Advanced Course Mini-Thesis Requirements for University of Cincinnati Students

Summary

Concerns have been raised regarding Advanced Course mini-thesis topics, timing and advisor interaction. Two actions will address these concerns:

1) Improve GE-university communication
2) Add a university abstract approval committee and specific timing to the mini-thesis requirements

Background

A mini-thesis project is typically needed to meet University of Cincinnati (UC) and Advanced Course (ACE) requirements for students not pursing a thesis option. The mini-thesis is an independent project providing 3 credit hours toward university degree requirements. Typically for GE students, this project is related to the student’s funded GE work-scope allowing it to also address the ACE graduation requirement to complete a business-related project.

The current applicable ACE requirements for the mini-thesis focus on completing necessary university requirements and a business-related project within the allowable 3.5-year timeframe of the program. Additionally, GE policies relating to technical reports are applicable. All mini-thesis projects are required to follow GE Policies 110.50 and 110.52, regarding Proprietary Information and Release of Abstracts, Technical Papers, Reports, and Presentations and of Company Non-proprietary Information, respectively. A blanket Proprietary Information Agreement is in place with UC and can be invoked by the students as appropriate. These requirements will remain in effect.

Without any set guidelines, each student and advisor has handled the abstract approval and review of the completed project on an individual basis. This has resulted in a wide variation of both timing and content for the project.
Concerns

Although not specific to GE students, concerns have been raised by the university regarding mini-thesis projects:

- **Technical nature of project**
  Some projects do not demonstrate the level of technical research or analysis that is desired for a Master's level engineering effort

- **Advisor input to project**
  Many students have less than desired contact with their university advisor / review committee – sometimes only limited to approving the abstract and handing in the final paper.

Additionally, there are mini-thesis concerns specifically regarding GE students:

- **Project expectations**
  University advisors are not familiar with the expectations for the mini-thesis and do not feel that they are given an opportunity to provide feedback

- **GE timing & tracking of project completion**
  Since mini-thesis projects are an individual effort and traditionally have required multiple extensions to complete, it is a challenge to track and administer this requirement of the Advanced Course

Proposal

Two actions are proposed to address the concerns:

1) Establish an annual meeting of the GE Technical Education Programs Manager with the Assistant Dean of Graduate Studies and department representatives from the UC College of Engineering. This can be held in conjunction with the annual UC informational meeting. The meeting will initially enable an evaluation of progress toward addressing concerns regarding the GE mini-thesis projects, and more generally, will enable regular discussion between the university and GE on all aspects of the program.

2) Add Advanced Course mini-thesis project requirements to include an abstract approval committee and specific timing for the abstract approval and project completion. These requirements would formalize a process to maintain consistent high-quality engineering projects within a structured timeframe. Initially, these would be piloted with the University of Cincinnati mini-thesis projects. Once successful, they could be specified for other thesis / project requirements and with other universities, if worthwhile.
Abstract Approval Committee (AAC)

Figure 1 shows the flowchart of student activity with the new requirement for an abstract approval shown in light green. The remainder of the process essentially follows the current approach.

The UC Abstract Approval Committee (AAC) will consist of:
- A UC faculty advisor identified by the student
- A GE faculty advisor identified by the student

The student must consult with the Graduate Program Director (GPD) in the program in which he/she is enrolled. The ACC must be approved by the GPD. Upon submission of the mini-thesis abstract to the AAC, the student is required to schedule a meeting of the committee. The meeting is required to encourage an active working relationship between committee members, to facilitate the development of a consensus on the quality of the proposed work, and clearly define the committee’s expectations on the project outcomes.

Students are expected to state the topic, planned approach, and desired deliverable for their project in the abstract. The committee has the option to ask for additional details or clarification. Should a proposal be deemed inadequate, the committee can recommend additional research or analysis be included in the project scope to assure an appropriate and consistent level of engineering effort. As a last resort, the committee could also reject an abstract that is not of sufficient caliber.
Specific Timing

A specific timing is established for the approval of abstracts and completion of projects. The milestones for abstract approval, “1,” and project completion, “2,” are shown in Figure 2.

![Figure 2: Advanced Course Mini-thesis milestones](image)

The mini-thesis must be approved by the ACC by July of Year 3 (identified as milestone 1 in Figure 2). This allows approximately one year for completion of all the activities required for the project, including the required GE review cycle.

It is strongly recommended that the student start developing the abstract and identifying ACC members for approval by the GPD in January of Year 2. It is the student’s responsibility to submit the mini-thesis abstract to the ACC sufficiently early for approval by the established deadline.