2020 – 2021 Graduate Student Handbook

Department of Nanoscience
Joint School of Nanoscience and Nanoengineering
University of North Carolina Greensboro
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The Nanoscience graduate handbook provides key information for graduate students in their studies in the Department of Nanoscience. This handbook is intended to serve as a reference for selected topics that are important to the graduate students in the Department of Nanoscience. Please note that this handbook reflects the intentions of the Nanoscience faculty’s goals and expectations and is not intended to be a comprehensive set of regulations or rules.
**Organization of the Department of Nanoscience**

The JSNN Nanoscience faculty is responsible for this department’s academic, research, and operations in accordance with established UNCG policies. For academic advising, or policies regarding research, students may consult with any of the professors listed below.

**Nanoscience Faculty and Staff:**

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**NANOSCIENCE GRADUATE STUDENT RESPONSIBILITIES**
Review the list below and discuss them with your advisor. **To ensure successful progression through this graduate program, you must:**

- **Take the primary responsibility for the successful completion of your degree.** You are responsible for deadlines; you are responsible for completing the proper forms; and you must ensure that you and your advisor agree upon your annual work plan.
- **Meet regularly with your advisor.** Provide your advisor with updates on your activities and research. Do not miss scheduled meetings. If you must take the initiative to reschedule the meeting in advance.
- **Work with your research advisor to develop a thesis/dissertation project and committee.**
- **Initiate requests for feedback and seek advice from your advisor, your committee, and other mentors.**
- **Know the policies and requirements of the Graduate School and of the Department of Nanoscience.** Read the student handbook and the curriculum guide of the graduate school. If you are unclear about a policy, ask your advisor, the Nanoscience Director of Graduate Studies, or someone in the UNCG Graduate School Office. Do not rely on your peers.
- **Attend and participate in research group meetings, departmental seminars, and journal clubs.**
- **READ.** Keep up with original literature in your field.
- **WRITE.** Practice writing regularly, at best daily.
- **Be a good citizen.** Maintain a safe and clean work space and interact collegially with your peers. Read over the safety policies outlined in this handbook book as well as the policies required in specific labs.
- **Maintain detailed, organized, and accurate notes in a format specified by your advisor.**
- **Discuss policies on preparing manuscripts, authorship, and attendance at professional meetings with your advisor.**
- **Discuss work hours, sick leave, and vacation with your advisor.** Clarify your intentions and plans; provide your advisor with advanced notice of planned absences; and fill out the appropriate leave forms. Know the university and graduate school policies on vacation, leave of absence, and sick leave. In some cases, these university policies refer to specific aspects of your graduate student responsibilities but not necessarily all of your responsibilities.
- **Know the UNCG and Department of Nanoscience policies on research ethics, scientific integrity, intellectual property; following these UNCG policies is a critical step to your graduate research.**
I. NANOSCIENCE POLICIES AND REQUIREMENTS

Nanoscience Business Calendar
All official student business, including examinations (i.e. proposal and dissertation defenses) and committee meetings must be held during official university hours during the Fall and Spring semesters. There will be no departmental business between May 15th and August 15th.

Graduate Student Requirements for Continued Good Standing
Failure to maintain good standing will result in an automatic reduction of a student’s annual evaluation and may result in dismissal, if these issues are not addressed immediately. In some cases, failure to remain in good standing will result in loss of financial support. A graduate degree is an enormous commitment, one that exceeds any expectations that entails an undergraduate degree, do not assume that the same behavior that leads to success as an undergraduate will hold true in graduate school. It will take an even more committed effort to achieve the goals that you set for yourself in graduate school

- Each student must maintain a GPA of a 3.0 or higher in their course work.
- Doctoral students cannot have any grades below a B on their plan of study. In such a case that the course is a required course, a student will need to retake the class again to earn a B or better. In the case of a required course, the student will only be allowed to retake this course once.
- Each student must complete their Plan-of-Study by the end of their second semester and/or before completion of 18hrs of course work.
- Each new student must choose a research advisor by the end of their first semester in the program.
- Each student must successfully write and defend their Qualifying Exam before May 15th of their first year; this includes all re-examination attempts.
- Each student must have their dissertation committee selected by the end of their first year.
- Second year doctoral students must successfully defend their dissertation proposal by the end of the fourth semester. Failure to defend your dissertation proposal by the end of the second year/fourth semester may result in changes to your funding status, including loss of tuition remission and/or your assistantship.
- Each student must meet with their committee at least once a year, including those years that a student proposes or defends their thesis/dissertation research.
● Students who are participating in the language development program (i.e. Pathways) must demonstrate enough command of the English language, both written and spoken, by the end of their first year.

Class Registration
Registration periods for each semester are published in the University's Academic Calendar of the University Catalogue, and on the University Registrar's website (www.uncg.edu/reg). Registration at UNCG is an automated process that is conducted online through UNCGenie. All new and continuing students will receive electronic personal data (EPD) information and registration access window information via their UNCG email prior to each registration period. Continuing students who do not pre-register for the next semester during the Early Registration periods in November (for spring semester) and in April (for summer/fall semester) will be required to pay a late registration fee.

Academic advising during the first year and advising codes:
All students will have an academic advisor. First year students will be assigned an advisor. Advising codes for each semester can be obtained from their faculty advisor.

Immunization Clearance
All admitted students are required by North Carolina State law to submit an immunization form with appropriate verification of immunizations. This form is available online and must be satisfactorily completed and returned to Student Health Services. Failure to comply with this requirement within 30 calendar days from the first day of each semester will result in an administrative withdrawal of that student from the University. Students subjected to an administrative withdrawal for failure to comply with medical clearance requirements are entitled to a refund, subject to the guidelines of the University's Refund Policy.

Tuition and Fees Policies
Current tuition related policies and fees may be found at the following URLs: http://grs.uncg.edu/financial/estimated-cost/ and http://grs.uncg.edu/bulletin/.

Accommodations
The Nanoscience Department will satisfy all accommodations for special services or needs of any student as specified by the Office of Accessibility Resources and Services (OARS). All students seeking accommodations should register with OARS prior to the beginning of the semester and communicate with the Department Head and the Director of Graduate Studies to ensure all accommodations can be met adequately. The Department Head will work with appropriate faculty to arrange for accommodation in specific classes. For more information, please see: http://ods.uncg.edu/.

Official University Communication
According to UNCG University policy, email is the official method of communication. Thus, all official communications will be transmitted through UNCG University email to your official UNCG email address at the “uncg.edu” domain. It is always your responsibility to monitor this email account while enrolled at UNCG. Failure to monitor this email account may cause you to miss important announcements/deadlines and will never serve as a basis for an appeal or modification of deadlines.

Readmission and Catalog Policy
This handbook provides details of the policies of the Department of Nanoscience as dictated by the UNCG graduate school. The University Catalog (https://catalog.uncg.edu/academic-regulations-policies/graduate-policies/) is the publication that documents all academic policies, regulations, and program requirements for a given academic year for all graduate students and programs. Your catalog year identifies the set of curriculum requirements and regulations for the completion of your degree program. The catalog year is established for the individual student upon admission to the program. You may change a catalog year without a change of program only to a more recent catalog. You may request this change formally through their department. Any student who has been inactivated must reapply for admission to the University. If admitted, the student will be assigned to the catalog requirements for the program in effect for the re-admit term.

Cancellation of Registration
A student may only ask for their registration to be cancelled if they did not attend or participate in any courses. If a student attended or participated in any portion of their courses, then Dropping Courses or official Withdrawal from the University processes should be followed. Appropriate justification and approval by the academic program should be included with the cancellation request prior to submission for electronic processing by The Graduate School.

Additionally, the University may cancel a student’s registration under the following circumstances:

- **ACADEMIC INELIGIBILITY**: The Graduate School will automatically cancel the registration of those students who become academically ineligible. See Academic Eligibility.

- **NONPAYMENT OF TUITION AND FEES**: A student’s registration will be canceled if they do not pay tuition and fees (or properly arrange for a payment schedule) by the payment deadline given in the University Registrar’s Calendar.

- **FAILURE TO SUBMIT CAMPUS HEALTH SERVICES FORMS**: If a new or transfer student, or a matriculated student not registered for two years, fails to submit the immunization record and Medical History Form, registration will be canceled. For additional information about the
University’s Cancellation policies, please refer to the Office of the University Registrar.

**Graduate Appeals**
There are two types of appeals available through The Graduate School: 1) Appeal of grades, and 2) Appeal based on misapplication or misinterpretation of University policy, regulation, rule, or procedure or a violation of state or federal law. These policies provide a procedure for graduate students to make claims that their rights under University policy or under the law have been violated. This policy is not meant to supersede policies of general applicability such as the Policy on Discriminatory Conduct, which are to be resolved by a separate body. In addition, this policy is not meant to supplant such existing policies as the Student Code of Conduct, Academic Integrity Policy, Residency Reclassification, Research Misconduct, or the Family Education Rights and Privacy Act. For more information please consult the University Catalog.

**Student Conduct**
The following policies and procedures apply to all matters of student conduct in the Department of Nanoscience, including academic conduct in the classroom, behavior in the labs, and safety at JSNN.

All Graduate Students in the Department of Nanoscience have three obligations that are equally weighted and constitute the basis of their annual evaluations.

- You have a commitment to your academic advancement. The duties include maintaining a GPA greater than 3.0 in all coursework and meeting minimal requirements for individual grades in your classes. Academic obligations also involve timely progress through the graduate program, such as passing your qualifying exam/ORP, meeting deadlines for proposal defenses, scheduling annual committee meetings, and regular participation in your thesis/dissertation lab’s programs such as lab meetings and/or journal clubs.

- Your second obligation is towards your departmental service. This involves performing the duties that are required for your assistantship, attending weekly seminars, and participating in events sponsored by the Department of Nanoscience and the Joint School of Nanoscience and Nanoengineering. There are several types of assistantships including Research, Instructional, and Office. The duties of each type of assistantship will be described in more detail in another section of this handbook. However, the responsibilities of any assistantship are distinct from a student’s other obligations and should be made clear in the student’s annual set of goals and expectations and in your annual evaluation. All assistantships officially involve 20 hours of work per week. These assistantships, including the Research Assistantship, enable you to be supported during your graduate work. You cannot use advancement through your dissertation project as evidence of meeting the requirements of your Research Assistantship.
Your third obligation is towards your research, specifically your dissertation research project. This obligation involves planning your work, conducting your work, presenting your work to a larger audience through publication in peer-reviewed journals, presentations at conferences, and the completion of your thesis or dissertation. The writing of your thesis or dissertation is the most critical and important document for your career as a graduate student (see section below). However, all components of this obligation are important. The Department of Nanoscience requires that each student have one published first author paper prior to dissertation defense. However, specific labs may require more publications prior to dissertation defense. The process will be different for each student and the goals and expectations will vary from project to project and lab to lab. Working with your advisor you will craft a proposal that will define the expectations of your research project, but without proper and constant effort you will not succeed.

Financial Support for Graduate Students:

Nanoscience Graduate Students in a doctoral program can be supported financially through the provision of stipends, partial payment of insurance, and tuition remissions. Student fees will not and cannot be paid for by the Department of Nanoscience and must be paid for by the students. For more information on graduate student fees please visit this website: https://grs.uncg.edu/financial/estimated-cost/

Stipends can be provided through several different mechanism: 1) NC State supported graduate assistantships (details of the different types of graduate assistantships are provided below); 2) research support off externally funded grants; and 3) university or externally supported fellowships and scholarships, a list of awards that can be found at: https://grs.uncg.edu/awards/. Note some of these fellowships are restricted to specific programs and most require a nomination from a mentor and/or the department.

There are also some externally funded grant programs available to students at many of the larger federal funding agencies (e.g. NIH, NSF, NASA), as well as private organizations and industrial sources. The Department of Nanoscience encourages all interested students to work with their advisor to apply for this type of external funding. Many of these external grants are extremely competitive and require significant contributions from both the mentor and the student, therefore careful planning for such projects must be considered, i.e. do not wait for the last minute; it will take months to put together a competitive grant.

IMPORTANT NOTE: Funding for your education allows you to earn a graduate degree with little to no financial burden; this is an honor. Students determined at any point in the semester to no longer meet the eligibility requirements for an
assistantship and/or a tuition support will have the full amount of any award rescinded, and are personally responsible for paying the full costs of tuition for that semester.

