



Institute of Bioinformatics
UNIVERSITY OF GEORGIA

Graduate Student Handbook

Reviewed Summer 2018

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Really Useful Information

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 120 Green Street
 Athens, GA 30602-7229

Listserv Addresses

iobgrads@listserv.uga.edu (all graduate students receive and can post to this list including administrators of the graduate program and IOB director)

binfgrads@listserv.uga.edu (all graduate students only – this list is administered by the Bioinformatics Graduate Student Organization, BIGSA)

ioball@listserv.uga.edu (all IOB members including graduate students, postdocs, and faculty)

IOB Website:

<http://iob.uga.edu>

IOB Events/Seminar Schedule:

<https://iob.uga.edu/events/upcoming-seminars/>

UGA Graduate School:

<http://grad.uga.edu/>

Doctor of Philosophy (Ph.D.) in Bioinformatics

ILS Curriculum Requirements:

Students who enter the Ph.D. program through the Integrated Life Sciences (ILS) program will take the ILS Core Curriculum for the first semester. Currently, this one semester curriculum consists of lab rotations, a professional development class, a responsible conduct of research class, a scientific literature reading class and a data management class (<http://ils.uga.edu/admissions/curriculum/>). Upon selection of Bioinformatics as a major and entering the IOB Ph.D. program, the student is required to follow the curriculum described below. For a suggested course schedule, see Appendix A.

IOB Ph.D. curriculum overview:

Prerequisites-satisfied in Undergraduate courses	Core (All Required)	Electives
Intro Molecular Genetics Intro Biochemistry Intro to Statistics and Probability Proficiency in a programming language Intro Calculus	BINF 8441 (3.0) Statistical Inference for Life Sci BINF 8500 (3.0)** Bioinformatics Algorithms BINF 8600 (1.0) Intro to Grant Writing	One elective from IOB approved list One elective chosen by advisory committee
Routine Courses		
BINF 8060 [^] (1.0) – IOB Seminar BINF 8061 [^] (1.0) – IOB Student Seminar BINF 8970 [^] (1.0-2.0) – Lab Meeting BINF 8900L*(3.0) – Rotations BINF 9000 (1.0-18.0) – Dissertation research BINF 9300 (1.0-12.0) – Dissertation writing GRSC 7770 (1.0-3.0) – required for Teaching Assistants only		

*Satisfied by GRSC 8000 in ILS Program; [^]Required every semester; ** Prerequisite course is BINF 6006 (if needed)

Requirements for 8000 Level Courses

Graduate School rules require that Ph.D. students with a Master's degree take at least 16.0 credit hours of 8000 level courses, while students without a Master's degree must take 20.0 credit hours of 8000 level courses. Doctoral research (9000), independent study courses, directed study, and dissertation writing (9300) may not be counted in the 8000 level requirements.

Program Prerequisites

It is assumed that students entering the program have taken introductory courses in molecular genetics, biochemistry, calculus, and statistics & probability. It is also assumed that the students are able to program in some programming language. Students who lack in any of these areas must take appropriate courses in their first year in the program. These courses may not be counted towards degree requirements.

Registration Requirements

Students will register for 18.0 credits in all semesters they are enrolled, including Summer semesters. This is to accurately reflect the time and effort BINF students put in to their research. Exceptions to this requirement are made on a case by case basis, and only in anticipation of the semester in which the requirement will not be met. Requests to enroll for less than the required amount should be submitted to the Graduate Program Administrator prior to registration for the effected semester. For specific questions, please contact the Graduate Program Administrator.

Core Courses

All students are required to take a core of three bioinformatics courses:

BINF 8441 (3.0): Statistical Inference for the Life Sciences. Introductory statistics for students in the life sciences, including probability, discrete and continuous random variables, distributions, expectations, maximum likelihood, Bayesian inference, hypothesis testing, and linear regression. These topics will be mixed with applications of the statistical concepts to biological data. Statistical inference and real data analysis are implemented in R.

BINF 8500 (3.0): Bioinformatics Algorithms. A hands-on course in which students will design and implement selected bioinformatics algorithms.

BINF 8600 (1.0): Grant Writing. The course introduces the principles of successful grant writing and manuscript preparation. Students are expected to develop and produce a grant proposal in the NIH or NSF format.

IOB Approved Electives

Students are required to take one elective course that focuses on applying bioinformatics analyses to real data. Examples include GENE (BINF) 8940, FANR (BINF) 8140, BINF 8980, P BIO (BINF) 8350, EHSC 8460(L), and MIBO (BINF) 8270L. Requests to add other courses to this list may be made in writing to the Graduate Affairs Committee. Any such course must have a strong emphasis on applications to the analysis of experimental data.

