summer session.
3. Students who complete all requirements for the degree prior to the first day of the fall or spring semester or the first summer session, may graduate during the next semester or summer session without being registered as long as they were registered in the immediately preceding semester or summer (either session) with at least one credit hour.
4. In order for students to submit their thesis or dissertation to the Graduate School or have their final oral examination after the last day of a semester or summer session but before the first day of the next semester or summer session, they must have been registered with at least one credit hour in the semester or summer session which immediately preceded the date that the thesis or dissertation was submitted or the exam was held.
5. Students whose only remaining requirement for graduation is removal of an "IN" in a course are not required to be registered to remove the "IN" and graduate. However, students who do not remove any remaining IN grade(s) in the semester or summer following the completion of all other requirements and are not registered during the same semester or summer will be terminated at the end of that semester or summer due to non-compliance with the continuous registration policy.

IMPORTANT TIME LIMIT INFORMATION

MASTER’S DEGREES

All requirements for the master's degree must be completed within six calendar years; beginning with the date the student commences courses carrying graduate credit applicable to the degree program, unless a more restrictive time limit has been established by the academic school/college or program. Pay particular attention to this time limit if you consider using on your Plan of Work courses you took prior to starting your graduate degree program. For example, if a student includes on their Plan of Work a graduate course taken three years before entering the program (whether taken at NC State or transferred from elsewhere) then the student will have only three remaining years to complete their degree.

DOCTORAL DEGREES

All students admitted to doctoral programs are allowed a maximum of six calendar years from admission to the doctoral program to attain candidacy for the degree and a maximum of ten calendar years to complete all degree requirements. Academic schools/colleges or programs may have more restrictive requirements than the above stated University policy.

TIME LIMIT EXCEPTIONS

The Graduate School must approve exceptions to these time limitations. The Dean will consider and evaluate the specific nature of the circumstances and compelling reasons that prompted the advisory committee and the program, recognizing the significance of discipline and commitment in meeting deadlines, to make the request for exception to policy.

A written request for an extension of time in order to complete degree requirements should include the following:

A statement documenting the circumstances that justify the request for a time extension; A statement of the impact the proposed extension would have on the validity of the student's course work and program; Evidence of endorsement of the request from the student's advisory committee and the DGP. The request should proceed from the committee to the DGP to the Graduate School.

The Graduate School will respond to each request for a time extension within a maximum of five working days of receipt of the request.

FINANCIAL SUPPORT AND THE GSSP (GRADUATE STUDENT SUPPORT PLAN)

The department provides Teaching Assistantships (TAs) to support some graduate students and encourage teaching experience. A half-time TA is expected to spend a total of 20 hours/week in laboratory teaching and other associated duties.

A number of other types of support are available. These include Grant Research Assistantships (RAs) and Fellowships. All recipients of a TA, RA or Fellowship of at least \$3,000 per semester (\$8,000 annualized) must be registered full-time as required by the Graduate Student Support Plan (see below). Please note that to be eligible for any graduate assistantship (RA or TA), a student must have a GPA of 3.00 or higher. This aligns with the Graduate School's academic standing requirement for graduate students (see above).

Students not financially supported by a TA appointment (students with a fellowship or RA) can normally obtain teaching experience by teaching one or more laboratory sections on a volunteer basis.

Please note that a TA solicitation memo/email is sent out in February for the subsequent fall semester and September for the spring semester. This memo is sent to all graduate students and their major professors. It is the responsibility of the graduate student in consultation with their faculty advisor to complete this memo and return it by the stated deadline to the Graduate Services Coordinator in order to be considered for a Teaching Assistantship position for the following semester. The TA appointments are nine-month appointments.

The Graduate Student Support Plan (GSSP) provides tuition remission and health insurance for those students supported by either a teaching or research assistantship or fellowship, with certain time limits:

- A Masters student with no previous graduate coursework is covered by the GSSP for 4 semesters.
- A PhD student without a MS or continuing on for a PhD immediately after completing a MS at NC State is covered by the GSSP for 10 semesters.
- A PhD student with a Masters prior to applying is covered by the GSSP for 8 semesters.
- The GSSP does not cover tuition for summer courses.
- The GSSP does not cover fees; students are responsible for paying their own fees, unless their advisor pays them from grant funds.

