Computer Engineering Design 2

CEN 3908C

Academic Term: Spring 2024

Instructor:
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Course Description

Reinforce basic computer engineering skills; design, produce, and report on a computer engineering project, meeting defined specifications, and using a structured design methodology and project management. (3)

Course Pre-Requisites / Co-Requisites

CEN 3907C with minimum grade of C.

Course Objectives

Students will fully implement the design for a computer engineering project using modern techniques and technologies. This will include software topics and hardware elements as part of the capstone.

Professional Component (ABET):

This course serves criteria (b) of ABET Professional Component, namely: "one and one-half years of engineering topics, consisting of engineering sciences and engineering design appropriate to the student's field of study". This course constitutes one-semester of engineering-specific coursework.

Relation to Program Outcomes (ABET):

The table below is an example. Please consult with your department's ABET coordinator when filling this out.

Outcome	Coverage*
1. An ability to identify, formulate, and solve engineering problems by applying principles of engineering, science, and mathematics.	
2. An ability to apply both analysis and synthesis in the engineering design process, resulting in designs that meet desired needs.	Medium
3. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions.	Medium
4. An ability to communicate effectively with a range of audiences	Medium
5. An ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts.	Medium
6. An ability to recognize the ongoing need for additional knowledge and locate, evaluate, integrate, and apply this knowledge appropriately.	Medium
7. An ability to function effectively on teams that establish goals, plan tasks, meet deadlines, and analyze risk and uncertainty	Medium

*Coverage is given as high, medium, or low. An empty box indicates that this outcome is not covered or assessed in the course.

Course Schedule (Subject to Adjustment)

Week 0-2: Alpha Build / Alpha Test Plan / Demo & Check-In
Week 3-7: Beta Build / Beta Test Plan / Presentation / Demo & Check-In (x2) / Peer Evaluation
Week 8-10: Release Candidate / Preliminary Report / Demo & Check-In / Peer Evaluation
Week 11-13: Production Release / Final Report / Demo & Check-In (x2) / Peer Evaluation
Week 14-15: Post-Mortem Presentations / Project Showcase / Presentation Evaluations / Peer-Evaluation

Required Textbooks and Software

There are no required materials for this course. All materials will be provided by the instructor. The College of Engineering requires students to have a mobile computing device (laptop).

Evaluation of Grades

Assignment	Points	Percent
Course Engagement		
Syllabus Quiz	10	1%
Check-In Meetings (10-drop-1)	9 x 10	9%
Peer Evaluation / Status Report (4)	4 x 10	4%
Presentation Review (4)	4 x 5	2%
Professional Interaction	10	1%
Deliverables		
Alpha Test Plan	10	1%
Beta Test Plan	20	2%
Preliminary Report	40	4%
Final Project Report	100	10%
Progress Presentation	40	4%
Post-Mortem Presentation and Showcase Event	100	10%
Alpha Build	40	4%
Beta Build	80	8%
Release Candidate	150	15%
Production Release	250	25%
TOTAL	**1000**	**100%**

Percent	Grade	Grade Points
93 - 100	A	4.00
90 - 92	A-	3.67
87 - 89	B+	3.33
83 - 86	B	3.00
80 - 82	B-	2.67
77 - 79	C+	2.33
73 - 76	C	2.00
70 - 72	C-	1.67
67 - 69	D+	1.33
63 - 66	D	1.00
60 - 62	D-	0.67
0 - 59	E	0.00

Grading Policy

Final grades will be rounded to the nearest whole percentage point. Grades will not be "bumped up", and no additional credit will be offered at the end of the term – so do not ask! Any request for a final grade increase, via "bumping" or "extra credit" will result in a deduction of 1% of the student's final grade. More information on UF grading policy can be found at: https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx

Attendance Policy, Class Expectations, and Make-Up Policy

Attendance is mandatory for course meetings. Students are expected to participate as audience members for the presentations of other students in the class and submit graded presentation review. There are no exceptions unless due to emergency or pre-arranged and with prior approval. Excused absences must be consistent with university policies in the undergraduate catalog (https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx) and require appropriate documentation.