FANR (BINF) 8140 (3.0): Functional Genomics. Fundamentals and practical applications of functional genomics in biological research. Lecture- and paper-based discussion on topics including gene discovery, genome sequencing, transcript profiling by microarray, and next-generation sequencing

(RNA- Seq), regulation of gene expression, forward and reverse genetics, proteomics, metabolomics, correlation network analysis, and ecological genomics. Offered Spring semester every year.

GENE (BINF) 8940 (3.0): Applied Genome Analysis. Hands-on application of bioinformatics approaches used in whole genome analyses. Topics will include aspects of genome assembly, annotation, expression studies, ChIP-sequence, and comparative genomics. Emphasis is placed on mastery and critical evaluation of the approaches used for whole genome analyses rather than any particular software program or approach. Offered Fall semester each year.

MIBO (BINF) 8270L (3.0): Composition, Organization, and Evolution of Genomes. Computational approaches to the study of properties of eukaryotic and prokaryotic genomes, genome evolution, and statistical and computational methods for genome analyses and comparisons. Topics include composition of prokaryotic genomes, eukaryotic chromosome structure, lateral gene transfer, genome rearrangements. Emphasis will be placed on biological interpretations of sequence data. Offered Spring semester every year.

BINF 8980, 8980D (4.0): Case studies in Systems Biology. Shared research experience in systems biology. Each semester the research case study will be either on the biological clock, host-pathogen interactions, or marine metagenomics. Project will include genomics experiments involving microfluidics, network identification, and genomic analysis. Emphasis will be placed on transformative research accomplished on the clock, host-pathogen system, or marine ecosystem. Offered Fall and Spring semester every year, as needed.

PBIO (BINF) 8350 (3.0), Molecular Phylogenetics and Evolution. The course includes hands-on training of phylogenetic methods, discussions of the underlying assumptions of these methods, and an opportunity to frame and execute a term project relevant to each student's research interests ranging from the evolutionary ecology of trait evolution and diversification to the molecular evolution of gene families. With just 12-16 students in the course, lecture topics will be tailored to student interests. Offered Spring semester every year.

EHSC 8460 (L) (1.0-3.0): Environmental Genomics. Covers the background and use of new high throughput genomic tools for environmental studies. Content and credits will vary depending on subjects covered, which are modified to meet the needs of enrolled students.

General Electives

Students are required to take one elective, as directed by their advisory committee. Any selection of elective that is approved by the Graduate Coordinator and the student's committee are acceptable. However, students will not be allowed to count program prerequisites as elective courses.

Additional Electives

Student advisory committees may specify additional requirements designed to extend the breadth or depth of the student's knowledge in the area of his/her specialization. These additional requirements may include both graduate and specialized undergraduate courses deemed appropriate by the student's advisory committee. It is expected that such additional requirements will be instituted mainly for students whose focus is more computational because these programs traditionally require more courses than biological disciplines.

Courses required for Teaching Positions

For those students who have a teaching assistantship at any point in their program, it is required they take GRSC 7770. If the student speaks English as a second language, they must pass a language proficiency exam. The exam will be coordinated through the Graduate School. If the student is unable to pass the proficiency exam, they must register for LLED 7768 or LLED 7769.

GRSC 7770 (1.0-3.0): Graduate Seminar. Provides graduate teaching assistants with knowledge of pedagogical approaches and available support systems. Special sections are reserved for international students, with focus on use of language, pedagogy, and cultural aspects of teaching in this country. Offered every year.

LLED 7768 (3.0): International Graduate Internship I. Provides international graduate teaching assistants with knowledge of pedagogical approaches and available support systems. The course focuses on cultural aspects of teaching and English language for the classroom with particular attention to pronunciation, stress, and intonation patterns. Offered Fall and Spring semester every year.

LLED 7769 (3.0): International Graduate Internship II. Provides international graduate teaching assistants with knowledge of pedagogical approaches and available support systems. The course focuses on English language for the classroom and cultural aspects of teaching with emphasis on presentation skills and audience awareness. Offered Fall and Spring semester every year.

Other Required Courses

In addition to the above courses, all students are required to take the following courses:

- BINF 8060 (1.0): IOB Seminar. Taken every Fall and Spring semester
- BINF 8061 (1.0): IOB Student Seminar. Taken every Fall and Spring semester
- BINF 8900L (3.0): Lab rotation*
- BINF 8970 (1.0-2.0): Current Topics in Research. Lab meetings, **taken every semester**
- BINF 9000 (1.0-18.0) : Doctoral research. Taken to fulfill credit load requirements after the completion of courses
- BINF 9300 (3.0-12.0) : Doctoral dissertation. Minimum of 3.0 credits total

*Satisfied by GRSC 8000 in ILS Program

BINF 8060 (1.0): Bioinformatics Seminar. Seminar dealing with various topics in current Bioinformatics. Offered Fall and Spring semester every year.

