

# CEN 3031 Introduction to Software Engineering

Section 11114

**Class Periods:** Online

**Location:** Online

**Academic Term:** Fall 2023

## **Instructor:**

Lisha Zhou

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Office Hours: By appointment only, with 24 hours in advance.

## **Teaching Assistant:**

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## **Course Description**

This course gives an introduction to software engineering theory, principles and methods. Topics include software planning, software design, configuration management, testing and maintenance. Students will gain experience contributing to an open-source project and participating on a team project to develop a product.

## **Course Pre-Requisites / Co-Requisites**

COP 3530 - Data Structures and Algorithms

## **Course Objectives**

- Understand what software engineering is and why it is important.
- Understand ethical and professional issues that are important for software engineers.
- Have extensive experience using the Agile “Scrum” Software Development Process.
- Have experience working on a team to complete a large-scale software product.
- Have experience with working with an existing code base.

Course objectives will be addressed and accomplished in the 4 modules: Module 1: SWE Introduction and Ethics

Module 2: Open Source

Module 3: Product Planning and Design

Module 4: Product Execution

## **Materials and Supply Fees**

There is no supply fee for this course.

**Relation to Program Outcomes (ABET):**

Outcome	Coverage*
1. An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics	Medium
2. An ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors	Medium
3. An ability to communicate effectively with a range of audiences	High
4. 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
5. An ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives	High
6. An ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions	Medium
7. An ability to acquire and apply new knowledge as needed, using appropriate learning strategies	Medium

**Required Textbooks and Software**

- **Engineering Software Products: An Introduction to Modern Software Engineering**
- Ian Sommerville
- Pearson; 1st edition (May 19, 2019)
- ISBN 9780135211168

**Recommended Materials**

- Essential Scrum
- Mike Cohen and Ron Jeffries
- Addison-Wesley Professional; 1st edition (July 26, 2012)
- ISBN: 9780137043293

**Course Schedule** The following is a **TENTATIVE** overview of the course schedule (subject to change):

Module	Week	Playposit Lecture Videos	Assignments	Due
0	08/23 – 08/27	- Introduction	Course Orientation Quiz Skills Survey	08/25 09/01
1	08/28 – 09/03	- Software Engineering Defined - Software Engineering Ethics	ACM Ethics Case Analysis	09/12
2	09/05 – 09/10	- Software Process Activities and Models - Open-Source Software - Why students should contribute to open-source projects	Open-Source Project	10/01
3	09/11 – 09/17	- DevOps and Code Management - Project and Risk Management	Development Environment and Project Proposal Plan (DEPP)	09/22
4	09/18 – 09/24	- Agile Method and Scrum Framework		
5	09/25 – 10/01	- User Stories - Product Backlog and Kanban Board	User Stories Product Backlog	10/03 10/10
6	10/02 – 10/08	- Software Architecture Models - System Models and Decomposition	Software Architecture Models	10/17
7	10/09 – 10/15	- Sprint Retrospective	- Project Design and Plan Presentation - Sprint 0 Retrospective - Individual Contribution 1 - Peer 1 Evaluation	10/24 10/26 10/26 10/26
8	10/16 – 10/22	- Software Quality Management	Daily Scrum	10/27
9	10/23 – 10/29	- Software Testing	Daily Scrum Software Tests	11/03 10/31
10	10/30 – 11/05	- Cloud Based Architecture - Use Case Model	Daily Scrum	11/10
11	11/06 – 11/12		- Sprint 1 Presentation - Sprint Retrospective 1 - Individual Contribution - Peer 2 Evaluation	11/14 11/17 11/16 11/17
12	11/13 – 11/19	- Security and Privacy - Static Code Testing	Daily Scrum	11/17 12/06
BR	11/20 – 11/26	BREAK		
13	11/27 – 12/03	- Software Evolution - Use Case Model	Daily Scrum	12/01
14	12/04 – 12/06	- Microservices Architecture	- Final Presentation - Project Documentation And Project Submission	12/05 12/05
15	12/04 – 12/06		- Individual Report - Research Project - Peer 3 Evaluation	12/06 12/06 12/06

**Attendance Policy, Class Expectations, and Make-Up Policy**

State whether attendance is required and if so, how will it be monitored? What are the penalties for absence, tardiness, cell phone policy, laptop policy, etc. What are the arrangements for missed homework, missed quizzes, and missed exams?

