Program Mission and Objectives

Program Mission

The Mission of the Materials Science and Engineering Department at the University of Connecticut consists of four components, as listed below:

- Prepare men and women for leadership careers in Materials Science and Engineering,
- Perform research that advances the frontiers of engineering and science,
- Provide a State and national center of materials expertise,
- Promote recognition, open communications and personal development among faculty, staff and students.

Materials Science and Engineering Undergraduate Program

The Bachelor of Science in Engineering (BSE) program for Materials Science & Engineering major was established in 1999 in direct response to the estimate from the Connecticut materials community that there would be job opportunities for 25-50 entry-level Materials Engineers per year with the State's major employers of scientists and engineers. Enrollment in the MSE undergraduate (freshmen – senior) major in academic year 2013-14 is 120. Twenty-three (23) MSE majors received the BSE degree in the prior academic year.

Program Objectives

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Within three to five years after graduation, in their professional careers and/or graduate programs, our alumni/ae will have

- progressed in responsible professional positions and/or will have attained or will be successfully moving toward attaining post-graduate degrees.
- earned recognition for applying and continually expanding special, in-depth competencies in materials design, selection, characterization, and/or processing.
- earned recognition for applying and continually expanding professional skills of critical and cooperative thinking, communication, and leadership.
- become engaged with and contributing to professional societies and collaborating with the MSE Program Faculty in providing opportunities for current and potential MSE majors.

Program Outcomes

Our graduating students have

(a) The ability to apply knowledge of mathematics, science (including chemistry and physics) and engineering principles to *analyze* materials systems and processes;

(b) The ability to utilize experimental, statistical and computational methods to design and conduct experiments, as well as to analyze and interpret data;

(c) An ability to design a materials system, component, or process to meet desired needs and performance requirements within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability;

(d) An ability to contribute to and lead multifunctional and multidisciplinary teams;

(e) An integrated understanding of the scientific and engineering principles underlying the four major elements of the materials science and engineering discipline: structure, properties, processing, and performance, and the ability to apply that knowledge to identify, formulate, and solve materials selection and design problems;

(f) An understanding of professional and ethical responsibility;

(g) An ability to communicate effectively;

(h) The broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context;

(i) A recognition of the need for, and an ability to engage in life-long learning;

(j) A knowledge of contemporary issues; and

(k) An ability to use the traditional and advanced techniques, skills, and tools necessary for modern materials science and engineering practice.

Enrollment numbers for the Department of Materials Science and Engineering, University of Connecticut

(as of 10/06/2014)

Freshman:	13
Sophomore:	31
Juniors:	50
Seniors:	55
Total:	149

Number of graduates, May 2014: 28