BINF 8061 (1.0): Institute of Bioinformatics Student Seminar. A special seminar classed focused on student research presentations with an emphasis on presentation skills. While all students are required to attend, only students in their second year and beyond are required to present. Offered Fall and Spring semester every year.

BINF 8900L (3.0): Bioinformatics Lab Rotation. Students will be exposed to research topics and techniques by participating in the research projects of Bioinformatics faculty members. Offered Fall and Spring semester every year, as needed. Satisfied by GRSC 8000 in ILS Program.

BINF 8970 (1.0-2.0): Current Topics in Research. Subjects of current interest in Bioinformatics research. Current literature and modern analysis of research results. Course is designed to meet the specific research needs of the student. Offered at the request of faculty. This course is also used to cover student time and effort spent in research lab meetings within their chosen research laboratory.

Students register for sections offered by their thesis advisor. Offered Fall, Spring, and Summer semester every year.

BINF 9000 (1.0-18.0): Doctoral Research. Research while enrolled for a doctoral degree under the direction of faculty members. Offered Fall, Spring and Summer semester every year.

BINF 9300 (1.0-12.0): Doctoral Dissertation. Dissertation writing under the direction of the major professor. Offered Fall, Spring and Summer semester every year.

NOTE: Bioinformatics students are to take 9000 and 9300 hours in BINF only. No other department courses in 9000 and 9300 will be allowed.

Lab Rotations

Students who are not committed to a major professor upon entering the program will rotate through labs in order to find a major professor. Students will spend one third of a semester in each of up to three different labs, participating in research work in that lab (BINF 8900L). Rotations will occur on a regular schedule. See the IOB faculty Webpage for a list of approved faculty and links to their sites (<http://iob.uga.edu/faculty/>).

Students who enter through the ILS program will complete rotations in their first semester at UGA. ILS students register for GRSC 8000 (Lab Rotations) and will complete three 6-week rotations during the semester. By the end of the first semester, ILS students will join a lab. ILS students will begin taking the IOB Core curriculum upon joining the Bioinformatics program. Please be pro-active in contacting faculty about arranging rotations.

Advisory Committee

Upon arrival at the University, students will meet with the Graduate Coordinator and/or the Graduate Program Administrator for guidance and mentoring.

Because this program is interdisciplinary, students will be advised to take prerequisite courses in areas where the student does not have the necessary background.

Students will select their major professor by the end Fall semester of their first year. The major professor must be a Full or Adjunct Faculty member of the Institute of Bioinformatics, and a member of the Graduate Faculty. *By the end of Spring semester of the first year, students must establish an advisory committee.* The advisory committee must consist of the major professor and at least three other UGA Graduate Faculty members. At least two members of the advisory committee must be Full or Adjunct Faculty of the IOB. The advisory committee should be composed of representatives of both the biological and the quantitative sciences. At least one member of the advisory committee will represent the student's focused area of study e.g. computer science, plant biology, microbiology, etc., from outside the institute. This member of the committee will provide input from outside bioinformatics and ensure that the program of study is consistent with the practices of the most related outside discipline.

The advisory committee will meet with the students no less than once per academic year. The advisory committee will be responsible for mentoring the student's research and training, approving the student's program of study, administering the written and oral comprehensive examination, approving the subject for the dissertation, approving the completed dissertation, and approving the student's defense of his or her research. Students will take their comprehensive examination during their

second year, supervised by the major professor, under the Graduate School guidelines. For more information, see Appendix B.

Advisory Committee form is required, see:

<http://grad.uga.edu/index.php/current-students/forms/>

IOB Comprehensive Examination

The comprehensive exam will be comprised of a written portion and an oral portion. The written portion will take place before the oral portion, and will consist of a written proposal of their dissertation research, based on NIH guidelines. It is expected that students are able to articulate the rationale for their proposed research and be able to explain their research strategy.

The student should coordinate with their committee to set a timeline for submission of the written portion of the exam and scheduling of the oral exam. The entire process will take about 4 weeks from submission of the written exam until the date of the oral exam. Final scheduling of the date the oral exam cannot occur until grades on the written portion of the exam have been received, and the Graduate School has been given a two week notice period.

