

## Nanoengineering, Ph.D.

Joint School of Nanoscience and Nanoengineering

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The Ph.D. program in Nanoengineering features coursework, laboratory rotations and extensive dissertation research involving engineering at the nanoscale. It is designed for students with a strong academic track record and potential who seek advanced-level education and training to pursue careers in academia, industrial or government organization that utilize nanotechnology. Students will have opportunities to work in one or more of the following research areas: nanobiology, nanomaterials, nanometrology, nanobioelectronics, nanoenergy, nanoenvironment, and computational nanotechnology.

### Admission Requirements

- Bachelor's degree in engineering or a closely related field with minimum 3.5 GPA or master's degree in engineering or a closely related field
- GRE scores
- Three professional recommendation letters with at least one from former university/institution
- Current curriculum vitae and statement of purpose

### Degree Requirements

Total credit hours: 60 (post baccalaureate)

- Core courses (15 credits): NANO 701, 702, 703, 704, 705 with overall average B grade or better
- Lab Rotations: Select 3 credit hours from: NANO 851-855 or JSNN consortium course NAN 611 through UNCG
- Select 9 credit hours from: NANO 800-899 or JSNN consortium courses NAN 700-798 through UNCG or other 800 level courses with approval from advisor and graduate coordinator/department chair
- Select 9 credit hours from: NANO 700-899 excluding 792, 796-799, 851-854 or consortium courses NAN 600-798 through UNCG excluding NAN 621, 622, 628 or other graduate level courses with approval from advisor and graduate coordinator/department chair
- Supervised Research (6 credits): NANO 994
- Participation in JSNN NanoBus program or other STEM activities
- Dissertation (18 credits): NANO 997
- Pass qualifying exam, preliminary exam, dissertation defense
- Attend all required JSNN meetings/seminars

### Qualifying Examination:

The Qualifying Examination is given to assess student competence in a broad range of relevant subject areas. The Qualifying Examination is normally given at the end of every Spring semester and is held on two consecutive days. Only students with unconditional status and in good academic standing may take the Qualifying Examination. Students must take the Qualifying Examination by the end of the second semester of enrollment. In case of failure to pass in the first attempt, students will have an opportunity to take the exam in the following semester. Failure to pass the Qualifying Examination by the end of the third enrolled semester or the second attempt will result in the termination from the Ph.D. program.

### Preliminary Oral Examination:

The Preliminary Oral Examination is conducted by the student's dissertation committee and is a defense of the student's dissertation proposal. Students must have successfully completed the qualifying examination to be eligible for the Preliminary Oral Examination. Passing this exam satisfies the requirement for Ph.D. Candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's Advisory Committee may permit one re-examination. At least one full semester must elapse before the re-

examination. Failure on the second attempt will result in dismissal from the doctoral program.

**Admission to Ph.D. Candidacy**

A student will be admitted to candidacy upon successful completion of the Qualifying Examination and Preliminary Oral Examination.

**Dissertation Research:**

A student may not register for dissertation credits before passing Qualifying Examination. No more than 18 dissertation credits are counted toward the total credit hour requirement for the Ph.D. degree.

**Final Oral Dissertation Defense:**

The Final Oral Dissertation Defense is conducted by the student's dissertation committee. This examination is the final dissertation defense presentation that is scheduled after a dissertation is completed. The examination may not be held within six months after admission to Ph.D. candidacy. Failure on the examination may result in dismissal from the doctoral program. The student's dissertation committee may permit one re-examination. At least one full semester must elapse before the re-examination. Failure on the second attempt will result in dismissal from the doctoral program.

**Submission of Dissertation:**

Upon passing the Ph.D. Final Oral Dissertation Defense, the Ph.D. student must have the dissertation approved by each member of the student's dissertation committee. The approved dissertation must be submitted to The Graduate College by the deadline given in the academic calendar and must conform to the Graduate College's guidelines for theses and dissertations.

**Program Specific Academic Policies:**

- The qualifying exam must be attempted for the 1<sup>st</sup> time by the end of the 2<sup>nd</sup> semester and must be passed by the end of the 3<sup>rd</sup> semester.
- Assist the instructor in teaching a course or laboratory for at least 1 semester.