

# School of Biological Sciences

## Master of Science in Biology Graduate Student Handbook



LOUISIANA TECH  

---

UNIVERSITY®

School of Biological Sciences  
215 Carson-Taylor Hall  
P.O. Box 3179  
Louisiana Tech University  
Ruston, Louisiana 71272

318 257-4573 telephone  
318 257-4574 fax

*June 2011*

## Notes

## **School of Biological Sciences**

William J. Campbell, Ph.D.  
Interim Director  
[campbell@latech.edu](mailto:campbell@latech.edu)

215 Carson-Taylor Hall  
P.O. Box 3179  
Louisiana Tech University  
Ruston, Louisiana 71272

*Telephone:* (318) 257-4573  
*Fax:* (318) 257-4574

*Web Page:*

[http://ans.latech.edu/index.php?option=com\\_content&view=article&id=109&Itemid=135](http://ans.latech.edu/index.php?option=com_content&view=article&id=109&Itemid=135)

## **College of Applied and Natural Sciences**

James D. Liberatos, Ph.D.  
Dean

William J. Campbell, Ph.D.,  
Associate Dean for Graduate Studies and Research

913 Prescott Library  
P.O. Box 10197  
Louisiana Tech University  
Ruston, Louisiana 71272

*Telephone:* (318) 257-4287  
*Fax:* (318) 257-5060  
*Web Page*  
<http://www.ans.latech.edu>

## **Louisiana Tech University Graduate School**

Terry M. McConathy, Ph.D.  
Executive Vice President and Dean of the Graduate School

Wyly Tower, Room 1642  
P.O. Box 7923  
Louisiana Tech University  
Ruston, Louisiana 71272

*Telephone:* (318) 257-2924  
*Fax:* (318) 257-4487  
*Web Page*  
[http://www.latech.edu/graduate\\_school](http://www.latech.edu/graduate_school)

*Note: The Graduate School website is a source of information regarding policies, deadlines, preparation of the thesis, and downloadable Graduate School forms.*

## *Some Important Points to Know and Remember*

---

- Students enrolled in the Master of Science in Biology program should read and become familiar with the information in this *Handbook*.
- During the first quarter enrolled in Graduate School students should:
  - (a) assemble your Graduate Advisory Committee, and designate a Chair of the committee to be your Advisor {GS Form 5}
  - (b) complete and submit your Plan of Study  
{GS Form 6 – form must be typed and be on a single page, front and back}
- Students receiving a graduate assistantship (teaching or research) must be registered for a minimum of 6 hours of graduate credit per quarter. In certain situations students receiving an assistantship may be able to register for 3 hours of graduate credit during summer quarter if specified criteria are met; check with your advisor or the Graduate School if you have questions about summer registration requirements.
- Students pursuing thesis research must be registered for a minimum of 3 hours of graduate credit per quarter.
- Students pursuing the Thesis Plan should submit their thesis research proposal (and GS Form 10) prior to actually beginning their thesis research.
- Non-thesis students should register for BISC 585 (*Comprehensive Examination in Biological Sciences*) and schedule their written comprehensive examinations the quarter preceding their anticipated date of graduation. Non-thesis students **must** be enrolled in BISC 585 to be eligible to take their written comprehensive examinations. *{BISC 585 is a 0 credit hour course, and there is no tuition cost to register for this course.}*
- If a student changes from the Thesis Plan to Non-Thesis Plan, or vice versa, the student's advisor must notify, in writing, the Associate Dean for Graduate Studies and Research.
- As a graduate student, **you** are responsible for being aware of all University, College, and School of Biological Sciences guidelines and deadlines.

## Table of Contents

	Page
<b>General Information</b> .....	5
<b>Admission</b> .....	6
<b>General Regulations</b> .....	8
<b>Program Of Study: Thesis Plan</b> .....	10
<b>Summary Time Table For Thesis Students</b> .....	14
<b>Program Of Study: Non-Thesis Plan</b> .....	15
<b>Summary Time Table For Non-Thesis Students</b> .....	17

*Appendices Begin on Page 18*

<b>Appendix A:</b>	Graduate Faculty:	School of Biological Sciences
<b>Appendix B:</b>	Graduate Faculty:	Department of Agricultural Sciences School of Forestry
<b>Appendix C:</b>	Graduate School Forms	
	<b>GS 5 form</b>	Appointment of Advisory Committee
	<b>GS 6 form</b>	Plan of Study - Thesis Plan
	<b>GS 6 form</b>	Plan of Study - Non-Thesis Plan
	<b>GS 10 form</b>	Proposal for Thesis
	<b>GS 11 form</b>	Examination Report

## GENERAL INFORMATION

The School of Biological Sciences offers a program of study leading to the **Master of Science** degree in **Biology**. A student may pursue either the thesis plan (30 semester hours) or the non-thesis plan (36 semester hours). Details of these plans are described below.