Submission of the written portion of the exam consists of emailing a copy of the proposal and a completed “Notice of Comprehensive Examination” form to all members of the committee and the Graduate Program Administrator. The committee will have two weeks to review and provide a pass/fail grade on the written portion of the exam. If a committee member does not provide a grade two weeks after submission of the written exam, the grade will be marked as a ‘pass’ for that committee member. Grades on the written exam will be emailed by each committee member to the Graduate Program Administrator. The Graduate Program Administrator will compile grades and send results to student and the entire committee. If there are more than one failing grade on the written exam, Graduate Program Administrator should alert the Graduate Coordinator and advisor as soon as possible, detailing the outcome of the exam. If there is no more than one failing grade, the student can proceed to schedule the oral exam. The Graduate Program Administrator will submit the required paperwork to notify the Graduate School to announce the date and place of the oral exam.

Prior to the oral exam, the student will obtain the “Report of the Written and Oral Comprehensive Examination” form required by the Graduate School from the Graduate Program Administrator. These forms must be taken to the oral exam by the student. The oral exam will last at least two hours, but not longer than three hours. The student will prepare a presentation of no more than 20 slides that are intended to serve as a framework of the discussion of the proposed research. The student’s presentation should last for approximately 20-25 minutes. Questions during the exam will consist of both general and specific knowledge related to the student’s proposed research as described in their presentation and written proposal. A member of the student’s committee, other than the advisor, will serve as chair of the exam. The advisor is not allowed to answer questions for the student, and will not participate in the discussion unless granted permission by the exam chair.

At the conclusion of the oral exam, the committee will provide pass/fail grades on the oral component of the exam. UGA Graduate School requirements indicate that there may be only one failing grade on each part of the exam from the committee for the exam to be considered passing. The student’s advisor may issue a failing grade and the student may still pass.

Students who fail their comprehensive exam, either written or oral portion, may make a second attempt at the exam. If the student fails on the second attempt, the matter will be forwarded to the Graduate Affairs Committee for review and recommendations. Possible outcomes include, but are not limited to, change of degree objective from Ph.D. to masters level, or student exiting the program without degree. Recommendations from the Graduate Affairs Committee may be considered after reviewing the situation with the student, the student's advisor, and getting feedback from the student's advisory committee.

Students are expected to complete their comprehensive exams by the spring semester of their second academic year. At least one committee meeting must have occurred prior to submission of the written portion of the comprehensive exam.

For detailed instructions on the comprehensive exams, please refer to Appendix B.

Final Program of Study Form is required PRIOR to Notice of Exam, see:

<http://grad.uga.edu/index.php/current-students/forms/>

Dissertation Planning

A written proposal, or prospectus, is prepared as part of the comprehensive exam. This proposal will detail the breadth and scope of research the student plans to undertake during their dissertation research. It is expected that the committee will provide input on this proposal so the student can focus on a viable dissertation project. However, it is expected that the proposal will be entirely the student's own work. It is important to note that the student is not required to have data prior to taking their comprehensive exams.

Admission to Candidacy

The student will submit an Application for Admission to Candidacy form along with the Report of the Written and Oral Comprehensive Examination form, indicating they have passed the comprehensive exam. The Graduate Program Administrator will assist the student in the preparation of the required forms. The Application for Admission to Candidacy for Doctoral Degrees form must be filed with the Graduate School at least one semester before graduation. Once the student has been admitted to candidacy, they may register for Doctoral Dissertation (BINF 9300) credit hours.

The Graduate School prepares the Report of Written and Oral Comprehensive Examination form and sends it to the Graduate Program Administrator.

Application for Admission to Candidacy is required, see:

<http://grad.uga.edu/index.php/current-students/forms/>

Dissertation Approval and Defense

The student's dissertation must represent originality in research, independent thinking, scholarly ability, and technical mastery of a field of study in bioinformatics. The dissertation must also demonstrate competent style and organization (see [Graduate School](#) for guidelines for theses and dissertations). While working on his/her dissertation, the student must enroll for a minimum of 3.0 credit hours of BINF 9300 (Doctoral Dissertation). Students may not register for this course until they have been admitted to candidacy. Once the student's major professor approves the final version of the dissertation, it will be distributed to the other members of the advisory committee, and a dissertation defense scheduled no sooner than three weeks after the distribution. This exam requires

that all members of the advisory committee be present and is open to faculty members, graduate students, and the public (per Graduate School policy). The Graduate School requires two weeks' notice of the defense exam; therefore, the student will contact the Graduate Program Administrator prior to scheduling the defense and provide the Notice of Exam form at least three weeks prior to the defense date. All but one of the members of the advisory committee must approve the student's dissertation and defense. These results are recorded and submitted to the Graduate School on the Approval Form, provided by the Graduate Program Administrator prior to the scheduled defense.