Design Milestones

To complete the design project capstone sequence by the end of Computer Engineering Design 2, students will complete the following milestones throughout this course:

Alpha Build – Project build with a full complement of vertical features suitable for formal testing (Due Week 2) *Beta Build* – Feature-complete project build, integrating initial testing feedback, for further testing (Due Week 6) *Preliminary Report* – Status report on project background, work, timeline, and remaining plans (Due Week 6) *Progress Presentation* – Report on current progress of project work before audience of peers (Due Week 7) *Release Candidate* – Polished iteration for user testing that serves as a candidate for production (Due Week 10) *Production Release* – Final project deliverable; feature complete, tested, and ready for end-users (Due Week 13) *Final Report* – Final report on project background, work, evaluation, and contributions to field (Due Week 13) *Post-Mortem Presentation* – Full, live presentation of work before audience of peers (due Weeks 14-15)

Over the course, students are expected to put in approximately **150 hours of focused engineering effort** as part of their project, individually (approximately 10 hours weekly).

Code & Schematic Submissions

Functionality is key to success in computer engineering, so it is **extremely important** that the guidelines are followed. Failure to follow these instructions will result in penalties. Code must compile / run in debug and release mode, and schematics must be error-free. Debug information should never be released in the final version of a software project. **Projects that do not compile AND run will be marked zero**.

Design Project & Deliverables

This course is last course in the sequence for the Computer Engineering program culminating in a capstone project. As such, students will develop their design projects to completion by the end of the course. All designs must be of general use – they must ultimately serve as more than merely an opportunity for students to practice their skills. All projects should have as a goal the creation or improvement of a useful product or contribution to scientific research. As such, projects will be vetted by stakeholders beyond the student engineers.

Course Expectations

Academic Dishonesty will be dealt with strictly. Sharing / copying, "borrowing" of code structure, discussing code structure, looking at code from another student or providing such code, and plagiarism, in addition to other dishonest behaviors, are all considered academic dishonesty. Absolutely no information regarding assignment solutions may be shared by students except at a conceptual level. If students implement algorithms from other sources, they must cite those sources. Students may not copy code from the Internet or other sources under any circumstances. Any student found to have violated these rules, whether a provider or receiver or unauthorized help, will be assigned a zero grade and referred to the Honor Court. **When in doubt, ask.**

Grade reviews must be requested within one week of a grade being posted. After two weeks, no grade will be revisited. In the event of a grade review, the entire assignment will be reviewed.

All assignments are due by the time listed on Canvas. Projects and homework with a cascading deduction: one (1) academic day late for 10% penalty; two (2) for 25% penalty; or three (3) for 50% penalty. Quizzes and tests may not be submitted late for credit except with instructor approval for extenuating circumstances (see below).

Students should visit office hours for project help and grade questions. Online students should make plans to be chat with a TA during scheduled office hours or try to arrange an appointment with the TA or instructor. Do not send email to, send private messages to, or "@" instructors or TAs about project help or grades. The TAs and instructor will often try to answer questions when possible in chat, but the way to get personalized help is to visit or make arrangements!

Important correspondence (other than project help) should be engaged via email. In particular, the chat system is helpful for simple questions and allows students to help one another, but students should not expect a response to important questions via chat. Please allow 48 business hours for a response; the instructor and TAs have many responsibilities and respond to messages as efficiently as is practical.

Course Evaluation

Students are expected to provide professional and respectful feedback on the quality of instruction in this course by completing course evaluations online via GatorEvals. Guidance on how to give feedback in a professional and respectful manner is available at https://gatorevals.aa.ufl.edu/students/. Students will be notified when the evaluation period opens, and can complete evaluations through the email they receive from GatorEvals, in their Canvas course menu under GatorEvals, or via https://ufl.bluera.com/ufl/. Summaries of course evaluation results are available to students at https://gatorevals.aa.ufl.edu/public-results/.

Students Requiring Accommodations

Students with disabilities who experience learning barriers and would like to request academic accommodations should connect with the disability Resource Center by visiting https://disability.ufl.edu/students/get-started/. It is important for students to share their accommodation letter with their instructor and discuss their access needs, as early as possible in

the semester.

In-Class Recording

Students are allowed to record video or audio of class lectures. However, the purposes for which these recordings may be used are strictly controlled. The only allowable purposes are (1) for personal educational use, (2) in connection with a complaint to the university, or (3) as evidence in, or in preparation for, a criminal or civil proceeding. All other purposes are prohibited. Specifically, students may not publish recorded lectures without the written consent of the instructor.

A "class lecture" is an educational presentation intended to inform or teach enrolled students about a particular subject, including any instructor-led discussions that form part of the presentation, and delivered by any instructor hired or appointed by the University, or by a guest instructor, as part of a University of Florida course. A class lecture does not include lab sessions, student presentations, clinical presentations such as patient history, academic exercises involving solely student participation, assessments (quizzes, tests, exams), field trips, private conversations between students in the class or between a student and the faculty or lecturer during a class session.