NC State Supported Graduate Assistantships

Enrollment Requirements for Graduate Assistants Receiving Graduate Tuition Remission Awards and/or In-State Tuition Awards.

Fall & Spring Semesters

- Students must be enrolled in at least 9 hours per semester until required coursework is finished, i.e. attain Doctoral Candidacy.
- For master’s degrees, students must enroll in at least 9 credit hours each of their first two semesters. Enrollment for remaining required credits will be determined by the filed Plan of Study.
- Upon completion of all pre-thesis course work, a master’s student will be considered full-time provided they are enrolled in 3 credits of thesis (Nan 699).
- Doctoral Candidates are considered full-time provided they are enrolled in 3 credits of Dissertation.

International Students

The U.S. Citizenship and Immigration Services (USCIS) requires international students on F-1 or J-1 visas to carry a full-time course of study to remain in status. Students in their final semester who have completed the minimum hours required for a degree can use the Reduced Course Load form to enroll in fewer hours.

Waiver of Hours

Graduate Assistants who are unable to meet the enrollment requirements as described above, may use the Reduced Course Load Form to apply for an exemption. There is no Graduate School Tuition Support available for summer terms.

Assistantship Responsibilities

All Nanoscience doctoral students are responsible for carrying out the assigned duties of their assistantship. These assistantships can be fully obligated to one mission (research, instruction, or office) or a combination of these missions. All assistantships are expected to fulfill 20 hours of work per week. All Nanoscience doctoral students receive Departmental Graduate Assistantships for their first year, but to be considered for future support the student must remain in good standing and have a ‘continuing status’ as per their annual reports. Yearly attendance at safety lectures or other workshops are required as part of your assignment regardless of the type of assistantship. Failure to carry out the duties as specified by the Head Instructor or Research Advisor will result in
termination of the appointment. The Department of Nanoscience has several types of assistantships available for students.

- **Instructional Assistant:** A Graduate Instructional Assistant (IA) is a graduate student, enrolled in accordance with their plan of study, who may assist with grading and other administrative responsibilities related to a course. **However, IAs are not responsible for final grades.** Graduate IAs may be listed in the schedule for labs, recitations, tutorials, etc. that are linked to a course with a credentialed Instructor of Record. These courses are designated with an R, L, or T and the linkage to the Lecture course is clearly noted. This may include lab assistance and set-up, serving as a lab supervisor, meeting students in office hours or group settings to provide tutorial assistance, lead recitation sections; but does not deliver new course content. Graduate IAs serve under the direct supervision of the faculty member who is instructor of record and a member of the graduate faculty, participate in pre-service training, and receive regular in-service training as well as planned, periodic evaluations.

Graduate Instructional Assistants in the Department of Nanoscience are assigned to the laboratory sections of courses taught by the faculty. The head instructor of the Laboratory course will oversee Graduate Instructional Assistant instruction.

1. All IAs must become familiar with the material associated with the lab they are teaching and the materials for the associated lecture course.
2. IAs will prepare and present pre-lab lectures on the experiments being done on that day. The Pre-lab lecture covers key points in the experiment and any cautions that need to be taken when doing the experiment. This lecture also covers any problems students had with the previous labs.
3. IAs must attend weekly meetings with the head instructor who details the information that they need to cover in their pre-lab lecture as well as any problems with or modifications to the upcoming experiment.
4. Prepare solutions or unknowns that are used in their labs if these are not provided by the stockroom staff.
5. Oversee the students while they are performing the experiment and answer any of the student’s questions.
6. They must ensure that their laboratory is ready for the next session.
7. Collect any material associated with the laboratory including pre-laboratory assignments, lab reports, lab notebooks and quizzes.

The exact duties of a Graduate Instructional Assistant will vary depending on the course and the head instructor. It is the responsibility of each IA to understand their responsibility and fulfill their duties.

- **Research Assistantships:** Graduate Research Assistantships (RA) is a graduate student, enrolled in accordance with their plan of study who is assigned to work in a faculty member's lab or provide fundamental support for a faculty member's research. Duties of research assistants vary by discipline and lab but include all
tasks needed to pursue research in a given area, such as: data collection, entry, and analysis; reviewing the literature and other library work; writing reports; copying, filing, and collating; organizing and/or cleaning the lab or office.

In the Department of Nanoscience, RAs are intended to (1) support the research activities of one or more faculty members, and (2) support the student’s exposure to the JSNN’s mission. As such, the work areas are assigned by the Director of Graduate Studies based on recommendations from the JSNN’s faculty and staff. The Assistantship assignments are intended to provide service to the school. Students should expect reassignment with each semester to broaden exposure and experience; however, some positions will require commitment for multiple semesters. Service hours are flexible with respect to academic schedules but must meet 20 hours per week by agreement with the assigned supervisor. Satisfactory progress of students’ service assignments is subject to evaluation by the assigned supervisor at the end of each semester for first year students. Please remember that students who accept assistantship support are expected to work on the specified service assignment, as discussed above. You will lose your assistantship if you do not perform the tasks assigned to you. If you believe that you are being asked to perform excessive or inappropriate work as a graduate assistant, you should discuss this with your supervisor. If you cannot resolve the problem, you should discuss it with the Director of Graduate Studies and/or the Department Chair.

- **Office Assistant (OA):** An OA is the title given to graduate assistants when there are no expectations of classroom teaching or grading. An OA may staff an open laboratory, studio, or workshop, where students’ complete assignments or work on projects; provide non-graded, individual instruction or tutoring, or help faculty prepare and manage classroom materials. The office assistant may also perform academic duties such as assisting in faculty research that are not technical. An office assistant may also be assigned to a wide variety of other responsibilities that are not related to instructional or research processes but support the mission of the University. Graduate students who have appointments in non-academic units are always classified as office assistants.

**Maintaining Assistantship Status**
The Graduate School reserves the right to withdraw an assistantship appointment at any time because of failure to meet basic eligibility requirements, including maintaining adequate academic performance (3.0 GPA) and satisfactory progress toward degree as assessed by the annual review process, or for violation of University policies. Units may also withdraw an assistantship based on failure to follow guidelines or for substandard performance in assistantship duties.

At no time may a graduate assistant receive academic credit for the work assigned for the assistantship. This includes performing work that will be part of proposal or dissertation documents. The Director of Graduate Studies is responsible for
ensuring that service expectations do not impede any student’s significant progress toward their degree.

Specifying Assistantship Duties:
Work assignments for students should be clear and specific and should reflect a relationship to the student’s academic program. Duties to be accomplished for any graduate assistant will be established by the faculty advisor in charge of the assistantship appointment at the time of their annual expectations meeting in the Fall. Where duties require students to work outside the hours typically expected according to the appropriate University calendar (e.g., nights, weekends, holidays), the appointment letter should specifically describe these expectations.

Supervisors should make a clear distinction between the work to be performed for the assistantship and the work being performed toward completing the degree. For example, it would be prohibited for time spent completing class assignments to be part of the duties of an assistantship. Hours spent on thesis or dissertation research will not be considered part of state-funded assistantship duties. Research assistantships that are part of externally funded research projects do not have this restriction.

Multiple Assistantships
A student may have multiple graduate assistantships or hourly appointments by the University. However, it is the responsibility of the secondary employer (i.e. the department or university office outside the Department of Nanoscience) to receive permission of the Department of Nanoscience and the Graduate School before offering a student any additional work, and to ensure that the maximum work load of 29 hours per week is not exceeded. For international students with F1 Visa the maximum number of hours of work per week is 20 hours.

Attendance Policy for Assistantships
The Department of Nanoscience follows the attendance policy for assistantships set by the University of North Carolina Greensboro. Nanoscience students receiving a Graduate Assistantship will develop an assistantship work plan with their supervisor. As with all professional employees, graduate students are expected to communicate with their employer (i.e. advisor/mentor) in a timely manner if absences occur or if they are unable to fulfill their responsibilities.

*Graduate assistants are not required to work during the following circumstances:
  ● Fall Break, Spring Break and the holiday break between fall and spring semesters
  ● State holidays such as Thanksgiving (Thursday and Friday), Martin Luther King, Jr. Day, etc.
  ● When the university is officially closed for emergencies

However, these holidays/events do not exempt students from their other obligations! Students are still expected to honor their curricular and their research commitments during times when they are not obligated to serve the department
through their assistantship.

In all other cases of absence, all graduate assistants are required to make up any missed hours that are part of the written assistantship assignment. Absences for Instructional Assistants are difficult if not impossible to make up and it is strongly encouraged that plans to deal with these issues be formed ahead of time. Absences due to illness or other personal circumstances are also to be made up at the supervisor’s discretion.

START DATE FOR FALL-SEMESTER ASSISTANTSHIPS

Graduate assistantships typically start around the beginning of classes each fall. However, there may be good reasons why an assistantship should start before the semester begins, such as to provide preparation time for teaching a class, to provide training, to accommodate the timeline of a research project, to address administrative tasks that need to be completed prior to the start of the semester, etc. Appointments for fall semester assistantships may start as early as August 1. Assistantship duties may begin before August 1, provided that funds can be identified that will permit a student to be paid for those duties.

Arrival deadline for international students on assistantship: International students on assistantship without a U.S. Social Security card/number must arrive on campus, register for classes, and report to the International Programs Center a minimum of 20 days prior to the University's official “late enrollment” period. Please find the enrollment deadline for the relevant term at the Registrar's Academic Calendar page. It is ideal to arrive earlier.

TERMINATION OF ASSISTANTSHIPS

Termination of an assistantship occurs when an assistantship is ended prior to the end of the appointment. Termination of an assistantship is different from non-renewal. Termination may be initiated by the Department, the Graduate School, or the student. Termination of an assistantship will have significant and permanent consequences for a student and should only be undertaken after clear feedback on deficiencies and attempts to assist the student in meeting expectations.

Consequences of a loss of assistantship

- Stipend payments will cease immediately upon termination of an assistantship. Any pay received erroneously in excess of the contracted amount or after termination of the assistantship will be returned to UNC Greensboro.
- Students who have received a tuition award who resign or are terminated from their University assistantship prior to the end of the semester (for personal, financial, medical, or any other reason) will have the full amount of their tuition...
remission and/or in-state tuition award rescinded and are then personally responsible for paying the full costs of tuition for that semester. Tuition remission and/or in-state tuition awards are not prorated.

Appeals to the above policy must be directed to The Graduate School, along with a written recommendation from the dean, chair, and director of graduate studies for the student’s academic program, and a letter of confirmation from Student Health Services if the resignation is for medical reasons.

Loss of your assistantship for whatever reason may change your ability to continue your studies at UNCG. This is especially true if you are an international student who is required to have an assistantship to maintain your immigration status or a student required to maintain your assistantship for other reasons. It is your responsibility to understand these implications and work with appropriate offices where necessary.

● **TERMINATION BY STUDENT:** Should a graduate student determine the need to terminate their assistantship appointment, they should consult with the assistantship supervisor as soon as possible. The notice of termination, prepared by the student, should be both verbal and written. Withdrawing from the University will result in the termination of an assistantship. International students should consult with appropriate offices relating to immigration/visa status.

● **TERMINATION FOR ACADEMIC DEFICIENCY:** An assistantship may be terminated for academic deficiency or for failure to meet other academic requirements as described under Academic probation (https://catalog.uncg.edu/academic-regulations-policies/graduate-policies/). Any student placed on academic probation will be terminated from their assistantship by the Graduate School. Students may lose their assistantship without being dismissed from the University.

● **TERMINATION FOR FAILURE TO PERFORM DUTIES:** If, in the opinion of the immediate supervisor of the graduate assistant, a student is not carrying out the duties of their assistantship satisfactorily, the supervisor should immediately provide feedback to the student and attempt to resolve the problem. All conversations and feedback should be documented and placed in the student’s written record with a copy provided to the student. If the student’s performance remains unsatisfactory, the student should receive a written warning from the department chair (or designee) delivered through an official UNCG email detailing the nature of the problem.

If, after this formal warning, the student fails to improve to reasonable standards, the department chair should give the student a written notice of termination. This letter of termination should be sent to the student through an official UNCG email and should specify the date of termination and any requirements for vacating the position. At least two weeks should elapse between the written warning and the
notice of termination. The Dean of the Graduate School must be notified of the termination.

