

## MATERIALS SCIENCE AMP

All students must meet the Requirements for the Accelerated Master's Degree Pathways

### OVERVIEW

The Accelerated Master's Pathway leads to both B.S. and M.S. degrees in 5 years. The pathway is open to undergraduate physics, electrical engineering, and mechanical engineering majors. Interested students should contact the Materials Science Director by the beginning of their Junior year.

Following formal Graduate College admission to the Accelerated Master's Degree Pathway, up to 9 credits of approved graduate coursework may be taken that may be counted toward both the undergraduate and graduate degree requirements.

### SPECIFIC REQUIREMENTS

#### Requirements for Admission to Graduate Studies for the Degree of Master of Science

A major in physics, chemistry, engineering, or mathematics.

#### Minimum Degree Requirements

The above requirements for admission must be supplemented in either of the following ways:

| Requirement Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Credits |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------|
| OPTION A (THESIS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |         |
| 30 graduate credits of an approved program of study including at least 18 credits of coursework; completion, 6 of which must be at the 6000-level of at least 1 3-credit course in each of the following categories: electrical and optical properties of materials, thermodynamics and kinetics, mechanical properties of materials, quantum properties of materials*, computational materials science*, and synthesis and characterization of materials* (* = select 2 out of 3); satisfactory completion of a comprehensive examination, and satisfactory completion of an M.S. thesis including its defense at an oral examination. |         |
| OPTION B (NON-THESIS)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |         |
| 30 graduate credits of an approved program of study with at least 6 credits at the 6000-level; completion of at least 1 3-credit course in each of the following categories: electrical and optical properties of materials, thermodynamics and kinetics, mechanical properties of materials, quantum properties of materials*, computational materials science*, and synthesis and characterization of materials* (* = select 2 out of 3), and satisfactory completion of a comprehensive examination.                                                                                                                                 |         |

#### Comprehensive Examination

Full-time Materials Science M.S. candidates are required to pass a written Comprehensive (Qualifying) Exam with a score of 50% or better, no later than 4 semesters after joining the program. Failure to pass the test will result in dismissal from the program. The deadline for part-time students is the semester they complete 24 credits. All students (full and part-time) are allowed a maximum

of 2 attempts to pass the exam. Offered annually, the 3-hour exam requires students to solve a minimum of 3 problems that cover the following topics: electrical and optical properties of materials, thermodynamics and kinetics, mechanical properties of materials, quantum properties of materials, computational materials science, synthesis and characterization of materials or equivalent core course requirements.

#### Requirements for Advancement to Candidacy for the Degree of Master of Science

Successful completion of a comprehensive examination in Materials Science.