

Senior Thesis in Biomedical Engineering

Overview

The Senior Thesis is an option for seniors who are especially interested in research and/or intending to continue on to a PhD program. Students from this program will be selected and invited by their faculty advisor (GPA minimum of 3.8 is advised). These selected students will continue on an established research project and complete a written thesis at the end of the academic year. The thesis will be defended orally in front of a committee of 2-3 faculty, and revisions will be incorporated into the final written thesis, which will go on file with the department.

Benefits to the Student

- 1) For students interested in pursuing a PhD, the experience of writing and defending a thesis will be outstanding preparation for the PhD dissertation.
- 2) Excellent for the resume, and for personal statements and essays for fellowship and graduate school applications.
- 3) Closer connection with primary mentor and committee, which may lead to greater professional development and stronger recommendation letters.
- 4) Go more in depth into a problem, with greater opportunity to make an impact, and possibly produce a manuscript for publication in a peer-reviewed journal.
- 5) Opportunity to meet as a group with SBME faculty to discuss topics related to graduate schools (e.g., applying for NSF Fellowships, what to look for during grad school visits, choosing between offers, etc.)

Logistics

- Selection/invitation process
 - SBME will provide faculty with a list of rising seniors and their GPAs.
 - Based on GPA, past research performance, and relevance to career goals, faculty shall invite prospective students no later than **September 1**.
 - Students may request an invitation. However, faculty are encouraged to limit the number of senior theses in their group, so invitations will be highly selective.
- One faculty member serves as the Faculty Advisor for the Senior Thesis program. The Faculty Advisor serves as the contact point for Senior Thesis students and their advisors and other committee members if any questions or issues arise.
- Course credit: Students enroll first in one semester of BME 3440/3980 for 1-3 credit hours. Then, pending 'satisfactory progress' in BME 3440/3980, the following semester the student enrolls in BME 4980 for 1-3 credit hours.
 - Students must complete at least 6 hours of research credit (BME 3440/BME 3980/BME 4980) in total (including Freshman – Junior years) by the end of their undergraduate career to satisfy the Senior Thesis requirement.
 - As long as these 6 total hours are achieved, students may elect to take only 1 hour of BME 3440/3980 in the fall semester, and 1 hour of BME 4980 in the spring semester of their the Senior year (e.g., to stay under 18 hours).
 - The Fall semester grade will include the Semester Report (see below), and the Spring semester grade will include the Final written thesis.

- Requirements/Expectations of students:
 - Full academic year commitment, with a time commitment of ~10-15+ hours/week.
 - Work must be novel and independent (as opposed to “service work”, e.g., to make materials or collect data on a given piece of equipment for a grad student’s project). *The committee is responsible for ensuring these criteria are met.*
 - Semester report (5 pages maximum) due to committee in early December (before dead week) as a “check point.” Satisfactory progress is required to continue to the following Spring (determined by committee). For students with unsatisfactory progress or who elect to opt out, the exit is to discontinue the Senior Thesis in the Spring semester.
 - Written thesis submitted to the committee in April no later than 3 weeks before dead week ends. Target = 20-30 pages, limit = 60 pages, double spaced (Tables, Figures, References excluded). Content may include work prior to the senior year. Format comparable to a Master’s thesis.
 - Oral defense (public) defended before dead week (written thesis must be submitted at least 1 week prior to oral defense). Any revisions to the written thesis must then be submitted in final form by the end of dead week. This final thesis will form the basis for the grade for the course in the Spring semester (grade assigned by primary advisor, with input from committee).
- Committee: 2 faculty minimum, 3 preferred. Established no later than **October 1**.
- **Honors:** Honors students will need to enroll in 3 hours of BME 3980 for their Honors research requirement, before they can enroll they must return an Honors research form, which can be found at the following website:
 - http://ou.edu/content/dam/honors/docs/Honors%20Research%20w_Instructions.pdf
 - Honors students must provide the Honors College with a copy of their final thesis paper.
- Expected, but not required, to attend the SBME department seminars (course schedule permitting). Will sign attendance log along with the grad students to document attendance.
- Expected to attend a lecture/discussion on thesis writing.