# Biology, MS

The Master of Sciences (MS) in Biological Sciences is a research-intensive degree designed to prepare students for careers in the life sciences or further training in preparation for pursuing a PhD in the biological sciences. Students are required to conduct their own independent research while participating in either the Plan I (with thesis) or Plan II (without thesis) degree tracks leading to the MS in Biological Sciences. Plan I is the traditional track in which students are required to perform independent research and submit a formal thesis formatted to university guidelines and give a public defense of the thesis. Plan II (without thesis) also requires independent research and the completion of a Capstone Experience Research Report, as well as a formal defense of the research.

## Admissions

Most successful applicants will contact potential faculty mentors during the application process. The departmental website lists faculty and provides a link to individual pages that describe their research interests.

Before entering graduate study in the Biological Sciences, the applicant is expected to have a substantial knowledge of chemistry, mathematics, and physics, and to have completed basic courses in the biological sciences with high standards of scholarship. In general, a curriculum equivalent to that required of undergraduate majors in the Department of Biological Sciences is expected. Students admitted without this background may be required to make up course deficiencies without receiving graduate credit.

See the Admission Criteria section of this catalog for more information.

## Curricular Requirements

Plan I and Plan II both are available for the MS degree. A student pursuing an MS degree under either plan is expected to submit a formal research proposal by his or her second semester in residence, and to take final written and oral examinations before the degree is granted. Plan I requires 24 hours of coursework and a formal thesis; Plan II requires 30 hours of coursework and a written research report approved by the student’s graduate committee. A "B" average must be maintained in all coursework.

### Thesis - Plan I

<table>
<thead>
<tr>
<th>Code and Title</th>
<th>Hours</th>
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<tbody>
<tr>
<td><strong>Required Courses</strong></td>
<td></td>
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<tr>
<td>BSC 505 Intro to Grad Studies</td>
<td>2</td>
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<tr>
<td>BSC 601 Biological Sciences Seminar</td>
<td>1</td>
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<tr>
<td><strong>Thesis Course</strong></td>
<td></td>
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<tr>
<td>BSC 599 Thesis Research</td>
<td>6</td>
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<tr>
<td><strong>Biology Elective Courses</strong></td>
<td>21</td>
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<tr>
<td>BSC 507 Research Tech In By</td>
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<td>BSC 511 Phage Discovery Laboratory</td>
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<td>BSC 512 Limnology</td>
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<td>BSC 515 Wetland Ecology</td>
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<td>BSC 516 Disease Ecology</td>
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<td>BSC 517 Environmental Modeling</td>
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<td>BSC 519 Evolutionary Genomics</td>
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<td>BSC 520 Principles Of Systematics</td>
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<td>BSC 521 Pers Gen Med</td>
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<td>BSC 522 Biology of Cancer</td>
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<td><strong>Total Hours</strong></td>
<td>30</td>
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### Additional Requirements:

24 credit hours other than BSC 599 Thesis Research, including:

- BSC 524 Human Physiology
- BSC 525 Human Physiology Lab
- BSC 526 Computational Biology Lab
- BSC 528 Biology Of Fishes
- BSC 530 Introduction to Pharmacology
- BSC 531 Pathogenic Microbiology
- BSC 534 Plant Systematics
- BSC 535 Immunology
- BSC 539 Bch/Molecular Biology Lab
- BSC 541 Developmental Biology
- BSC 542 Integrated Genomics
- BSC 544 General Virology
- BSC 548 Animal Behavior
- BSC 549 Endocrinology
- BSC 550 Fundamentals of Biochemistry
- BSC 551 Bch/Molecular Biology II
- BSC 553 Biochemistry Lab
- BSC 555 Chemical Ecology
- BSC 556 Microbial Ecology
- BSC 558 Drug Discovery Laboratory
- BSC 564 Biology Of Algae
- BSC 565 Principles Of Toxicology
- BSC 569 Histology Of Vertebrates
- BSC 570 Prin Pop Genetics
- BSC 571 Plant Physiology
- BSC 573 Bioinformatics
- BSC 575 General Entomology
- BSC 576 Aquatic Insects
- BSC 580 Plant Ecology
- BSC 581 Foundations in Advanced Biostatistics with Applications to R
- BSC 582 Conservation Biology
- BSC 583 Evolution
- BSC 585 Found Forest Res and Conserv
- BSC 587 Biogeography
- BSC 590 Stream Ecology
- BSC 594 Signal Transduction Neuroby
- BSC 598 Non-Thesis Research
- BSC 607 Adv Research Tech In By
- BSC 656 Microscopical Techniques
- BSC 666 Disease Models and Mechanisms
- BSC 675 Global Change Biology
- BSC 695 Spec Topics Biolog Sci
• At least 19 credit hours with a letter grade (i.e., not Pass/Fail)
• A maximum of 6 credit hours with a letter grade may be taken from BSC 507 Research Tech In By and/or BSC 607 Adv Research Tech In By
• Up to 5 hours of Pass/Fail credit can be applied toward fulfillment of degree requirements. Pass/Fail hours can include up to a total of 4 credit hours of BSC 601 (Biological Sciences Seminar)
• Of the 30 required credit hours, 18 must carry the BSC or MS designation.
• There are no preconditions to enrolling in BSC 599, and there are no limits to the number of hours of BSC 599 taken – However, only 6 hours can be applied toward degree requirements. BSC 598 Non-Thesis Research may not be applied toward this degree.