*The School of Biological Sciences participates in the interdisciplinary degree program for the Master of Science in Molecular Sciences and Nanotechnology (MSNT), and the interdisciplinary Ph.D. program in Computational Analysis and Modeling (CAM). The information in this handbook is provided primarily for students enrolled in the M.S. in Biology degree program.*

Applicants interested in pursuing the thesis plan are encouraged to discuss their research interests with members of the Biological Sciences Graduate Faculty (see list in Appendix) in whose research area they are interested. The thesis plan is strongly recommended for students considering a Ph.D. program after completing the Master of Science program, and for students planning for a career in research. The non-thesis plan is sometimes preferred by students interested in gaining admission to professional schools, or those wishing to enhance their background and experience in biology.

Graduate students with Unconditional Admission status (see below) may apply for financial support in the form of Graduate Assistantships. Assistantship application forms are available from the School of Biological Sciences, the College of Applied and Natural Sciences, or the Graduate School. Assistantships are awarded on a competitive basis; not all students applying for an assistantship will receive financial support. Preference is given to students in the thesis plan. Completed assistantship application forms should be submitted to the Director of the School of Biological Sciences (215 Carson-Taylor Hall). Questions regarding the awarding of assistantships should be directed to the School of Biological Sciences.

In addition to this *Graduate Student Handbook* for students in the School of Biological Sciences, graduate students should familiarize themselves with the pertinent guidelines of the College of Applied and Natural Sciences and Louisiana Tech University, as stated in the current edition of the Louisiana Tech University *Catalog*.

Information regarding the **Graduate School** is available online at [www.latech.edu/graduate\\_school](http://www.latech.edu/graduate_school). Students pursuing the M.S. thesis plan must also obtain a copy of the *Guidelines For The Preparation And Submission Of Your Thesis Or Dissertation*, available from the Graduate School, or by downloading from the Graduate School website.

## ADMISSION

Applicants seeking admission to the Biology Graduate Program in the College of Applied and Natural Sciences must meet the minimum admission requirements of the Graduate School, as published in the current *Catalog* of Louisiana Tech University, as well as meet the admission requirements of the School of Biological Sciences. Each graduate student must assume personal responsibility for knowing the Graduate School regulations and requirements described in the current *Catalog*.

Admission decisions regarding the Master of Science in Biology program are based on an applicant's **GPA** and on the applicant's scores on the general test of the **GRE** (Graduate Record Exam). Students applying to the program should submit an official copy of their GRE scores at the time they submit their Graduate School application.

### **GPA and the Graduate Record Examination (GRE)**

To be considered for admission to the graduate program in Biology, an applicant must have a minimum undergraduate grade point average (GPA) of 2.50 (on a 4.00 scale), overall or on the final 60 semester hours. In addition, applicants must submit official scores for the General Test of the Graduate Record Examination (GRE). Based on an applicants GPA and GRE scores, admission to the graduate program in Biology may be either Unconditional or Conditional.

#### **Unconditional Admission\***

For Unconditional Admission into the graduate program in Biology an applicant must possess a minimum undergraduate GPA (overall, or on the final 60 semester hours) of 3.00. In addition, a score of at least 1400 is required as calculated using the following equation:

$$(GPA \times 200) + (verbal\ GRE + quantitative\ GRE) = 1400$$

#### **Conditional Admission\***

For Conditional Admission into the graduate program in Biology an applicant must possess a minimum undergraduate GPA (overall, or on the final 60 semester hours) of 2.50, and a score of at least 1200 as calculated using the following equation:

$$(GPA \times 200) + (verbal\ GRE + quantitative\ GRE) = 1200$$

---

\* *The equations above for Unconditional and Conditional admission will be utilized for applications submitted with scores on GRE tests completed prior to August 1, 2011.*

*Effective August 1, 2011, a revised GRE test will be scored on a new point scale (130-170) for both the quantitative and verbal sections of the general test. New equations for Unconditional and Conditional admission will be utilized for scores obtained on the revised GRE test.*

### **Conditional Admission (continued)**

Students admitted with Conditional Admission who earn a minimum of 9 graduate semester credit hours at Louisiana Tech with a graduate GPA of at least 3.00, and no grade lower than C and no more than one C, can have their status changed to Unconditional Admission, provided all other requirements for Unconditional Admission have been satisfied.

Students admitted with Conditional Admission who fail to qualify for Unconditional Admission as described above will be dropped from the Graduate School.

Graduate students admitted with Conditional status may not be eligible for financial aid; students with questions regarding financial should direct those questions to the Office of Student Financial Aid (240 Keeney Hall, 257-2641). Additional details concerning Conditional Admission can be found in the current *Catalog* of Louisiana Tech University.

