

# School of Biological Sciences

## Ph.D. in Molecular Science & Nanotechnology

### Graduate Student Handbook



LOUISIANA TECH  

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UNIVERSITY®

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Winter 2022

## WELCOME

Welcome to Graduate School and the School of Biological Sciences! We are excited to have you join us for your Ph.D. degree and hope that you will enjoy your time here. Graduate school is a big transition from college and this handbook is designed to make some of that transition easier by providing you with critical degree information along with some of the resources that are available to you on campus to assist you in academics, financial aid, and overall personal health.

The goal of graduate school is to prepare you with a set of skills that will help you achieve your next academic or career goal. During graduate school, you will develop skills in critical thinking, collaboration, writing, and oral presentation.

**The Ph.D. program in MSNT is designed for students who want to pursue a faculty-guided research project.** Most students enrolled in the program are interested in pursuing a career in academia or are looking for research and development jobs in the industry. The Doctoral Program is a larger commitment as the time it takes to complete your degree depends on your research project and your work ethic. The degree requires a Ph.D. research proposal, significant research effort, and a final written dissertation and defense. During your first quarter of enrollment, you will identify a faculty advisor who works in an area of biology that interests you and with whom you work well. You will work in the area of research directed and supported by your advisor to achieve the goals you, your advisor, and your committee set for you before graduation. Most students complete their Ph.D. in 5-6 years, depending on the research project and completion of the proposal and dissertation writing and presentation requirements. All of the details and expectations of the degree programs are provided in this handbook.

The goal for all of the faculty at Louisiana Tech University is to help you be successful and help you to achieve the next step in your career. Your fellow graduate students, the faculty, and staff are here to help and support you so please ask questions, engage in your classes and research, and enjoy your time in the graduate program.

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## HOW TO BEGIN

To prepare for the first quarter at Louisiana Tech, each student will need to first register for classes. All students should receive a series of emails from **Louisiana Tech University Graduate School** and **Louisiana Tech Registrar**. Make sure you are checking your email and carefully reading all emails sent by the University. International students should attend the orientation offered by the International Student Office located in Tolliver Hall, Room 229.

1. **Familiarize yourself with the Ph.D. MSNT degree requirements and expectations.**  
<https://coes.latech.edu/graduate-programs/molecular-science-and-nanotechnology-phd/>
2. **Obtain your CWID number and set up Louisiana Tech email and BOSS accounts.**  
This information should come in an email from the Louisiana Tech Registrar.
3. **Meet with your academic advisor.** Each student will be temporarily assigned an academic advisor, who will be replaced by the student's research advisor or permanent advisor after the plan of study is completed.
4. **Select courses for your first quarter.** A summary of the courses required by the Ph.D. program can be found online and in the handbook. A graduate student is verified as full-time with 6 or more graduate semester hours. A student receiving an assistantship must be qualified as a full-time graduate student. Graduate International students are required to be enrolled for a minimum of 6 graduate credit hours in their degree program each term until graduation to maintain F-1 student visa status.
5. **Register for classes.** If you have any holds or are unable to register, check with the Registrar's office.
6. **Purchase a parking sticker at the Campus Police Station.**

## GENERAL GUIDELINES

### The Graduate Advisory Committee

*What is the Graduate Advisory Committee?*—The Graduate Advisory Committee is a group of faculty that serve the student in completing their degree. The Graduate Advisory Committee members will include five members of the Louisiana Tech University Graduate Faculty. **As this is an interdisciplinary degree program, the committee must be made up of Graduate Faculty from both the College of Applied and Natural Sciences as well as the College of Engineering and Science** (Appendix B). The chair of the Graduate Advisory Committee directs the dissertation research, in consultation with the other members of the Committee. The Graduate Advisory Committee assists in the preparation of the Plan of Study and administers the required examinations (see below). The Associate Dean for Research and Graduate Studies 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.

*Selecting and Assigning a Major Advisor*—Graduate students must select a major advisor during the **first quarter enrolled**. Until a student has designated a major advisor, Dr. Nestorova will serve as the major advisor. Typically, incoming graduate students will have contacted a Louisiana Tech University faculty member to work with before acceptance into the Graduate School. If the student and faculty member have mutually agreed to work together, and the student is accepted into the program, this faculty member will serve as the student’s major advisor. In other cases, the student may have been accepted to the program without having contacted a faculty member and without having selected a major advisor. In the latter case, the student must find a major advisor before the end of the first quarter and preferably soon after the quarter begins. Once the major advisor is selected and agrees to work with the student, the student may select the Graduate Advisory Committee in consultation with the major advisor. To officially have your major advisor listed as your major advisor on BOSS you will need to notify the Office for the School of Biological Sciences (CTLH 215). Students may seek advice regarding the selection of a major advisor by discussing their interests and career goals with the Biological Sciences Graduate Faculty, the Associate Dean for Research and Graduate Studies, and/or the Director of the School of Biological Sciences.

