

Masters of Science (MS) in Materials Science and Engineering (MSE)

All school of engineering (SOE) master's degrees are designed to be a course-based 1-yr MS degree. This requires students complete 10 credits (30 semester hours) of courses and their degree will stipulate "non-thesis". All credits must be chosen in accordance with the student's academic advisor. In order to earn the stipulation "with thesis" the student must work with a mentor to perform research which will then be written into a thesis and defended before a panel of three faculty. This is often done during a second year, where the student is only paying continuation fees. The availability and willingness of a faculty member to work with a student on a thesis is not guaranteed.

- At least one of the courses must come from the core MSE course list, see below
- An additional five credits must come from the approved MSE course list, <http://materialsscience.tufts.edu/education/course.htm>
- Up to four credits can be taken in Master's Thesis credits, not to be combined with Master's Project
- Up to two credits can be taken in Master's Project credits, not to be combined with Master's Thesis
- Up to two credits can be taken in Internship credits.
- Up to one credit can be taken in Professional Development credits.

New MSE core courses (in development):

- **MSE 101 – Materials Characterization:** A jointly offered course on materials characterization techniques, taught by experts on the tools. Potential substitutes: BME-251 or EE-214
- **MSE 102 – Thermodynamics of Materials Processes:** The thermodynamics of phase changes, solid phase changes, surfaces, crack/void formation, diffusion, polymer alloys and solutions. Potential substitutes: ChBe203, CHM131, or ME 116
- **MSE 103 – Materials Structure and Crystallography:** Atomic arrangements in crystalline and non-crystalline materials. Potential substitutes: Phys 173
- **MSE 104 – Materials Defects, Microstructure, and Deformation:** Advanced studies of deformation and failure in materials. Macroscopic and microscopic aspects of deformation. Elasticity and plasticity theories and problems in deformation processing. Potential substitutes: ME-120