- **TERMINATION FOR CAUSE:** An assistantship may be terminated for other serious violations of UNCG’s community norms and values, including violations of the Academic Integrity Policy. Allegations regarding violations of this nature should be referred to the appropriate disciplinary body. If a student is unable to perform their duties because of violations such as these, their assistantship should be suspended pending completion of due process. A student suspended from their assistantship but ultimately found to not be guilty of the alleged violations should be reinstated in good standing and reimbursed for lost assistantship revenue.

- **TERMINATION DUE TO LOSS OF EXTERNAL FUNDING OR FINANCIAL EXIGENCY:** A sudden or unexpected loss of funding from either an external funding source or (in very rare cases) a dramatic change to the University budget environment may result in the termination of an assistantship. While we work diligently to reduce the probability of this outcome, it is possible that unexpected developments could require this step. Unexpected loss of external funding cannot be used to justify termination of assistantships not directly funded by that project.

Should the University receive notification that research funding will be discontinued, departments must notify the affected graduate students with as much advance notice as possible. Departments should make every effort to secure funding to enable affected students to continue throughout the current semester.

**LEAVE WITHOUT PAY**
Graduate assistants may request up to four weeks of leave without pay per semester and one week of leave without pay per summer session for illness of a close family member, death in the immediate family, or personal illness or hardship. If leave without pay is not approved by the administrator of the graduate assistantship, the graduate assistant may petition the Dean of the Graduate School for approval.

**VACATION**
Students are not permitted to take extended vacations (> 3 weeks). The Department of Nanoscience recommends that all Nanoscience graduate Students take only three weeks of vacation per year. Vacations cannot conflict with assistantship duties or course work. Ultimately, vacations are up to the discretion of your advisor.

**PARENTAL LEAVE**
A graduate assistant (of any gender) is eligible for up to six weeks of parental leave. The request for parental leave must be made to the department at least one month in advance, with notification provided by the department chair to the Dean of the Graduate School. The Graduate School encourages the department and student to work together to enable the student to maintain enrollment and employment status during this time.
FELLOWSHIPS
Fellowships are monetary awards that require no service or work from the student. Fellowships may be institutionally awarded (through the Graduate School or through one of UNCG’s graduate programs) or they may be externally awarded and brought to UNCG. Fellowships are awarded by government agencies (federal, state, local), private foundations, industries, professional groups, and others. The Graduate School maintains a list of available fellowships on its website that includes information on a large number of prominent external fellowships.

Typically, fellowships are awarded on merit. For UNCG Graduate School fellowships, students are nominated for consideration by faculty. Students may not apply directly for Graduate School Fellowships. For a monetary award to be designated a fellowship, it must provide the recipient a minimum of $1,000 for the academic year.

Some awards may limit students’ research to areas of interest to the donor and may require a period of residency at the industrial sites. Fellowships are usually offered in early February or March for the following academic year. Unless otherwise stipulated by the grantor and/or donor, holders of fellowships or traineeships are required to enroll in the same minimum credit load as other departmental graduate assistants.

Fellowship recipients are also eligible for appointment as graduate assistants. For students simultaneously holding fellowships or traineeships and assistantships, the normal department stipend should be provided because the fellowship is a non-service award.

Most UNCG Graduate School Fellowships are for one year only. Departments may request that the total amount of the fellowship be paid out over a specified number of years. Fellowships may be withdrawn at any time for failure to maintain a satisfactory academic status or for violating University policies.

Please see the Graduate School Webpage on Fellowships and Scholarships located here: [https://grs.uncg.edu/awards/](https://grs.uncg.edu/awards/).

Tuition Remission, In-State Tuition Awards, and General Tuition Awards
Students holding an assistantship or fellowship of at least $2,000 per semester may also receive tuition assistance from the Department of Nanoscience, including a Tuition Remission Award, reducing tuition to in-state rates, and/or an In-State Tuition Award. These awards are based on multiple factors including residency and state of a student’s progression through the program. Additional financial policies and procedures can be found on the UNCG Graduate School's Funding Resources website: [https://grs.uncg.edu/financial/](https://grs.uncg.edu/financial/).
Resident students who are awarded a fellowship or assistantship appointment may be eligible for an In-State Tuition Award. Requests for tuition remission and in-state tuition award privileges are initiated by the academic program in which the student is enrolled.

A non-resident student who is awarded a fellowship or assistantship appointment may be eligible for a Tuition Remission Award reducing tuition to in-state rates. In addition to tuition remission, non-resident who are awarded a fellowship or assistantship appointment may be eligible for an In-State Tuition Award. Requests for tuition remission and in-state tuition award privileges are initiated by the academic program in which the student is enrolled.

Domestic U.S. doctoral students are expected to make a good faith effort to obtain North Carolina State residency by the end of the first year. Application for North Carolina State residency can be found here: https://grs.uncg.edu/forms/ If you are unsuccessful, the non-resident differential (i.e. the total non-residential tuition less than the resident tuition) may be paid until you are able to convert. In most cases it is not possible for international students to obtain North Carolina State residency.

Tuition remission and in-state tuition awards are available fall and spring semesters only. No summer awards are made. Students must be on-campus unless the award requires their presence at another campus or research center.

**Eligibility**

Students must meet the following criteria to qualify for tuition remission and/or in-state tuition awards:

- Students must be full-time, degree-seeking. Certificate students are ineligible.
- Students enrolled in doctoral, doctoral track sequence programs and must receive at least the state-mandated minimum stipend of $2,000.
- Students must have an appointment as a graduate assistant, fellow, or trainee. The appointment must be in effect for a period of not less than one full semester for the student to be eligible for, and to retain, tuition remission and/or an in-state tuition award.
- Must maintain academic good standing, 3.0 GPA or above.
- **Students taking dissertation extension credit (i.e. Nan 801, 802, and 803) are not eligible for tuition waivers; although they may still be eligible for stipend support. International students should be aware that these courses will still have fees, although only one credit of any extension credit is needed for consideration as a full time student.**

**Duration of Tuition Support**

As a policy of the UNCG Graduate School if recommended by the department, doctoral students (or students in doctoral track sequence programs) are eligible for tuition remission and/or in-state tuition awards for ten semesters total. **However, The Department of Nanoscience will only support a student with an NC state funded**
assistantship up to eight semesters. Students who complete a degree in one academic program and then enroll in another academic program or change academic programs without receiving a degree are only eligible for the maximum semesters of eligibility as noted above during their enrollment at the University.

INTERNSHIPS
Nanoscience Students may want external research experiences in the form of internships, which may or may not be financially supported. The Department of Nanoscience fully supports such endeavors as this enables the student to tailor their graduate experience and participate in new areas of research and work. However, it is important to consider how the internship will impact your dissertation research, assistantship obligations, and service duties. All students, both international and domestic should discuss these opportunities with their advisors prior to applying.

International students must also consider their visa status and the paperwork that must be performed to keep them in good standing. This paperwork requires time and students should determine the proper procedure at least six months prior to the start of the internship, even if they have not been accepted into the program. There are two options: Curricular Practical Training and Optional Practical Training.

- Curricular Practical Training or C.P.T. is for eligible currently-enrolled students. This type of internship involves training that is part of the student’s plan of study, either as a formal course or as an additional graduation requirement, i.e. a teaching requirement. As such this type of intern program is only available to students prior to their rise to Doctoral Candidacy Status. Since the justification for this type of internship aligns with the student’s plan of study, the paperwork for entering such an internship program by an international student is performed on site at UNCG within the International Programs Center (IPC) and can be completed within 5 weeks.
- Optional Practical Training (O.P.T.) is another option that is available for eligible currently-enrolled students or recent graduates. These types of internships are outside the student’s plan of study and involve both internal and external paperwork. This option requires 3-5 months for processing by the US Department of Homeland Security and therefore any student interested in participating in such programs often needs to initiate the verification process prior to the offer of acceptance into the program.

GRADUATE STUDENT ASSOCIATION
The GSA is a graduate student run organization that represents the interests of graduate students on the UNCG campus. Departmental representation is required for students to take advantage of GSA-sponsored programs. The GSA representatives for Nanoscience in the 2020-2021 year are Parth Desai (phdesai@uncg.edu) and Alex Grindstaff (gagrinds@uncg.edu). If you have questions or concerns that involve GSA topics contact them. The GSA sponsors many activities for graduate students and provides funds for professional activities, including awards for travel to professional
training programs and conferences. For more information visit the GSA website: https://graduatestudentassociation.uncg.edu/.

**INTELLECTUAL PROPERTY TERMS, RESEARCH POLICIES AND PROCEDURES**

Ownership of any intellectual property that students may produce is governed by the University’s Intellectual Property Policy. For more details visit: https://policy.uncg.edu/research-ip.html. Failure to follow the proper procedures during the acquisition of a patent may invalidate that patent or other types of protection of intellectual property. Any student interested in developing their intellectual property must discuss these actions with their thesis/dissertation advisor prior to engaging in any further action. Note: any intellectual property developed at JSNN is in part owned by the University of North Carolina Greensboro. Furthermore, ownership rights may also be given to funding agencies and individuals outside the university. If a student is unclear about any intellectual property issue, they should discuss these issues with their advisor, whether they believe that it involves their research or not.

**Student Recognition and Awards**

Each year, the Nanoscience faculty may recognize outstanding students, who best exemplify and reflect JSNN’s goals, vision, work ethic, and culture. One or more first year students may be recognized for demonstrating an exemplary integrated and interdisciplinary educational, training, collaborative, peer mentoring, and service experience. Additionally, each year, a senior level graduate student may be recognized for serving as a role model by demonstrating: creativity, collaboration, innovation, progress, thrift, and entrepreneurship in their research.

**Academic Integrity Policy**

A violation of academic integrity is an act harmful to all other students, faculty and, ultimately, the entire community. Specific information on the Academic Integrity Policy and obligations of faculty and students may be found online at http://academicintegrity.uncg.edu Academic integrity violations are unacceptable. If a student is uncertain about an issue of academic honesty, he/she should consult the faculty member to resolve questions in any situation prior to the submission of the academic exercise including and especially thesis and dissertations. Students must read and understand the UNCG Academic Integrity Policy, Student Code of Conduct, and Ethics and Professional Standards, which may be found at the following links:

- [http://sa.uncg.edu/handbook/academic-integrity-policy/](http://sa.uncg.edu/handbook/academic-integrity-policy/)
- [https://sites.google.com/a/uncg.edu/caphesaprofessional-standards](https://sites.google.com/a/uncg.edu/caphesaprofessional-standards)

Students must recognize their responsibility to uphold the Academic Integrity Policy and to report apparent violations to the appropriate persons. Students who do not understand the Policy or its application to a assignment are responsible for raising such questions.
with their faculty member. By enrolling in the university, each student agrees to abide by the Academic Integrity Policy.

Violations of academic honesty include but are not limited to:

- **Cheating** - intentionally using or attempting to use unauthorized materials, information, notes, study aids or other devices or materials in any academic exercise unless specifically allowed in advance by the faculty member proctoring that specific exam. Students may not have others conduct research or prepare work for them without advance authorization from the faculty member. This includes, but is not limited to, the services of commercial term paper companies.

- **Fabrication, Falsification, and Forgery** - the intentional invention and unauthorized alteration of any information or citation in an academic exercise. Falsification is a matter of altering information; fabrication is a matter of inventing or counterfeiting information for use in any academic exercise or University record; and Forgery is defined as the act to imitate or counterfeit documents, signatures, and the like. "Invented" information is unethical in any laboratory experiment, report of results or academic exercise. Students need to acknowledge the actual source from which cited information was obtained. For example, a student shall not take a quotation from a book review and then indicate that the quotation was obtained from the book itself. Falsification of University records includes altering or forging any University document and/or record, including identification material issued or used by the University.

- **Multiple Submission**, i.e. the re-submission of substantial portions of the same work (including oral reports) for credit more than once without authorization from instructors of all classes for which the student has submitted the work. Examples include but are not limited to:
  - Resubmitting the same paper for credit in more than one course without all faculty members’ permission.
  - Revising and then submitting an credited paper or report (including oral presentations) as if it were new work for a different class.
  - Submitting sections of a M.S. thesis for a PhD dissertation without permission from members of the student’s M.S. and dissertation committees.