*Assembling a Graduate Advisory Committee*—During the **first quarter enrolled** as a graduate student, each student will assemble a Graduate Advisory Committee for counsel and guidance. This committee must comprise five persons, including the Major Advisor. Ordinarily, a majority of the Committee members are from the student's area of research interest. 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. If an adjunct faculty member who is not employed at Louisiana Tech University is appointed as a member of the committee, the chair of the committee (the Major Advisor) will serve as the designated signer on the Plan of Study for that person(s) (see below for more on Plan of Study). The Coordinator for the Molecular Science and Nanotechnology program, the Associate Dean for Research and Graduate Studies, and the Dean of the College of Applied and Natural Sciences are *ex officio* members of each Graduate Advisory Committee. In consultation with the chair of the committee (Major Advisor), the student will select the rest of the committee. From there the student must ask those faculty members to serve on their committee. The Graduate Advisory Committee is complete when all members have signed off on the electronic Plan of Study form. At any point, a student may add, remove, or substitute a member of their committee as long as they adhere to the make-up of the committee described above. It is professional courtesy to let a committee member know they have been removed or substituted, and all faculty should be asked and agree to serve on a graduate advisory committee before adding them to the electronic Plan of Study.

**THE PLAN OF STUDY**  
([HTTP://FORMS.LATECH.EDU](http://forms.latech.edu))

Each student, with the advice and approval of the student’s Graduate Advisory Committee, will prepare a Plan of Study. The completed and signed **Plan of Study must be submitted during the student’s first quarter of enrollment**. Failure to submit this form on time will prevent a student from registering for subsequent terms. 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 Research and Graduate Studies. 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.

The Plan of Study should include all required classes for the degree the graduate student is seeking and the estimated quarter the student will take the class. Additionally, students must have the correct number of credit hours accounted for on the Plan of Study. The courses and the timing of enrollment in those courses are likely to change from the initial Plan of Study. This is OK and a new or revised Plan of Study does not need to be completed every time there is a change. However, any time the Plan of Study is changed (Revised), courses and any grades assigned to those courses should be accurately updated. **A final updated Plan of Study is required before graduation that reflects courses that are taken and grades earned.**

### QUALIFYING EXAMINATION

The qualifying examination consists of a written examination that covers general topics in molecular biology and nanotechnology discussed in the core courses (MST 505, MSNT 506, MSNT 521). It is strongly recommended that students register for the qualifying examination (MSNT 685) soon after completing the core courses, which should normally occur within the first five quarters of enrollment, not including summer. The qualifying exam is administered every Winter quarter and consists of 12 questions that cover much of the content of each core course and require a multi-page, in-depth answer demonstrating Ph.D. level comprehension of the material. The expectation is that the students will provide a satisfactorily written answer on 6 of the 12 questions listed below.

#### **MSNT 505, Nanotechnology Principles**

- Nanoscale metrology tools, usage, considerations, an example of at least 3 instruments for nanoscale data.
- Nanoscale fabrication techniques, i.e. top-down or bottom-up processes, etc.
- Nanomaterials, applications, and form factors, i.e. atomic composition, particles, tubes
- Bio-nanotechnology, including biomedical applications and impacts on the environment.

#### **MSNT 506, Nanofabrication by Self-Assembly**

- Principles of organized multilayer film production via alternate adsorption of oppositely charged components, LbL (nanoparticles, polymers, and proteins). Examples of applications in electronic devices or for biocompatible coating.
- Halloysite clay nanotubes, characteristic and usage for loading and controlled release of functional materials (drugs, proteins, anti-corrosion)
- Nano assembly on micro templates: organized shells and capsules and their applications. Examples of nanoshell assemblies.
- Drug delivery with nano/microencapsulation.

#### **MSNT 521, Principles of Cell and Molecular Biology**

- Design characteristics are important in engineering dental and orthopedic tissues. Use the TMJ disc as the model targeted tissue and discuss the design characteristics required to develop repair tissues for the TMJ disc



- Reasons why biomaterials are used in tissue engineering. What rationale justifies their use? What are successful examples? Why have these been successful?
- Relate protein structure to their function. Discuss consequences if their structure is altered either by matrix metalloproteinases or through changes in gene expression

### **COMPREHENSIVE EXAMINATION**

After passing the qualifying exam the student will enroll in a comprehensive examination (MSNT 686) and present his/her Ph.D. research project to the advisory committee. The exam is expected to be completed within the first nine quarters of enrollment. MSNT 686 is a presentation of preliminary research achievements, a defense of proposed Ph.D. research, and a demonstration of an understanding of the principles and methods involved in the area of research. A written proposal, uploaded in a student's plan of study and approved by their committee, is required before a student may enroll in MSNT 686. Before the comprehensive examination, the students are required to complete at least 9 SCH of Pre-Candidacy Doctoral Research (MSNT 651). A proposal outlining the research to be undertaken for the dissertation must be submitted to the advisory committee before registration for MSNT 686. The comprehensive exam will include a presentation to the Doctoral Advisory Committee on the student's proposed dissertation topic followed by a question and answer session. After successful passing of the examination, the students are admitted to candidacy and can register for Post-Candidacy Dissertation Research (MSNT 751). Following successful completion of the exam, the students will update their plan of study to include the date of the exam.

