The University of Texas at Dallas

Erik Jonsson School of Engineering and Computer Science

Master of Science in Materials Science and Engineering

Curriculum

Research and education in the Materials Science and Engineering Department involves the study of advanced materials — including metals, semiconductors, composites, polymers, nanomaterials and biomaterials — and their potential use in various applications. Materials science and engineering is a highly interdisciplinary field drawing on many fundamental disciplines to advance the design and discovery of new materials for use in virtually all areas of science, engineering, industry and society.

The program leading to the MS degree in Materials Science and Engineering provides intensive preparation for professional practice in modern materials science. This degree is suitable both for students completing undergraduate study in the areas of materials science, mechanical engineering, electrical engineering, chemical engineering, chemistry or physics, and also for professional engineers who wish to continue their education.

The curriculum ensures that students are exposed to a broad knowledge of modern materials science; that they apply their knowledge and analytical skills to create effective and novel solutions to practical problems; and that they communicate and work effectively in collaborative environments. These outcomes prepare graduates for successful careers in many settings and make key contributions in materials science and engineering research.

Career Options

Graduates of the program seek positions such as: Materials Engineer/Scientist, Process Engineer, Research Engineer and Manufacturing Engineer.

Degree Program

The MS in Materials Science and Engineering requires the completion of a minimum of 33 semester credit hours. Coursework requirements are divided into core subjects, advanced topics and electives.

The core subjects studied are *quantum mechanics for materials scientists, thermodynamics of materials, materials characterization and electronic optical and magnetic materials.* Advanced and elective coursework is selected from a wide variety of courses in the broad areas of (i) materials properties and processing, (ii) further study of materials characterization methods, (iii) theoretical and computational methods for studying materials, and (iv) semiconductor materials and devices. Nanomaterials and nanoscience feature prominently in many of these courses.

For complete admission and degree requirements, view the Graduate Catalog at **catalog.utdallas.edu**.

Contact Information

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