The GSSP limits and exceptions described above only apply to tuition remission; students supported on assistantships continue to be eligible for health insurance as long as they maintain full-time enrollment. See the Graduate School Handbook 3.15, section C, for the minimum registration requirements, which explains what constitutes full-time enrollment (<http://catalog.ncsu.edu/graduate/graduate-handbook/>). Eligible students who are supported by the GSSP are automatically enrolled in the health insurance policy. See the GSSP Handbook for information about declining GSSP health insurance. The effective date of health insurance provided by the GSSP is based on the effective date of the student's qualifying appointment and is always the 16th of the month. Insurance premiums are paid by the GSSP on a monthly basis, the month running from the 16th through the 15th of the following month. Terminations are effective on the 15th of the month if a student becomes ineligible for an assistantship. Students should consult the GSSP Handbook (link below) for other pertinent information related to health insurance.

For U.S. citizens who are not legal residents of North Carolina, the GSSP covers the non-resident portion of tuition for the first year of graduate study, in addition to in-state tuition. These students can establish NC residency after one year by meeting certain criteria. The steps necessary to establish NC Residency for tuition purposes are described in detail in the Graduate Student Survival Guide. It is very important for new out-of-state US students to initiate steps to establish NC residency immediately upon arrival to avoid liability for the non-resident portion of tuition after the first year. Many of these actions must be taken before the tenth day of the semester; delaying them may result in residency not being granted. International students cannot establish legal residency; therefore, the GSSP covers the non-resident portion of their tuition for the duration of their studies, subject to the time limits described above. The details on establishing residency are found at the [graduate school webpage](#).

Both students and faculty should familiarize themselves with the GSSP criteria in the Graduate Student Support Plan Handbook published by the Graduate School (<http://www.ncsu.edu/grad/support-plan/> and <http://www.ncsu.edu/grad/support-plan/docs/gssphdbk.pdf>).

TUITION AND FEES OBLIGATION

If a student's appointment ends in mid-semester, or if a student withdraws from school after the deadline for withdrawing or dropping a course, the student is responsible for paying a full semester's tuition. In a case where the student is granted tuition remission, the tuition remission ends the day the appointment ends, and the Student Accounts office bills the student for that semester's tuition, unless the Program is willing, and has tuition remission funds available, to pay it for the student. As these funds are used only for those students on assistantships, the Program may not be able to respond to such requests. Please note students or their advisor may be required to pay their fees.

ELECTRONIC THESES AND DISSERTATIONS (ETD)

You are required to submit your thesis or dissertation electronically. Scheduled workshops and on-line instructions (<http://www.ncsu.edu/grad/etd/>) are provided to assist students with the entire ETD process. ETDs can be created in virtually any word processing program. After the thesis or dissertation is completed, you then convert it into a PDF. The ETD is then submitted on-line and reviewed by the Thesis Editor. Once approved, it is archived in the NC State Library. The ETD can also be accessed online to be made available for future researchers and scholars.

THESIS AND DISSERTATION SUBMITTAL

While your completed thesis or dissertation is submitted electronically to the Graduate School, the department suggests that you supply a bound hard copy for the departmental archives.

Binding is available through Wolf Xpress Print and Copy Services, call for a quote. The student must provide Wolf Xpress with the copies they wish to have bound; each copy should be submitted in an individual envelope, one copy per envelope. The binding process takes about one month, and payment for the binding is due in cash at the time the bound copies are returned from the bindery.

A master's thesis can be bound with a burgundy or black cover and gold or white letters on the spine while a doctoral dissertation can be bound with a blue or black cover and gold or white letters on the spine. The student's name, degree and date may be imprinted on the spine but not the thesis or dissertation title. The title may be added to the front cover at a cost.

[Wolf Xpress Print and Copy Services](#) is in the Talley Student Union, or at 515-2131.

STUDENT ACTIVITY REPORTS

As part of the ongoing assessment of our graduate program required by the Graduate School, both the Biology and CALS-Fisheries, Wildlife, and Conservation Biology programs require all students file annual student activity/evaluation reports with the GSC. These reports are read by the DGP and students will be contacted in the term in which they submit the report with feedback on their progress.

SOME AWARDS AND LECTURES

The Betsy Tharrington Award. This award is given each year to an outstanding Teaching Assistant in Biological Sciences. It was established in honor of Betsy Tharrington, who was an outstanding graduate student and Teaching Assistant. She was killed in an automobile accident before completing her studies. Her family, friends, and colleagues established the endowment as a memorial for quality teaching.

The Reinard Harkema Memorial Endowment. These awards were established in 1978 in recognition of Dr. Harkema's long (42 years) and distinguished service to NC State University and his genuine interest in students. The funds are used for three purposes:

1. Graduate students may be given financial support to attend summer field stations.
2. The outstanding graduate/undergraduate student is given a certificate and gift.
3. Small research awards may be given to graduate and undergraduate students to support meritorious research.