### **DISSERTATION DEFENSE EXAMINATION**

Students must successfully pass the dissertation defense examination that is administered by the Doctoral Committee. It consists of an open public defense of the results of the dissertation. This final exam must be completed following the deadlines published by the Graduate School. According to Graduate School guidelines, the oral defense must take place no later than the 10<sup>th</sup> class day of the quarter of expected graduation. The defense must be public and advertised in advance to all Biology Faculty. Those serving on the doctoral committee must recommend, with at most one dissent, that the student has satisfactorily passed the dissertation defense exam. Following successful completion of the dissertation defense, the student will update their Plan of Study including uploading their final dissertation document to be signed by all members of their Graduate Advisory Committee indicating that they all agree the student passed their dissertation defense examination.

### **GRADUATE ASSISTANTS**

Graduate students who have been appointed to a Graduate Assistantship (including both for assistance in 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. NOTE: Graduate Assistantships do not include a waiver of in-state tuition and fees and thus, Graduate Assistants must still pay in-state tuition and

fees unless other sources of support are available. Students receiving a Graduate Assistantship must be enrolled in **a minimum of 6 graduate credit hours per quarter** while receiving the assistantship. Students may be enrolled in 3 hours during the summer as long as they are also registered for a minimum of 6 hours in the coming fall quarter. For new incoming graduate students, students must enroll before the start of their first quarter. Should a student's course load fall below the six-hour minimum the assistantship and out-of-state tuition waiver will be canceled, 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 just 3 hours of graduate credit for one quarter during their tenure as graduate students if specified criteria are met (this is usually a student's final quarter); check with your advisor or the Graduate School if you have questions about registration requirements.

*Graduate Assistantships (Awarded to assist in teaching)*—There are a limited number of graduate assistantships, therefore not all students who apply will be granted an assistantship. Responsibilities of GA include assisting in course laboratory teaching (typically these courses include BISC131, BISC133, BISC226, BISC260, BISC310, BISC313). To be selected for one of these Graduate Assistantships, the student must first apply for the assistantship. The application can be found at 215 Carson-Taylor Hall. The term of appointment (Fall, Winter, Spring, or Summer Quarter(s)) will be specified as well as the level of funding, which depends on the workload and graduate level (Masters or Ph.D.). Unless otherwise specified, students will be expected to work 20 hours per week for approximately 10 weeks per quarter. Graduate students on assistantships will be expected to meet with their faculty supervisor (typically the faculty member teaching the course) before the beginning of classes each quarter that the graduate student is receiving the assistantship and on a regularly scheduled basis as established by the supervisor. Responsibilities as a Graduate Assistant include:

1. Assist in assigned sections of the course each quarter determined by supervisors.
2. Hold 10 hours of office hours per week in the School of Biological Sciences graduate student office or other approved location
3. Participate in Graduate Assistant meetings as scheduled.
4. Prepare for laboratory meetings, grade laboratory notebooks, laboratory reports, and other tasks associated with instructing the laboratory section.
5. Assist laboratory coordinators and faculty in maintaining a clean and safe learning environment.
6. Maintain strict confidentiality regarding student, staff, and faculty records (<https://www.latech.edu/current-students/registrar-office/ferpa/>).
7. Maintain a complete and accurate record of time worked. Submit accurate timesheets on time.

*Graduate Assistantships (Research)*—Graduate students may be on research-related assistantships. A faculty member may have funds from grants or other opportunities to pay a student to complete research. The faculty member provides the assistantship and so the level of funding will be determined by that faculty member and funding source. Graduate students on

assistantships will be expected to meet with their faculty supervisor (typically their Major Advisor) to determine the expectation and detailed responsibilities.

## TRAINING

*Laboratory Safety*—Any student working or assisting in a laboratory is expected to complete safety training and review the Hazardous Communication Program (Policy 4212) which can be found on the Environmental Health and Safety webpage under Safety Documents <https://www.latech.edu/administration/administration-facilities/environmental-health-safety/>.

Graduate students should contact Mr. Jay White ([jwhite@latech.edu](mailto:jwhite@latech.edu)) to complete their general laboratory safety training. Students should give a copy of their safety certification to their faculty supervisor. Each student will undergo additional laboratory safety training specific to the laboratory they will be working in by their faculty supervisor. Documentation of this training should be kept on file by the faculty supervisor.

*Driver Safety Certification*—Any student traveling on State of Louisiana business as part of their responsibilities at Louisiana Tech University in either a State Vehicle or private vehicle must complete annual Driver Certification. No expenses related to travel in a State or private vehicle will be reimbursed and State Vehicles may not be operated without training. The Process of Certification of Drivers can be found on the Environmental Health and Safety webpage under Safety Documents <https://www.latech.edu/administration/administration-facilities/environmental-health-safety/> under ‘Driver’s Safety Program’.

*Other Training*—Students working on research funded by specific agencies may be expected to complete additional research, ethics, or laboratory safety training. This will be determined in consultation with their Major Advisor or faculty supervisor. Students on assistantships related to teaching may also have additional training as specified by their faculty supervisor. Graduate Assistants will also be required to do quarter safety training and will be notified of these activities through Moodle.

