CEN 3031 Introduction to Software Engineering

Instructor

Sanethia Thomas, PhD sanethiat@ufl.edu

Zoom https://ufl.zoom.us/my/drsanethiathomas

To book office hours. https://calendly.com/drsanethiathomas/meeting

Communication Guidelines

Email/Slack/Zoom Chat

Email responses will be given between 9:00am – 6:00pm, M-F.

Allow for 48 business hours for a response. All questions and concerns for Dr. Thomas should use the official communication approved by UF - Email (Not slack).

Slack is a place to build community with your peers. Slack is managed by the peer mentors. Please keep all communication class related, positive and non-offensive. All questions and concerns for Dr. Thomas should use the official communication approved by UF - Email (Not slack).

Zoom Chat: The zoom chat is a place to generate conversation about the lecture topic being taught at the time. Please keep all communication class related to the lecture, positive and non-offensive. Zoom chat is managed by the peer mentors. ****Use the microphone if you need to ask questions to the professor.**

Canvas Announcements: Announcement notifications should be activated in your settings so you are aware of class announcements in a timely manner.

Office Hours

Office Hours: Held 1 hour after every class Wednesday and Friday, or by appointment with 24 hours advance. When you request an appointment make sure you provide the topic of discussion. All office hours will be held via zoom.

Peer Mentors

Rahul	Chari	rchari@ufl.edu
Mikala	Hill	mikayla.hill@ufl.edu
Kabir	Khara	kkhara@ufl.edu
Anthony	Kourey	anthony.rahbany@ufl.edu
William	Lawson	wlawson2@ufl.edu
Likhita	Manchikanti	lmanchikanti@ufl.edu
Tiase	Miyazumi	tmiyazumi@ufl.edu
Fernando	Rivera	f.rivera@ufl.edu
Grant	Wise	grantwise@ufl.edu
Jack	Wu	wuj1@ufl.edu
Tianlan	Yang	yangtianlan@ufl.edu
Liam	Young	liamyoung@ufl.edu

Course Information

The course is hybrid and will be delivered though Hyflex technology. It is organized around online synchronous/face to face lectures and asynchronous lectures.

Mondays - No Class. Watch Recorded Lectures.

Tuesdays - ONLINE ONLY Lab Discussions during course section via Peer Mentor zoom link.

Wednesdays - Synchronous Class. 2 options - ONLINE https://ufl.zoom.us/my/drsanethiathomas or Face 2 Face in NPB 1001.

Fridays - Synchronous Class. 2 options - ONLINE https://ufl.zoom.us/my/drsanethiathomas or Face 2 Face in NPB 1001.

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.

Credits: 3

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

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

Course Requirements

Required Textbook

Required:

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

Recommended:

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

Prerequisites

- COP 3530 - Data Structures and Algorithms

Minimum Technology Requirements

The College of Engineering requires students to have a mobile computing device (laptop) with 802.11 WiFi capability and webcam. Preferred methods for public and private communication regarding the course and a method for resolving technical issues (e.g. helpdesk.ufl.edu, 352-392-4357).

The University of Florida expects students entering a program to acquire computer hardware and software appropriate to his or her degree program. Most computers are capable of meeting the following general requirements. A student's computer configuration should include:

- Webcam
- Microphone
- Broadband connection to the Internet and related equipment (Cable/DSL modem)
- Microsoft Office Suite installed (provided by the university)

Individual colleges may have additional requirements or recommendations, which students should review before the start of their program

Materials/Supply Fees

There is no supply fee for this course.

Course Policies

Students are strongly recommended to listen to all lectures and attend all classes and lab discussions.

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 <u>10% penalty</u>; two (2) business days from the canvas date is <u>30% penalty</u>; or three (3) business days from the canvas date is <u>60% penalty</u>. Assignments will not be accepted after 3 business days.

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

In class participation assignments. In class participation cannot be turned in late under any circumstance as they are meant to be done in class to count for your participation. In class participation assignments can not be made up.

Grade reviews must be requested within one week of a grade being posted. After one week, no grade will be revisited.

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 Peer Mentors during scheduled office hours. **Do not send email to, send private messages to, or "@" instructors or TAs about grades.

For matters directed to the professor, email the professor directly. Please allow 48 business hours for a response.

Course Grading Policy

Grade Category	Percentage	Letter	Range (%)
Participation/Assignments	10%		A 94 – 100
			A- 90 – 93
			B+ 87 – 89
Open Source Project	25%		B 84 – 86
			B- 80 – 83
	25%		
SE Research Project			C+ 77 – 79
			C 74 – 76
	30%		
Team Project			C- 70 – 73
			D+ 67 – 69
	10%		
Peer Evaluation			D 64 – 66
	100%		
Total			D- 60 – 63

Grades will not be rounded.

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.

See the current UF grading policies for more information.

UF Policies

University Policy on Accommodating Students with Disabilities

Students with disabilities requesting accommodations should first register with the Disability Resource Center (352-392-8565) by providing appropriate documentation. Once registered, students will receive an accommodation letter that must be presented to the instructor when requesting accommodation. Students with disabilities should follow this procedure as early as possible in the semester.

University Policy on Academic Conduct

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 honesty 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 [Student Honor Code and 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.

**Academic Dishonesty will be dealt with strictly. Sharing / copying, "borrowing" of work that is not your own original work is considered academic dishonesty. 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.