Bartholomew B. Brandt Lecture. Through the generosity of the Dr. Brandt family, monies have been designated for the improvement of academic programs. The speaker is an outstanding scientist, chosen by graduate students, and presents in the spring.

Fred and Joan Barkalow Distinguished Conservationist Lecture. This annual event is held on the campus of NC State University and is sponsored by the University, the North Carolina Conservation Educational Foundation (NC Wildlife Federation), and by the NC Chapter of the Wildlife Society. Activities include an afternoon lecture and informal evening discussion. The purpose of the lecture is to provide an annual event to honor Dr. Barkalow's many contributions and years of dedicated public service to the conservation of our state's and nation's natural resources.

OTHER ITEMS OF INTEREST

1. Department Assistance: Graduate students are called upon from time to time to assist staff and faculty in promoting the welfare of the department. This may include helping with seminar programs, Open House activities, registration, graduation and any other activity that will enhance and promote the objectives of the department for the good of the students, staff and

faculty. We expect that students will be willing to help with these activities, and these activities can also be listed on a student's CV showing their interest in building community.

2. Seminars: There are several Departmental and Center seminars during the semester including the Biology, Ecology, and Evolution Seminars (BEES) which are held most Thursdays at 3:30 p.m. in 101 David Clark Labs. Other seminars include those in Entomology, Genetics/GGI, MEAS, Keck Center Seminars, etc. etc. External speakers, as well as NCSU speakers give talks on a variety of research topics. Participation, regardless of the topic, is strongly encouraged. The list of speakers and seminar titles is available through the different Department or Center web sites.
3. Graduate Student Associations: There is a campus-wide Graduate Student Association (GSA) that seeks to provide a good environment for the achievement of the academic goals of students. Graduate students have formed their own, active group (BSAB) for the purpose of attaining this goal within the department. More information about the association is at: <https://getinvolved.ncsu.edu/organization/842>
AND Twitter handle: @NCSUGradBiology
They elect members to assist in seminars, serve on graduate service committees, organize some annual program events, and provide representation and advice to the DGP. There is some money available from the Graduate Student Association for social events, some travel to scientific meetings, and thesis binding.
4. Office Space: Ph.D. and Thesis Master's graduate students having TAs, RAs, or fellowships will be given assigned space in their home department. Non-thesis Master's students will be provided desks as space permits.
5. Keys: Keys to laboratories and necessary office spaces may be obtained from Freha Legoas for a refundable deposit: \$5.00 for keys. Your advisor will need to approve a key request. The advisor can e-mail Freha. Your student ID is required to pick up keys.
6. Phones: Any office on campus can be reached when dialing from a campus phone with the last 5 digits in the phone number. Calling off-campus requires dialing a 7 first and then the number. When calling long distance (for business purposes only) dial 7-1-area code-phone number.
7. Mail: Each student will be assigned a mailbox. The mailroom is located in 115 David Clark Labs.
8. Use of departmental supplies and equipment:
 - a) FAX Machines: A FAX machine is available to graduate students for teaching materials only in room 117 of David Clark Labs. The number is 515-2698.

b) Copy Machines: A departmental copy machine for teaching materials only is located in 117 David Clark Labs.

**The use of departmental copying machines is restricted to official departmental programs. Students are not allowed to use departmental stationary or telephones except for official University business. Personal copies should be made using a personal WolfCopy card or your university ID card on machines that take these cards, located at the libraries and other locations around campus.

9. Safety: The department is very much concerned with the safety of all individuals in the department. All graduate students are required to attend a safety course, to review the lab safety plan and Institutional Animal Care and Use (IACUC) plans for the lab(s) in which they work, and to sign the necessary papers documenting their training. All new students are required to attend safety training upon arrival at NCSU, TAs should attend the training annually, and RAs should attend the training every 3 years.

10. Web Sites of interest: <http://www.ncsu.edu/grad/>

<http://www.ncsu.edu/registrar>

<http://appliedecology.cals.ncsu.edu>

<https://bio.sciences.ncsu.edu/>

<http://pfl.grad.ncsu.edu/>

Appendix 1. Biology Concentrations, Required Coursework

All MS and Ph.D. students in Biology are required to take AEC 502 (Introduction to Biological Research)* and one graduate level ethics course (such as PHI816, Introduction to Research Ethics; or equivalent). In addition, the following concentrations have required coursework, with details specified for MS and Ph.D. students. Please consult the following website for deviations in the terms courses are offered, staffing, and credit hours:

<https://webappprd.acs.ncsu.edu/php/coursecat/directory.php>

*If you are an entering PhD student with an MS degree and have already taken a class equivalent to AEC 502, you may be able to waive this course requirement. Please consult your advisor and the Biology DGP.

