

Computer Engineering Design 1

CEN 4907C #19439

Class/Lab Periods: Tues-Thurs, P4-P5 (10:40 AM - 12:35 PM)

Location: NSC 215

Academic Term: Spring 2026

Instructor

Joe Del Rocco

jdelrocco@ufl.edu

Office Hours: On campus Tuesdays, 9:30-12:30 in NSC 215

Book office hours via Bookings site:

<https://outlook.office.com/bookwithme/user/d647dd4a6395422e9ba102d8cb9567ee%40ufl.edu>

Teaching Assistant

Please see the Canvas website section for up-to-date TA contact information and schedules.

Course Description

First course in computer engineering design sequence; Reinforces critical computer engineering skills through laboratory practice and launch of capstone project. Students will develop a project pitch, design plan, pre-alpha build, and design prototype. The project will meet defined specifications and will be completed using a structured design methodology and project management techniques. (3)

Course Pre-Requisites / Co-Requisites

Prerequisites: CEN 3031 and EEL 3744C with minimum grades of C. Co-requisite: COP 4600.

Course Objectives

By the end of this course, students will be able to...

- Employ basic design methodology within software and hardware development environments
- Build a computer bootloader for multiple architectures in assembly languages
- Design a printed circuit board (PCB) for custom hardware

Materials and Supply Fees

None

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).

Attendance Policy, Class Expectations, and Make-Up Policy

Late work is not accepted except in case of excused absence. Absences are handled according to the university undergraduate catalog (<https://catalog.ufl.edu/ugrad/current/regulations/info/attendance.aspx>).

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.

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.	Medium
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

Week 1: Introduction & Design Process
 Week 2: Equipment Use & Demonstration
 Week 3: x64 Boot Process
 Week 4: Project Pitching & Team Building
 Week 5: ARM Boot Process
 Week 6: PCB Design
 Week 7: Project Design Plan
 Week 8: System Drivers
 Week 9: Feedback on Design (In-Class)
 Week 10: Pre-Alpha Project Build
 Week 11: Elected Topic
 Week 12-13: Design Prototype Preparation
 Week 14-15: Design Prototype Presentations

Assignments Due

Syllabus Quiz (1/19), Design Quiz (1/19)
 Lab Equipment Demo (1/24), Project Pitch (1/26)
 x64 Boot Loader Submission (1/31)
 Team Roster (2/7)
 ARM Bootloader Submission (2/14)
 PCB Schematic (2/21)
 Design Draft (2/28)
 Device Driver Submission (3/7)
 Design Revision (3/14)
 Pre-Alpha Submission (3/28)
 Elected Lab Submission (4/4)
 Design Prototype Submission (4/18)
 Submit Presentation Slides (4/25)

Grading Breakdown

Assignment	Points	Pct
Syllabus/Design Quizzes	2 x 15	3%
Equipment Demo	30	3%
PCB Schematic	30	3%
Lab Assignments (4)	4 x 60	24%
Pitch	60	6%
Design Draft	50	5%
Design Revision	100	10%
Pre-Alpha Build	50	5%
Design Prototype	180	18%
Prototype Pres.	100	10%
Check Meetings (12)	5 x 12	6%
Peer Report (3)	20 x 3	6%
Pres. Review (2)	10 x 2	2%
TOTAL	1000	100%

Evaluation of Grades

Percent	Grade	Grade Pts
93.0 – 100.0	A	4.00
90.0 – 92.9	A-	3.67
87.0 – 89.9	B+	3.33
83.0 – 86.9	B	3.00
80.9 – 82.9	B-	2.67
77.0 – 79.9	C+	2.33
73.0 - 76.9	C	2.00
70.0 - 72.9	C-	1.67
67.0 - 69.9	D+	1.33
63.0 - 66.9	D	1.00
60.0 - 62.9	D-	0.67
0.0 - 59.9	E	0.00

Grading Policy

More information on UF grading policy can be found at:
<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

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/>.

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 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](mailto:title-ix@ufl.edu), 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 support, 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>.