Non-Thesis - Plan II

Code and Title | Hours
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**Required Courses**
BSC 505 Intro to Grad Studies | 2
BSC 601 Biological Sciences Seminar | 1
**Biology Elective Courses** | 27
BSC 507 Research Tech In By | 27
BSC 511 Phage Discovery Laboratory | 1
BSC 512 Limnology | 1
BSC 515 Wetland Ecology | 1
BSC 516 Disease Ecology | 1
BSC 517 Environmental Modeling | 1
BSC 519 Evolutionary Genomics | 1
BSC 520 Principles Of Systematics | 1
BSC 521 Pers Gen Med | 1
BSC 522 Biology of Cancer | 1
BSC 524 Human Physiology | 1
BSC 525 Human Physiology Lab | 1
BSC 526 Computational Biology Lab | 1
BSC 528 Biology Of Fishes | 1
BSC 530 Introduction to Pharmacology | 1
BSC 531 Pathogenic Microbiology | 1
BSC 534 Plant Systematics | 1
BSC 535 Immunology | 1
BSC 539 Bch/Molecular Biology Lab | 1
BSC 541 Developmental Biology | 1
BSC 542 Integrated Genomics | 1
BSC 544 General Virology | 1
BSC 548 Animal Behavior | 1
BSC 549 Endocrinology | 1
BSC 550 Fundamentals of Biochemistry | 1
BSC 551 Bch/Molecular Biology II | 1
BSC 553 Biochemistry Lab | 1
BSC 555 Chemical Ecology | 1
BSC 556 Microbial Ecology | 1
BSC 558 Drug Discovery Laboratory | 1
BSC 564 Biology Of Algae | 1
BSC 565 Principles Of Toxicology | 1
BSC 569 Histology Of Vertebrates | 1
BSC 570 Prin Pop Genetics | 1
BSC 571 Plant Physiology | 1
BSC 573 Bioinformatics | 1
BSC 575 General Entomology | 1
BSC 576 Aquatic Insects | 1
BSC 580 Plant Ecology | 1
BSC 581 Foundations in Advanced Biostatistics with Applications to R | 1
BSC 582 Conservation Biology | 1
BSC 583 Evolution | 1
BSC 585 Found Forest Res and Conserv | 1
BSC 587 Biogeography | 1
BSC 590 Stream Ecology | 1
BSC 594 Signal Transduction Neuroby | 1
BSC 598 Non-Thesis Research | 1
BSC 607 Adv Research Tech In By | 1
BSC 656 Microscopical Techniques | 1
BSC 666 Disease Models and Mechanisms | 1
BSC 675 Global Change Biology | 1
BSC 695 Spec Topics Biol Sci | 1

Total Hours | 30

Additional Requirements:
• At least 25 credit hours with a letter grade (i.e., not Pass/Fail)
• A maximum of 6 credit hours with a letter grade may be taken from BSC 507 Research Tech In By and/or BSC 607 Adv Research Tech In By
• Up to 5 hours of Pass/Fail credit can be applied toward fulfillment of degree requirements. Pass/Fail hours can include up to a total of 4 credit hours of BSC 601 Biological Sciences Seminar
• Of the 30 required credit hours, 18 must carry the BSC or MS designation.
• BSC 599 Thesis Research may not apply toward this degree

All graduate students are required to register for and attend the weekly departmental seminar, enrolling in BSC 601 Biological Sciences Seminar each semester they are in residence at the Tuscaloosa campus.