- **Plagiarism** - the intentional, knowing, or careless presentation of the work of another as one's own without acknowledging the source. To avoid plagiarism the following guideline should be followed in the given circumstances.
  - **Direct Quotation**: Every direct quotation must be identified by quotation marks or appropriate indentation and must be properly acknowledged, in the text by citation or in a footnote or endnote. When direct quotations are used, however, quotation marks must be inserted, and acknowledgment made immediately after.
o **Paraphrase:** Prompt acknowledgment is required when material from another source is paraphrased or summarized, in whole or in part, in one's own words. To acknowledge a paraphrase properly, one might state: "Repeating the same action over and over without a change in outcome is a sign of craziness..." and then conclude with a footnote or endnote identifying the exact reference.

o **Borrowed facts:** Information gained in reading or research, which is not common knowledge must be acknowledged.

o **Common knowledge:** Common knowledge includes generally known facts such as the names of leaders of prominent nations, basic scientific laws, etc. If in doubt as to whether a statement is common knowledge, ask your advisor.

- **Complicity** – the intentional or knowing assistance or attempting to assist another to commit an act of academic dishonesty. While collaboration and sharing information are characteristics of academic communities, they become a violation when they involve dishonesty. **Faculty members must make their expectations about collaboration and information sharing clear to students.** Students should seek clarification when in doubt. It is the responsibility of the student to resolve and confirm this clarification. Complicity also includes **computer misuse,** i.e. the use of software to perform work, which the instructor has told the student to do without the assistance of software. Examples of complicity include knowingly allowing another to copy from one's paper during an examination; distributing test questions or substantive information about the materials to be tested before the scheduled exercise; collaborating on academic work knowing that the collaboration is not allowed but will not be reported; taking an examination or test for another student or signing another’s name on an academic exercise.

- **Misconduct in Research** - Misconduct in research and in creative activity destroys that trust and is prohibited. Research and creative activities include class papers, dissertations, grant funded research, and service activities. Research rests on a foundation of mutual trust. Students shall adhere to professional standards of integrity in their scientific research including appropriate representations of originality, authorship, collaborative crediting, and intellectual property. Misconduct in research is defined as serious deviation from accepted professional practices or in reporting the results of research activities. Honest errors or honest differences in judgments or interpretations of data are not considered a serious breach of research edict. Misconduct in research includes:

  o **Abuse of Confidentiality,** which involves taking or releasing the ideas or data of others which were given in the expectation of confidentiality. Examples are stealing ideas from grant proposals, award documents, or manuscripts intended for publication when one is a reviewer for granting agencies or journals or when one is a juror.
- **Dishonesty in Publication or Exhibition/Performance:** Knowingly publishing or presenting work that will mislead. Examples include misrepresenting material, particularly its originality, or adding or deleting the names of other authors without permission.

- **Deliberate Violation of Requirements:** Failure to adhere to or receive the approval required for work under research regulations of federal, state, local or university agencies, including guidelines for the protection of human subjects or animal subjects and the use of recombinant DNA, radioactive material, and chemical or biological hazards.

- **Failure to Report Fraud:** Concealing or otherwise failing to report known misconduct or breaches of research ethics.

- **Research Board Requirements:** Failure to comply with requirements of the conduct of research and creative activities, e.g. the protection of human subjects, the welfare of laboratory animals, radiation, and biosafety. Allegations in these areas may be brought by the Human Subjects Institutional Review Board, the Institutional Animal Care and Use Committee, and the Institutional Biosafety Committee.

**Laboratory Safety**

The Department of Nanoscience regards safety in the lab and throughout the campus with the highest importance and makes every effort to ensure a safe working environment. All students at JSNN must complete an annual safety training program that is conducted in the beginning of the Fall Semester. Students missing this meeting will have their access to JSNN removed (including access to all labs) until arrangements are made for safety training. Additional lab-specific safety training is required to gain access to individual research and instrumentation labs; students needing access to resources or instruments in a specialized lab must meet with that lab’s director for safety training prior to gaining access. While many safety issues are accidental, most can be prevented by proper training and adherence to safety protocols. Problems and violation of safety issues will be dealt with on an individual basis and will result in several actions. First, all individuals involved with a safety violation or an accident associated with a safety violation will be required to undergo re-training both at the school level and within the lab in which the accident occurred. Repeated violations will result in more severe consequences including but not limited to permanent loss of access to laboratory spaces, and even dismissal.

Examples of violations of safety include:

- Lack of proper Personal Protective equipment.
- Dangerous lab practices such as inappropriate storage and use of dangerous chemicals, biological agents, or safety devices, e.g. use of dangerous chemicals and irritants such as osmium tetroxide outside a hood or in an inappropriate hood. Or, use of BSL2 organisms in an unsanctioned lab space and/or without proper containment protocols
- Inappropriate behavior in the lab
JSNN Instrumentation/Equipment Training and Use
The Joint School of Nanoscience and Nanoengineering is home to an elite cluster of state-of-the-art instrumentation, which requires dedication and respect to learn and operate properly. Training on any instrument is open to all students who need it for their thesis or dissertation research. However, the decision whether a student needs to be trained on a particular instrument is determined by the advisor/mentor. The operation of all the instruments and equipment at JSNN requires years of practice and your training and research. A graduate student is not required to learn all instruments at JSNN and therefore, students should not expect to learn to operate all of the instruments at JSNN. Training on an instrument requires the completion of a form and approval by both your advisor and the JSNN staff who oversees the training. Often, additional reading and study is expected of a trainee, and failure to follow these instructions and readings will hinder or even stop training. The operation of a specialized piece of equipment is a privilege that must be earned, not a right. If the JSNN training staff believes that you are not capable of completing instrument training, or that you will not develop the skills needed to independently operate the instrument without fear of personal injury or damaging the tool, training will be stopped.

Once you have been trained, you will use the Book-It application to reserve an instrument for use on your research project. Each tool has its own user time limits, consult with JSNN staff for more information. **DO NOT BLOCK OFF TIME JUST FOR YOUR CONVENIENCE.** Individuals caught blocking off time will also be subject to removal of privileges. Failure to show up for a scheduled time may result in loss of user privileges on any instrument. JSNN is committed to graduate student training and given this it is expected that any instrument may be damaged during operation. Each incident will be evaluated and the student or individual using the instrument at the time of the incident will be questioned to determine the source of the problem. If it is discovered that the issue was user-error, the individual will be retrained on that instrument and monitored to ensure that the problem does not arise again. Failure to inform staff of an instrument failure as soon as possible is a serious offense. **Not admitting to an instrument problem is a serious ethical violation and will negatively impact a student’s annual evaluation.** Time is critical, and the loss of any instrument capability will affect many people and research at JSNN; damaged instruments often still partially function but generate bad data. The sooner a problem is identified, the sooner the instrument will be repaired. If any student repeatedly damages an instrument they will be removed from that tool’s user list. The habitual disregard for appropriate use of any tool, could lead to dismissal from the NS graduate program.

**Applying for Graduation**
Students must formally apply for graduation to The Graduate School by the end of the first week of classes during the term in which they plan to graduate. Degrees are awarded at the end of each semester and the second summer session (i.e., in December, May, and August). All graduate students must be enrolled for at least one credit during the
term in which they are scheduled to receive their degree. This may include extension courses (801, 802, 803). See the Continuous Enrollment Policy (https://catalog.uncg.edu/academic-regulations-policies/graduate-policies/). Diplomas and transcripts of students owing money to the University will be withheld until their account is cleared. Students who do not apply for graduation before the published deadline for any semester may apply for graduation during the next semester. Students who have applied for graduation but fail to meet the requirements must reapply for graduation by the deadline for the semester in which they will fulfill their degree requirements. Degrees are conferred only after all requirements are completed and the Board of Trustees has taken official action. The form for applying for graduation is online at: https://grs.uncg.edu/current/graduation-application/.

**Graduation Fee**
The graduation fee is payable in the Cashier's and Student Accounts Office.

**Leave of Absence**
The Department of Nanoscience and the University of North Carolina at Greensboro supports a leave of absence policy to assist graduate students who are temporarily unable to continue their programs. The leave of absence may extend for up to one academic year. A leave of absence will be considered a break in a student's continuous enrollment. Students choosing this option must file a Graduate School Request for a Leave of Absence that states the reason for the requested absence and that they will neither use University resources, nor require faculty communication or interaction during the leave period. If the leave of absence extends beyond one academic year, the student's matriculation is closed, and the student must re-apply for admission to The Graduate School. International students on F-1 visa/status must remain continuously enrolled until the thesis, dissertation, project or directed study is completed and cannot apply for a leave of absence from the Graduate School. Those international students who wish to apply for a leave of absence are advised to consult with the International Program Center.

The student is responsible for ensuring that the proposed leave is compatible with the regulations of any granting agency from which funding would normally be received during the leave period and that such agencies are informed of the proposed leave. Students on student loan programs should inquire with the Financial Aid Office and/or lender regarding any consequences that such a leave may have on their ability to receive future aid or on their repayment status. Graduate students on assistantships who are granted a leave of absence will not be paid during the period of their leave. If feasible, the remainder of their appointment will be held for them upon their return to the next term. If a graduate assistant and chairperson/director disagree on the leave or its arrangements, students may appeal to The Graduate School. See Appeals Policies and Procedures.

**Preparing the Application for Leave of Absence**
In consultation with the supervising faculty member, the Application for Leave of Absence form is to be completed by the student and signed by both the student and the advisor or supervising faculty member. The application is to be submitted to the DGS for review and signature before being forwarded to the Vice Provost and Dean of The Graduate School. Whenever possible, application should be made in advance of the anticipated leave or as soon as possible after commencement of the leave.

**Withdrawal from a Program or a Course**

Graduate students who must withdraw from the University may do so by dropping all courses online through UNCGenie until the last day to drop without academic penalty. Course withdrawals for fifteen-week courses that occur after the last day to withdraw without incurring a WF grade are calculated as an F (failing) grade. Students whose registration for all courses is cancelled must seek reactivation or readmission through The Graduate School to return to school in subsequent terms.

After the deadline to withdraw without penalty, and no later than the last day of classes, a Withdrawal (W) may be granted only with the permission of the Vice Provost and Dean of The Graduate School and if the student’s status in the course at the time of withdrawal is satisfactory. If the student is in failing status at the time of withdrawal, a grade of Withdrawal Failing (WF) is given and will be calculated as an F (failing) grade. A course abandoned with insufficient reason for withdrawal is assigned the grade of F. In certain cases, faculty may initiate the withdrawal procedure for cause.

Retroactive Withdrawals may be requested in rare cases, such as when the student is unable to complete the term and the deadline to drop without academic penalty has passed or when a grade of Incomplete has been assigned and the student is unable to complete the remaining requirements. Such withdrawals will only be considered when truly extenuating circumstances exist. Students seeking this should consult the Graduate School for more details.

**Dismissal from the NS Graduate Program**

A student may be dismissed from the Nanoscience graduate program for a variety of reasons including poor performance on your annual review, failure to pass critical milestones in the student’s graduate curriculum, and a substantiated violation of UNCG and the academic integrity policies of the Department of Nanoscience. The process can be initiated by a faculty member or members, the director of graduate study, or the chair and will involve immediate discussion with the student involved. The Department will follow Graduate school policies and practices on all disciplinary actions. Potential examples of dismissal are outlined below, however these do not represent a comprehensive list.

- Poor classroom performance and consistent failure to remain in good standing.
- Inability to meet semester goals, reports deadlines assigned by the advisor and/or the committee during the annual and semi-annual reviews.

- Failing the Qualifying Examination/ORP.

- Failure to pass the proposal defense.

- Unresolved unsatisfactory performances on annual reports.

- Continual failure to follow proper lab safety protocols.

- Continual failure to operate instrumentation in a proper and safe manner.

- Violation of UNCG’s Academic Integrity, Student Code of Conduct, Ethics and Professional Standards, or Responsible Conduct in Research policies. In addition to this, ethics violations are reflected on a student’s permanent record.
II. Nanoscience Degree Programs

The department of Nanoscience is a graduate granting department only and awards advanced graduate degrees of a Master’s in Science (MS) in Nanoscience and a Doctorate (PhD) in Nanoscience. For more information, please consult the UNCG graduate catalogue. Students must satisfy the degree requirements of the catalog of the year they began matriculation.

