

M.S. Via the Capstone Project (Plan II): Materials Science and Engineering

The Materials Science and Engineering M. S. capstone project provides an opportunity for students to culminate their M.S. studies by combining ideas from their prior coursework with their own additional research. The project is expected to help students to polish their expertise in an area that is especially relevant to their career. A successful capstone project will combine academic knowledge, research, and professional skills into a coherent final product. The student will define a capstone project in under the guidance of an MSE faculty member and demonstrate competency in project design and management skills, written presentation of complex ideas, and analytical and creative thinking.

A capstone project differs from an MS thesis as the capstone project does not requiring original research. Instead, the capstone should aim to demonstrate the ability to apply what was learned in the MS courses to a problem in materials science and engineering utilizing **original** analysis (qualitative, quantitative, or both) of a specific situation, to advance expert understanding of the topic.

The capstone project will be evaluated by three MSE department faculty members: (1) Student faculty advisor, (2) MSE Chair/or Vice –Chair of Graduate Studies, and (3) Another MSE faculty member chosen by the student. The capstone project document length is expected to range from thirty to forty pages, including text, figures, and references using the same style guidelines as required for an M.S. or Ph.D. research thesis. The project is expected to be completed in the quarter after M.S advancement to candidacy is approved.

Once the student's advisor has provided some feedback on the project report, the student should furnish each member of the committee with a copy of the capstone project **at least fourteen calendar days** prior to the due date. Sufficient time must be allowed for the student to interact with the committee members to incorporate changes, if necessary, before delivering the final version to the Department Student Affairs Office.

The following guidelines are to be used for the capstone project report.

- (1) Describe the professional issue of interest — explain what is to be addressed.
- (2) Address the significance of the project
- (3) Provide a literature background--enough description of prior knowledge for readers to understand what the nature of the project and what is known.
- (4) A description of the project, which could be theoretical, analytical, computational, and/or experimental.
- (5) The analysis and results of the project (this should be the main body of the project). Students are encouraged to base the structure of the capstone project on past outstanding examples of successful projects as determined by the student faculty adviser.