Dissertation and Final Examination Approval form is required, see:

<http://grad.uga.edu/index.php/current-students/forms/>

Electronic Thesis and Dissertation (ETD) Submission Approval form is required, see:

<http://grad.uga.edu/index.php/current-students/forms/>

Master of Science (M.S.) in Bioinformatics

Because of its interdisciplinary nature, the bioinformatics M.S. degree program admits students from diverse backgrounds and leads to multiple career paths, depending upon the background and interests of the students. Thus, the curriculum is designed to provide flexible training of a diverse student body while maintaining the rigor of the program.

Master students are required to take BINF 8990 (Colloquium) once. In addition, 6.0 credit hours of BINF 7000 (Master's research) and 3.0 credit hours of BINF 7300 (Master's thesis) are required for students with the thesis option. In the absence of a thesis, students will instead take 9.0 credit hours of 8000 level courses in an area of specialization to be approved by the student's advisor.

Registration Requirements

Students with the thesis option will register for 18.0 credits in all semesters they are enrolled, including Summer semesters. This is to accurately reflect the time and effort BINF students put into their research. Students without a thesis should register for courses in accordance with their approved plan of study. Exceptions to this requirement are made on a case by case basis, and only in anticipation of the semester in which the requirement will not be met. Requests to enroll for less than the required amount should be submitted to the Graduate Program Administrator prior to registration for the effected semester. For specific questions, please contact the Graduate Program Administrator.

Core courses for M.S. Program

Every M.S. student needs to take the following four core courses and complete any prerequisites for these courses.

Course	Title	Credits
BINF 8211*	Advanced Methods for Biological Data Analysis II	3.0
BINF 8940	Applied Genome Analysis	3.0
BINF 8441	Statistical Inference for the Life Sciences	3.0
BINF 8500	Bioinformatics Algorithms	3.0

*Course not offered of a regular basis, substitutions may be requested through IOB Graduate Coordinator.

M.S. Advisory Committee

Upon arrival at the University, students will meet with the Graduate Coordinator and/or the Graduate Program Administrator for guidance and mentoring.

Because this program is interdisciplinary, students will be advised to take prerequisite courses in areas where the student does not have the necessary background.

By the end of their first year in the program, students with the thesis option will establish an advisory committee. The major professor must be a core IOB faculty member or an adjunct faculty member of the Institute of Bioinformatics, as well as a member of the Graduate Faculty. The advisory committee must consist of the major professor and at least two other Graduate Faculty members. At least two members of the advisory committee must be full or adjunct faculty of the IOB. The advisory committee will also be composed of representatives of both the biological and the quantitative sciences.

Advisory Committee form is required, see:

<http://grad.uga.edu/index.php/current-students/forms/>

Students with the non-thesis option are not required to form an advisory committee; the graduate coordinator or a designated academic advisor will monitor their progress.

Final Program of Study form must be submitted by the second semester of residence. The Program of Study Form indicates how and when degree requirements will be met and must be formulated in consultation with the student's major professor (thesis option) or the academic advisor (non-thesis option).

Final Program of Study for MS Degree, see:

<http://grad.uga.edu/index.php/current-students/forms/form-instruction/#ms>

<http://grad.uga.edu/index.php/current-students/forms/>

Master's Thesis (only students with thesis option)

The thesis is a report of the student's investigations under the supervision of his/her major professor and requires the approval of the major professor and the advisory committee. The thesis must demonstrate competent style and organization, and communicate technical knowledge. The thesis often includes original research in bioinformatics. It must demonstrate mastery of a particular area of bioinformatics. The student's advisory committee assures that the quality of the thesis meets the standards of the IOB and the Graduate School. The candidate must register for BINF 7300 (Master's Thesis) for at least 3.0 credit hours while working on the thesis.

M.S. Thesis Defense (only students with thesis option)

After all course work has been completed and the thesis has been approved by the student's major professor, the thesis is submitted to the other members of the advisory committee at least two weeks before the thesis defense date. The thesis defense is an oral examination conducted by the student's advisory committee. The Graduate School requires two weeks' notice of the defense exam; therefore the student will contact the Graduate Program Administrator prior to scheduling the defense. All members of the advisory committee must be present at the defense. The advisory committee members, including the major professor, must vote on whether the student passed the defense and record their votes. These results are recorded and submitted to the Graduate School on the Approval Form, provided by the Graduate Program Administrator prior to the scheduled defense. To pass the thesis defense, no more than one of the advisory committee members' votes can be fail.