Transfer Credit
See information on transfer credit.

Accelerated Master's Program
See information on the Accelerated Master's Program.

Comprehensive Exams
Plan I: All students must pass a final oral examination (defense) related to their thesis. Final oral examination questions may also include other subjects beyond the student’s research that the M.S. Advisory Committee or other faculty consider relevant. Final oral examinations for the M.S. Plan I must be taken not less than six weeks prior to the proposed graduation date (Note: This deadline does not include time required for revision of the thesis after the defense). The outside member of the student’s committee must attend and participate in the final defense; this may be a virtual presence if the member can see and hear the presentation and actively participate in questioning of the candidate.
All departmental faculty members have the right to attend the final oral defense, and have the right to ask questions of the student that are relevant to the goals of the examination. Only faculty on the student’s
committee may vote on whether the student has passed or failed the examination.

**Plan II:** All M.S. Plan II students must pass a final oral examination related to their research or literature survey topic. Final oral examination questions may also include other subjects beyond the student's research that the M.S. Plan II Advisory Committee or other faculty members consider to be relevant. Final oral examinations must be taken no less than two weeks prior to the proposed graduation date. All committee members must attend and participate in the oral examination, either in-person or by electronic means (e.g., Skype). All students are required to notify the departmental office of their final oral examination 14 days prior to the exam.

All departmental faculty have the right to attend the oral examination, and have the right to ask questions of the student that are relevant to the goals of the examination. Only faculty on the student's committee may vote on whether the student has passed or failed the examination.

**Plan I**

**M.S. Plan I Advisory Committee:** A student must form a M.S. Advisory Committee prior to their first annual review meeting. The first committee meeting is to be held after completion of the first semester of studies (by January 31st for students entering in the fall semester and by June 30th for students entering in the spring semester) to evaluate progress toward a degree. In subsequent years of study, the committee will meet prior to December 15th to review progress during the previous academic year. It will also meet as needed to administer all final examinations, and to examine and approve the thesis.

**M.S. Research Proposal:** A formal research proposal is required and should be completed by the end of the student's second semester in the program. This proposal should include:

1. A full but concise statement of the specific goals of the research.
2. A review of the relevant literature to place the proposed work in a solid theoretical context.
3. A discussion of the significance of the proposed research and how it addresses a novel question.
4. A description of the experimental design, including experimental methods, procedures, and methods used in analysis and interpretation of results.
5. Literature citations.

The M.S. Advisory Committee can establish additional requirements such as page length and format. The proposal should be submitted to and approved by the student's M.S. Advisory Committee no later than the end of the student's second semester enrolled in the Graduate Program. A new proposal will be required if the thesis research changes significantly.

**Research Expectations:** A formal thesis, prepared in accordance with university regulations, is required. The thesis shall be based upon research approved by the student's M.S. Advisory Committee and conducted under the supervision of the major professor. See https://services.graduate.ua.edu/etd/ for formatting and submission guidelines.

**Formal Departmental Seminar and Final Oral Defense:** In addition to participation in the departmental research symposiums, a publicly announced final formal departmental seminar concerning the student’s research is required. The seminar is scheduled immediately preceding the final oral examination. All students are required to notify departmental office personnel of the date, time and room location of their formal seminar a minimum of 14 days prior to the seminar. A title and an abstract must be submitted to the departmental office at the time of seminar notification so that a public announcement can be made. In addition, a copy of the final draft of your thesis must be made available in the departmental office for those wishing to review it.

All students must pass a final oral examination (defense) related to their thesis. Final oral examination questions may also include other subjects beyond the student's research that the M.S. Advisory Committee or other faculty consider relevant. Final oral examinations for the M.S. Plan I must be taken not less than six weeks prior to the proposed graduation date (Note: This deadline does not include time required for revision of the thesis after the defense). The outside member of the student's committee must attend and participate in the final defense; this may be a virtual presence if the member can see and hear the presentation and actively participate in questioning of the candidate.

See additional information on Plan I Advisory Committee.