PhD in Nanoscience

The mission of the Joint School of Nanoscience and Nanoengineering (JSNN) is to prepare students from a variety of disciplinary backgrounds to conduct basic and advanced research in Nanoscience and Nanoengineering in industrial, governmental or academic settings. Within this context, the Nanoscience Department provides a graduate level cross-disciplinary educational and discovery research experience in nanoscience. It also works collaboratively with the Nanoengineering Department to achieve an integrated foundational research program in emerging high impact areas.

Students completing this degree program will be able to:

• Design, organize and manage multifaceted research programs or projects in the areas of Nanotechnology and Nanoscience.
• Communicate, both orally and through the written word, effectively when proposing new research projects, reporting their research discoveries, or when critiquing or evaluating the proposals or discoveries of others,
• Practice safe laboratory protocols and policies.
• Analyze and synthesize complex ideas associated with Nanoscience and Nanotechnology and employ these processes for the advancement of Nanoscience research.

PhD in Nanoscience Program Outline of Catalogue years prior to 2020/2021

The PhD in Nanoscience requires a minimum of 60 hours. The program has 21 credit hours dedicated to core courses, including 5 core nanoscience courses, and 15 credit hours of electives. In addition to formal coursework, students are required to have completed their plan of study by the end of their first year, pass a qualifying exam (see below) prior to the start of their second year, and write and defend their dissertation proposal by the end of their second year. In addition to formal coursework, doctoral students are required to gain the equivalent of two semesters of teaching experience, which may be met through a variety of means.

Course distribution and Credit allocation

Fundamentals of Nanoscience Courses (15 credits)

- NAN 601 Nanochemistry (3)
- NAN 602 Nanobiology (3)
- NAN 603 Nanophysics (3)
- NAN 604 Nanotechniques (3)
- NAN 605 Mathematical Methods in Nanoscience and Nanoengineering (3)
Laboratory Rotations (4 credits)
- NAN 611 Nanoscience Laboratory Rotation (4)

Professional Development Seminars (2 credits)
- NAN 621 Professional Development Seminar I (1)
- NAN 622 Professional Development Seminar II (1)

Advanced Nanoscience Electives (15 credits)
- Select 15 credits of electives (15)

Dissertation (24 credits)
- NAN 799 Nanoscience Dissertation Research* (24)

Total Credit Hours 60

**PhD in Nanoscience Program Outline of Catalogue 2020**

The PhD in Nanoscience requires a minimum of 49 hours. The program has 19 credit hours dedicated to core courses which include the two core Principles of Nanoscience courses (Nan700 and Nan706), two Nan707/Lab Practice and Protocol courses, two Nan708/Science Communications courses, and Scientific Integrity/Nan710. In addition to the core classes, there are 12 credit hours of electives course credit; elective courses will be selected through discourse among the student, the mentor and the student’s committee. Students in this program will complete a minimum of 18 credits in research courses: six credits prior to earning candidacy (e.g. Nan 790) and a minimum of 12 credits in doctoral Nan 799 research coursework, with a maximum of 24 credits. In addition to the standard PhD in Nanoscience, the department offers two concentration degree programs in Nanoscience: one concentration in Synthetic Biology and another in Materials Science and Nanomaterials. The courses needed for these concentration programs are outlined below and involve selecting six credits of concentration required and specific elective coursework. In addition to formal coursework, students are required to have completed their plan of study by the end of their first year, pass a qualifying exam (see below) prior to the start of their second year, and write and defend their dissertation proposal by the end of their second year. In addition to formal coursework, doctoral students are required to gain the equivalent of two semesters of teaching experience, which may be met through a variety of means.

**Course distribution and Credit allocation for PhD in Nanoscience**

**Foundations of Nanoscience Courses (6 credits)**
- NAN 700 Principles of Nanoscience I: Physical, Chemical, and Biological Foundations
- NAN 706 Principles of Nanoscience II: Analytical, Statistical, and Computational Foundations

**Advanced Nanoscience Courses (12 credits)**
Select one concentration option (12 credits) from the following:
- NAN 727 Principles of Quantum and Solid State Physics
- NAN 729 Mathematical Methods in Modeling Complex Systems
- NAN 731 Systems and Synthetic Biology
Two approved elective courses (6 credits)

Additional Required Courses (13 credits)

Dissertation Research (18-30 credits)

Total Credit Hours 49-61

1 Students must complete NAN 707 and NAN 708 twice each for a total of 6 credits each.

2 Students must take NAN 790 twice for a total of 6 credits.

3 Students must complete a minimum of 12 credits in NAN 799.

Course distribution and Credit allocation for PhD in Nanoscience with a concentration in Synthetic Biology

Foundations of Nanoscience Courses (6 credits)

Required Courses for concentration

Select two courses (6 credits) from the following:

Elective Courses: Select two courses (6 credits) from the following: *

Additional Required Courses (13 credits)

Dissertation Research (18-30 credits)

Total Credit Hours 49-61
**Course distribution and Credit allocation for PhD in Nanoscience with a concentration in Materials Science and Nanomaterials**

**Foundations of Nanoscience Courses (6 credits)**
- NAN 700 Principles of Nanoscience I: Physical, Chemical, and Biological Foundations
- NAN 706 Principles of Nanoscience II: Analytical, Statistical, and Computational Foundations

**Required Courses for concentration**
Select two courses (6 credits) from the following:
- NAN 727 Principles of Quantum and Solid State Physics
- NAN 729 Mathematical Methods in Modeling Complex Systems
- NAN 732 Nanomaterials Chemistry

**Elective Courses (6 credits)**
Select two courses (6 credits) from the following: *
- NAN 728 Nanotechniques
- NAN 748 Macromolecular and Supramolecular Chemistry
- NAN 749 Introduction to Spectroscopy Methods in Nanoscience
- NAN 755 Biomimetics and Biomaterials
- NAN 762 Nanoscale Reactions
- NAN 764 Materials, Syntheses, and Processes by Design
- NAN 771 Computational Quantum Nanochemistry

*Or elective courses approved by the student’s committee and advisor.

**Additional Required Courses (13 credits)**
- NAN 707 Lab Protocols and Practice
- NAN 708 Science Communications
- NAN 710 Scientific Integrity

**Dissertation Research (18-30 credits)**

**Total Credit Hours 49-61**

1 Students must complete NAN 707 and NAN 708 twice each for a total of 6 credits each.
2 Students must take NAN 790 twice for a total of 6 credits.
3 Students must complete a minimum of 12 credits in NAN 799.
*Or elective courses approved by the student’s committee and advisor.*
PhD Student Timeline

Year 1
- Successful completion of Core Courses
  - Attaining a B or better in each course
  - Maintaining a 3.0 GPA
- Qualifying Exam – preparation and defense of an Original Research proposal
- Complete and Submit a Plan of Study to Graduate School
- Discussion and Planning with NS faculty/Selection of faculty advisor
  - Signing of Letter of intent with an advisor
  - Submitting this request to NS Office
- Domestic US students must seek In-state residency status.
- Prepare a Curriculum Vitae
- Select a dissertation advisor within the first seven weeks of the first semester
- Complete and submit an annual report to your advisor and department.

Year 2
- Successful completion of remaining elective and core courses
  - Attaining a B or better in each course
  - Maintaining a 3.0 GPA
- Prepare and Defend a Doctoral Research Proposal – failure to do so by end of second year will result in a loss of tuition remission, i.e. domestic student will receive waivers for 0 to at most 3 credits of instate tuition/international students will receive waivers for 0 to at most 6 credits of out-of-state tuition.
- Selection of Dissertation Committee
- Plan first Committee Meeting
- Complete and submit an annual report to your advisor and department.

Years 3-5
- Have an Annual Dissertation Committee Meeting
- Prepare Dissertation/thesis.
- Participate and engage in departmental activities both voluntary and required.
- Actively engage in Research
  - Regular meetings with advisor
  - Attend schedule group/lab meetings
- Generate external research products
  - Attend/present at conferences
  - Write/publish manuscripts; with at least meeting minimum 1 publication published by the time of defending the Ph.D. thesis.
- Complete and submit an annual report to your advisor and department.
Ph.D. in Nanoscience Requirements

- Minimum credit hours for degrees: The minimum number of credit hours required for the Ph.D. degree is 60, including dissertation. The minimum number of credit hours for the Professional M.S. degree is 30 credit hours including the internship.

- Grades: Students are required to achieve a GPA of 3.0 or above to graduate from the program with no more than 6 credits below B. If a student receives more than 6 credits below a grade of B or one failing grade, he/she will be dismissed from the program. Only grades of B or better will count toward the doctoral degree.

- Time limits for completion: A typical time-frame for completion of the Ph.D. degree on a full-time basis will be 4-5 years; however, students may take up to 7 academic years to complete all requirements for the degree. Students may take up to a maximum of 72 credit hours in the Nanoscience doctoral program depending on individual needs. Students may petition the JSNN Graduate Studies Committee and the Graduate School for an extension if there are compelling reasons for requiring more than seven years to complete the requirements (e.g. part time students will typically take 2 – 3 years more to complete their courses of study). No credit will be given for courses taken more than five years prior to enrollment at JSNN. Transfer credit is also tied to time and may expire. For more information, see the UNCG Graduate School policy.

- Qualifying exam: Students will take a qualifying exam at the end of their first year of full-time study to continue in the program. Students who do not pass the exam, in May, will be allowed to take one additional oral examination within a 90-day period, measured from the date of the last class in the semester in which the examination was scheduled.

- Dissertation proposal: By the end of the first semester, students will select a dissertation advisor. The dissertation advisor must hold tenure-track faculty status within the Department of Nanoscience or be a tenure-track faculty member within either of the two parent universities with affiliated faculty status in the JSNN, including collaborating and adjunct faculty. In consultation with the advisor, the student will prepare and defend a dissertation proposal by the end of their second semester. The dissertation proposal is a statement document on how the student intends to accomplish the proposed goals of his/her research. A written document in the form of a grant proposal needs to be prepared along with a 45 min presentation. Students will present their proposals to their committee, which will be followed by an oral defense. At least one week prior to their proposal defense, the student will need to provide their committee members a copy of their dissertation proposal.

- Seminars: All students are required to attend Nanoscience departmental and JSNN seminars. Poor attendance (i.e. missing more than three unexcused absences) to these seminars will result in loss of “Continuing Status” in their annual report and may be the
basis for dismissal. Students who “sign in” absent students are committing an integrity violation which will be treated as a violation of UNCG academic integrity policy.

- **Safety Training:** All students need to go through safety training to access any of the laboratories at JSNN. Each laboratory has specific guidelines for training; please consult with the lab manager for access. Failure to take safety training will result in loss of access to JSNN and/or specific labs. Continued failure to follow safety guidelines will jeopardize a student’s “Continuing Status”.

- **Teaching experience:** Students are required to gain the equivalent of two semesters of teaching experience. The teaching experience requirement may be met several ways and the student is expected to work with his/her advisor/committee to develop a suitable plan to gain appropriate teaching experience.

**Dissertation:** Each student must complete a written dissertation of their research, present their dissertation publicly and defend their dissertation orally before their dissertation committee. The defense must occur in the same term that the student applies for graduation.

- **Publication requirement:** Each student is required to have at least one published manuscript prior to their dissertation defense; however, some labs may require more publications; discuss this topic with individual faculty to ensure that you have met not only the departmental requirements but also the requirements of your lab as well.