### **Deficiencies in Undergraduate Course-Work**

Most students accepted into the Master of Science in Biology program will have completed a bachelor's degree in biology, or a closely related discipline. In some instances a student with a bachelor's degree in a field other than biology or a closely related discipline may be admitted to the Master's in biology program. These students will be required to complete appropriate course work to satisfy deficiencies in their academic background.

To ensure that every student graduating with the Master of Science in Biology has knowledge covering the fundamentals of biology, an applicant's background knowledge will be evaluated. Where deficiencies in background knowledge appear, the student will be required to complete appropriate course work. This course work will be indicated on the student's Plan of Study form (GS Form 6), and must be successfully completed to satisfy their degree requirements.



## GENERAL REGULATIONS

### The Graduate Advisory Committee

The Associate Dean for Graduate Studies and Research will initially serve as the advisor for incoming biology graduate students until the student's Graduate Advisory Committee has been formed, and a Committee chair has been appointed. During the **first quarter enrolled** as a graduate student, each student will select a Graduate Advisory Committee for counseling and guidance. Students may seek advice regarding the formation of their Graduate Advisory Committee by discussing their interests with the Biological Sciences Graduate Faculty, or with the Associate Dean for Graduate Studies and Research, or the Director of the School of Biological Sciences. The Graduate Advisory Committee will be appointed by completing the Appointment of Advisory Committee form (GS form 5; see Appendix C) and submitting the form to the Associate Dean for Graduate Studies and Research.

Ordinarily, a majority of the Committee members are from the student's area of emphasis. The Graduate Advisory Committee membership will include a minimum of three and a maximum of five members of the Louisiana Tech University Graduate Faculty. **A minimum of two committee members must be from the School of Biological Sciences Graduate Faculty.** The remaining committee member(s) will be selected from the Graduate Faculty of Louisiana Tech University. One Committee member will be appointed to serve as chair of the Graduate Advisory Committee, and will also serve as the student's major advisor. Adjunct faculty that have been appointed to the Graduate Faculty of Louisiana Tech may serve on a Graduate Advisory Committee, but may not chair a Graduate Advisory Committee. The Director of the School of Biological Sciences, the Associate Dean for Graduate Studies and Research, and the Dean of the College of Applied and Natural Sciences are *ex officio* members of each Graduate Advisory Committee.

The chair of the Graduate Advisory Committee for a thesis student typically directs the thesis research, in collaboration with the other members of the Committee. The Graduate Advisory Committee assists in preparation of the Plan of Study and administers the required examinations (see below). The Associate Dean for Graduate Studies and Research and the Graduate Advisory Committee may identify deficiencies in the candidate's educational background and will, based on those deficiencies, determine a schedule of additional course work.

### The Plan Of Study

A Plan of Study form (GS Form 6; see Appendix C) will be prepared by each student, with the advice and approval of the student's Graduate Advisory Committee. The completed and signed **Plan of Study form must be submitted during the student's first quarter of enrollment.** Failure to submit this form in a timely manner will prevent a student from registering for subsequent terms. The form must be **typed, front and back, on a single page.** The completed Plan of Study form must be signed by the student, all members of the Graduate Advisory Committee, and the Director of the School of Biological Sciences. The Plan of Study will be submitted to the Graduate School through the Associate Dean for Graduate Studies and

Research. Changes to a student's Plan of Study, approved by the student's Graduate Advisory Committee, may be made by completing and submitting a new fully signed Plan of Study form.

### **Written and Oral Examinations**

Students pursuing the thesis plan must successfully pass an oral examination (also referred to as the oral defense of the thesis). According to Graduate School guidelines, the oral examination must take place no later than the 10<sup>th</sup> class day of the quarter of expected graduation. Following successful completion of this examination, the Examination Report (GS Form 11) must be signed and submitted to the Associate Dean for Graduate Studies and Research.

Students pursuing the non-thesis plan must successfully pass both a comprehensive written examination and also an oral examination, conducted by their Graduate Advisory Committee. Students must register for BISC 585 (*Comprehensive Examination in Biological Sciences*) during the quarter they take the comprehensive written examination, typically the quarter prior to the quarter the student anticipates graduating. Students will not be allowed to take the written comprehensive examination if they are not registered for BISC 585. The oral examination is typically scheduled during the final quarter of enrollment in the graduate program. Following successful completion of both the written and oral examinations, the Examination Report (GS Form 11) must be signed and submitted to the Associate Dean for Graduate Studies and Research.

### **Graduate Assistants**

Graduate students who have been appointed to a Graduate Assistantship (including both teaching and research appointments) have certain obligations that must be satisfied, and certain guidelines that must be followed. Students appointed to a Graduate Assistantship will have out-of-state tuition fees waived, if applicable.