Aquaculture and Aquatic Sciences (Concentration Chair: Brad Taylor, Applied Ecology)

Students in the Aquaculture and Aquatic Sciences Concentration must take a quantitative course and restricted electives, as outlined below.

Quantitative Requirement – MS and Ph.D. students choose one of the following:

- ST511 or ST512, Experimental Statistics in Biological Sciences I & II (Fall&Spring; staff)
- Bioinformatics course, such as BIT815, or others (with permission from Advisory Committee)
- AEC510, Machine Learning Approaches in Biology (Fall odd years; Reading)
- ST505, Applied Nonparametric Statistics (Spring; Lu)
- BMA567, Modeling Biological Systems (Alternate years; Gross)

Restricted Electives – choose minimum of one for MS, two for Ph.D.:

- AEC/ENT509, Ecology and Conservation of Freshwater Invertebrates (Spring odd years; Taylor)
- AEC515, Fish Physiology (Fall even years; Reading)
- AEC519, Freshwater Ecology (Spring even years; Taylor)
- AEC624, Marine Fisheries Ecology (Fall, Buckel)
- AEC592, Management of Small Impoundments (Fall even years; Kwak)
- AEC592, Aquatic Plant Ecology (Fall; Burkholder)
- AEC592, Advanced Biology of Fishes (Fall; Reading)
- AEC624, Marine Fisheries Ecology (Fall, Buckel)
- AEC710, Sampling Animal Populations (Spring; Collazo)
- AEC726, Quantitative Fisheries Management (Fall even years; Fischer)
- BMA772, Stochastic Processes in Biology (Spring; Gross)
- FW511, Human Dimensions of Wildlife (Spring odd years; Peterson)
- MEA549, Principles of Biological Oceanography (Fall; Eggleston)
- NR595, Natural Resource Policy and Management (Fall; Hess)
- TOX715, Environmental Toxicology (Fall; Buckwalter)
- ZO524, Comparative Endocrinology (Spring; Borski)

Molecular, Cellular and Developmental Biology (Concentration Chair: Scott Belcher, Biological Sciences)

Students in the Molecular, Cellular and Developmental Biology Concentration must take quantitative and biotechnology requirements along with restricted electives, as outlined below.

Quantitative Biology Requirement – MS and Ph.D. students choose one of the following:

- ST511 or ST512, Experimental Statistics in Biological Sciences I & II (Fall&Spring; Staff)
- Bioinformatics course, such as BIT815, or others (with permission from Advisory Committee)
- AEC510, Machine Learning Approaches in Biology (Fall odd years; Reading)

Restricted Elective Requirement – MS and Ph.D. students choose one of the following:

- BIO592, Capstone Course in Molecular, Cellular, and Developmental Biology (Fall&Spring; Staff)
- GN701, Molecular Genetics (Fall; Staff)
- GN702, Cellular and Developmental Biology (Spring; Staff)
- GN750, Developmental Genetics (Spring; Staff)

Biotechnology Requirement – one course appropriate based on thesis research. BIT courses are commonly taken to fulfill this requirement (<http://biotech.ncsu.edu/courses>), but other courses can also satisfy this requirement. Please consult your Mentor, Advisory Committee, and Concentration Chair.

- BIT510, Core Technologies in Molecular and Cellular Biology (Fall, Spring, Summer; Staff)
- BIT595, Special Topics (Fall, Spring, Summer; Staff)

Ecology and Evolution (Concentration Chair: Alonso Ramirez, Applied Ecology)

Ph.D. students are required to take one course in Ecology AND one course in Evolution. MS students are required to take either one course in Ecology OR one course in Evolution. MS and PhD students are also required to take one quantitative course. The courses listed below satisfy the Ecology and Evolution Concentration requirements.