## OTHER INFORMATION

### Graduate Student Office Space

There are a limited number of graduate student desk spaces in the Graduate Student Office in Carson-Taylor Hall 134. Students on Graduate Assistantships that are required to hold office hours will have priority for the space. If there is additional space, other graduate students may be assigned space but may have to surrender the space if a Graduate Assistant required to hold office hours needs the space in the future. To acquire desk space, email Dr. Bill Campbell ([cambell@latech.edu](mailto:cambell@latech.edu)). Graduate Assistants should not hold office hours in their labs unless separate office space has been designated. This is to protect the undergraduate student who may not have appropriate safety training to be in specific laboratory spaces.

### Scholarships

There are a few scholarships available to graduate students in the School of Biological Sciences. The dollar amounts vary annually based on stock markets are usually around \$500-\$900 per year. Students will receive an email with applications when they are available and hard copies of the applications for these scholarships can be found in 215 Carson-Taylor Hall. See applications for eligibility and deadlines; applications are typically available in the Fall and Spring.

### Seminars

The School of Biological Sciences and New Frontiers in Biomedical Research have a weekly seminar series. Seminars are held on Mondays at 3:30 pm in University Hall 134 unless otherwise noted. These seminars feature presenters from research laboratories, private sectors, government, and universities and may be local, national, or international. The NanoAssembly and Science seminars are held on Thursday at 3:30 pm and feature presentations for external and internal researchers in the field of nanotechnology and general science. Attendance at these seminars is expected of graduate students as learning about biological-related science and its communication is essential for an advanced degree in MSNT. Although any given presentation may be related or outside a person's particular area of study, learning to draw connections and apply knowledge across fields is how science advances and is an essential skill for an advanced degree in Biology. Graduate students are strongly encouraged to attend even when not enrolled in MSNT 611/504/604 seminar series.

### Funding for Travel

*Louisiana Tech University Funding*—The College of Applied and Natural Sciences has a limited set of funds for graduate student travel related to conference attendance. Deadlines for applications are Fall and Spring annually and can be found on the College of Applied and Natural Science's web page at: <https://ans.latech.edu/research-outreach/mini-travel-grants/>.

*External Funding*—There are numerous travel scholarships for students to attend meetings. These are typically funded by the society associated with that meeting. Talk with your major advisor to learn more about these opportunities.

### Funding for Research

*Louisiana Tech University Funding*—The College of Applied and Natural Sciences has a limited set of funds for graduate student research. The deadline for applications is mid to late October

annually and can be found on the College of Applied and Natural Science's web page under 'Mini & Travel Grants' under 'Graduate Student Research Mini-Grants' <https://ans.latech.edu/research-outreach/mini-travel-grants/>.

*External Funding*—Below is a non-comprehensive list of organizations that have grants or scholarships available to fund student research. Many other funding opportunities exist, this list is merely meant to provide some information as a launching board; additional research by the student on potential granting agencies will likely be necessary. For individual deadlines and eligibility, see each agency's webpage. Sigma Xi, National Science Foundation Graduate Research Fellowships, Garden Club of America, Lewis and Clark Research Grant, Explorer's Club, National Geographic, Louisiana Environmental Education Consortium (LEEC), Louisiana Biomedical Research Network (LBRN), and Louisiana Space Consortium (LaSPACE).

## PROGRAM OF STUDY

For the degree of Ph.D. in Molecular Science and Nanotechnology, a minimum of **66 semester hours of graduate credit** is required, with the following regulations:

Category	Number	Course Name		SCH
<b>Core Courses</b>	MSNT 506	Nanofabrication by Self-Assembly (Spring)	3	9
	MSNT 521	Principles of Molecular Biology (Fall)	3	
	MSNT 505	Nanotechnology Principles (Spring)	3	
<b>Qualifying Examinations</b>	MSNT 685	Doctoral Qualifying Exam (Winter)	0	
	MSNT 686	Oral Comprehensive Exam (Fall, Winter, Spring, Summer)	0	
<b>Doctoral Seminar<sup>1</sup></b>	MSNT 611	Dissertation Enhancement Seminar (Fall)	1	3
	MSNT 504	MSNT Seminar (Winter, Spring)	1	
	MSNT 604	MSNT Doctoral Candidate Seminar (Winter, Spring)	1	
<b>Independent Study and Special Topics</b>	MSNT 657	Doctoral Level Special Topics (taken twice)	6	12
	MSNT 650 <sup>2</sup>	Doctoral Independent Study (taken twice)	6	
<b>Electives</b>	Select eight (24 semester hours) approved by advisory committee			24
<b>Research and Dissertation</b>	MSNT 651	Pre-Candidacy Doctoral Research	1-9	9
	MSNT 751	Post-Candidacy Dissertation Research	1-9	9
<b>Total Hours</b>				<b>66</b>

<sup>1</sup> MSNT 611 needs to be taken once, ideally in the first year of studies. MSNT 504 needs to be taken once before passing the qualifying exam and oral comprehensive. MSNT 604 must be taken once after admission to candidacy.

<sup>2</sup> Taken under the supervision of the faculty member. Can be a preparation for the research leading to the dissertation.