This statement is required:

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies. Click here to read the university attendance policies:

<https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

**Evaluation of Grades**

Assignment	Percentage of Final Grade
Participation	10%
Assignments	15%
Open Source Project	20%
Research Project	20%
Team Project	30%
Peer Evaluation	5%
Extra Credits	2%
	102%

### **Grading Policy**

The following is given as an example only.

Percent	Grade	Grade Points
93.4 - 100	A	4.00
90.0 - 93.3	A-	3.67
86.7 - 89.9	B+	3.33
83.4 - 86.6	B	3.00
80.0 - 83.3	B-	2.67
76.7 - 79.9	C+	2.33
73.4 - 76.6	C	2.00
70.0 - 73.3	C-	1.67
66.7 - 69.9	D+	1.33
63.4 - 66.6	D	1.00
60.0 - 63.3	D-	0.67
0 - 59.9	E	0.00

More information on UF grading policy may be found at:

<https://catalog.ufl.edu/ugrad/current/regulations/info/grades.aspx>

**NOTE:** A C- will not be a qualifying grade for critical tracking courses. In order to graduate, students must have an overall GPA and an upper-division GPA of 2.0 or better (C or better). Note: an average of C- is equivalent to a GPA of 1.67 and therefore does not satisfy this graduation requirement. For more information on grades and grading policies, please consult [the catalog](#).

### **Class Expectations**

**Students are strongly recommended to listen to all lectures, read the required readings and supplemental resources.**

**Assignments are due by the time listed on Canvas.** Assignments and project work can be turned in late with a cascading deduction: one (1) business day from the canvas date is 10% penalty; two (2) business days from the canvas date is 30% penalty; or three (3) business days from the canvas date is 60% penalty. Assignments submitted after 11:59pm on a due date of Friday is considered late if turned in at 12:00am on Saturday and will be considered 1 day late until Monday 11:59pm. Assignments will not be accepted after 3 business days.

Participation is due by the time listed on canvas and cannot be turned in late or made up.

Requirements for make-up assignments, and other work in this course are consistent with university policies that can be found at [Attendance Policies](#).

**Grade reviews must be requested by email within one week of a grade being posted.** After one week, grades will not be revisited.

**Extra Credit.** Opportunities will be given throughout the course. Extra credit will not be given at the end of the course. Additionally, the final grade at the end of the course is the grade earned; grades will not be curved or bumped up.

**Peer Evaluations.** Each team member will score their team members and themselves. They are to provide a rating and justification of the rating. A team member who has an average peer evaluation score of 70-79.9 will receive a 15% penalty for the associated assignments. A team member who has an average peer evaluation score of less than 70 will receive a penalty determined by the professor of the course considering the evaluated contribution and justification provided by their team members. Peer evaluations must be completed to receive a peer evaluation score.

**Students should arrange for project help and grade questions during office hours with the professor.** Students should make plans to meet with the TA during scheduled office hours.

**For matters directed to the professor, email the professor directly.**

Requirements for class attendance and make-up exams, assignments, and other work in this course are consistent with university policies. Click here to read the university attendance policies:  
<https://catalog.ufl.edu/UGRD/academic-regulations/attendance-policies/>

### ***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.

### ***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.bluer.com/ufl/>. Summaries of course evaluation results are available to students at <https://gatorevals.aa.ufl.edu/public-results/>.

### ***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.

### ***Commitment to a Safe and Inclusive Learning Environment***

The Herbert Wertheim College of Engineering values varied perspectives and lived experiences within our community and is committed to supporting the University's core values, including the elimination of discrimination. It is expected that every person in this class will treat one another with dignity and respect regardless of race, creed, color, religion, age, disability, sex, sexual orientation, gender identity and expression, marital status, national origin, political opinions or affiliations, genetic information, and veteran status.

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
- HWCOC Human Resources, 352-392-0904, [student-support-hr@eng.ufl.edu](mailto:student-support-hr@eng.ufl.edu)
- Curtis Taylor, Associate Dean of Student Affairs, 352-392-2177, [taylor@eng.ufl.edu](mailto:taylor@eng.ufl.edu)
- Toshikazu Nishida, Associate Dean of Academic Affairs, 352-392-0943, [nishida@eng.ufl.edu](mailto:nishida@eng.ufl.edu)

### **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](mailto: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](mailto: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](mailto: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/getting-help/>; <https://distance.ufl.edu/state-authorization-status/#student-complaint>.