Thesis Defense and Final Examination Approval form required, see:

<http://grad.uga.edu/index.php/current-students/forms/>

Electronic Thesis and Dissertation (ETD) Submission Approval form required, see:

<http://grad.uga.edu/index.php/current-students/forms/>

M.S. Graduation Requirements (all M.S. students)

Before the end of the second semester in residence, a student must submit to the Graduate School, through the Graduate Program Administrator, the Master's **Program of Study form**. The Program of Study Form indicates how and when degree requirements will be met and must be formulated in consultation with the student's major professor. An **Application for Graduation form** must also be submitted directly to the Graduate School.

For forms, please see: <http://grad.uga.edu/index.php/current-students/forms/>

Graduate Certificate in Bioinformatics

Curriculum Requirements

Graduate students in any department at UGA can receive the Graduate Certificate in Bioinformatics by taking bioinformatics coursework. Students seeking a Certificate must be currently enrolled and in good standing in a graduate program at the University of Georgia, Athens.

The requirements for the certificate in Bioinformatics are:

1. BINF 8211: "Computational Applications in Bioinformatics"
2. BINF 8441: "Statistical Inference for the Life Sciences"
3. BINF 6006: "Programming and Data Structures for Informatics"
or any 3- or 4- credit hour 7000- or 8000-level course offered by Computer Science (CSCI prefix)
4. At least one additional 3- or 4- credit graduate-level course with BINF prefix
5. At least one additional 3- or 4-credit course in biology

How to Apply for a Certificate

If you are applying prior to completing the certificate coursework, contact the Graduate Program Administrator with your interest in the Certificate Program. Include your name, student identification (810 or 811), your department, and degree program. Upon receipt of this information, the certificate program will be added to your registration profile in Athena. If you need assistance with course scheduling to complete the certificate requirements, please contact the Graduate Program Administrator.

If you have completed coursework toward the certificate program and wish to apply for the certificate, send a letter to the Graduate Program Administrator of the Institute of Bioinformatics that includes the following: your name, your student identification (810 or 811), and the courses completed to fulfill the Certificate requirements. This request must be received one semester prior to the semester you plan to graduate.

In addition, please include information on the courses you have taken for credit toward the certificate. For each course, include only the course prefix and number (e.g. BINF 8210) and the semester in which the course was completed. Include a copy of your transcript that shows the grades for the course used for completion of the Certificate. For courses recently completed whose grades are not included on your transcript, include a brief letter from the instructor stating that you have received a grade B or higher.

Please note: the Certificate is not a document mailed to you, but a notation added to your transcript, which would say "COMPLETION OF A CERTIFICATE IN BIOINFORMATICS."

Graduate School Requirements

The Graduate School sets forth additional requirements concerning residence, time limits, programs of study, acceptance of transfer credits, admission to candidacy, minimum GPAs, dissertation, and examinations, etc. The students should refer to the [Graduate School Bulletin](#) for details.

Probation and Dismissal Policy

The Institute of Bioinformatics reserves the right to place students on probation or dismiss them if they have not made sufficient academic progress or if they have willfully gone against IOB policy. The IOB Graduate Affairs Committee will review the student's situation and will meet with the student and advisor as needed. If it is found that the student has failed to meet expectations, the student may be dismissed from the Institute of Bioinformatics.

For details on the Graduate School's Probation and Dismissal Policies, please visit their website.

Course Waiver Policy

A faculty advisor may request a student waiver for a course by making a request to the Graduate Affairs Committee. The request must come from the student's advisor and not from the student directly. The request and materials should be send to the Graduate Coordinator, with the Graduate Program Administrator copied in the email. For the exception to be considered, the advisor must supply supporting evidence, such as: (1) syllabi of related courses prior to the one required; (2) relevant work experience; or (3) transcripts indicating satisfactory grades.

Once all materials are received, GAC will review and vote on whether the student has sufficient knowledge to waive the course requested.

Expectation of Graduate Students

The institute of Bioinformatics expect their graduate student to actively contribute to and participate in all aspects of the graduate program. This includes attending IOB seminars, IOB social events, retreats, graduate student and faculty recruitment events, and engaging in the intellectual life of the institute.

Graduate research is a full-time job. This work is the start of your career, so the more effort you put in to it, the better start you will have. More important than the hours you spend working is your ability to communicate with your advisor and committee. It is expected that you will communicate your regular course schedule with your advisor so they know when to expect to see you in the lab. In addition, any changes to your schedule, be it vacation, holidays, life events, etc., should be communicated to your advisor. We know that you have personal lives outside of graduate school, but you are expected to report to your advisor as you would an employer.