- Completion of the Ph.D. program includes successful oral defense of the Dissertation Defense examination by the student's Graduate Advisory Committee. **Written notification (memo or email containing a flyer for distribution) of the date and location of a student's oral examination must be forwarded to the office of the Associate Dean for Research and Graduate Studies at least one week advance of the examination.**
- Students are expected to have published one or more peer-reviewed publications or conference proceedings by the time they graduate.
- Agreement by the Graduate Advisory Committee is required regarding the student's acceptable performance in the oral defense of the Ph.D. project. Upon completion of these requirements, the completed dissertation should be uploaded to the updated Plan of Study and signed off on by all members of the Graduate Advisory Committee, Director for the

School of Biological Sciences, Associate Dean for Research and Graduate Studies, and Dean of the College of Applied and Natural Sciences.

## The Dissertation

A Ph.D.-level research project is directed by a faculty member (the Major Advisor) who will aid a student in identifying a project that fits within the expertise and area of study of that particular advisor. A dissertation research project includes a novel statement of an original hypothesis or a problem to be investigated, and the student has to conduct investigations to address the problem or to test the hypothesis. Relevant scientific literature must be surveyed, and empirical data must be collected, properly analyzed, and reported.

If appropriate, approval for resources, research ethical approval (e.g., IACUC, IRB, etc.), and facilities to be used for dissertation research must be secured from the appropriate academic unit head before beginning a dissertation research project. Enrollment in a minimum of three hours of graduate credit is required each quarter, including the summer, when the student is using university resources (laboratory facilities, supplies, computers, faculty time, library resources, etc.) for their research project.

*Important steps in conducting dissertation research include:*

- Define an original and new 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 important step defines the student's research project. The proposal should be an overview of the research project, including an introduction that may take the form of 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 dissertation proposal must be submitted to the student's Graduate Advisory Committee before the registration for MSNT 686. It is of paramount importance for the student to keep the Graduate Advisory Committee advised of progress and problems encountered during the research project. Before initiating the dissertation 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: <https://www.latech.edu/study-with-us/graduate/thesis-dissertation/guidelines/>) These guidelines contain helpful information, as well as University guidelines that must be followed, and deadlines that must be met.

### **Guidelines for the Dissertation Proposal:**

The total length of the Dissertation Proposal should be in the range of 10-15 single-spaced pages, but the final length will depend on specifics of the project, figures, etc. A general guide for the dissertation proposal is:



**Introduction:**

This section should cover relevant background information and a survey of the literature that describes what has been done in the field that supports you in conducting the research outlined in your proposal. This section should be well referenced with relevant citations that demonstrate a thoughtful investigation of the literature.

**Motivation & Goal:**

This section should describe the overall motivation and need for your research to be performed; the significance of your project to your field of study. This section should also describe the research question, the specific objectives of your Ph.D. project, and the overall goal for this research.

**Methodology/Experimental Design:**

This section should describe the methodology for each of the objectives listed in the previous section. These should not be detailed methods but rather general information about experimental design, measurements to be taken and assays to be performed, and expected results. The goal of this section is to demonstrate a clear understanding of how to design experiments, collect data, and interpret results. It is also important to demonstrate that the methods will allow you to meet your stated objectives.

**Conclusion:**

This should be a summary of the objectives, what will be learned from the research being performed, and how the results of this project impact the student's field of study.

**Guidelines for Dissertation:**

The general [Graduate School Guidelines, Policy 2132](https://www.latech.edu/study-with-us/graduate/thesis-dissertation/guidelines/#content) for the Preparation and Submission of Your Thesis or Dissertation can be accessed at <https://www.latech.edu/study-with-us/graduate/thesis-dissertation/guidelines/#content>.

***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 dissertation and removal from the graduate program.***

**General Comments on Completing the Dissertation:**

It is the student's responsibility to produce a Dissertation 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 dissertation research, as well as with the preparation of the written document.

***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 Molecular Science and Nanotechnology degree. Follow Graduate School guidelines and deadlines for***



*submission of Dissertation, including submission of printed and electronic copies of completed Dissertation to Library, as required. See the current list of specific dates and deadlines in Guidelines For The Preparation And Submission Of Your Dissertation, available from the Graduate School website at: <https://www.latech.edu/study-with-us/graduate/thesis-dissertation/>).*

## Resources

### FINANCIAL RESOURCES

*Payment plans are available. Talk with the Comptroller and Financial Aid to complete the required paperwork.*

**Comptroller:** The Office of the Comptroller provides fiscal and support services for the University's instructional, research, public service, and economic development activities for the benefit of the faculty, staff, and students. These services include providing financial services to the University, its customers, and community; protecting the University's financial resources; financial reporting for the University; managing our students' financial records and needs; and accounting for all financial transactions in accordance with applicable State and Federal laws as well as University regulations, policies, and procedures.  
<https://www.latech.edu/administration/finance/comptroller/>

**Office of the Comptroller, Louisiana Tech University**  
**1<sup>st</sup> Floor Keeny Hall**  
**Phone: 318-257-2235**

**Financial Aid:** The mission of the Office of Financial Aid is to assist students in attaining their educational goals by helping them navigate the financial aid process. Through education, counseling, and guidance, the Office of Financial Aid is committed to providing its students with the means to obtain financial assistance efficiently and effectively, as well as increase their financial knowledge and decision-making skills to help ensure their future financial success.  
<https://www.latech.edu/current-students/financial-aid/>