Publication without the permission of the instructor is prohibited. To "publish" means to share, transmit, circulate, distribute, or provide access to a recording, regardless of format or medium, to another person (or persons), including but not limited to another student within the same class section. Additionally, a recording, or transcript of a recording, is considered published if it is posted on or uploaded to, in whole or in part, any media platform, including but not limited to social media, book, magazine, newspaper, leaflet, or third party note/tutoring services. A student who publishes a recording without written consent may be subject to a civil cause of action instituted by a person injured by the publication and/or discipline under UF Regulation 4.040 Student Honor Code and Student Conduct Code.

Commitment to a Safe and Inclusive Learning Environment

The Herbert Wertheim College of Engineering values broad diversity within our community and is committed to individual and group empowerment, inclusion, and the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of gender, sexuality, disability, age, socioeconomic status, ethnicity, race, and culture.

If you feel like your performance in class is being impacted by discrimination or harassment of any kind, please contact your instructor or any of the following:

- Your academic advisor or Graduate Program Coordinator
- Jennifer Nappo, Director of Human Resources, 352-392-0904, jpennacc@ufl.edu
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, taylor@eng.ufl.edu
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, nishida@eng.ufl.edu

University Honesty Policy

UF students are bound by The Honor Pledge which states, "We, the members of the University of Florida community, pledge to hold ourselves and our peers to the highest standards of honor and integrity by abiding by the Honor Code. On all work submitted for credit by students at the University of Florida, the following pledge is either required or implied: "On my honor, I have neither given nor received unauthorized aid in doing this assignment." The Honor Code (https://sccr.dso.ufl.edu/process/student-conduct-code/) specifies a number of behaviors that are in violation of this code and the possible sanctions. Furthermore, you are obligated to report any condition that facilitates academic misconduct to appropriate personnel. If you have any questions or concerns, please consult with the instructor or TAs in this class.

Software Use

All faculty, staff, and students of the University are required and expected to obey the laws and legal agreements governing software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against university policies and rules, disciplinary action will be taken as appropriate. We, the members of the University of Florida community, pledge to uphold ourselves and our peers to the highest standards of honesty and integrity.

Student Privacy

There are federal laws protecting your privacy with regards to grades earned in courses and on individual assignments. For more information, please see: https://registrar.ufl.edu/ferpa.html

Campus Resources:

Health and Wellness

U Matter, We Care:
Your well-being is important to the University of Florida. The U Matter, We Care initiative is committed to creating a culture of care on our campus by encouraging members of our community to look out for one another and to reach out for help if a member of our community is in need. If you or a friend is in distress, please contact umatter@ufl.edu so that the U Matter, We Care Team can reach out to the student in distress. A nighttime and weekend crisis counselor is available by phone at 352-392-1575. The U Matter, We Care Team can help connect students to the many other helping resources available including, but not limited to, Victim Advocates, Housing staff, and the Counseling and Wellness Center. Please remember that asking for help is a sign of strength. In case of emergency, call 9-1-1.

Counseling and Wellness Center: https://counseling.ufl.edu, and 392-1575; and the University Police Department: 392-1111 or 9-1-1 for emergencies.

Sexual Discrimination, Harassment, Assault, or Violence
If you or a friend has been subjected to sexual discrimination, sexual harassment, sexual assault, or violence contact the **Office of Title IX Compliance**, located at Yon Hall Room 427, 1908 Stadium Road, (352) 273-1094, title-ix@ufl.edu

Sexual Assault Recovery Services (SARS)
Student Health Care Center, 392-1161.

University Police Department at 392-1111 (or 9-1-1 for emergencies), or http://www.police.ufl.edu/.

Academic Resources

E-learning technical suppor*t*, 352-392-4357 (select option 2) or e-mail to Learning-support@ufl.edu. https://lss.at.ufl.edu/help.shtml.

Career Connections Center, Reitz Union, 392-1601. Career assistance and counseling; https://career.ufl.edu.

Library Support, http://cms.uflib.ufl.edu/ask. Various ways to receive assistance with respect to using the libraries or finding resources.

Teaching Center, Broward Hall, 392-2010 or 392-6420. General study skills and tutoring. https://teachingcenter.ufl.edu/.

Writing Studio, 302 Tigert Hall*,* 846-1138. Help brainstorming, formatting, and writing papers. https://writing.ufl.edu/writing-studio/.

Student Complaints Campus*:* https://sccr.dso.ufl.edu/policies/student-honor-code-student-conduct-code/;https://care.dso.ufl.edu.

On-Line Students Complaints*:* *https://distance.ufl.edu/state-authorization-status/#student-complaint*.