ECE4012 | ECE Culminating Design Project II | 2020 Spring
Revised 2020 March 30 to reflect Institute COVID-19 Constraints

Contact information and office hours:

Bruno Frazier	**Whit Smith**	**Mick West**
MiRC 223	Van Leer E392	GTRI
(404) 894-2030	(404) 894-3185	404-407-8638
bruno.frazier@ece.gatech.edu	whit.smith@ece.gatech.edu	mick.west@gtri.gatech.edu
Office Hours: TBD	Office Hours: TBD	Office Hours: TBD

Lectures: ECE 4012A & ECE4012 IP   MW 1:55-2:45pm as scheduled   Pre-COVID-19 in CoC 16

Prerequisites:
ECE 4011 and ((ECE 3020 and ECE 3030) or (ECE 3025 and ECE 3072 and ECE 3084)) [all courses minimum C]

Optional Text: Hyman, *Fundamentals of Engineering Design*, Prentice-Hall, 2nd ed., 2003.

ECE 4012 Grading:

Design Notebooks	15 %
Professionalism	10 %
Oral Project Proposal Presentation	10 %
Final Project Video Presentation	(Required)
Final Project Video Demonstration	25%
Final Report	25%
Weekly Reports & Electronic Deliverables	10 %
Expo Registration before the Deadline	5%

Materials:

Course materials and announcements may be distributed in lecture, via email, posted online**,** or as otherwise specified in the ECE 4012 information. Students are expected to read email on a daily basis. You are responsible for all announcements or materials, regardless of the manner of distribution.

Late Policy:

All items are expected to be turned in by the specified due date and time. Late submissions, if accepted, may be subject to a penalty.

Exams:

No exams will be conducted during ECE4012.

Professionalism

This grade component is based on your professional behavior during ECE 4012. Points may be deducted for unprofessional behavior by a student during the semester, including:

- 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 industrial 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 format
- failure to adhere to the Georgia Tech Academic Honor Code

Attendance

Attendance is encouraged but not mandatory during all ECE 4012 lectures. Students are responsible for the lecture content for any missed lectures. If you plan to be absent, the polite action is to notify your instructors prior to the lecture as this is consistent with typical industrial practices. Following imposition of Institute COVID-19 constraints, students continue to be responsible for content which might include online lectures.

Revised Project Proposal & Oral Presentation

The Project Proposal is a team written, formal document that accurately describes the proposed project in the format introduced in ECE4011. After receiving feedback from the team faculty advisor as part of at the end of ECE4011, the team is responsible for revising the project proposal to incorporate the agreed upon project content. Additionally, the team is responsible for holding a presentation of the revised content during Week 1-2 of ECE4012 with their advisor / sponsor. The oral presentation is recommended to be formatted with the same sections as the written project proposal. Since the imposition of Institute COVID-19 constraints, teams whose pre-COVID-19 Proposal constraints cannot be met should edit and acquire timely advisor approval prior to proceeding.

Course Outcomes:

As part of ECE4012, students:

1. Develop an understanding of how professional issues (teamwork, ethics, licensure, standards) relate to the practice of engineering design.
2. Develop leadership skills through the culminating design project experience
3. Are introduced to issues, methods and tools used in the engineering practice.
4. Effectively communicate information relating to all aspects of the proposed design in written, oral and graphical form.

Course Objectives:

Upon successful completion of this course, students should be able to:

1. Apply the skills learned during undergraduate coursework to a practical culminating design project.
2. Effectively participate as part of an engineering design team to work towards a common set of objectives.
3. Apply effective leadership skills to teaming environments.
4. Generate engineering specifications.
5. Evaluate system performance.
6. Effectively communicate the results of the design project both an oral and written format.

Design Notebook

An INDIVIDUAL design notebook MUST be maintained throughout ECE 4012. Your design notebook must be usable to follow-on projects or other people who need to refer to it at a later time. Usability will be judged from adherence to standards, overall organization, legibility, intelligibility of technical content, and meeting / notebook maintenance. A discussion of your Design Notebook contents is available online.

NOTE: In past semesters of ECE4011 & ECE4012, students have maintained a physical, bound notebook. The instructors are investigating online journal apps for keeping individual student electronic notebooks, which would affect some of the requirements listed below**.**

Points

Points	
3	Each page is numbered, dated and signed
1	The notebook does not have removable pages
1	All blank pages/areas are marked Intentionally Left Blank•
4	Your name, projects name, contact info, and team members contact info are recorded on the cover or inside of the cover
1	All Notebook entries are in chronological order
1	All notebook entries are in ink, i.e., no pencil entries allowed
3	Record team meetings dates, those present, and meeting highlights
2	Detailed meeting notes (if project has software component this includes documenting coding progress and source code locations)
1	Document information resources accessed (websites, books, scientific papers, professors, industry professionals, etc…)
3	Record design ideas in the form of block diagrams, sketches, etc.
3	Documentation of Engineering Results and Data (test plans, raw data, analysis and discussion of results)
2	Generate to-do items and place a box in the left hand margin ahead of listed item
3	Include check boxes for yours and your team's and list individual responsibilities and deadlines
1	Check off to-do items when they are completed and write in completion date
1	To-do items should run chronologically through the notebook as your design work progresses
3	Professionalism (general organization, neatness, professional language)
33	Total

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.