**Office of Financial Aid, Louisiana Tech University**  
**1<sup>st</sup> Floor Keeny Hall**  
**Email: [techaid@latech.edu](mailto:techaid@latech.edu)**  
**Phone: 318-257-2641**

**Tuition & Fees information:**  
<https://www.latech.edu/administration/finance/comptroller/tuition-fees/#content>

### ACADEMIC RESOURCES

**Graduate School:** The Graduate School offers the administrative structure, leadership, and guidance necessary to support graduate education at Louisiana Tech University. The Graduate School is the initial and final stop in the graduate application and admission process. The Graduate School works with the Provost, the Graduate Council, the academic deans, the graduate program coordinators, and faculty to help provide students with a superior educational and research environment within which to pursue rigorous, challenging, and relevant graduate and professional degrees.  
<https://www.latech.edu/study-with-us/graduate/>

Graduate Student Handbook, Ph.D.  
 MSNT

Winter 2022

**Graduate School, Louisiana Tech University**  
**Wyly Tower 1208**  
**Telephone: 318-257-2924**  
**Fax: 318-257-4487**  
**Email: [gschool@latech.edu](mailto:gschool@latech.edu)**

**Registrar:** At Louisiana Tech University, the Office of the University Registrar is considered the official record keeper. Our office provides an array of services such as registration, student enrollment, transcripts, enrollment verifications, certification of military benefits, and commencement, along with many more. As we work in support of the University's mission, our primary goal is to provide the best possible service in meeting the needs of our students, faculty, staff, and administrators.

The deadlines for payment and how to pay tuition and fees can be found on the Registrar's page under 'Payment Deadlines and Purges.' A 'Purge' is a scheduled event where students who are enrolled in classes but have not paid their tuition and fees are automatically dropped/removed from those courses. Those who have paid are unaffected. There are two Purge dates before the start of each quarter.

To register for classes, your advisor on BOSS will have to enter the code to release you. Typically your advisor will release you after you have discussed courses for the upcoming quarter. Registration deadlines can be found on the Louisiana Tech University Registrar page under 'Registration Priorities' <https://catalog.latech.edu/content.php?catoid=13&navoid=459>.  
<https://www.latech.edu/current-students/registrar-office/>

**Office of the Registrar, Louisiana Tech University**  
**Room 207 Keeny Hall**  
**Phone: (318) 257-2176**  
**Fax: (318) 257-4041**  
**E-mail: [registrar@latech.edu](mailto:registrar@latech.edu)**

**Student Conduct & Academic Integrity:** The Department of Student Conduct and Academic Integrity at Louisiana Tech University is responsible for ensuring a fair, just, and impartial restorative justice process for students and organizations accused of violating the Code of Conduct or Honor Code, to educate and provide resources to achieve respect, civility, and integrity for all members and stakeholders of the University community.

Guiding Principles:

- Uphold an environment that is favorable to academic success
- Maintain a safe and secure campus by protecting the rights of all members of the Louisiana Tech community
- Guide students to assume self and social responsibility
- Allow opportunities for individual growth and development
- Foster student decision-making and conflict resolution skills
- Augment the development of student ethical values

Louisiana Tech has an Academic Honor Code regarding academic integrity, plagiarism, and cheating. The honor code can be found in the [catalog](#).

**Testing & Disability Services:** The Department of Testing and Disability Services (TDS) serves as a resource for the university community and acts as a liaison between students and faculty as well as national and community agencies. Disability Services provides information, reasonable accommodations, and other assistance to students, faculty, and applicants of Louisiana Tech University. To promote independence and self-advocacy, services are available to students with qualifying documented learning, physical, and physiological disabilities. Testing Services follows national testing center requirements to provide test opportunities through contracted agencies for Louisiana Tech University and the local community. As a department within the Division of Student Affairs, Testing and Disability Services seeks a collaborative and cooperative relationship with the university community to enhance the education of Louisiana Tech students.

**Department of Testing & Disability Services, Louisiana Tech University**

**Location:** 318 Wyly Tower

**Mailing Address:** P.O. Box 3009, Ruston, LA 71272

**Phone:** Disability Services – 318.257.4221

**Fax –** 318.257.2969

**Campus Mail:** #54

**Disability Services email address:** [tds@latech.edu](mailto:tds@latech.edu)

**Hours:** 8 a.m. to 5 p.m., Monday through Friday | **Summer:** 7:30 a.m. to 5 p.m. Monday through Thursday, 7:30 a.m. to 12:30 p.m. Friday

**Computing Center:** The Computing Center is available to students who need help with any computer issues, including software, email, and Moodle assistance.