Getting Help

Technical Difficulties

For all issues with technical difficulties for Canvas, please contact the UF Help Desk at:

- http://helpdesk.ufl.edu
- (352) 392-HELP (4357)
- Walk-in: HUB 132

**Any requests for make-ups due to technical issues should be accompanied by the ticket number received from the Help Desk. The ticket number will document the time and date of the problem. You should e-mail your instructor immediately of the technical difficulty if you wish to request a make-up.

Code Submissions

Functionality is key to success in software development and computer science, so it is **extremely important** that the guidelines are followed. Failure to follow these instructions will result in penalties.

- Add the professor and your peer mentor to your github repository.
- Code must compile / run in debug and release mode. 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**.

- Include only those files specified by the documents in your archive. Projects should have no directory structure except as explicitly mentioned in the documentation (i.e., relevant files and folders should be submitted in the root of the zip file.) It should be possible to open the archive, copy your files directly into the project, compile, and then run the project without further steps. **If the project has naming or organization error(s), its grade will be zero.**

Netiquette and Communication Courtesy

All class members are expected to follow rules of common courtesy in all email messages, threaded discussions, or slack and in chats.

Health and Wellness

- **U Matter, We Care**: If you or someone you know is in distress, please contact umatter@ufl.edu, 352-392-1575, or visit U Matter We Care to refer or report a concern and a team member will reach out to the student in distress.
- **Counseling and Wellness Center:** Visit UF Counseling & Wellness Center or call 352-392-1575 for information on crisis services as well as non-crisis services.
- **Student Health Care Center:** Call 352-392-1161 for 24/7 information to help you find the care you need, or visit UF Student Health Care Center.
- **University Police Department**: Visit UF Police Department or call 352-392-1111 (or 9-1-1 for emergencies).
- **UF Health Shands Emergency Room/Trauma Center:** For immediate medical care in Gainesville, call 352-733-0111, or go to the emergency room at 1515 SW Archer Road, Gainesville, FL 32608; UF Health Shands Emergency Room/Trauma Center.

Academic and Student Support

- **Career Connections Center:** 352-392-1601. Career assistance and counseling services UF Career Connections Center.
- **Library Support:** Various ways to receive assistance with respect to using the libraries or finding resources. UF George A. Smathers Libraries Ask-A-Librarian
- **Teaching Center:** 352-392-2010 General study skills and tutoring: UF Teaching Center
- **Writing Studio:** 352-846-1138. Help brainstorming, formatting, and writing papers: University Writing Program Writing Studio

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.

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 Conduct 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. 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 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

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

Course Evaluations

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 Providing Constructive Feedback. 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 GatorEvals. Summaries of course evaluation results are available to students at GatorEvals Public Results. More information about UF's course evaluation system can be found at GatorEvals - Faculty Evaluations.

Tips for Success

Taking a course online can be a lot of fun! Here are some tips that will help you get the most of this course while taking full advantage of the online format:

- Schedule "class times" for yourself. It is important to do the coursework on time each week. You will receive a reduction in points for work that is turned in late!
- Read ALL of the material contained on this site. There is a lot of helpful information that can save you time and help you meet the objectives of the course.
- Print out the Course Schedule located in the Course Syllabus and check things off as you go.
- Take full advantage of the online discussion boards. Ask for help or clarification of the material if you need it.
- Do not wait to ask questions! Waiting to ask a question might cause you to miss a due date.
- Do your work well before the due dates. Sometimes things happen. If your computer goes down when you are trying to submit an assignment, you'll need time to troubleshoot the problem.

- To be extra safe, back up your work to an external hard drive, thumb drive, or through a cloud service.

Course Schedule

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

Week	Dates	Course Learning Module	Chapter	Weekly Assignments	Due Date
Week 1	1/5-1/7	**Module 1: SWE Introduction and Ethics**	SWE Introduction		
Week 2	1/10-1/14		ACM Ethics	Ethics Case Analysis	1/14
Week 3	1/17-1/21	**Module 2: Open Source**	Open Source/Code Review	Skills Survey Open Source Project	1/21 1/28
Week 4	1/24-1/28		10: DevOps and Code Management	Configuration Management	2/1
Week 5	1/31-2/4	**Module 3: Product Planning and Design**	1: Software Products/ 2: Agile PM	Project Proposal	2/4
Week 6	2/7-2/11		3: Features, Scenarios, Stories	User Stories Product Backlog	2/18
Week 7	2/14-2/18		4: Software Architecture	Project Models	2/25
Week 8	2/21-2/25		Presentation Week	Sprint Retrospective/ Peer Evaluation	3/4
Week 9	2/28-3/4		9: Software Testing	Software Test	3/25
Week 10	3/7-3/11		Spring Break		

Week 11	3/14-3/18	**Module 4: Product Execution**	5: Cloud Based Architecture		
Week 12	3/21-3/25		6: Microservices Architecture		
Week 13	3/28 - 4/1		Sprint 1 Presentation Week	Sprint Retrospective/Peer Evaluation	4/8
Week 14	4/4-4/8		7: Security and Privacy		
Week 15	4/11-4/15		8: Reliable Programming		
Week 16	4/18-4/22		Final Presentation	Team Project Submission and Product Documentation

Peer Evaluation

SE Research Project | 4/20

4/22

4/27 |
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