Should you be in a situation where you are considering additional employment outside of your graduate assistantship, please discuss the details with your advisor and the Graduate Coordinator, so they are aware of the details and can work with you so you do not get behind in your research. Communication is key!

Multiple Program Enrollment

Bioinformatics students who are interested in pursuing an additional degree while enrolled at UGA must speak with the Graduate Program Administrator and Graduate Coordinator. Before applying to or enrolling in an additional program, students will receive written approval from their faculty advisor to enroll in courses toward a degree other than their Bioinformatics program. This allows for the paperwork to be processed correctly for both degrees. Such approval may be contingent upon progress toward their primary degree, grant funding sources, project compatibility, and lab work requirements.

APPENDIX A:

Sample Curriculum:

First Year:

Fall: ILS students will complete the core course requirements set by the ILS program. For the most up-to-date listing of the ILS curriculum, please visit their website:

<http://ils.uga.edu/admissions/curriculum/>

Students admitted directly to the IOB Ph.D. program will consult the IOB Graduate Coordinator to plan their course schedule for their first fall semester in the program. If admitted during the spring semester, BINF 8900L will replace BINF 9000.

<p><u>Spring:</u></p> <ul style="list-style-type: none"> • BINF 6006 (prereq for algorithms) • BINF 8001- Intro to Bioinformatics • BINF 8441 - Statistical Inference for the Life Sciences • BINF 8060 - IOB seminar • BINF 8061 - Student seminar • BINF 8970 - Lab Meeting • BINF 9000 - Research 	<p><u>Summer:</u></p> <ul style="list-style-type: none"> • BINF 8970 • BINF 9000
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Second Year:

<p><u>Fall:</u></p> <ul style="list-style-type: none"> • BINF 8500 – Algorithms • BINF 8600 – Grant Writing • Elective • BINF 8060 • BINF 8061 • BINF 8970 • BINF 9000 	<p><u>Spring:</u></p> <ul style="list-style-type: none"> • Elective • BINF 8060 • BINF 8061 • BINF 8970 • BINF 9000 <p><u>Complete Comprehensive Exam</u></p>	<p><u>Summer:</u></p> <ul style="list-style-type: none"> • BINF 8970 • BINF 9000
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Third and Fourth Year:

<p><u>Fall:</u></p> <ul style="list-style-type: none"> • BINF 8060 • BINF 8061 • BINF 8970 • BINF 9000 <p>Any electives as recommended by advisory committee</p>	<p><u>Spring:</u></p> <ul style="list-style-type: none"> • BINF 8060 • BINF 8061 • BINF 8970 • BINF 9000 <p>Any electives as recommended by advisory committee</p>	<p><u>Summer:</u></p> <ul style="list-style-type: none"> • BINF 8970 • BINF 9000 and/or • BINF 9300
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Fifth Year (if applicable):

<p><u>Fall:</u></p> <ul style="list-style-type: none">• BINF 8060• BINF 8061• BINF 8970• BINF 9000 and/or• BINF 9300	<p><u>Spring:</u></p> <ul style="list-style-type: none">• BINF 8060• BINF 8061• BINF 8970• BINF 9000 and/or• BINF 9300
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APPENDIX B:

Research Proposal Guidelines

The written research proposal will take the form of an NIH grant proposal (but without the budget and human subject/animal use approvals), which is prepared by the student as a possible dissertation research prospectus. The student should consult with their major professor regarding the exact format of the proposal but should follow NIH grant preparation instructions (e.g., the font size should be at least 11 pt, and the document should be single-spaced, with numbered pages, and one-inch margins). In general, the proposal should include an introduction or background section reviewing the relevant literature, major hypotheses, specific aims for the project, preliminary results (optional), and the proposed methods for achieving the specific aims. This should outline specific procedures, and include potential outcomes, potential problems, and alternative approaches. The proposal should be concisely written, and should not exceed 12 pages (excluding references). Numbered tables and figures with legends should be embedded into the appropriate sections of the text, with full-page copies of each figure included as appendices (not included in the page limit). The proposal must be presented in writing to the Advisory Committee at least two weeks before the oral preliminary exam.

The proposal does not have to be based on preliminary results already obtained by the student. The purpose of this proposal is to evaluate the student's ability to develop and present a coherent, logical, and well-thought-out research project in the area of their thesis research. As such, while the student may consult with their major professor regarding the written proposal prior to distributing it to their committee, the proposal should represent the student's independent work.

The research plan in the dissertation proposal is not meant to be a blueprint for completion of the degree – it is expected that changes in the actual progress of the project may occur over time, in consultation with the student's Advisory Committee and advisor.