**Location:** Wyly Tower of Learning 155 (basement entrance through front stairwell)

**Phone Number:** 318-257-5300

**Fall, Winter, and Spring Hours (except university holidays)**

**Monday - Friday 8:00 a.m. - 8:00 p.m.**

**Summer Hours (except university holidays)**

**Monday – Thursday 7:30 a.m. - 5:00 p.m. and Friday 7:30 a.m. - 12:30 p.m.**

## HEALTH & WELLNESS RESOURCES

**Counseling Services:** Counseling Services strive to identify student needs regarding academic achievement, emotional/psychological and physical health, career involvement, and responsible decision-making. Through counseling, crisis intervention, educational programming, and counselor training, services are delivered that address needs in guiding the student toward the fulfillment of his/her fullest potential intellectually, socially, physically, and spiritually. These services are confidential and free to full-time Louisiana Tech students. <https://www.latech.edu/current-students/student-advancement-affairs/counseling-services/>

**Counseling Services**

**Keeny Hall 310**

**(318) 257-2488**

**[counseling@latech.edu](mailto:counseling@latech.edu)**

**Student Health Center:** Green Clinic TechCare is here to serve Louisiana Tech University by providing appropriate medical care to its students, faculty, staff, and families as well as the University community. TechCare was developed as a partnership between Louisiana Tech and Green Clinic Health System to expand medical services provided to the Louisiana Tech community. Green Clinic TechCare serves as an advocate for health promotion, disease prevention, and early intervention of illness for Louisiana Tech University students, faculty, staff, and families. Green Clinic TechCare also allows, to the Louisiana Tech University community, seamless access to the Green Clinic network of primary care as well as specialty and ancillary services with priority scheduling. <https://www.gctechcare.com/#>

**Green Clinic TechCare**  
**Lambright Sports and Wellness Center on Tech Drive**  
**(318) 257-4866**  
**Monday through Friday 7:30 a.m. to 4:30 p.m.**  
**Closed daily from 12:30 p.m. until 1 p.m.**  
**Walk-ins are accepted until 3:45 p.m.**

**The Health Hut:** The Health Hut is a non-profit organization whose mission is to serve the medical needs of the uninsured adult population of Lincoln Parish through mobile medical care. A casual conversation with a board member of the Lincoln Health Foundation led to the creation of The Health Hut by Dr. Leonel Lacayo and his wife Lisa Lacayo in 2011. The Lacayo's took a great interest in serving those who could not afford medical care and had limited means of transportation. Today their legacy lives on as The Health Hut continues to provide easy access for complete primary care services to all areas of Lincoln Parish. The Health Hut also is a provider for Louisiana Medicaid. <https://www.thehealthhut.org/>

**The Health Hut**  
**310 Mississippi Ave**  
**(318) 513-1212**  
**Monday through Friday 8:00 a.m. to 4:30 p.m.**

**The Good Nutrition Mission Food Pantry:** The Good Nutrition Mission Food Pantry is sponsored by the Student Dietetic Association, provides, at no charge, non-perishable food items for Louisiana Tech students who are food insecure. The pantry is staffed by mostly undergraduate nutrition and dietetic majors but welcomes all students who want to donate their time. Students who receive supplies from the pantry must show a current Louisiana Tech University campus ID and provide a valid telephone number and email address. Hours of operation for the food pantry, located in

**The Good Nutrition Mission Food Pantry**  
**Carson-Taylor Hall, Room 152**  
**Hours: Dependent upon volunteer availability; check the door for quarter schedule**  
**Contact: Catherine Fontenot, Ph.D., RD, LDN, at [maryf@latech.edu](mailto:maryf@latech.edu) or [318.257.3237](tel:318.257.3237)**

## **APPENDIX A:**

### Projected Graduate Course Offerings

The following list is a guide to when graduate courses offered by the School of Biological Sciences are generally offered. The courses listed are those we anticipate will be offered in upcoming quarters.

*This is only a guide, course offerings may vary from this list.*

SBS Course Offerings	Fall Quarter	Winter Quarter	Spring Quarter	Summer Quarter
<b>MSNT 502</b> Research Methods	X			
<b>BISC 506</b> Graduate Endocrinology		X		
<b>BISC 508</b> Graduate Bacterial Genetics				
<b>BISC 509</b> Biological Sciences Seminar	X	X	X	
<b>BISC 511</b> Graduate Developmental Biology			X	
<b>BISC 512</b> Graduate Immunology		X		
<b>BISC 513</b> Ecological Topics		X*†		
<b>BISC 514</b> Graduate Advanced Genetics			X	
<b>BISC 518</b> Graduate Biotechnology Principles	X			
<b>BISC 520</b> Graduate Evolution		X		
<b>BISC 521</b> Principles of Cell and Molecular Biology	X			
<b>BISC 522</b> Graduate Molecular Biology		X		X
<b>BISC 526</b> Graduate Histology		X		
<b>BISC 527</b> Graduate Herpetology			X	
<b>BISC 529</b> Graduate Stem Cell Biology				
<b>BISC 530</b> Biological Sciences Special Problems	X	X	X	X
<b>BISC 531</b> Graduate Medical Genetics		X		
<b>BISC 532</b> Graduate Freshwater Ecology			X*	
<b>BISC 533</b> Graduate Global Change Ecology			X*	
<b>BISC 535</b> Current Topics in Biological Science	X	X	X	
<b>BISC 536</b> Graduate Histology				
<b>BISC 540</b> Biological Sciences Internship	X	X	X	X
<b>BISC 541</b> Biological Sciences Internship	X	X	X	X
<b>BISC 555</b> Graduate Molecular Techniques			X	
<b>BISC 557</b> Graduate Genetic Engineering	X			X
<b>BISC 562</b> Graduate Virology		X		
<b>BISC 563</b> Graduate Cancer Biology				
<b>BISC 564</b> Graduate Principles of Pathology				
<b>BISC 566</b> Graduate Medical Anthropology			X	
<b>BISC 568</b> Graduate Biostatistics		X		
<b>BISC 570</b> Graduate Bioethics			X	
<b>BISC 591</b> Graduate PCR - Methods and Applications	X	X	X	X
<b>BISC 592</b> Graduate Protein Analysis			X	
<b>BISC 593</b> Graduate Animal Behavior	X			