**Doctoral Plan of Study and Permission to Continue in a Doctoral Program**

A plan of study for the doctoral degree must be outlined by the student and the advisor and dissertation committee at the earliest possible time following the start of the student’s study in the Department of Nanoscience, and no later than the completion of 18 semester hours. The plan of study will be submitted to the Vice Provost and Dean of The Graduate School for approval. **Failure to file the Plan of Study upon completion of 18 hours will be interpreted by the Graduate School as a withdrawal. If a student is recommended for withdrawal, the Graduate School must be notified.** In addition to the department form the student must also complete, with all of the signature of their committee and the signature of the Department Head or Director of Graduate Studies, the Graduate School’s Doctoral dissertation/Plan of Study [https://grs.uncg.edu/wp-content/uploads/2016/08/RECOMMENDATION-FOR-DOCTORAL-ADVISORY_DISSERTATION-COMMITTEE-AND-_PLAN-OF-STUDY.pdf](https://grs.uncg.edu/wp-content/uploads/2016/08/RECOMMENDATION-FOR-DOCTORAL-ADVISORY_DISSERTATION-COMMITTEE-AND-_PLAN-OF-STUDY.pdf). Copies of the approved plan of study will be filed in the student’s permanent folder in The Graduate School, in the department’s files, and with the student. Any changes in the plan of study or in the subject of the dissertation must be submitted to The Graduate School for approval. No changes to the Plan of Study can be made after the student has achieved the status of Candidacy. The student’s Plan of Study will indicate the following:
o Major and minor fields of study.
o Specific courses the student is expected to complete as a minimum requirement.
o All specific core, seminar, language, and research requirements of the major department.
o No more than one quarter of the coursework credited to the degree, exclusive of the dissertation, at the 500 level.
o No more than 15 semester hours of independent study, exclusive of the dissertation. (See additional requirements above to pursue Independent Study.)
o No credit evaluated as B- (2.7) or less. All courses applied toward the degree must be B (3.0) or better, and additional hours must be taken for any hours earned with a grade of B- (2.7) or less.

Nanoscience Doctoral Qualifying Examination

The qualifying exam for the Ph.D. in Nanoscience degree consists of a written document and an oral defense of this work. This work will take the entire first year and is part of the research efforts for all first-year students. The goal of this examination is to provide a critical assessment of a student’s ability to research ideas pertinent to their research area, communicate and defend their ideas, and critically think during the defense of their proposal. In the first stage, the candidate will write a document that consists of a 5000-7500 word review article on a topic that has been selected with the student’s advisor. The review document will be a comprehensive essay of the research area in which the student’s work will take place; this document will include the central hypothesis of the field, its history with important milestones, the current stage of the art and the future needs. The student is expected to synthesize the material in a manner that will enable them to use this information as the launching point for their dissertation research.

Following this review, the student shall write a short 500-1000 word Dissertation Research outline. The intent of this research outline is to demonstrate the potential direction of the student’s dissertation project. The style of the 500-1000 word Dissertation Research Outline can be modeled after a NIH style Specific Aims Page or an NSF summary statement document, and the choice is at the discretion of the research advisor.

For the 2020/2021 Academic year, this document is due to the student’s Dissertation Committee on March 8th, 2021, i.e the Monday after 2021 Spring break. The committee will grade this document for content, organization, and clarity. The grade will be one of the following: Pass, Conditional-Pass, or Fail. A passing grade allows the student to progress through this milestone and plan for their oral exam (see below). A grade of a Conditional Pass requires that the committee create a remediation plan for the student that includes a detailed list of what the student needs to do before being reevaluated and a timeline for this process. All corrections must be completed by the second week of April. A grade of failing will result in dismissal from the program.
Starting in the last **two weeks of March**, the student will set up a meeting with their committee and give an 20-30-minute presentation of their review article. This presentation will be followed by an oral examination by the committee. During this meeting, the advisor will remain silent and only, if needed, be allowed to clarify the questions being asked by the committee. In no case, will the advisor be allowed to clarify answers by the student. During this oral examination, any aspect of the project may be questioned, including any aspect of the review article or in the Dissertation Research Outline page and any fundamental material that the committee believes is important, including that material covered in the student’s coursework.

The outcome of this oral exam will be Pass, Conditional-Pass, or Fail. A passing grade allows the student to progress through this milestone and allow the student to complete form indicating so. A grade of a Conditional Pass requires that the committee create a remediation plan for the student that includes a detailed list of what the student needs to before being retested, and a timeline for this process. All make up exams must be scheduled by May 15th. This deadline is a component of determining whether a student has a Conditional-Pass or a Failing grade. A grade of failing will result in dismissal from the program.

**Document Formatting Requirements**

**Composition**
- Use English.
- Avoid jargon.
- Spell out acronyms the first time they are used in each application section/attachment and note the appropriate abbreviation in parentheses. The abbreviation may be used in the section/attachment thereafter.

**Paper Size and Margins**
- Use paper size no larger than standard letter paper size (8 ½” x 11”).
- Provide at least one-half inch margins (½”) - top, bottom, left, and right - for all pages. No applicant-supplied information can appear in the margins.

**Font (size, color, type density) and Line Spacing**
Text must follow these minimum requirements:
- **Font size**: Must be 11 points or larger. Smaller text in figures, graphs, diagrams and charts is acceptable, if it is legible when the page is viewed at 100%.
  - Some PDF conversion software reduces font size. It is important to confirm that the final PDF document complies with the font requirements.
- We recommended the following fonts, although other fonts (both serif and non-serif) are acceptable if they meet the above requirements.
  - Arial
  - Georgia
  - Helvetica
Citations

- Use whatever format for citations that you want.
  - We do not require a specific citation format.
  - The use of "et al." in place of listing all authors of a publication is acceptable practice.
  - Most style guides include format guidance for citations and all formats are acceptable.

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</tr>
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<td>5000-7500 words</td>
</tr>
<tr>
<td>Dissertation Research Outline</td>
<td>500-1000 words</td>
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Annual Dissertation Committee meetings

All Students including those who have reached Candidacy must have an annual dissertation committee meeting. It is the responsibility of the student to organize this meeting: i.e. polling the availability of their committee members, reserving a meeting place, preparing a short-written summary (1000-1500 words pages), and a 20-30-minute presentation of their research project’s progress. These meetings must be scheduled during the academic year and will not take place during vacation breaks or during the summer (e.g. May 15th to August 15th). Furthermore, a student must plan and schedule these meeting early in the year (i.e. do not expect the faculty to accommodate your mistakes should you forget.) Failure to organize a yearly meeting will result in a poor annual review and may result in loss of funding and/or ‘good standing’ as a student.

Dissertation Proposal Defense

The dissertation proposal represents a formal understanding between the Dissertation Committee and the Doctoral Candidate. This agreement outlines the work in a student’s doctoral dissertation and the intellectual rigor the Committee that expects from the Candidate. The proposal will guide the Candidate towards their completion of the dissertation project.

The dissertation proposal is a major milestone and will advance the doctoral candidate toward completion of the dissertation. The proposal does not require any prior publications or background work, although such work may help a student defend their proposal. The proposal must contain enough detail to describe the significance, background and rationale for the work that the Candidate will perform for their dissertation. In the Department of Nanoscience, the proposal defense and the deliberations of the Dissertation Committee are private. Upon successful defense of the proposal, the student must file with the department and the Graduate School the

Proposal Defense Examination

The examination committee of the proposal defense is composed of the student’s dissertation committee and their dissertation advisor. The complete dissertation committee must participate in the proposal defense examination. The proposal examination will be closed-to-the-public with only the student, their advisor(s) and their committee in attendance. The dissertation advisor will not be allowed to talk or answer questions during this examination and must collect notes regarding the question and answer session conducted by the dissertation committee. One member of the committee will serve as chair of this exam; the chair will run the question and answer session as well as maintain the order of the process. The outcome of the proposal defense examination is one of the following: pass, conditional pass, or fail. A majority decision is required; dissenting members of the examining committee may forward a minority report to the Graduate School. A passing grade allows the student to progress towards candidacy; the student must complete and submit the proposal defense form. A student must receive a passing vote from a committee majority; in cases of even numbered committees a 50% passing vote will count as passing. A grade of a ‘Conditional Pass’ requires that the committee create a remediation plan, which includes a detailed list of what the student needs to before being retested, and a timeline for this process. These conditions must be written in a clear and concise way and communicated in such a manner that the student understands what is expected; the list of these conditions must be submitted to the DGS and the Graduate School. All make up exams must be scheduled by May 15th of their second year. This deadline and whether the student is capable of completing the required changes can be a component of determining whether a student has a Conditional-Pass or a Failing grade. A student who fails their proposal defense examination will be dismissed from graduate work at UNCG unless the doctoral advisory committee unanimously requests a re-examination. Only a single re-examination will be allowed; it can encompass written, oral, or both components as determined by the advisory committee. If the DGS or the Graduate School denies the request, the student’s program is terminated. If the student fails to pass the re-examination, the Graduate School will send the student a letter of dismissal from the program.

Admission to Doctoral Candidacy

In the Department of Nanoscience, a student will be admitted to Candidacy when they have completed the following:

- Submitted a Plan of Study that has been approved by the Graduate School
Upon achieving these milestones, the student must file their formal application for Doctoral Candidacy Approval to The Graduate School for admission to candidacy for the doctoral degree with a form signed by the dissertation committee and identified chair, along with a current Plan of Study.

**Dissertation**

The dissertation is the final product of a doctoral student's academic career. The dissertation is the basis for the dissertation defense. The doctoral dissertation must be an original and completed work at the time of the defense. Partially completed dissertations, dissertation drafts or outlines are not allowed to be defended. The dissertation is a long and detailed work that represents all research and scholastic efforts a student has accomplished during their studies. The preparation of the dissertation must be treated with respect. While there is no set word limit (minimal or maximum), the dissertation needs to be clearly written, well organized, and representative of the highest quality of work. While journal manuscripts often serve as the basis of several chapters in this document, the form and structure of these published manuscripts often needs to be modified to be placed in context of a dissertation’s goals and intentions. Writing a dissertation is an enormous endeavor and a student should plan, organize, and begin writing early in their career.

**A General Time-line for Dissertation preparation**

- At least one semester prior to the semester of graduation, the student must discuss with their advisor their readiness for preparing and defending their dissertation. The decision to move towards dissertation and defense of a dissertation that is made by the faculty advisor, who has established the requirements for graduation for their research group. The mentor’s decision is based on how well a student has met the requirements for graduation and the expectations of their research project. All labs have different requirements; these requirements are established by the advisor and depend on factors such as their field of study and the project. Upon agreement between the advisor and student, the student must schedule a committee meeting during which the entire committee evaluates whether a student has accomplished enough work to successfully write and defend their doctoral dissertation. At this time a defense date will be set. Although the university has multiple deadlines for graduation during an academic year, these administrative
deadlines will not be the deciding factor on the establishment of any dissertation defense date. The dissertation is a student’s final evaluation for graduation with a doctoral degree; the goal of this process is to produce a document with depth and clarify, and not simply to meet an administrative deadline. Factors such as the student’s written communication abilities, the amount of published work, and amount of work pending on the project are critical for determining the defense date. **There will be no dissertation defenses during the summer months (May 15th to August 15).**

- At least **eight weeks** prior to the date of the dissertation defense, the student will send a **complete draft** of their dissertation to his or her dissertation advisor. This will be a complete and annotated version of the dissertation that includes all chapters (e.g. introduction, literature review, research chapters, and conclusions). This draft is written and edited by the student. The complete draft will also contain all the necessary data figures (e.g. graphs, charts, tables, and image figures), analysis and discussion of this data. UNCG provides guidelines for preparing dissertations. It provides students with an overview of a timeline and key dates, style and format requirements, and the online submission process. A current copy of the UNCG Dissertation manual may be found at the following URL: [http://grs.uncg.edu/current/td-manual/](http://grs.uncg.edu/current/td-manual/)

- During the preparation of the dissertation, the advisor will assist the student in editing and polishing of this document. The cooperative interaction between student and advisor is an essential part of the process and the student needs to work with their advisor to produce a dissertation of the highest quality. Students should not expect that their advisor will rewrite their work or engage in severe editing of a poorly written document. Such circumstances are grounds for changing the dissertation date. The interaction between the advisor and student is essential and should not be taken lightly or for granted. On average it will take a student **3-4 months to write** a dissertation draft in the condition that is acceptable for presentation to their advisor, in many cases it will take longer. **Very few people can write a complete 50000+ word document in less than this time, and even fewer can do this well: do not think that you are one.**

- Two weeks prior to the defense date, the student will send a copy of their complete, edited dissertation to their committee. This is not a rough draft, but a complete and fully edited version of your dissertation work. At two weeks before the defense day, you must also fill out the “Dissertation Defense” form and submit to the Graduate School: [https://grs.uncg.edu/wp-content/uploads/2016/08/Final-Oral-Examination-Schedule.pdf](https://grs.uncg.edu/wp-content/uploads/2016/08/Final-Oral-Examination-Schedule.pdf).