**Plan II**

**M.S. Plan II Advisory Committee:** A student must form a M.S. Advisory Committee prior to their first annual review meeting. The first committee meeting is to be held after completion of the first semester of studies (by January 31st for students entering in the fall semester and by June 30th for students entering in the spring semester) to evaluate progress toward a degree. In subsequent years of study, the committee will meet prior to December 15th to review progress during the previous academic year. It will also meet as needed to administer all final examinations, and to examine and approve the culmination Capstone Experience.

**Culminating “Capstone” Experience:** In addition to earning a minimum of 30 semester hours of credit, candidates for the M.S. Plan II degree are required to complete one or more of the following:

- **A. Non-thesis research project.** This requirement is met by completing a research project under the supervision and to the satisfaction of the student's M.S. Plan II Advisory Committee. The M.S. Plan II Advisory Committee determines the nature and extent of the research project. The student must prepare a report, present a public seminar, and pass an oral examination on this research. The oral exam will take place immediately following the public seminar. The research report must be submitted to the M.S. Plan II Advisory Committee for review at least 14 days prior to the public seminar and oral exam. In addition, a copy of the research report must be submitted to the departmental office and the public defense announced at least 14 days prior to the seminar and exam date. Students selecting this option may apply up to 6 hours of BSC 507/BSC 607 and up to 5 hours of BSC 598 Non-Thesis Research toward fulfillment of requirements for the degree.

- **B. Research practicum.** This requirement is met by earning 6 credit hours of BSC 507 Research Tech In By under the supervision and to the satisfaction of the student's M.S. Plan II Advisory Committee. The M.S. Plan II Advisory Committee determines the nature and extent of the BSC 507 research project. Examples of research practicum experiences include, but are not limited to, conducting research in the M.S. Plan II Advisor's laboratory, at a regional research center (e.g., HudsonAlpha Institute for Biotechnology, Joseph W. Jones Ecological Research Center), or at a national lab (e.g., National Institutes of Health). The student must prepare a report, present a formal public seminar, and pass an oral exam on the research experience. The oral exam will take place immediately following the public seminar. The research report must be submitted to the M.S. Plan II Advisory Committee for review at least 14 days prior to the oral exam. In addition, a copy of the
Culminating "Capstone" Experience Proposal: A formal Capstone Experience proposal is required and should be completed by the end of the student's second semester in the program. This proposal should include a full but concise statement of the specific goals of the Capstone Experience. M.S. Plan II option A candidates must also include in their proposals the following:

1. A full but concise statement of the specific goals of the research.
2. A review of the relevant literature to place the proposed work in a solid theoretical context.
3. A discussion of the significance of the proposed research and how it addresses a novel question.
4. A description of the experimental design, including experimental methods, procedures, and methods used in analysis and interpretation of results.
5. Literature citations.

The M.S. Advisory Committee can establish additional requirements such as page length and format. The proposal should be submitted to and approved by the student’s M.S. Advisory Committee not later than the end of the second semester. A new proposal will be required if the thesis research changes significantly.

Formal Departmental Seminar (M.S. Plan II Options A and B only): In addition to participation in the departmental research symposiums, a publicly announced final formal departmental seminar of the student's research is required for students selecting M.S. Plan II Options A and B. The seminar is scheduled immediately preceding the final oral examination. All students are required to notify departmental office personnel of the date, time and room location of their formal seminar and exam a minimum of 14 days prior to the date. A title and an abstract must be submitted to the departmental office at the time of defense notification so that a public announcement can be made. In addition, a copy of the final draft of your written report must be made available in the departmental office for those wishing to review it.

For M.S. Plan II as a transitional degree (pre-Ph.D.): In order to qualify for the M.S. degree, Ph.D. students must fulfill all requirements of the M.S. Plan II culminating "Capstone" experience option A, namely (i) submit a written report detailing the research experience, (ii) present a formal departmental dissertation and (iii) pass a final oral examination. Research applied toward fulfillment of the M.S. Plan II degree requirements may not be applied toward fulfillment of requirements for the Ph.D. degree.

Time Limits for Degree Completion
See information on time limits for degree completion.

Student Progress Requirement
Annual Progress Review: First year students must meet with their committee after completing the first semester of studies (by January 31st for students entering in the fall semester and by June 30th for students entering in the spring semester). Subsequently, each graduate student will meet annually prior to December 15th with her/his M.S. Advisory Committee for the purpose of reviewing the student's progress toward a degree during the previous academic year.