Quantitative Requirement – MS and Ph.D. students choose one of the following:

- ST511 or ST512, Experimental Statistics in Biological Sciences I & II (Fall&Spring; Staff)
- AEC510, Machine Learning Approaches in Biology (Fall odd years; Reading)
- ST505, Applied Nonparametric Statistics (Spring; Lu)
- BMA567, Modeling Biological Systems (Alternate years; Gross)

Ecology Requirement – choose from one of the following:

- AEC503, Foundations of Ecology (Spring, Irwin)
- AEC519, Freshwater Ecology (Spring even years, Taylor)
- AEC592, Urban Ecology (Fall, Youngsteadt)
- AEC761, Conservation & Climate Science (Fall even years, Staff)
- BIO/BMA560, Population Ecology (Spring, occasional; Gross)
- BMA590, Modeling of Biological Systems (Spring, occasional; Gross)
- MEA750, Marine Benthic Ecology (Fall&Spring; Eggleston)
- Pending course number, Paleoecology (Term Fall; Gates)

Evolution Requirement – choose from one of the following:

- AEC550, Conservation Genetics (Spring even years; Burford Reiskind)
- BIO570, Evolutionary Ecology (Fall odd years; Langerhans)
- ENT591, Principles of Biosystematics (Term TBA; Wiegmann)
- GN703, Population and Quantitative Genetics (Spring; Staff)
- GN713, Quantitative Genetics and Breeding (Spring; Staff)
- GN740, Evolutionary Genetics (Fall; Staff)

GN757, Quantitative Genetics Theory and Methods (Fall; Staff)
PB503, Systematic Botany (Spring; Staff)
PB545, Paleobotany (Spring; Staff)
Pending course number, Human Paleontology (Term TBA; Ross)
Pending course number, Molecular Paleontology (Term TBA; Schweitzer)
Pending course number, Taphonomy (Term TBA; Schweitzer)

Forensic Sciences (Concentration Chair: Ann Ross, Biological Sciences)

This is a Ph.D. only concentration that will prepare students for both academic and practitioner settings in forensic anthropology and other related fields.

Restricted Electives: Students must take the following two courses.

BIO 520, Skeletal Biological Laboratory Methods in Human Identification & Cold Cases (Fall odd years, Ross)
BIO 811, Forensic Science Seminar (Fall, Ross)

Quantitative Requirements: Students must take the following three classes.

ST 511, Experimental Statistics in Biological Sciences I
ST 512, Experimental Statistics in Biological Sciences II
ST 540, Applied Bayesian Analysis (Spring)

Other Requirements:

- Every student is required to complete training logs. Many of the modules can be completed while taking the BIO520 course. Please contact the Forensic Sciences Concentration Chair for additional information.
- Students are also required to start the Training Case Record Form after their first year and/or after taking BIO 520, whichever comes first. Please contact the Forensic Sciences Concentration Chair for additional information.
- Forensic Anthropology Society of Europe Level II Certification is strongly recommended but not required-costs associated with this exam are the student's responsibility.

Optional Electives:

Planned course: Human Paleontology (Ross)
Planned course: Taphonomy (Schweitzer)
GIS courses various and graduate certificate
Criminalistics and Forensic Chemical Analysis (TC589)
Bioarchaeology (ANT524)
Topics in Physical Anthropology (Offered at Duke EVANTH790)
Human gross anatomy (offered at UNC-Chapel Hill, Duke or other)

Physiology and Behavior (Concentration Chair: Russell Borski, Biological Sciences)

The Physiology and Behavior Concentration only has a PhD offering and no MS or MR offerings at this time. All requirements below are for Ph.D. students.

Quantitative Biology Requirement – choose one course from the following:

ST511 or ST512, Experimental Statistics in Biological Sciences I & II (Fall&Spring; Staff)
Bioinformatics course, such as BIT815, or others (with permission from Advisory Committee and Concentration chair)

Physiology or Neurobiology Requirement – choose one course from the following:

PHY503/504, General Physiology I & II (Fall&Spring; Staff)

PHY513, Comparative Physiology (Term TBA; Staff)

PHY702, Reproductive Physiology (Fall&Spring; Staff)

BIO588, Neurobiology (Fall; Staff)

BIO592, Endocrinology (Fall, Borski)

BIO705, Fundamentals of Neuroscience (Fall; Staff)

Pending course number, Graduate level Hormones and Behavior (Term TBA; staff)

*Other Physiology and Behavior may fulfill this requirement; please consult your Mentor, Advisory Committee, and Concentration Chair if you have a course you would like to substitute in.

Biotechnology Requirement – one course appropriate based on thesis research. BIT courses are commonly taken to fulfill this requirement (<http://biotech.ncsu.edu/courses>), but other courses can also satisfy this requirement. Please consult your Mentor, Advisory Committee, and Concentration Chair.

BIT510, Core Technologies in Molecular and Cellular Biology (Fall, Spring, Summer; Staff)

BIT595, Special Topics (Fall, Spring, Summer; Staff)

Integrative Biology (Concentration chair: current DGP)

This concentration is open to MS and PhD students who do not fit academically within the other Biology concentrations, or who integrate across multiple concentrations. Coursework is determined in consultation with your PhD mentor and committee and is approved by the DGP.