- At least two weeks prior to the defense, the student will prepare a 45-50 minute seminar of their dissertation research in collaboration with their advisor. The student will also send a copy of the title and abstract of their dissertation to the NS office administrator for posting of the time, date, and location of the defense.
• On the defense date, the student will present their talk and answer questions from the audience and then defend their dissertation to their committee in a private session.
• Upon successful completion of their Dissertation Defense, the student must have the committee to sign their cover page of their dissertation (see guide) and complete and file the following form with the Department of Nanoscience and the Graduate School: [https://grs.uncg.edu/wp-content/uploads/2017/07/oralexam.pdf](https://grs.uncg.edu/wp-content/uploads/2017/07/oralexam.pdf).

**Time Limits for Doctoral Degrees**

Advanced degrees awarded from UNCG indicate that our students have current, usable knowledge in their field; therefore, all requirements for the doctorate, including the dissertation, must be completed within seven academic years. Any student entering a doctoral program with a Master’s degree must be completed within a seven year period; student’s entering a doctoral program with a baccalaureate degree must complete their doctorate within eight years. All coursework to be credited to the student’s doctoral program must fall within these time periods beginning with the date the first courses carrying graduate degree credit applicable to the student’s program are begun. In the case of transferred credit earned prior to the enrollment in the Department of Nanoscience graduate program, the seven-year clock of time commences with the beginning date of the term in which the transfer credit was earned.

**Transfer Credit for Doctoral Degrees**

In some instances, work done in other institutions may be counted toward the degree, particularly work culminating in a master’s degree from a regionally accredited institution and representing an appropriate area of study. If the student proposes the transfer of credit from another graduate school, the work for which credit was received must be covered by the preliminary examination, and the transfer must be recommended by the student’s advisory/dissertation committee before The Graduate School will credit the work to the student’s doctoral program. Students must secure approval from their doctoral advisory/dissertation committee and the Dean of The Graduate School in advance of registration at other universities. In general, however, not less than two-thirds of the total non-dissertation credit hours of doctoral degrees must be completed in residence courses at UNCG. To ensure that the courses fall within the time limit permitted, the transfer credit will be accepted finally and posted to the transcript only at the time of completion of the degree requirements.
The Masters of Science in Nanoscience Degree

The 30 credit, non-thesis M.S. in Nanoscience follows the Professional Science Master’s degree model, featuring coursework in Nanoscience and business and an internship to provide practical experience. It is designed for students with strong backgrounds in technical fields who seek additional specialized training to qualify them for positions in companies that work in the field of nanotechnology. The non-thesis in M.S. in Nanoscience also has a concentration in Instrumentation. The Master of Science in Nanoscience Instrumentation concentration involves coursework on the theory and application of nanoscale characterization and analytical instruments including scanning electron microscopy, optical microscopy techniques, atomic force microscopy, Energy-dispersive X-ray spectroscopy (EDX), and surface analysis tools like the Raman spectroscopy and X-ray photoelectron spectroscopy (XPS). This new Master of Science concentration will train individuals in the theory, operation, and implementation of these instruments in the context of material characterization. The on-campus M.S. in Nanoscience Thesis Option is a 30-credit program that includes the completion of a 6 credit thesis. Students are expected to start their research project during their first year in the program.

Degree Program Outline for non-thesis M.S. in Nanoscience
Total: 30 credit hours
Nanoscience Survey Courses: Select 9 credits from the following:
- NAN 601 Nanochemistry (3)
- NAN 602 Nanobiology (3)
- NAN 603 Nanophysics (3)
- NAN 604 Nanotechniques (3)
- NAN 605 Mathematical Methods in Nanoscience and Nanoengineering (3)
Disciplinary Foundation Courses: Select 9 credits from the following:
- NAN 609 Nanosafety (3)
- NAN 615 Introduction to Spectroscopy Methods in Nanoscience (3)
- NAN 620 Immunology (3)
- NAN 625 Molecular Biology in Nanosciences (3)
- NAN 626 Introduction to Stem Cell Biology and Ethics (3)
- NAN 630 Advances in Bio-Sensors (3)
- NAN 655 Biometrics and Biomaterials (3)
Business/Management Courses: Select 9 credits from approved courses in School of Business
Internship/Project (Capstone Experience) (3 credits)
- NAN 698 Professional MS in Nanoscience Internship 3
Total: 30 credit hours

Core Course in Instrumentation (3 credits)
- NAN 604 Nanotechniques (3)

Fundamentals of Nanoscience Courses (6 credits)
Select two courses (6 credits) from the following: 6
- NAN 601 Nanochemistry (3)
- NAN 602 Nanobiology (3)
- NAN 603 Nanophysics (3)
- NAN 605 Mathematical Methods in Nanoscience and Nanoengineering (3)

Laboratory Rotations (4 credits)
- NAN 611 Nanoscience Laboratory Rotation (4)

Nanoscience Seminar Course (2 credits)
- NAN 621 Professional Development Seminar I (1)
- NAN 622 Professional Development Seminar II (1)

Instrumentation Electives: Select three courses (9 credits) from the following:
- NAN 615 Introduction to Spectroscopy Methods in Nanoscience (3)
- NAN 623 Optical Microscopy for Nanoscience (4)
- NAN 624 Particle Beam Microscopy for Nanoscience (4)
- NAN 625 Molecular Biology in Nanosciences (3)
- NAN 630 Advances in Bio-Sensors (3)

Internship (6 credits)
- NAN 698 Professional MS in Nanoscience Internship * (6)
  * 3-credit course taken twice for 6 credits total.

Degree Program Requirements for thesis M.S. in Nanoscience
Total: 30 credit hours

Fundamentals of Nanoscience Courses/Survey Courses (12 credits)
Select 12 credits from the following: 12
- NAN 601 Nanochemistry (3)
- NAN 602 Nanobiology (3)
- NAN 603 Nanophysics (3)
- NAN 604 Nanotechniques (3)
- NAN 605 Mathematical Methods in Nanoscience and Nanoengineering (3)

Disciplinary Foundation Courses, Select 6 credits from the following: 6
- NAN 609 Nanosafety (3)
- NAN 615 Introduction to Spectroscopy Methods in Nanoscience (3)
- NAN 620 Immunology (3)
- NAN 625 Molecular Biology in Nanosciences (3)
- NAN 626 Introduction to Stem Cell Biology and Ethics (3)
- NAN 630 Advances in Bio-Sensors (3)
- NAN 655 Biometrics and Biomaterials (3)

Laboratory Rotation (4 credits)
- NAN 611 Nanoscience Laboratory Rotation (4)
Nanoscience Seminar Course (2 credits)
- NAN 621  Professional Development Seminar I  1
- NAN 622  Professional Development Seminar II  1

Thesis Credits (6 credits)
- NAN 699  Thesis (6)
III. DEPARTMENT OF NANOSCIENCE ANNUAL REVIEW OF GRADUATE STUDENTS

As required by UNCG’s Graduate School, all doctoral students must undergo an annual review. The annual review will be conducted by the student’s research advisor and reviewed by the Graduate Studies Committee. The Annual Review provides feedback to doctoral students regarding their progress in the program, performance, and professional accomplishments that are expected in the Department of Nanoscience.

The annual review process begins each year with the completion of a form by each student. This ‘Annual Expectations’ form outlines the individual annual goals and expectations for the student; these goals are discussed with and approved by the dissertation adviser; and then submitted to the department office as an official document. At the end of the academic year (typically late April), a student will provide an annual report, which revisits these goals. The student will submit this document to their advisor and then meet with their advisor to discuss their yearly accomplishments. The annual reports of all students will also be evaluated by the Graduate Studies Committee. The criteria for this evaluation will be based on the progress and achievements of the student and include whether the student met annual research, service, and curricular goals, and compliance with the standards of good academic standing.

The final review will result in one of three valuations:

(i) Continuation, and be given ‘Continuing Status’
(ii) Continuation with reservations and be given the status, ‘Continuing with Reservations’; this will result in changes in funding status either in tuition, stipend and in some cases both.
(iii) Dismissal (Note: dismissal can occur because of this review only in accordance with the dismissal process stipulated by the Graduate School.)

The Department of Nanoscience holds no obligation to readmit any student dismissed from the department program. All students enrolled in the Nanoscience Ph.D. program are expected to maintain ‘Good Standing’ in the University and ‘Continuing Status’ in the department. This means that all coursework and department program requirements must be completed successfully and on time, and proper academic conduct and research progress must be maintained throughout the student’s tenure in the department. See the timeline of expected student progress as outlined in this student handbook (Appendix IV, pages 59-61).

The annual review process is coterminous with the funding process and is required of all PhD students (whether funded by the department or not). Each year students must fill out the "Annual Review of Doctoral Graduate Students" form and schedule a meeting with their advisor to discuss their annual set of expectations. A student’s
evaluation form is a cumulative document that will be added onto annually and recorded in the department; students will add to it each year, but each year’s accomplishments and expectations will be clearly demarcated and evaluated separately, i.e. a previous year’s accomplishments and work will not supplant failure in the following year. Each student will be provided with written feedback from the Graduate Studies Committee, particularly in cases when the review results in a ‘Continuation with Reservations’ valuation. The feedback will represent the judgment of the Review Committee, not just the Research Advisor, the Director of Graduate Studies, or Department Chair, whose signatures will appear with the valuation and comments and will provide a mitigation strategy and a timeline for the student to engage to regain “Continuing Status”. Failure to adhere to this strategy may result in the student being dismissed from the program.

All students must demonstrate satisfactory performance in all three areas listed below. **Failure to demonstrate satisfactory performance in any one area and an evaluation of ‘continue with reservation’ can result in loss of student eligibility for continued funding, i.e. stipend and/or tuition.**

1. **Lack of Satisfactory Performance in Curricular Requirements**
   a. Failure to complete the necessary courses with satisfactory grades. Students unable to complete the necessary coursework in 2 years with an overall grade average of B or better will receive a valuation of ‘Continue with Reservations’ or will be dismissed from the Graduate Program depending on the circumstances. **Students who receive a valuation of ‘Continue with Reservations’ will be provided with specific conditions to meet and a timeline to bring their status to ‘Continuing Status’ in the department.**

   b. Failure to maintain a 3.0 GPA. Students who fail to maintain a GPA of 3.0 at the end of any given semester or summer session will be placed on academic probation by the University. Any student on academic probation will be ineligible to hold an assistantship position in the Department of Nanoscience. Students on academic probation will receive a valuation of ‘Continue with Reservations,’ and will have up to one semester to bring their GPA back to a 3.0. **Failure to meet the GPA requirement will result in dismissal from the department program.**

   c. **Failure to comply with matters related to proper academic conduct.** All matters related to student misconduct as defined in the Graduate Student Handbook. Examples of this include plagiarism, cheating on examinations, and failure to conduct research in an ethical manner. Students who are found responsible for academic misconduct may receive a valuation of ‘Continue with Reservations’ or may be dismissed from the Graduate Program, depending on the circumstance. The Department of Nanoscience reserves the right to decide on whether a student should remain in the program or be dismissed from the program given the nature of the misconduct. Each circumstance will be handled
individually by the Graduate Studies Committee and brought to the department faculty if deemed necessary

2. Lack of Satisfactory Performance in Meeting Department Requirements
   a. Failure to perform departmental duties such as serving as an instructional assistant or performing service assignments as research or office assistants.
   b. Attend the weekly seminars.
   c. Failure to prepare and defend the Doctoral Research Proposal by the end of Year 2 of the program will result in an evaluation of ‘Continue with Reservations’. A student will be required to apply for a request for an extension. Extension will only be granted under extreme circumstances, for example, medical illness. Proof for the extreme circumstances must be provided. The Graduate Studies Committee will decide whether a student should be granted an extension. **If the committee agrees to provide the student with an extension, the student will not be in ‘Continuing Status’ within the department during the period of extension, until the specific requirement is met.**
   d. Failure to pass the Qualifying exams by the end of Year 1 will result in a valuation of ‘continuation with reservation’. A student will be required to apply for a request for an extension. The Graduate Studies Committee will decide whether a student should be granted an extension. If the committee agrees to provide the student with an extension, the student will not be in ‘Continuing Status’ during the period of extension, until the requirement is met. If the committee decides that the student cannot be granted an extension, the committee reserves the right to make recommendations to the student’s program of study, which could include dismissal from the program or applying to the Nanoscience M.S. program.