This evaluation will result in a "Pass", "Probationary pass", or "Fail". Guidelines for these rankings are given below:

- **Pass**: The graduate student is making satisfactory research progress commensurate with their time in the program, has maintained at least a 3.0 cumulative GPA, and has met other requirements of the program (e.g., formed a committee, presented a research proposal, etc.) in a timely manner.
- **Probationary Pass**: The graduate student has fallen behind schedule with respect to such requirements as formation of a committee, literature search and submission of a research proposal, scheduling and taking required examinations (for PhD students only), writing of the thesis or dissertation etc. (see degree timeline), or little or no research progress has been made since the last annual review. It may apply to a student receiving a grade lower than a B in a course during the previous year even though the (overall cumulative) GPA is 3.0 or higher. Committees awarding a Probationary Pass for students who have fallen behind schedule must provide a written rationale to the Graduate Committee and the Department Chair in the annual committee report, including clearly defined milestones or benchmarks the student must reach in order to bring their performance up to standard. The student must submit a remediation plan to their committee members addressing the concerns of the committee, including procedures for how milestones and benchmarks will be met, as well as a timeline, within two weeks of notification of their Probationary Pass. This plan must be signed by the major advisor and two other members of the student’s advisory committee, and presented for approval to the Graduate Program Director. Once approved, the remediation plan document will be placed in the student's file, and a copy given to the student. Furthermore, the graduate student must have a follow-up committee meeting meeting within six months of the annual review to evaluate their progress on the remediation plan. At the conclusion of the six-month follow-up meeting, the student will be awarded either a Pass or a Fail.
- **Fail**: The graduate student's progress is unacceptable for reasons such as a cumulative GPA of less than 3.0 in all (both graduate and undergraduate) courses attempted, insufficient research progress, or not completing the degree within time limits without an acceptable/approved reason.

Graduate students receiving a ranking of Fail for any annual review, or two rankings of Conditional Pass for any two annual reviews, will be dismissed from the Biological Sciences Graduate Program.

Appeal of a dismissal decision. If a decision was made to dismiss the student from the program, the student may make a formal appeal. This should be done according to the University of Alabama's University-wide Academic Grievance Procedures, described in the faculty handbook and available online at http://facultyhandbook.ua.edu/.

Additional Academic Requirements
All graduate students are required to register for and attend the weekly departmental seminar, enrolling in BSC 601 Biological Sciences Seminar each semester they are in residence at the Tuscaloosa campus.

Academic Misconduct Information
See information on academic misconduct.
Withdrawals and Leave of Absence Information
See information on withdrawals and leave of absence in the handbook.

Academic Grievances Information
See information on academic grievances.

Scholastic Requirements
See scholastic requirements in the handbook.

Graduate School Deadlines Information
See information on Graduate School deadlines.

Application for Graduation Information
See information on application for graduation.

Master’s Degrees
The primary purpose of master’s degree programs is to provide students with subject matter at an advanced level in their fields of study. Master’s degrees are designed to assist students either to continue their graduate studies or to meet the goals of their professions. In most cases, master’s programs also help students become familiar with methods of independent investigation.

Program Requirements
Two plans are offered for the master’s degree:

Plan I. Candidates for the master’s degree under Plan I must earn a minimum of 24 semester hours of credit in coursework plus earn a minimum of 6 additional hours of thesis research hours, for a total of 30 hours.

Plan II. Candidates for the master’s degree under Plan II must earn a minimum of 30 semester hours of coursework credit and pass the comprehensive examination or complete a culminating or “capstone experience” as described under the Comprehensive Examinations section below.

Both plans require a minimum of 18 semester hours in the major subject. With the approval of the major department, the remainder of the coursework may be completed in either the major or a related field.

In some divisions and in many departments of the University, candidates are required to do their work under Plan I. Candidates working under Plan II may be required to participate successfully in seminar or problem courses that will give them an acquaintance with the methods of research and an appreciation of the place and function of original investigation in the field.

Residency Requirements
A student’s program at the master’s level must provide sufficient association with the resident faculty to permit individual evaluation of the student’s capabilities and achievements.

Graduate Credit
A student must be admitted to the Graduate School and must register as a graduate student in order to receive graduate credit. Approval for graduate registration must be obtained from program advisors prior to registration.