APPENDIX C:

Suitable Electives

***6000-level courses do not count toward Graduate School residency requirements.**

In an effort to maintain an accurate listing of UGA courses related to bioinformatics, a course listing is available on the IOB website. Please refer to that listing for the most up-to-date courses available.

Here is the link: <https://iob.uga.edu/graduate-courses/>

APPENDIX D:

Ph.D. Student Checklist

Coursework:

Require Core:

- BINF 8441 - Statistical Inference for the Life Sciences
- BINF 8500 - Algorithms
- BINF 8600 - Grant Writing

One IOB Approved Elective:

- _____ (list course)

One Committee Approved Elective:

- _____ (list course)

Other Required Courses

- | | |
|-----------------------------------------------------------------|---------------------------------------------------------------------|
| <input type="checkbox"/> BINF 8060 (IOB Seminar), each semester | <input type="checkbox"/> BINF 8061 (Student Seminar), each semester |
| <input type="checkbox"/> BINF 8900L (Lab Rotation) or GRSC 8000 | <input type="checkbox"/> BINF 8970 (Lab Meeting) |
| <input type="checkbox"/> BINF 9000 (Doctoral Research) | <input type="checkbox"/> BINF 9300 (Doctoral Dissertation) |
| <input type="checkbox"/> GRSC 7770 (Teaching Assistants Only) | |

Milestone Completion Dates:

Begin at UGA:

Enter IOB Program:

Date of Written Exam:

Date of Oral Exam:

Admission to Candidacy:

Date of Notice to Graduate:

Date of Defense:

Required Forms – Ph.D.:

First Year:

- Advisory Committee form, end of second semester (May)
- Preliminary Program of Study (May)

Second Year:

- Annual Student Evaluation
- Final Program of Study (at least two weeks prior to written exam)
- Notice of Exam-Written exam, to Graduate Program Administrator
- Notice of Exam-Oral exam, to Graduate Program Administrator (three weeks prior to oral exam)
- Report of the Written and Oral Comprehensive Examination form (upon completion of oral exam)
- Application for Admission to Candidacy (upon completion of oral exam)

Third Year:

- Annual Student Evaluation

Fourth Year:

- Annual Student Evaluation

Final Semester:

- Application for Graduation-directly to Graduate School (check due date on Graduate School website)
- Format Check-directly to Graduate School, deadline applies
- Notice of Exam-Dissertation Defense (three weeks prior to the oral defense)
- Dissertation and Final Examination Approval (upon passing of dissertation defense)
- Electronic Thesis and Dissertation (ETD) Submission Form (upon passing of dissertation defense)
- Graduation Ceremony Information-directly to Graduate School

View forms at <http://grad.uga.edu/index.php/current-students/forms/>

Forms are prepared and submitted by the Graduate Program Administrator, unless otherwise stated.

M.S. Student Checklist

Coursework:

Core, all required:

- BINF 8211 (or approved substitution) BINF 8940 BINF 8441 BINF 8500

Other Required Courses

Thesis option:

- BINF 8060, each semester BINF 8061 each semester BINF 8900L
 BINF 8970, lab meeting (if applicable) BINF 7000 BINF 7300

Non-Thesis option:

Pick Three 8000-level courses:

- _____ Course _____ Course _____ Course

- BINF 8060, each semester BINF 8061 each semester

Dates:

Begin at UGA:

Enter IOB Program:

Date of Notice to Graduate:

Date of Defense (thesis option):

Required Forms: M.S.:

First Year:

- Advisory Committee form, end of second semester (May)
 Final Program of Study, second semester of residence, but no later than the Friday of the second full week of classes of the semester in which the student intends to graduate.

Second Year:

- Annual Student Evaluation

Final Semester: (Thesis option)

- Application for Graduation-directly to Graduate School (check due date on Graduate School website)

- Format Check-directly to Graduate School, deadline applies
- Notice of Exam-Thesis Defense (three weeks prior to the oral defense)
- Thesis Defense and Final Examination Approval (upon passing of thesis defense)
- Electronic Thesis and Dissertation (ETD) Submission Form (upon passing of thesis defense)
- Graduation Ceremony Information-directly to Graduate School

To view forms: <http://grad.uga.edu/index.php/current-students/forms/>

Forms are prepared and submitted by the Graduate Program Administrator, unless otherwise stated.

Final Semester: (Non- thesis option)

- Application for Graduation-directly to Graduate School (check due date on Graduate School website)
- Graduation Ceremony Information-directly to Graduate School

To view forms: <http://grad.uga.edu/index.php/current-students/forms/>

Forms are prepared and submitted by the Graduate Program Administrator, unless otherwise stated.