

University of Washington
DEPARTMENT OF MATERIALS SCIENCE & ENGINEERING
Undergraduate Program

General Outcomes:

The Department seeks to graduate students who have:

- 1) an ability to apply knowledge of mathematics, science and engineering
- 2) an ability to design and conduct experiments, as well as to analyze and interpret data
- 3) an ability to design a system, component or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability and sustainability
- 4) an ability to function on multi-disciplinary teams
- 5) an ability to identify, formulate and solve engineering problems
- 6) an understanding of professional and ethical responsibility
- 7) an ability to communicate effectively
- 8) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental and societal context
- 9) a recognition of the need for, and an ability to engage in life-long learning
- 10) a knowledge of contemporary issues
- 11) an ability to use the techniques, skills and modern engineering tools necessary for modern engineering practice

Departmental Specific Outcomes

The departmental specific outcomes are based on the ABET Program Criteria for Materials Science and Engineering Programs, and on the department's specific program educational objectives noted in section 2.2, namely that graduates will have:

- 1) the ability to apply advanced science (such as chemistry and physics) and engineering principles to ceramics, metals, polymers and composite materials systems,
- 2) an integrated understanding of the scientific and engineering principles underlying the four major elements of the field: structure, properties, processing and performance related to material systems,
- 3) the ability to apply and integrate knowledge from each of the four major elements of the field to solve materials selection and design problems,
- 4) the ability to utilize experimental, statistical and computational methods consistent with the goals of the program,
- 5) experience in laboratory work and in research and/or design problem solving, and
- 6) preparation, as appropriate to the student and the area of interest, to enter graduate degree programs.