Students receiving a Graduate Assistantship must be enrolled in **a minimum of 6 graduate credit hours per quarter** while receiving the assistantship. Should a student's course load fall below the six-hour minimum the assistantship and out-of-state tuition waiver will be cancelled, and the student may be required to repay the funds received. These guidelines pertain to all graduate assistants regardless of whether their source of support is from grant funds, School/Departmental funds, College or University funds, or some other source of funds.

In certain situations students receiving an assistantship may be able to register for 3 hours of graduate credit during summer quarter if specified criteria are met; check with your advisor or the Graduate School if you have questions about summer registration requirements.

## PROGRAM OF STUDY: Thesis Plan

For the degree of Master of Science in Biology with the thesis plan, a minimum of **30 semester hours of graduate credit** is required, with the following regulations:

1. A minimum of one-half of the credits required to complete the Thesis Plan must be earned in courses open only to graduate students (500-level or above). A minimum of 18 hours must be earned in Biological Sciences courses (BISC). Credit earned in certain 400-level courses may be applied toward the required 30 semester hours of graduate credit, provided those 400-level courses have been approved for graduate credit by the University Graduate Council. Such 400-level courses approved for graduate credit are identified in the current edition of the Louisiana Tech University *Catalog* by the letter (G) placed at the end of the course description.
2. The curriculum for students pursuing the thesis plan includes the following required course work:

<u>Course</u>	<u>Title</u>	<u>Semester Credit Hours</u>
BISC 502	<i>Research Methods in Biological Sciences</i>	3
BISC 509	<i>Biological Sciences Seminar</i>	1
(thesis students are required to register for BISC 509 two times, for a total of 2 credit hours)		
BISC 535	<i>Current Topics in Biological Sciences</i>	1
BISC 551	<i>Research and Thesis in Biology</i>	6

In addition, students must earn three graduate credit hours of statistics; this may include any statistics course that has been approved for graduate credit.

Six semester hours of Biological Sciences Research and Thesis (BISC 551) can be applied toward the degree requirements. Students commonly register for more than six hours of BISC 551 during the course of their graduate program, however a maximum of six of those hours may be applied towards the degree requirements.

3. A maximum of six semester hours of credit for Biological Sciences Special Problems (BISC 530) combined with Biological Sciences Internship (BISC 540 and BISC 541) can be used toward satisfying the requirements for earning the M.S. in Biology.
4. The completed **Proposal for the Thesis** (accompanied by GS Form 10, see Appendix C) should be submitted to the Associate Dean for Graduate Studies and Research no later than during the first quarter of registration in Biological Sciences Research and Thesis (BISC 551).
5. Completion of the thesis plan includes a successful oral defense of the Thesis and oral examination by the student's Graduate Advisory Committee. **Written notification**

**(memo or email) of the date and location of a student's oral examination must be forwarded to the office of the Associate Dean for Graduate Studies and Research in advance of the examination.**

Unanimous agreement by the Graduate Advisory Committee is required regarding the student's acceptable performance in the oral defense and examination. Upon completion of these requirements the Examination Report (GS Form 11) will be submitted to the Graduate School through the Associate Dean for Graduate Studies and Research. Consistent with University policy, a student who does not successfully pass the comprehensive examination is entitled to **only one repeat examination**.

## **The Thesis**

A thesis research project includes a statement of an original hypothesis or a problem to be investigated, and it is the duty of the student to conduct investigations to address the problem or to test the hypothesis. Relevant scientific literature must be surveyed, and experimental data must be collected, properly analyzed, and reported.

If appropriate, approval for resources and facilities to be used for thesis research must be secured from the appropriate academic unit head prior to beginning a thesis research project. Enrollment in a minimum of three hours of graduate credit is required each quarter the student is utilizing university resources (laboratory facilities, supplies, computers, faculty time, library resources, etc.) for their thesis project.

*Important steps in conducting thesis research include:*

Define the problem to be investigated, or the hypothesis to be evaluated.

Review appropriate literature regarding what is known and what important questions remain unanswered. It is expected that the student will undertake a thorough review of the scientific literature and become cognizant of major issues within their field of research.

Prepare a research proposal. This very important step defines the student's research project. The proposal should be an overview of the research project, including a literature review, proposed methods and experimental procedures, and a description of how the collected data will be analyzed. A set of specific research objectives should also be included in the research proposal. The thesis proposal must be submitted to the student's Graduate Advisory Committee no later than during the quarter the student begins their thesis research. A Thesis Proposal Form (GS Form 10) must be signed and submitted to the Graduate School as described above. Before a student initiates a thesis project, input and approval by all Graduate Advisory Committee members must be documented by the completion of GS Form 10. It is of paramount importance for the student to keep the Graduate Advisory Committee advised of progress and problems encountered during the research project.