<b>MSNT 503</b> Topics in Molecular Sciences and Nanotechnology	X	X	X	X
<b>MSNT 504</b> Seminar in Molecular Sciences and Nanotechnology		X	X	
<b>MSNT 510</b> Selected Topic in Molecular Sciences	X	X	X	X

\*courses offered every other year

†based on demand

**APPENDIX B:**  
**Graduate Faculty in School of Biological Sciences, School of Agriculture and Forestry, & Biomedical Engineering**

<b>Faculty Name</b>	<b>Email address</b>	<b>Department</b>
Dr. Heidi Adams	<a href="mailto:hadams@latech.edu">hadams@latech.edu</a>	Ag& Forestry
Dr. Josh Adams	<a href="mailto:adamsj@latech.edu">adamsj@latech.edu</a>	Ag& Forestry
Dr. Mary Caldorera-Moore	<a href="mailto:mcmoore@latech.edu">mcmoore@latech.edu</a>	Biomedical Engineering
Dr. Bill Campbell	<a href="mailto:campbell@latech.edu">campbell@latech.edu</a>	Biological Sciences
Dr. Natalie Clay	<a href="mailto:nclay@latech.edu">nclay@latech.edu</a>	Biological Sciences
Dr. Michael Crosby	<a href="mailto:mcrosby@latech.edu">mcrosby@latech.edu</a>	Ag& Forestry
Dr. Mark DeCoster	<a href="mailto:decoster@latech.edu">decoster@latech.edu</a>	Biomedical Engineering
Dr. Julia Earl	<a href="mailto:jearl@latech.edu">jearl@latech.edu</a>	Biological Sciences
Dr. Laura Gentry	<a href="mailto:lgentry@latech.edu">lgentry@latech.edu</a>	Ag& Forestry
Dr. Becky Giorno	<a href="mailto:rgiorno@latech.edu">rgiorno@latech.edu</a>	Biological Sciences
Dr. Shelcie Menard-Harvey	<a href="mailto:smenard@latech.edu">smenard@latech.edu</a>	Biological Sciences
Dr. Jennifer Hill	<a href="mailto:jmhill@latech.edu">jmhill@latech.edu</a>	Biological Sciences
Dr. Patrick Hindmarsh	<a href="mailto:patrickh@latech.edu">patrickh@latech.edu</a>	Biological Sciences
Dr. Jason Holderieath	<a href="mailto:jjhold@latech.edu">jjhold@latech.edu</a>	Ag& Forestry
Dr. Gordon Holley	<a href="mailto:gholley@latech.edu">gholley@latech.edu</a>	Ag& Forestry
Dr. Kyle Kemege	<a href="mailto:kemege@latech.edu">kemege@latech.edu</a>	Biological Sciences
Dr. Paul Jackson	<a href="mailto:pjackson@latech.edu">pjackson@latech.edu</a>	Ag& Forestry
Dr. Terri Maness	<a href="mailto:tmaness@latech.edu">tmaness@latech.edu</a>	Biological Sciences
Dr. Rebecca McConnico	<a href="mailto:rmconn@latech.edu">rmconn@latech.edu</a>	Ag& Forestry
Dr. David Mills	<a href="mailto:dkmills@latech.edu">dkmills@latech.edu</a>	Biological Sciences
Dr. Mark Murphey	<a href="mailto:murphey@latech.edu">murphey@latech.edu</a>	Ag& Forestry
Dr. Terri Murray	<a href="mailto:tmurray@latech.edu">tmurray@latech.edu</a>	Biomedical Engineering
Dr. Gergana Nestorova	<a href="mailto:ggnestor@latech.edu">ggnestor@latech.edu</a>	Biological Sciences
Dr. Jamie Newman	<a href="mailto:jjnewman@latech.edu">jjnewman@latech.edu</a>	Biological Sciences
Dr. Bill Patterson	<a href="mailto:wpatter@latech.edu">wpatter@latech.edu</a>	Ag& Forestry
Dr. Don Shepard	<a href="mailto:dshepard@latech.edu">dshepard@latech.edu</a>	Biological Sciences
Dr. Jeff Shultz	<a href="mailto:jshultz@latech.edu">jshultz@latech.edu</a>	Biological Sciences
Dr. Laura Sims	<a href="mailto:simsla@latech.edu">simsla@latech.edu</a>	Ag& Forestry
Dr. Joel Stake	<a href="mailto:stake@latech.edu">stake@latech.edu</a>	Biological Sciences
Dr. Joshua Vandenbrink	<a href="mailto:jpvdb@latech.edu">jpvdb@latech.edu</a>	Biological Sciences
Dr. Yuri Voziyanov	<a href="mailto:voizyan@latech.edu">voizyan@latech.edu</a>	Biological Sciences