Graduate Credit for Noncredit Experiences
All course credit used toward a UA graduate degree must be taught at the graduate level. No graduate credit may be earned for experiential learning not conducted under the direct supervision of graduate faculty of The University of Alabama. UA does not offer graduate credit for noncredit workshops, seminars, continuing education experiences, professional development, internships, work/life experience, and so forth.

Transfer of Credit
Courses of full graduate-level credit earned in a regionally accredited institution where a student was enrolled in the graduate school, may be submitted for review for inclusion in a master’s degree program. Evaluation of credit for transfer will not be made until after the student has enrolled in the Graduate School of The University of Alabama. Acceptance of credit requires the approval of the student’s advisory committee and the dean of the Graduate School.

A student initiates the Request for Transfer of Graduate Credit form and must ensure that the Graduate School receives an official transcript from the outside institution. This should be done well in advance of the final semester, otherwise it may delay graduation and awarding of the degree.

With the approval of the student’s department and the dean of the Graduate School, the greater of 12 hours or 25 percent of the required coursework for a master’s degree may be transferred from an outside institution. Some master’s degree programs allow fewer hours to be transferred. Be sure to check with your department’s graduate program director regarding your department’s transfer policy. Eligible coursework will have been earned during the six-year period (18 fall, spring and summer semesters) preceding the semester of admission to the UA master’s program. Only courses in which a student earned a “B” grade or better may be transferred. Thesis Research (599) may not be transferred in from an outside institution. If approved, such coursework can be counted toward the minimum hours and coursework requirements for the master’s degree.

In some cases, foreign educational credentials may not meet the Graduate School’s criteria for transfer of credit. It may be necessary for students in this situation to secure an evaluation of their credentials from World Education Services Inc. (WES), an external foreign credential evaluation service. Additional information on their services can be found at their website.

400-Level Courses
A maximum of 6 semester hours of 400-level course credit may be accepted for graduate credit and used toward a master’s degree. The department needs to submit the Approval of 400-Level Course Work for Master’s Credit form through the UA DocuSign system in myBama. This form must be submitted for approval to the Graduate School by the last day to add a course for the semester in which the course will be taken.

Time Limit
All requirements for the master’s degree must be completed during the six years (18 fall, spring, and summer semesters) immediately preceding the date on which the degree is to be awarded. Previously approved transferred coursework that falls within six years of admission to the master’s degree program can be counted toward the minimum hours requirement. There is no provision for an extension of the time limit beyond six years for master’s students.

Revalidation of Expired Credits
There may be particular and limited instances where a student is re-admitted to a graduate program, and revalidation of expired credits is justified. In such cases, where the department and Graduate School feel it
is appropriate to do so, the student may work with the graduate program director to petition for such revalidation, on a course-by-course basis. For each course for which revalidation is requested, the student must demonstrate, to the department’s satisfaction, that the knowledge and skills gained in that course are still current. Currency will be evaluated by a committee of faculty, composed of at least three graduate faculty members within the degree program to which the student is requesting re-admission, and two from a separate department.

The committee will then issue a recommendation to the dean of the Graduate School, who will rule on the petition.

Some methods for demonstrating currency may include but are not limited to 1) a professional portfolio; 2) an exam or essay linked to each course and demonstrating up-to-date knowledge; 3) a re-take of the comprehensive exams under current program guidelines, and/or 4) other methods deemed appropriate by the committee.

Students may request revalidation of up to 50% of the required minimum coursework for their degree. Credits earned from an institution other than The University of Alabama may not be revalidated.

Consideration of revalidation, and a plan of study based on the demonstration-of-currency and other remaining requirements, must be completed as part of the student’s re-admission to the Graduate School. Revalidation of credits is not guaranteed. From the time of re-admission, students must complete the degree within the standard time limit, as specified in the Graduate Catalog at the time of the student’s re-admission.

Thesis
A thesis evidencing research capacity, independent thought, and the ability to interpret materials is required of all master’s degree candidates who pursue Plan I. The subject chosen must be in the major field and must be approved by the graduate committee of the major department or school and by the head of the student’s major department or division.