Prior to initiating the thesis project the student must obtain a current copy of the *Guidelines For The Preparation And Submission Of Your Thesis Or Dissertation*, published by the Louisiana Tech University Graduate School (also available from the Graduate School website at

[www.latech.edu/graduate\\_school/thesis\\_dissertations/grad\\_guidelines\\_thesis.shtml](http://www.latech.edu/graduate_school/thesis_dissertations/grad_guidelines_thesis.shtml). These guidelines contain helpful information, as well as University guidelines that must be followed, and deadlines which must be met.

### **An example of the organization of a thesis follows:**

*(Do not use this section as a substitute for reading the Graduate School Guidelines. You must obtain a copy of the Graduate School Guidelines and follow the procedures described therein.)*

#### Title

The title should describe the topic of the study clearly and concisely, but not be excessively wordy.

#### Abstract

The abstract should be informative but not overly descriptive. The abstract should include a statement of the research objectives, important methods to be employed, a brief description of the results obtained, and conclusions.

#### Introduction

The introduction should be a thoroughly documented description of the question(s) or hypothesis (hypotheses) to be investigated. The research objectives must be clearly identified. The introduction should include a thorough review of the significant scientific literature in the student's research area. The source of statements within the literature review, as well as in other sections of the thesis, should be documented.

#### Materials and Methods

This section should describe, in detail, how the research was conducted and what methods, techniques, or protocols were employed. A description of the organism(s) used should also be included. Include an explanation of your method of data analysis. Sufficient detail should be included in this section so that other researchers, familiar with your field of study, could repeat the experiments or techniques you describe.

#### Results

All experimental results should be introduced in the Results section of the thesis. Units and measurements should be consistent with those used in a major journal in the field. Ordinarily, metric (SI) units should be used.

#### Discussion

This section should summarize and interpret the observations and results obtained during the research described in the Materials and Methods and Results sections. This section should evaluate the results to determine whether the hypothesis proposed in the Introduction is valid. The Discussion should explain the results obtained with respect to the original problem or hypothesis, as well as to the relevant published scientific literature.

### Conclusion

There may be a separate section for the student's conclusions. In this section the student interprets the meaning and importance of the research findings, and draws appropriate conclusions.

### Literature Cited

Citation of primary sources (scientific journal articles) is often the best documentation of facts and ideas. Methods, comparative data, and authoritative analysis of previous work may also be cited from review articles and books. There are several acceptable formats for citing references within the main text. The format selected should be consistent with an acceptable style used by publications in the area of the student's research, and should be approved by the chair of the student's Graduate Advisory Committee.

Citation of information obtained from the Internet is acceptable, however students have a responsibility to ensure the accuracy and validity of information from this source. If in doubt about a particular reference, perhaps you should select a different source.

A list of all literature used or cited in the Thesis should be included in a Literature Cited section. Use of literature and/or data sources must be properly documented, and students should be aware of proper citation methods.

***Failure to properly document resources, presentation of data or material from another source as your own, or other forms of plagiarism is not acceptable, and may result in a rejection of the thesis and removal from the graduate program.***

### **General Comments On Completing The Thesis:**

It is the student's responsibility to produce a Thesis acceptable by the student's Graduate Advisory Committee, the School of Biological Sciences, the College of Applied and Natural Sciences, and Louisiana Tech University. It is strongly recommended that the student schedule regular meetings with the chair of the Graduate Advisory Committee to keep the chair of the Committee apprised of progress with the thesis research, as well as with the preparation of the written thesis.

***It is the student's responsibility to meet all School of Biological Sciences, College, and University deadlines, and to satisfy all requirements for the Master of Science in Biology degree.***

Professional style manuals may be consulted as an aid in the proper preparation of the thesis. It should be noted, however, that the student must follow his/her Graduate Advisory Committee's judgment. If a conflict exists between regulations set forth by various publications in the student's research area or in style manuals, and the rules put forth by the *Guidelines For The Preparation And Submission Of Your Thesis Or Dissertation*, published by the Louisiana Tech University Graduate School, the University's Graduate School guidelines take precedence. It is therefore imperative that students obtain a copy of the guidelines from the Graduate School before beginning the preparation of their Thesis.

### Summary Time Table for Thesis Students

<b>First quarter enrolled in Graduate School</b>	Formation of Graduate Advisory Committee (GS Form 5)  Complete and submit Plan of Study form (GS Form 6)
<b>First quarter registered for BISC 551</b>	Prepare Thesis Proposal (prior to beginning research); submit Proposal and GS Form 10
<b>First registration in BISC 509</b>	Present Thesis Proposal seminar
<b>Quarter of graduation</b>	Register for graduation  Submit new Plan of Study form (GS Form 6) if necessary  Set date for oral examination and notify, in writing, the Associate Dean for Graduate Studies and Research of the examination date, time, and location (the oral examination must take place no later than the 10 <sup>th</sup> class day of the quarter of expected graduation)  Submit completed Examination Report (GS Form 11) to Associate Dean for Graduate Studies and Research  Submit copies of completed Thesis to Library, as required

NOTE: See current list of specific dates and deadlines in *Guidelines For The Preparation And Submission Of Your Thesis Or Dissertation*, available from the Graduate School (also available from the Graduate School website at [www.latech.edu/graduate\\_school/thesis\\_deadlines.pdf](http://www.latech.edu/graduate_school/thesis_deadlines.pdf)).