3. Lack of Satisfactory Performance in Research
   a. Students are encouraged to meet regularly with their research advisors to ensure that they are making satisfactory progress toward their dissertation research. If a research advisor determines that a student is not making satisfactory progress, the student will receive a warning in writing. The student will have two weeks to schedule a committee meeting and meet with his/her dissertation committee members to determine what must be done to remedy the problem. The student will need to submit to the Thesis/Dissertation committee and the Graduate Studies Committee a plan of action. The Graduate Studies Committee will determine what length of time is permissible for a re-evaluation. If the problem is not remedied within the given time, the dissertation committee will decide to discontinue support and/or dismiss the student from the program.

According to University policy students must complete all requirements for the Doctorate Program within 7 years. Continuation toward a degree after failure to meet this requirement requires approval by the UNCG Graduate School. Adjustments for students on part-time status will be accommodated in accord with University policy.
Appendix I: Useful Links and Contacts

**UNCG Graduate School Academic Office**
The University of North Carolina at Greensboro
241 Mossman Building
1202 Spring Garden Street
Greensboro, NC 27412
Phone: (336) 334-5596
General Fax: (336) 334-4424
Admissions Office Fax: (336) 256-0109
E-mail: inquiries@uncg.edu
URL: [http://www.uncg.edu/grs/](http://www.uncg.edu/grs/)
Office Hours: Monday - Friday 8:00 am - 5:00 pm

**UNCG’s Office of Accessibility Resources & Services**
The Office of Accessibility Resources & Services is located on the second floor of the Elliott University Center (EUC) in Suite 215.
Office Hours: 8am to 5pm, Monday - Friday.
URL: [https://ods.uncg.edu/](https://ods.uncg.edu/)
VOICE 336.334.5440
FAX 336.334.4412
EMAIL oars@uncg.edu

**UNCG’s INTERNATIONAL PROGRAMS CENTER**
Mailing Address:
- International Programs Center
- (207 Foust Building)
- PO Box 26170
- Greensboro, N.C. 27402-6170
Physical Address:
- 1010 Administration Dr., Greensboro, N.C. 27412
Phone: (336) 334-5404
Fax: (336) 334-5406
Email: ipc_desk@uncg.edu
Office Hours: Monday-Friday, 8:00 am–5:00 pm
URL: [https://international.uncg.edu/](https://international.uncg.edu/)

**UNCG Graduate School Catalogue:** [http://www.uncg.edu/grs/bulletin/nano.html](http://www.uncg.edu/grs/bulletin/nano.html)

**UNCG Academic Calendar:** [http://www.uncg.edu/reg/Calendar/acaCal/fa12.html](http://www.uncg.edu/reg/Calendar/acaCal/fa12.html)
UNCG’s University Writing Center
[http://www.uncg.edu/eng/writingcenter/default.php]
Contact: The University Writing Center
The University of North Carolina at Greensboro
3211 MHRA Building
Greensboro, NC 27402-6170
VOICE: 336.334.3125 FREE 336.334.3125
FAX: 336.344.1111
EMAIL askthewc@uncg.edu
WEBMASTER wegum@uncg.edu

UNCG’s University Speaking Center
[http://speakingcenter.uncg.edu/about/index.php]
The University Speaking Center provides consultation support and instructional
workshop services for UNCG students, faculty, employees, and members of the
Greensboro community. Our support is designed to help speakers further develop their
own oral communication confidence and competence. We provide peer-to-peer
feedback, guidance, and other support in the areas of public speaking preparation and
delivery, interpersonal communication, and group or team communication.
The Speaking Center is located along with the Writing Center in 3211 MHRA. We are
on the third floor. MHRA is on the corner of Forest and Spring Garden - across the
street from the Mossman Building.

Fall Hours of Operation
Monday - Thursday
10am to 7pm
Friday
9am to Noon
Sunday
4pm to 8pm

Contact: The University Speaking Center
The University of North Carolina at Greensboro
3211 MHRA Building
Greensboro, NC 27402-6170
VOICE: 336.256.1346 FREE: 336.256.1346
WEBMASTER wegum@uncg.edu
Appendix II: Annual Graduate Student Nanoscience Expectation Form

Student Name:
Academic Year:
Year of Study (i.e. first, second, third, fourth, fifth):
Advisor:

I. **Curricular Requirements**
   a. List the courses that you plan to take for this upcoming academic year: Course Name, Instructor, Semester, Credit, Grade.
   
   b. Fill out other training.

II. **Assistantship/Department Requirements**
   a. List service roles
   b. List departmental events in which you plan to participate.
   c. Seminar attendance
   d. submit your plan of study:
   e. committee meeting date:
      a. proposal date:
      b. defense date:

III. **Dissertation Research Goals**
   a. List Research goals for year
   b. List publications with the following labels: in prep, submitted/in review, accepted/in press.
   c. List conferences attended with following labels: poster, talk, just attend.
   d. List papers reviewed.
   e. Other planned research related activities – specify
Appendix III: 22 Steps to completing your doctoral degree

DOCTORAL TIMELINE AND CHECKLIST
25 (Giant) Steps to Completing a Doctoral Degree
Inch by Inch, a doctorate is a cinch—Yard by yard, it’s very hard.
(Time Frames Will Vary by Program)

Name: ID: Concentration:

<table>
<thead>
<tr>
<th>First Year</th>
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<tbody>
<tr>
<td>☐ 1. Doctoral Advisory Committee (DAC). The Doctoral Advisory Committee Appointment Form (should be submitted before the student has completed 18 credit hours of coursework). Once the DAC is in place, discussion should begin regarding the student’s research interests if it has not begun already. Any subsequent changes in the advisory/dissertation committee must be submitted to The Graduate School for approval.</td>
</tr>
<tr>
<td>☐ 2. Plan of Study (POS). The first draft of the Plan of Study should be submitted with the Doctoral Advisory Committee Appointment Form before the student has completed 18 credit hours of coursework.</td>
</tr>
<tr>
<td>☐ 3. Doctoral Preliminary Exams. The written and the oral preliminary examinations together constitute a comprehensive examination of the student's command of the field. The examination is preliminary in that you must pass both the written and oral portions before being officially admitted to candidacy for the degree by the Graduate School. The overarching purposes of the preliminary exam are to:</td>
</tr>
<tr>
<td>● assess the extent and currency of the candidate’s knowledge in a manner that is as comprehensive and searching as the best practices of that field require;</td>
</tr>
<tr>
<td>● test the candidate's knowledge of any transferred courses;</td>
</tr>
<tr>
<td>● discover any weaknesses in the candidate’s knowledge that need to be remedied by additional courses or other instruction; and</td>
</tr>
<tr>
<td>● determine the candidate's competency to continue work toward the doctorate.</td>
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<tr>
<td>● Many programs include the dissertation proposal defense as part of the preliminary oral exam.</td>
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</tbody>
</table>
4. **Complete** all course requirements in the student's approved program of study.

5. File a **Revised Plan of Study** if needed.

6. Become familiar with the **Guide to Theses and Dissertations**. Avoid the formatting crunch and inevitable anxiety by registering for and completing the Canvas Course on formatting, attending the Graduate School formatting workshops, or making an early appointment with our formatting expert. I highly recommend requiring students to complete all written work for classes and the Dissertation Proposal to adhere to the Guide’s standards.

7. **Ensure** you have a faculty mentor assigned as your dissertation committee chair who is qualified to guide your dissertation research. File **Committee Revision Form** if needed. The signature of the Department Head confirms that the faculty member designated as chair is qualified to guide the topic and the process.

8. Satisfactory completion of the preliminary written and oral examination and any additional work that may be required as a result of this examination. **Results of Doctoral Preliminary Exams Form**

9. Satisfactory Defense of the **Dissertation Proposal**. The purpose of this exam is for students to demonstrate depth of understanding of the research topic, ability to perform independent work, have the requisite technical writing skills, and can synthesize material from courses and self-study into a plausible, testable hypothesis. The proposal should state the goals and aims of the dissertation research, justify the research, and provide a detailed plan to carry out the objectives of the research. Proposals should be treated like contracts. When you sign off on a proposal, you are giving up some of your rights to object later on. Done properly, a good proposal protects you and your students from remarks like, *I thought you were going to do X, or I’d like you to delve into nostalgia theory because your research revealed X, or where’s the originality in that?* Many units conduct the proposal defense as part of the preliminary oral exam.

10. An approved dissertation topic, to be filed in The Graduate School. **Dissertation Topic Approval Form**.

11. **File the** **Dissertations with Multiple Authors Form** if necessary. This information should be included as part of the written dissertation proposal.
☐ 12. **File Final Plan of Study.** Be sure the final POS exactly matches your transcript. **Doctoral Plan of Study Revision Form.** Be strategic with planning out 799 registration. Doctoral candidates are considered full-time with 3-credits of registration for 799. Once the credits required for the degree are completed, students must register for 9 credits of extension to be considered full-time. (Half-time enrollment is necessary to be considered for Financial Aid.)

☐ 13. **Application to Candidacy.** Apply for admission to candidacy upon the satisfaction of the above requirements. File an **Application for Admission to Candidacy** with the Graduate School. Doctoral education focuses more on the creation of new knowledge through the development of research competencies and less on the acquisition of content. Therefore, students should be encouraged to advance to candidacy as soon as appropriate for the discipline.

<table>
<thead>
<tr>
<th>Fourth/Fifth Year</th>
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☐ 15. **Application for Graduation.** This application is always due by the end of the first week of classes of the semester in which the student plans to graduate. Students should visit the Graduate School website to view all pertinent information regarding graduation, and to file the **Graduation Application Form.**

☐ 16. **Dissertation Document.** In order to provide adequate time for committee input and revisions, students are encouraged to submit a complete draft of the dissertation document to the Doctoral Dissertation Committee chair no later than the end of the first week of classes in the semester you plan to graduate. Students should expect multiple revisions before the document is sent out for review by the other members of the Doctoral Dissertation Committee. The Defense Draft must be sent to the rest of the DDC **no fewer than three weeks prior to the scheduled defense.** Students who fail to meet either of these deadlines should not expect to be allowed to defend the doctoral document in that semester.

☐ 17. **Schedule the Final Oral Exam.** Upon submission of the completed first draft, the student, in consultation with the DDC, will schedule the final oral exam. It is required that all final oral examinations include a public component. Therefore, AT LEAST TWO WEEKS PRIOR to the final oral exam date, you MUST submit the **Final Oral Examination Schedule Form** and Dissertation Abstract to the Graduate School for inclusion on the defense calendar. This will be strictly enforced! Please check the Graduate School Calendar for the FINAL day for Final Oral Exam completion. For guidance preparing the Abstract, please consult the **Guide for the Preparation of Theses and Dissertations.**
18. Final Oral Exam. The doctoral candidate who has successfully completed all other requirements for the degree must defend the dissertation orally. At least two weeks prior, the Graduate School will publish the dissertation title and date, time and location of the final oral exam. The exam is open to the public. *NOTE: On the day of the exam, the student must fill out and submit the Results of the Oral Examination in Defense of Thesis/Dissertation Form to his or her committee chair, who will sign it and submit it to the Graduate School following the exam.


20. File a Final Dissertations with Multiple Authors Form if there were changes from the proposal.

21. File FINAL copy of dissertation with the Graduate School.** After completing the formatting revisions requested by the Graduate School, submit the FINAL electronic copy of the dissertation.

22. Attend your doctoral hooding ceremony. There, you may thank and celebrate with your committee members and dissertation mentor.

** You will need to be very DILIGENT, as deadlines pertaining to the dissertation document change each semester. You may access these deadlines and others by viewing the Academic Calendar (https://grs.uncg.edu/calendar/) on the Graduate School or Registrar’s websites.

Students are Responsible for Meeting All Deadlines!
Joint School of Nanoscience and Nanoengineering

2907 E. Gate City Blvd.
Greensboro, NC 27401 U.S.A.

Phone: +1 (336) 285-800

Web: http://jsnn.ncat.uncg.edu

Twitter: JSNN2907

Facebook page:

https://www.facebook.com/JointSchoolOfNanoscienceAndNanoengineering