A thesis committee must consist of at least three members appointed by the dean of the Graduate School. Students set up their committee through the Graduate Academic Activities portal on the Graduate School website. The request normally is made as soon as the successful defense of the thesis proposal has been completed. All members of a thesis committee must be members of the Graduate Faculty. The Committee Chair must be a full or associate member of the Graduate Faculty. One member must be from outside the student’s major department. The majority of the thesis committee must be full-time regular University of Alabama faculty. If the outside member is not a full or associate member of the UA Graduate Faculty (e.g., a highly qualified person from another university, a business, or industry), the graduate dean needs to appoint that member by approving Affiliate Graduate Faculty status for the specific purpose of serving on the student’s thesis committee. Unless there are extraordinary circumstances meriting approval by the graduate dean before the final oral defense of the thesis, all members of the thesis committee must attend the defense.

The candidate must give members of the examining committee a minimum of two weeks to read the thesis before the date of the final oral examination. All members must agree that the student is ready for the final oral thesis defense. A final oral thesis defense is required of all students completing a thesis. All members of the thesis committee must be members of the UA graduate faculty and must attend the final oral thesis defense unless there are extraordinary circumstances warranting the graduate dean’s approval of the absence prior to the defense meeting.

The final oral thesis defense is the culminating experience in the master’s program. As such, all members of the thesis committee are expected to attend and participate in real time. Virtual attendance via interactive video or teleconference is permitted for off-campus external committee members, but the student and Tuscaloosa campus faculty should attend in person unless extraordinary circumstances dictate the need for virtual attendance. In circumstances where virtual participation is necessary, all participants must follow the Virtual Participation guidelines found below.

Virtual Participation in Committee-Based Exams/Defenses
All members of a student’s graduate committee are expected to attend and participate, usually in person, in any oral examination as part of the student’s graduate (Master’s or Doctoral) degree program. Traditionally, oral examinations are conducted with the student meeting their committee while gathered in one physical location on campus. However, the need occasionally arises for virtual participation in the oral examination.

If a department or program chooses to allow virtual participation in oral examinations, they must ensure adherence to the following technical requirements. Departments or programs may enforce stricter guidelines than those outlined, including an on-campus-only policy if deemed necessary and appropriate.

Technical Requirements
In cases where departments or programs allow any level of virtual participation, from one virtual member to a fully virtual event, they must adhere to the following requirements:

1. Prior to any oral exam, the student and Committee Chair coordinate with other committee members regarding the protocol for the exam.
2. All participants must join using university-adopted videoconferencing tools that allow for fully interactive audio and video communications along with screen-sharing capabilities, which must be maintained throughout the examination and any related discussion.
3. The use of audio-only communications is not permitted.
4. Participation merely by viewing a recording of the oral examination is specifically prohibited.
5. All members of the committee, on- or off-site, must participate in the final evaluation of the examination or defense; provisions must be made to record their votes and collect their signatures as necessary using the digital signature system approved by the Graduate School.
6. The Committee Chair, or another non-student designee, shall be the host of the virtual meeting. A co-host may be assigned so that the event will not be interrupted by technical difficulties. The host should mute all participants (or ask participants to mute themselves) and ask the student to share their screen, if a presentation is involved, in order to make the presentation visible to all attendees. The host must also ensure that appropriate security precautions are taken to prevent the interruption of the event.
7. Following the public portion of the defense, the host shall ask all non-committee members to leave the meeting, or the host may manually remove them. In programs where the defense has both a public and a private portion, the committee may then continue the event as outlined in their program protocols.
8. Once the committee has completed the examination of the student, the host shall place the student into the waiting room (or have the committee members use a breakout room) so the committee can conduct their deliberations in private.

The committee chair must have a secondary videoconferencing system available as a back-up in the case of technical difficulties. Cancellation of the examination should only occur in the case where both the
primary and secondary back-up systems fail. If an examination must be rescheduled, it will be done without prejudice to the student. Since committee deliberations are an essential aspect of the examination, completing the examination and final discussion via email or other non-audiosvisual means is not an option. If the student or any committee member(s) have a disability that will be impacted by virtual participation, accommodations for participation must be provided.

**Article Style vs. Journal Format for Master's Theses**

**Article Style.**

At the doctoral level, "article-style dissertations" are unified works that include several distinct but related studies of research or creative activity, each of which is of publishable quality. The University does not permit an "article-style thesis" to be presented for a master's degree.

**Journal Format.**

A "journal-format thesis" is acceptable. Such a thesis follows the format of a particular journal in which the student and advisor want the thesis to be published. To prepare a journal-format thesis, the student uses the journal's "information for authors" or similarly titled guidelines in conjunction with the Graduate School's Student Guide to Preparing Electronic Theses and Dissertations.