***It is the student's responsibility to be aware of and to meet all deadlines and to satisfy all degree guidelines.***

**PROGRAM OF STUDY:     Non-Thesis Plan**

For the degree of Master of Science in Biology with the non-thesis plan, a minimum of **36 semester hours of graduate credit** is required, with the following regulations:

1. A minimum of one-half of the credits required to complete the Non-Thesis Plan must be earned in courses open only to graduate students (500-level or above). A minimum of 18 hours must be earned in Biological Sciences courses (BISC). Credit earned in certain 400-level courses may be applied toward the required 36 semester hours of graduate of credit, provided those 400-level courses have been approved for graduate credit by the University Graduate Council. The 400-level courses approved for graduate credit are identified in the current edition of the Louisiana Tech University *Catalog* by the letter (G) placed at the end of the course description.
2. The curriculum for students pursuing the non-thesis plan includes the following required course work:

<u>Course</u>	<u>Title</u>	<u>Semester Credit Hours</u>
BISC 502	<i>Research Methods in Biological Sciences</i>	3
BISC 509	<i>Biological Sciences Seminar</i>	1
BISC 517	<i>Applied Biological Sciences Research</i>	3
BISC 535	<i>Current Topics in Biological Sciences</i>	1
(non-thesis students are required to register for BISC 535 two times, for a total of 2 credit hours)		
BISC 585	<i>Comprehensive Examination in Biological Sciences 0</i>	

In addition, students must earn three graduate credit hours of statistics; this can include any statistics course that has been approved for graduate credit.

3. A maximum of six semester hours of credit for Biological Sciences Special Problems (BISC 530) combined with Biological Sciences Internship (BISC 540 and BISC 541) can be used toward satisfying the requirements for earning the M.S. in Biology.
4. Non-thesis students are required to pass comprehensive written and oral examinations conducted by the student's Graduate Advisory Committee. **Unanimous agreement by the Graduate Advisory Committee is required regarding the student's acceptable performance on both written and oral examinations.** Consistent with University policy, a student who does not successfully pass the written comprehensive examination or the oral examination is entitled to **only one repeat examination.**

Written examinations should be taken the **quarter prior to the student's anticipated graduation**; students must register for BISC 585 (*Comprehensive Examination in Biological Sciences*) the quarter they will be taking their written comprehensive



examination. BISC 585 is a zero credit hour course, and there is no cost to register for the course, however students must be enrolled in BISC 585 to be eligible to take their written comprehensive examination.

It is the student's responsibility, in conjunction with the chair of the Graduate Advisory Committee, to schedule the written examination. Students should plan for the examination well in advance to ensure all Graduate Advisory Committee members are available. **The oral examination will be conducted during the student's final quarter.**

**Written notification of the date and location of a student's oral examination must be forwarded to the office of the Associate Dean for Graduate Studies and Research in advance of the examination.**

Upon successful completion of the student's written and oral examinations, the Examination Report (GS Form 11) must be forwarded to the Associate Dean for Graduate Studies and Research.

The Master of Science in Biology is an advanced degree and students earning this degree are expected to possess comprehension of the fundamentals of biology. The student's undergraduate and graduate course work should contribute to this objective. Members of the student's Graduate Advisory Committee will prepare written and oral comprehensive examinations, which may cover basic biology as well as material from courses on the student's Plan of Study. Students are encouraged to consult in advance with the members of their Graduate Advisory Committee to discuss their comprehensive examinations so they are familiar with each faculty member's expectations.

Early in the student's graduate program, each student should assess their biological science knowledge base, and should develop and implement strategies to remedy deficiencies before attempting the written comprehensive examinations.

