Nanoscience, PSM

This program is not currently accepting applications.

Pursue advanced training in nanoscale science, technology and engineering while simultaneously developing professional and business skills. You can work directly with research faculty on real-world projects, learn specific technical skills necessary to solve practical problems, directly dialogue with industry leaders and communicate to broad audiences.

Program Description

Degree Awarded: PSM Nanoscience
The PSM in nanoscience is a cohesive program of transdisciplinary courses that provide the knowledge base required for research and innovation in nanoscience. The program incorporates courses in:

- chemistry and biochemistry
- electrical engineering
- materials science
- physics

Commercial innovation is a particular target goal of the degree, including applications in:

- biochemistry and sensing technology
- biophysics and biomedical technology
- nanomaterials and nanoscale devices

The Professional Science Master's degree program in nanoscience is suitable for working professionals as well as for students who have obtained a traditional bachelor's degree or master's degree in related fields.
At a Glance

- **College/School:** The College of Liberal Arts and Sciences
- **Location:** Tempe campus or Online

Accelerated Program Options

This program allows students to obtain both a bachelor's and master's degree in as little as five years. It is offered as an accelerated bachelor's and master's degree with:

- **Biochemistry, BS**
- **Biochemistry (Medicinal Chemistry), BS**
- **Chemistry, BS**
- **Materials Science and Engineering, BSE**
- **Physics, BS**

Acceptance to the graduate program requires a separate application. During their junior year, eligible students are advised by their academic departments to apply.

Degree Requirements

32 credit hours including the required applied project course (NAN 593)

**Required Core (5 credit hours)**
- NAN 505 Nanoscience and Society (2) or NAN 506 Innovation and IP Management (2)
- NAN 571 Quantum Physics (3) or NAN 544 Introduction to Nanoscience (3)

**Electives or Research (15 credit hours)**

**Other Requirements (6 credit hours)**
- NAN 591 Professional Seminar (6)

**Culminating Experience (6 credit hours)**
- NAN 593 Applied Project (6)

Additional Curriculum Information

Students must take either NAN 505 or NAN 506. Students may also take the other course as an elective.

Students with a physical science or engineering background should take NAN 571 Quantum Physics and students with a biochemistry or life sciences background should take NAN 544 Introduction to Nanoscience.

The program includes a two-semester, student-centered professional seminar in which emerges the central role of the program as a vehicle for innovation. During the spring semester and summer session, students
conduct an individual applied project in association with a research group. Throughout the program, students interact with research faculty and other students in a variety of disciplines related to nanoscience. Students also meet with visiting speakers and industrialists in the professional seminar as well as in other seminars.

If taken full time, the PSM in nanoscience can be completed in 12 months (fall semester, spring semester and two eight-week summer sessions). Another option is the two-year, part-time program which allows prospective students and their employers flexibility in scheduling the program of study.

Students should see the academic unit for a complete list of approved electives. Many of the requisite elective courses are currently offered within the Department of Physics and the Department of Chemistry and Biochemistry. Most are cross-listed with other units.

Admission Requirements

Applicants must fulfill the requirements of both the Graduate College and The College of Liberal Arts and Sciences.

Applicants are eligible to apply to the program if they have earned a bachelor's or master's degree in physics, chemistry or a related field from a regionally accredited institution.

Applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in the last 60 hours of their first bachelor's degree program, or applicants must have a minimum cumulative GPA of 3.00 (scale is 4.00 = "A") in an applicable master's degree program.

All applicants must submit:

1. graduate admission application and application fee
2. official transcripts
3. personal statement
4. resume
5. two letters of recommendation
6. proof of English proficiency

Additional Application Information

An applicant whose native language is not English must provide proof of English proficiency regardless of current residency. TOEFL scores or equivalent are required for applicants whose native language is not English.

The personal statement should outline the applicant's research interests and why the applicant wants to apply to the Professional Science Master's degree program.

GRE scores are not required but are taken into consideration if submitted.
Letters of recommendation should be from individuals familiar with the applicant's work or studies relevant to the program.

**Career Opportunities**

Nanoscale science and engineering are having an increasing impact on many aspects of daily life and the opportunities for careers are rapidly expanding. In areas as diverse as designing medical diagnostic devices to building better batteries, from creating cosmetics to enhancing energy efficient windows, from auto and plane manufacturing to researching the nature of matter itself, knowledge of nanoscale science and engineering will be increasingly important during upcoming years and decades.

The highly technical field of nanotechnology and nanoscience is always looking for scientists, engineers and technicians. Career examples include:

- applications engineer
- biotechnologist
- forensic scientist
- instrument development engineer
- manufacturing engineer
- market development manager
- materials scientist
- mechanical or electrical engineer
- medical engineer
- microscopist
- optical engineer
- research scientist
- technical program manager

**Contact Information**

[Department of Physics](mailto:nanoscience@asu.edu) | PSF 470
nanoscience@asu.edu | 480-965-3561