

ECE 4723 Syllabus

Interdisciplinary Capstone Design

(0-2-6-3)

Fall 2026

Instructor Information

Instructor: Whit Smith

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General Course Information

Description

Seniors will work in teams to apply a systematic design process to real multi-disciplinary problems. Problems selected from a broad spectrum of interest areas, including biomedical, environmental, mechanical, industrial design, electrical and thermal/fluids. Projects must be based on the knowledge and skills acquired in earlier course work, and incorporate appropriate engineering standards and multiple realistic constraints. Emphasis is placed on the design process, the technical aspects of the design, and on reducing the proposed design to practice. The course consists of faculty and guest lectures, prototyping in design studios, and a multi-disciplinary design project.

Course Learning Outcomes

- Work in teams with advisors and perhaps a sponsor
- Identify roles, resources, tradeoffs, and constraints
- Propose a project with demonstrable quantitative Technical Specifications
- Construct in a bounded time a project appropriate to their technical training
- Submit cyclical status reports
- Demonstrate their results before a suitable audience
- Execute a public presentation
- Maintain and provide final documentation suitable for project reproduction or continuation

Required Course Materials

Course materials and announcements may be distributed online or as otherwise specified in the course information. Students are expected to read email daily and be responsible for all announcements or materials, regardless of the manner of distribution.

Grading Policy:

Weekly Reports & Surveys	10%
Proposal Report & Advisor Acceptance & Proposal Presentation	10%
Design Review Report & Design Review Presentation	15%
Capstone Design Expo participation	Required
Final Demonstration	10%
Final Presentation	10%
Final Report and supporting documentation sufficient to continue or reproduce the project	25%
Return of borrowed or Institute-purchased equipment	Required
Individual Design Notebooks	10%
Professionalism	10%

Required elements are mandatory to pass the course.

Grading Scale Your final grade will be assigned as a letter grade according to the following scale

A	90-100%
B	80-90%
C	70-80%
D	60-70%
F	0-60%

Description of Graded Components

Professionalism - This grade component is based on your professional behavior during this course. Points may be deducted for unprofessional behavior by a student during the semester, including:

- Resisting team formation
- Resisting non-ECE's majors' capstone course constraints
- Missing scheduled meetings with your project advisor or other team members

Unprofessional behavior as noted by the instructors or as reported by other team members, the project advisor, or sponsors
Failure to function properly as a member of the design team
Lack of professionalism in submitted assignments, e.g., chronic failure to follow required formats
Failure to adhere to the Georgia Tech Academic Honor Code

The **Project Proposal** is a formal document written by the team that accurately describes the proposed project and may have been defined during the first-semester of two-semester ECE Senior Design. Before the end of Week 2, the team is responsible for iterating until acceptance with their faculty advisor which may include a presentation at the advisor's discretion.

Design Notebook – Team members are required to maintain an individual design notebook. Students are to incorporate the elements as listed below. At the advisor's discretion, students are welcome to use physical or electronic notebooks with contents submitted electronically for grading. With goals including the ability to continue or reproduce your project, the criteria described on the course's Canvas site is encouraged.

Student-Faculty Expectations Agreement - At Georgia Tech we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. See <http://www.catalog.gatech.edu/rules/22/> for an articulation of The Institute's basic expectations. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the sought environment. Therefore, you are encouraged to remain committed to the ideals of Georgia Tech while in this class.

Course Policies

Attendance and/or Participation

Attendance is encouraged but not mandatory during all course team meetings and events. This will be graded via the professionalism component of the grade.

Academic Integrity

Georgia Tech aims to cultivate a community based on trust, academic integrity, and honor. Students are expected to act according to the highest ethical standards. Review [Georgia Tech's Honor Code](#) and the student [Code of Conduct](#).

Any student suspected of cheating or plagiarism on a quiz, exam, or assignment will be reported to the Office of Student Integrity, who will investigate the incident and identify the appropriate penalty for violations.

Core IMPACTS

Core IMPACTS is the University System of Georgia's General Education curriculum. If you are teaching a course that counts towards Core IMPACTS, you should include a syllabus statement about the Core area and associated [career competencies](#). [This resource](#)

developed by the Center for Excellence in Teaching and Learning and Online Education at Georgia State University includes template syllabus statements for each of the Core IMPACTS areas that you may adapt for your course.

Accommodations for Students with Disabilities

If you are a student with learning needs that require special accommodation, [contact the Office of Disability Services](#) (404-894-2563) as soon as possible to make an appointment to discuss your special needs and to obtain an accommodations letter. Please also e-mail me as soon as possible in order to set up a time to discuss your learning needs.

Student-Faculty Expectations Agreement

At Georgia Tech, we believe that it is important to strive for an atmosphere of mutual respect, acknowledgement, and responsibility between faculty members and the student body. [The Student-Faculty Expectations](#) articulate some basic expectations that you can have of me and that I have of you. In the end, simple respect for knowledge, hard work, and cordial interactions will help build the environment we seek. Therefore, I encourage you to remain committed to the ideals of Georgia Tech while in this class.

Campus Resources for Students

Undergraduate Student Academic Success Resources:

- Academic Support: Academic Success and Advising (a unit in the Office of Undergraduate Education & Student Success) provides free support for your courses. Students can attend scheduled supplemental review (PLUS) sessions, stop by Drop-In Tutoring, or schedule a one-on-one appointment through Knack. To explore what options work best for you, please visit us online at success.gatech.edu/tutoring, email us at tutoring@gatech.edu, or come see us at Clough Undergraduate Learning Commons, Suite 283.

Student Well-Being:

At Georgia Tech, we are concerned about your overall physical, social, and mental well-being. A [comprehensive list](#) of wellness related resources has been compiled and maintained by the Office of the Vice President for Student Engagement and Well-being ([student-resource-guide \(gatech.edu\)](http://student-resource-guide(gatech.edu)