### Summary Time Table for Non-Thesis Students

<b>First quarter enrolled in Graduate School</b>	Formation of Graduate Advisory Committee (GS Form 5)  Complete and submit Plan of Study form (GS Form 6)
<b>Quarter prior to anticipated graduation</b>	Register for BISC 585; Schedule written comprehensive examinations  Notify Associate Dean for Graduate Studies and Research of completion of written examinations
<b>Quarter of graduation</b>	Register for graduation  Submit new Plan of Study form (GS Form 6) if necessary  Set date for oral examination and notify, in writing, the Associate Dean for Graduate Studies and Research of the examination date, time, and location  Complete oral examination  Submit completed Examination Report (GS Form 11) to Associate Dean for Graduate Studies and Research

*It is the student's responsibility to be aware of and to meet all deadlines and to satisfy all degree guidelines.*

## **Appendix A**

---

Graduate Faculty  
School of Biological Sciences  
Louisiana Tech University

---

---

---

Graduate Faculty  
School of Biological Sciences

---

---

**William J. Campbell, Ph.D.**, (University of Florida)

Research Interests: Cell Biology, Environmental Physiology/Biochemistry, Photosynthesis  
Office: 913 Prescott Library (215 Carson-Taylor Hall)  
Telephone: 257-4287 (257-4573)  
Email: [campbell@latech.edu](mailto:campbell@latech.edu)

**Thea M. Edwards, Ph.D.**, (University of Florida)

Research Interests: Environmental Hormones; Ecological Developmental Biology of Plants and Animals  
Office: 141 Carson-Taylor Hall  
Telephone: 257-2909  
Email: [tedwards@latech.edu](mailto:tedwards@latech.edu)

**Rebecca R. Giorno, Ph.D.**, (Northwestern University)

Research Interests: Spore Formation in *Bacillus*, Microbiology, Molecular Biology, Genetics  
Office: 131 Carson-Taylor Hall  
Telephone: 257-3665  
Email: [rgiorno@latech.edu](mailto:rgiorno@latech.edu)

**Patrick L. Hindmarsh, Ph.D.**, (Case Western Reserve University)

Research Interests: Microbiology, Yeast Genetics, Molecular Biology  
Office: 205 Carson-Taylor Hall  
Telephone: 257-3189  
Email: [patrickh@latech.edu](mailto:patrickh@latech.edu)

**James D. Liberatos, Ph.D.**, (Florida State University)

Research Interests: Parasitology, Schistosomes, Cytogenetics  
Office: 913 Prescott Library  
Telephone: 257-4287  
Email: [jamesL@latech.edu](mailto:jamesL@latech.edu)

**David K. Mills, Ph.D.**, (University of Illinois, Chicago)

Research Interests: Extracellular Matrix Biology, TMJ Biology, Bionanotechnology, Tissue Engineering  
Office: 128 Carson-Taylor Hall  
Telephone: 257-2640 (Biomedical Engineering Building office 257-5205)  
Email: [dkmills@latech.edu](mailto:dkmills@latech.edu)

**Brandon C. Moore, Ph.D.**, (University of Florida)

Research Interests: Reproductive Biology & Endocrinology; Environmental Impacts on Reproductive Function  
Office: 129 Carson-Taylor Hall  
Telephone: 257-2359  
Email: [bmoore@latech.edu](mailto:bmoore@latech.edu)

**Larry G. Sellers, Ph.D.**, (North Carolina State University)

Research Interests: Entomology, Medical Ethics  
Office: 211 Carson-Taylor Hall  
Telephone: 257-2664  
Email: [lsellers@latech.edu](mailto:lsellers@latech.edu)

**Jeff L. Shultz, Ph.D.**, (Southern Illinois University)

Research Interests: Genetic and Physical Mapping, Comparative Genomics, Molecular Pathway Mapping  
Office: 120 Carson-Taylor Hall  
Telephone: 257-2753  
Email: [jlshultz@latech.edu](mailto:jlshultz@latech.edu)

**Yuri Voziyanov, Ph.D.**, (Natural Academy of Sciences, Ukraine)

Research Interests: Molecular Enzymology, Protein Engineering, DNA Recombination,  
DNA-Protein Interactions  
Office: 121 Carson-Taylor Hall  
Telephone: 257-2694  
Email: [voziyan@latech.edu](mailto:voziyan@latech.edu)

**John M. Wakeman, Ph.D.**, (University of Texas)

Research Interests: Animal Physiology; Toxicology  
Office: 203 Carson-Taylor Hall  
Telephone: 257-2724  
Email: [wakeman@latech.edu](mailto:wakeman@latech.edu)

**William Wolf, Ph.D.**, (Medical University of South Carolina)

Research Interests: Molecular Biology, Cell Biology  
Office: 201 Carson-Taylor Hall  
Telephone: 257-3193  
Email: [wewolf@latech.edu](mailto:wewolf@latech.edu)

**Jeff V. Yule, Ph.D.**, (State University of New York at Stony Brook)

Research Interests: Vertebrate Ecology and Evolution, Environmental Science/Studies,  
Modeling, Extinctions  
Office: 119 Carson-Taylor Hall  
Telephone: 257-3197  
Email: [jyule@latech.edu](mailto:jyule@latech.edu)

