

Fairfield University's School of Engineering

Master's Thesis Guidelines

Introduction

The Master's (MS) thesis is intended to be a test of the student's ability to formulate a problem, solve it, and communicate the results. The thesis is supervised on an individual basis by at least one faculty member. A thesis involves the ability to gather information, examine it critically, think creatively, organize effectively, and write convincingly; it is a project that permits the student to demonstrate skills that are basic to both the academy and to work in industry.

Students may choose the MS Thesis option provided they have the agreement of a faculty member in their Department of study to supervise their efforts and approval by the Department Chairperson.

Please note that this document provides general steps and guidelines for the MS Thesis option in the School of Engineering. **Always check with your department of study for any department-specific requirements.**

If a student chooses the MS Thesis option, the following steps are to be followed:

Step 1: Identify a thesis topic of interest and the faculty member who agrees to serve as thesis advisor.

Step 2: Working with the thesis advisor, agree on the creation of a thesis advisory committee made up of at least two full-time tenured or tenure-track faculty members and your thesis advisor (minimum of three members). Exceptions to this step shall be approved by the department chairperson.

Step 3: Register for the Department Thesis courses (Thesis I and Thesis II).

Step 4: By the end of the first week of the first semester and working with the thesis advisor, formally propose the thesis topic to the department chairperson for approval using the **Master's Thesis Proposal Form**. Once approved, begin working on the thesis with a plan to complete the research and generate the thesis within an approximate, one-year time frame.

Step 5: As the research is trending toward completion, write the thesis and, when completed, defend the thesis to the satisfaction of the thesis defense committee.

Supporting Information

Steps 1 and 2: Thesis Advisor and Thesis Advisory Committee

Please remember, if you choose the MS Thesis option, it is your responsibility to identify and to come to an agreement with the faculty member you desire to be your thesis advisor.

In general, when choosing a thesis advisor, full-time, tenured or tenure-track faculty members of the Department are eligible to serve.

In general, when choosing a thesis advisory committee: 1. Full-time, tenured or tenure-track faculty members of the Department are eligible to serve; 2. Full-time tenured or tenure-track faculty of other departments in the School of Engineering and the University are eligible to serve; 3. Research faculty and adjunct faculty members of the Department are also eligible to

serve. However, exceptions to these recommendations (e.g. inviting an outside member to serve) may be made with approval by the thesis advisor and the department chairperson.

Steps 3 and 4: Thesis Proposal

Before beginning work on the MS Thesis, the **Master's Thesis Proposal Form** needs to be completed and approved. On this completed form will be a description of the general area of the research problem to be investigated and the major topics of the research.

This form must be approved and signed by the thesis advisor, the thesis advisory committee members, and by the Department Chairperson and/or the Director of Graduate Studies; and must be submitted no later than one week after the start of semester in which the student is registered for Thesis I, the department's thesis course.

Step 5: MS Thesis

The MS Thesis involves focused research on a topic of mutual interest to the thesis advisor and the student. It is expected that the thesis work be of publishable quality. The contents can be, but are not limited to:

- A detailed survey of the state of the art in a well-defined area of engineering,
- A new solution to a problem,
- A comparison of several solutions to a problem, or
- Any other topic agreed upon by the student and the major professor and approved by the department chairperson.

The following is the general structure of the MS Thesis document:

- (1) Cover page
- (2) Acknowledgements
- (3) Abstract
- (4) Table of contents
- (5) List of tables
- (6) List of figures
- (7) Introduction: Definition of the problem, its importance, historical background
- (8) Solution of the problem
- (9) Conclusions and future work: Was the initial research question(s) answered satisfactorily, what questions remain open, suggestions for future work
- (10) Bibliography
- (11) Appendices

An oral, public defense of the MS thesis is required. The oral defense is attended by the candidate's thesis advisor, the MS thesis defense committee members, and any other interested faculty members and students.

The following are the steps to be followed in preparing for and carrying out the thesis defense:

- The thesis advisor forms the thesis defense committee consisting of at least three members including the advisor no later than three weeks before the thesis defense. The thesis defense committee may be the same as the thesis advisory committee or it may contain different individuals. For example, there may be an outside member with expertise related to the thesis topic invited to participate. In all cases the make-up of the thesis defense committee shall be approved by the department chair or the director of graduate studies using the **Master's Defense Committee Approval Form**.
- The thesis defense presentation is scheduled to occur no later than the last week of the semester at a time and date all defense committee members can attend. Scheduling the meeting earlier in the semester is encouraged to allow the student more time to close action items that may be raised at the defense presentation.
- The thesis defense should be no longer than a ninety minute formal presentation by the candidate followed by a maximum thirty minute question and answer session. The candidate is responsible for arranging and scheduling the day of the thesis defense. This includes, but is not limited to, scheduling the room, contacting all defense committee members for their availability, inviting the general public to attend, and making sure all the necessary paperwork is in order and available.
- The candidate must submit the written thesis document to all defense committee members no later than two weeks prior to the thesis defense presentation to allow those members time to read the thesis.
- All thesis defense committee members are expected to attend and participate in the presentation and provide their comments and any corrections they feel are necessary to be made to the thesis. Immediately following the public phase of the presentation, the thesis defense committee members, meeting together in private, discuss the quality of the thesis and of the presentation and vote as to accept or reject the thesis. The thesis advisor is a non-voting member of this committee.

If accepted, the defense committee will sign off on the **Master's Thesis Defense Report Form** and charge the thesis advisor with making sure that any changes or corrections the members of the defense committee recommended get made by the candidate before the final copy of the thesis is prepared.

If rejected, indicating a failed defense, the defense committee will sign off on the **Master's Thesis Defense Report Form** and the thesis advisor will meet with the department chairperson and the candidate in order to determine the next option for the candidate, which may include issuing an incomplete grade pending a rescheduled defense or a failure for the course if the thesis cannot be defended successfully.

- The candidate corrects the thesis, as necessary, and provides the final copy for thesis advisor's approval/signature no later than the final day of the semester.

Publication of Thesis

One hard copy of thesis and an electronic copy of the thesis in pdf format are to be submitted to the department at the conclusion of the thesis courses and thesis defense. It is highly

recommended that results of original research be considered for publication in collaboration with the thesis advisor.