

Master's Project Guidelines

Edited by:

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Background and Context:

A 3-credit project or a 6-credit thesis is a core requirement for a Master's Degree in Systems Engineering through the SDOE Program at Stevens Institute of Technology. This brief write-up discusses the requirements of a 3-credit project. Students are advised to collaborate and coordinate the academic requirements for a thesis option directly with their academic advisor.

Project Intent and Objectives:

The intent of the Masters project is for the student to apply the systems engineering concepts, principles and practices they have learned to:

1. A "real" problem within an application domain of interest to them, their sponsor and their assigned academic advisor;
2. An investigative study of some aspect of systems engineering (e.g., the utility and relevance of an ontology to project success); or
3. The development of a systems engineering application case study.

The objective of the project is to "stretch" the thinking of the student and to provide an experience in applying theoretical concepts within a pragmatic domain. Although the student may apply only a subset of their coursework in the execution of the project, he or she must conduct some form of independent research to be successful in this endeavor.

The specific approach to completing the requirements of the project will depend on the nature of the project (application, SE research, or case study) selected by the candidate and the faculty advisor. In the event of a "real" application within a domain of interest, some sponsors have offered the mentorship of subject matter or domain experts to complement faculty support and advising. Independent of the project focus and emphasis, the output is to be in the form of a technical paper suitable for submission to a referred conference or technical journal. It is expected that students will spend approximately 150-200 hours in the completion of the project.



Project Development Process:

The first step in the process is for a student to identify a suitable topic for his or her project and obtain a faculty advisor. It is highly recommended that students choose a topic from the attached list of Candidate Projects. In this case, the student should contact the corresponding advisor and make arrangements to begin. If a student wishes to develop a project topic on their own, it is their responsibility to identify a faculty advisor who agrees to supervise their work. In no case should work on the project begin until an advisor has been secured.

Next, the student should prepare an abstract for the paper that will be produced by the project and have that abstract approved by his or her faculty advisor. In practice, this may take several iterations. Experience has shown that the investment of time and effort at this stage greatly increases the likelihood of success and the speed at which the project will converge to a final paper. Students are encouraged to seek out their advisor and obtain ideas and guidance to ensure that both the student and the advisor agree that the paper described in the abstract will be a suitable deliverable for the project. In the event that a student chooses an application to a “real” problem, it is also highly desirable to identify application domain and subject matter experts to supplement the mentoring provided by the faculty advisor.

After the advisor and the student have agreed on an abstract, and any appropriate subject matter experts, work on the project can begin. Throughout the project, it is the responsibility of the student to obtain input and guidance from their advisor, as required. Advisors will generally not seek out students for this purpose.

Once a draft paper is ready, it should be provided to the advisor for review and comment with sufficient time for revision prior to the project deadline. The final paper will then be submitted to the advisor and assigned a grade. For a paper to receive an A, it must be judged by the advisor as suitable for submission to a referred conference or technical journal. Papers that are well done but do not rise to that standard will be assigned a grade of B. Lesser papers will be graded accordingly.