**Gary S. Zumwalt, Ph.D.**, (University of California)

Research Interests: Geosciences, Environmental Remediation  
Office: 125 Carson-Taylor Hall  
Telephone: 257-2749  
Email: [gzumwalt@latech.edu](mailto:gzumwalt@latech.edu)

---

## **Appendix B**

---

Graduate Faculty

Department of Agricultural Sciences

School of Forestry

Louisiana Tech University

---

---

---

College of Applied and Natural Sciences  
Participating Graduate Faculty  
Department of Agricultural Sciences

---

---

**Peter W. Gallagher, Ph.D.**, (Ohio State University)

Research Interests: Horticulture, Greenhouse and Landscape Plant Evaluation  
Office: 124 Reese Hall  
Telephone: 257-3275  
Email: [pgall@latech.edu](mailto:pgall@latech.edu)

**William H. Green, D.V.M.**, (Auburn University)

Research Interests: Animal Anatomy, Animal Pathology  
Office: 107 Reese Hall  
Telephone: 257-2303  
Email: [wgreen@latech.edu](mailto:wgreen@latech.edu)

**Gary A. Kennedy, Ph.D.**, (Louisiana State University)

Research Interests: Agricultural Economics, Louisiana Rural Land Markets  
Office: 101 Reese Hall  
Telephone: 257-3275  
Email: [kennedy@latech.edu](mailto:kennedy@latech.edu)

**Aaron K. Lusby, Ph.D.**, (Oklahoma State University)

Research Interests: Rural and Regional Development, Economic Impact Analysis  
Office: 123 Reese Hall  
Telephone: 257-3275  
Email: [alusby@latech.edu](mailto:alusby@latech.edu)

**Mark W. Murphey, Ph.D.**, (Texas A & M University)

Research Interests: Beef Cattle and Swine Production, Meat Science  
Office: 108 Reese Hall  
Telephone: 257-3275  
Email: [mmurphey@latech.edu](mailto:mmurphey@latech.edu)

---

---

---

---

College of Applied and Natural Sciences  
Participating Graduate Faculty  
School of Forestry

---

---

**James Dickson, Ph.D.** (Louisiana State University)

Research Interests: Wildlife Sciences  
Office: 220 Reese Hall  
Telephone: 257-4020  
Email: [jdickson@latech.edu](mailto:jdickson@latech.edu)

**Dylan Dillaway, Ph.D.** (University of Wisconsin)

Research Interests: Response of Plants to Changing Growth Environments  
Office: 13 Lomax Hall  
Telephone: 257-4457  
Email: [dillaway@latech.edu](mailto:dillaway@latech.edu)

**A. Gordon Holley, Ph.D.,** (Stephen F. Austin University)

Research Interests: Forest Economics and Management, Non-Industrial Private Forest Landowners, Forest Biometrics  
Office: 221 Reese Hall  
Telephone: 257-4926  
Email: [gholley@latech.edu](mailto:gholley@latech.edu)

**William B. Patterson, Ph.D.,** (Louisiana State University)

Research Interests: Forest Soils, Soil Water Quality, Forested Wetland Ecology  
Office: 16 Lomax Hall  
Telephone: 257-2879  
Email: [wpatter@latech.edu](mailto:wpatter@latech.edu)

**William G. Ross, Doctor of Forestry,** (Stephen F. Austin University)

Research Interests: Forest Health and Protection, Forest Ecology  
Office: 18 Lomax Hall  
Telephone: 257-3944  
Email: [wross@latech.edu](mailto:wross@latech.edu)

**Bogdon Strimbu, Ph.D.** (University of British Columbia)

Research Interests: Biometrics and Quantitative Silviculture  
Office: 201 Reese Hall  
Telephone: 257-2168  
Email: [stribu@latech.edu](mailto:stribu@latech.edu)

**Michael C. Tyree, Ph.D.** (Virginia Polytechnic Institute and State University)

Research Interests: Carbon Cycling in Forested Systems  
Office: 14 Lomax Hall  
Telephone: 257-2947  
Email: [mtyree@latech.edu](mailto:mtyree@latech.edu)

---

---



## Appendix C

---

### Graduate School Forms School of Biological Sciences Louisiana Tech University

---

<b>GS form 5</b>	Appointment of Advisory Committee
<b>GS form 6</b>	Plan of Study - Thesis Plan <b>(form should be submitted as one page, front/back)</b>
<b>GS form 6</b>	Plan of Study - Non-Thesis Plan <b>(form should be submitted as one page, front/back)</b>
<b>GS form 10</b>	Proposal for Thesis
<b>GS form 11</b>	Examination Report

*These Graduate School (GS) forms may be downloaded from the Graduate School web page ([www.latech.edu/graduate\\_school/thesis\\_dissertations/grad\\_forms\\_thesis.shtml](http://www.latech.edu/graduate_school/thesis_dissertations/grad_forms_thesis.shtml)).*

---