All theses are submitted electronically rather than on paper. See the Graduate School's homepage for a link to information on Electronic Theses and Dissertations (ETD) for details.

Theses must comply with the regulations set out in A Student Guide to Preparing Electronic Theses and Dissertations, available on the Graduate School's website. Approval of the thesis by the graduate dean is necessary before graduation.

The thesis should be completed, if possible, while the student is in residence at the University. To request permission to complete a thesis in absentia, the student must, before leaving the University, submit a satisfactory outline of the thesis, as well as evidence that adequate facilities are available where the work will be done, to the head of the student's major department.

**Protection of Human Subjects for Research**

Scientific research involving human subjects has produced substantial benefits for society, but it also can pose troubling ethical questions. The mission of the University's Institutional Review Board (IRB) for Protection of Human Subjects is to ensure that research involving human subjects is conducted ethically. University and federal policies require that review and approval to use human subjects in research precede the research.

In the case of thesis research that involves the use of human subjects in any way, the principal investigator is responsible for contacting the college Human Research Review Committee to obtain approval for the planned research.

**Final Thesis Defense**

The final oral thesis defense is the culminating experience in the master's program. As such, all members of the thesis committee are expected to attend and participate in real time. Virtual attendance via interactive video or teleconference is permitted for off-campus external committee members, but Tuscaloosa campus faculty should attend in person unless extraordinary circumstances dictate the need for virtual attendance. The thesis must comply with the regulations in A Student Guide to Preparing Electronic Theses and Dissertations.

"Completed" means submitted to ProQuest after being successfully defended, carefully edited following the defense meeting, and having the Committee Acceptance Form (CAF) signed by all committee members, department chairperson, and graduate dean. A majority of the thesis committee must approve the written thesis and defense before submission to the Graduate School. Following the thesis defense, the Committee Acceptance Form is submitted by the thesis chair through the UA DocuSign system in myBama.

Graduate School deadlines, including each semester's thesis deadline, are available at the Graduate School's homepage. Consult the ETD website for details of ETD submission, including information on what needs to be submitted to the Graduate School. The graduate dean must approve the thesis before the student can be cleared for graduation.

**Comprehensive Examinations**

In addition to the regular course examinations, a final comprehensive examination representing a "culminating" or "capstone" experience for a degree is required of all candidates for the master's degree (except for those candidates pursuing the Master of Accountancy, the Master of Business Administration, the Master of Library and Information Studies, the Master of Social Work, and the Master of Tax Accounting). The comprehensive examination is a culminating experience in which the student is expected to integrate prior learning. Each department, with approval of the Graduate Council, determines the most appropriate format. The various exams may consist of one or more of the following:

- a written and/or oral examination based on the content of the degree program;
- a thesis and final oral defense;
- a course requiring interpretation and integration of information from previous courses;
- a research paper, a "policy and practice" paper, or equivalent experience;
- a public performance or exhibition along with a contextualizing paper; and/or
- a practicum or internship.

If the comprehensive exam requirement is met with option 1 and/or 2 above, then the examining committee for comprehensive examinations must consist of at least three members of the graduate faculty from that department and appointed by the dean of the Graduate School.

The examination must be given at least six weeks before the date of graduation (two weeks before for Plan II) and reported promptly to the dean of the Graduate School on appropriate forms. The final report is submitted by the department through the UA DocuSign system in myBama. The form should be submitted when all examinations are completed. A student may take the final oral or written examination only twice. Failing the examination twice results in dismissal from the degree program and the Graduate School.

**Application for Graduation**

Each candidate for a master's degree must submit an Application for Degree via myBama no later than the last day to add a course for the semester (or first term of the summer semester) in which requirements for the degree are to be completed. That specific date is published each semester at the Graduate School's website under Current Students/Deadlines for Graduate Students.

**Second Master's Degree**

Six (6) semester hours of eligible credit from one master's degree at The University of Alabama may be applied to the requirements for a second master's degree, but only if the department of the second master's agrees to the courses in the plan of study. Any hours from the previous master's
degree must have been earned during the six years (18 fall, spring, and summer semesters) immediately preceding the date on which the second degree is to be awarded. ***Please note that if a student double counts six hours between two master’s degrees, no hours may double count toward any additional master’s degrees.