

ES 495-496: Integrative Engineering Senior Thesis

Catalog Description:

This two-semester course is designed for students pursuing honors research in Integrative Engineering. The course consists of an original research investigation and culminates in the written thesis and oral presentation at the end of the senior year. The course is operated in accordance with the requirements of the College honors program as administered by the Office of the Registrar. ES 496 is a designated writing (W) course.

Prerequisites:

Senior standing, completion of the systems core ES 103, ES 201, ES 30x

Learning Outcomes:

By the end of this course, a student will be able to:

- Conduct a literature review and write a research proposal
- Design a concise set of research objectives and identify the tasks needed to complete those objectives
- Conduct original data collection/analyses/modeling on the research topic
- Synthesize the results of the research in a written honors thesis. The format of the thesis will follow guidelines provided by the supervisor following the convention of the particular discipline
- Present the research progress (fall semester) and research results (spring semester) to a mixed audience of peers and faculty members

Instructor:

Staff

Course Hours:

TBD – a minimum of 10 hours per week on project-related work is required. A weekly progress meeting is required, in which the thesis student will provide a memo to the supervisor that briefly discusses progress, challenges, next steps, etc

Course Materials:

Relevant reference materials and primarily literature sources to be provided by the thesis supervisor

Grading:

Determined by the research supervisor in consultation with the Thesis Committee. By College policy the student must earn an A in ES 495 to continue in ES 496.

Schedule:

Fall Semester (ES 495):

Weeks 1 – 2	Conduct literature review and submit the research proposal, identify the Honors Committee members
Weeks 3 – 14	Revise proposal based on Supervisor feedback, Conduct research
Week 15	Present research progress

Spring Semester (ES 496):

Weeks 1 – 12	Conduct research
Weeks 12 – 14	Synthesize results, write thesis and submit draft to supervisor Typically, the thesis would include the following sections: abstract, introduction, materials & methods, results & discussion, conclusions and recommendations for future study, references
Week 15	Present thesis results, revise thesis based on Supervisor and Thesis Committee feedback

Note: this is a typical schedule, it may be adjusted as needed by mutual agreement of the thesis student and supervisor. For example, the research supervisor may wish to see a draft of the research proposal at the start of the fall semester.

Disability statement:

In compliance with Lafayette College policy and equal access laws, the instructor will be available to discuss appropriate academic accommodations that you may require as a student with a disability. Requests for academic accommodations need to be made during the first two weeks of the semester, except for unusual circumstances, so arrangements can be made. Students must register with the Office of the Dean of Advising and Co-Curricular Programs for disability verification and for determination of reasonable academic accommodations.

Academic Honesty Statement

The Engineering Division is an academic community that values intellectual endeavor, development, and discovery. While collaborative exploration of ideas is often encouraged, standards of academic honesty must be maintained by all members of our community. Members of the Lafayette Engineering community are expected to bear individual responsibility for their work, to learn and follow the rules and definitions that underlie the practice of academic integrity, and to uphold its ideals. Our community does not tolerate acts of academic dishonesty and will report incidents of alleged academic dishonesty for investigation; examples of unacceptable academic conduct that violate our shared standards include (a) using ideas, text, images, calculations or software received from others, including classmates or other resources, without proper

acknowledgment; (b) soliciting unauthorized assistance or copying answers from other students; or (c) obtaining, using, or copying the textbook author's or an instructor's solutions without authorization.

Federal Credit Hour Compliance:

The student work in this course is in full compliance with the federal definition of a four [two or one as appropriate for half and quarter unit courses] credit hour course. Please see the Registrar's Office web site for the full policy and practice statement at:

(<https://registrar.lafayette.edu/wp-content/uploads/sites/193/2013/04/Federal-Credit-Hour-Policy-Web-Statement.doc>).