



## **Syllabus for Foundation of Software Engineering**

**Credits: 3**  
**MSIT 5250**

### ***Instructor Contact Information:***

You can always send your instructor a private message through the Moodle Messaging system. Once logged into your course, click your instructor's Moodle profile page to be provided the ways in which to communicate with your instructor. Your instructor's email will also be listed in their profile.

### ***Course Description***

This course equips students with essential knowledge and practical skills in software development, design, testing, maintenance, and documentation. This course aligns with current industry trends, focusing on AI and Machine Learning methodologies, DevOps practices, cloud technologies, AI integration, and cybersecurity. It emphasizes real-world problem-solving through project-based learning and hands-on assignments. Students will explore roles such as software architect, quality assurance engineer, full-stack developer, mobile developer, security engineer, and project manager. The course highlights collaborative teamwork, software lifecycle management, and business impact analysis. By the end of the course, students will be able to apply software engineering principles effectively in diverse professional settings.

### ***Learning Objectives***

#### **Program Learning Objectives**

PLO 1: Students will be able to apply the principles of information technology, computer science, business administration and other disciplines to the analysis of complex computing problems.

PLO 2: Students will be able to design and evaluate solutions to complex computing problems using industry-recognized best practices and standards.

PLO 3: Students will be able to analyze user needs in the development and implementation of computing-based solutions.

PLO4: Students will be able to assess the ethical considerations in the development, implementation, evaluation, and management of IT systems.

PLO 5: Students will be able to construct clear, well-organized arguments supported by credible research-based evidence.

#### **Course Learning Objectives:**

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



1. Apply fundamental software engineering concepts in the software lifecycle, covering design, development, testing, maintenance, and documentation.
2. Explain industry trends such as AI and Machine Learning methodologies, DevOps, cloud technologies, and cybersecurity.
3. Employ problem-solving through project-based learning and real-world software engineering applications.
4. Explore roles in software engineering, including architect, QA engineer, full-stack developer, and security engineer.
5. Assess key skills, manage the software lifecycle, and evaluate the business impact of software solutions.

### **Co/Prerequisites**

None.

### **Course Materials**

UoPeople courses use open educational resources (OER) and other materials specifically donated to the University with free permissions for educational use. Therefore, students are not required to purchase any textbooks or sign up for any websites that have a cost associated with them. This course does not contain a main textbook; resources for all required reading will be provided in the course Learning Guide for each week.

### **Technology Requirements**

To fully engage in this course and make the most of your experience, the course must be taken on a PC. You also must have regular access to the internet (high speed is preferred).

Additionally, there are software requirements and installation, and you can refer to the following details:

You will need GitLab and Draw.io to be installed on your computer. For you to work on the various programming assignments in this course

- You can download and install Github application *GitLab*. (2022). GitLab B.V. on your computer using the link <https://github.com/>
- You can download and install drawio application on your computer using the link <https://www.drawio.com/>

The instructions for software installation have been integrated into the relevant units according to the specific topics.

Campus Tech Support Email for English programs: [support@uopeople.edu](mailto:support@uopeople.edu)

### **Regular and Substantive Interaction**

Your instructor will interact and engage with each of you on a regular basis throughout the term to support your learning. They will provide direct instruction related to the course's learning objectives, respond to your



questions, grade and/or provide feedback on your submitted coursework, post regular announcements, and engage in the course discussion areas regarding academic course content when appropriate.

## ***Course Expectations and Learning Activities***

### **Discussions**

Some units in this course require that you complete a Discussion Assignment. You are required to develop and post a substantive response to the Discussion Assignment in the Discussion Forum. A substantive response is one that fully answers the question that has been posed by the instructor. In addition, you must extend the discussion by responding to at least two (2) of your peers' postings in the Discussion Forum. Grading rubrics are provided in the Discussion Forum for each week. Discussion Forums are only active for each current and relevant learning week, so it is not possible to contribute to the forum once the learning week has come to an end.

### **Assignment Activities**

The assignment activities are graded by your instructor. The grading rubric is listed under the assignment instructions. The grading rubric is a document that outlines the criteria that your instructor will use to grade your work.

### **Class Introduction**

This section is your opportunity to introduce yourself to your classmates and create a vibrant learning community. By sharing your background, interests, and goals, you can create meaningful connections and discover commonalities with your peers.

### **Course Forum**

The Course Forum is the place to raise issues and questions relating to the course. It is regularly monitored by the instructors and is a good place to meet fellow students taking the same course. While it is not required to participate in the Course Forum, it is highly recommended.

## ***Participation Expectations***

- Be involved and active in your courses.
- Be highly motivated and disciplined.
- Check the course homepage, calendar and assignment page, the course syllabus, your UoPeople email, and the Moodle course discussion forums several times a week.
- Post the required comments and responses to the discussion forum for your course.
- Keep up with your assignments and online quizzes/exams (as applicable) and manage your time well. These quizzes test your knowledge and comprehension of the new content.
- Participate actively in class discussions.
- Be polite and respectful.
- Use good grammar and correct spelling.
- Be honest and original. Plagiarism will not be tolerated in any online course.

Non-participation is characterized by lack of any assignment submissions, inadequate contributions to the Discussion Forums, and/or lack of peer feedback to Discussion/Written Assignments. Also, please note the following important points about course participation:

- Assignments must be submitted on or before the specified deadline. A course timeline is provided in the course schedule, and the instructor will specify deadlines for each assignment.



- Occasionally there may be a legitimate reason for submitting an assignment late. Most of the time, late assignments will not be accepted and there will be no make-up assignments.
- All students are obligated to inform their instructor in advance of any known absences which may result in their non-participation.

### ***Feedback and Suggestions***

We value your input and would encourage you to complete the end of course survey to provide us with course feedback and suggestions, and report issues

### ***Evaluation and Grading Scale***

#### **Grading Weights:**

Category	% Of Grade	Grade Items (Learning Activities)	Associated Learning Objectives/Outcomes
<b>Discussions</b>	40%	1. Unit 1 – Discussion Forum 2. Unit 3 – Discussion Forum 3. Unit 4 – Discussion Forum 4. Unit 5 – Discussion Forum 5. Unit 6 – Discussion Forum 6. Unit 8 – Discussion Forum	● Unit 1 – CLO1 ● Unit 3 – CLO2 ● Unit 4 – CLO3 ● Unit 5 – CLO4 ● Unit 6 – CLO4 and CLO5 ● Unit 8 – CLO5
<b>Assignment Activities</b>	60%	1. Unit 2 – Assignment Activity 2. Unit 4 – Assignment Activity 3. Unit 5 – Assignment Activity 4. Unit 7 – Assignment Activity	● Unit 2 – CLO1 ● Unit 4 – CLO3 ● Unit 5 – CLO4 ● Unit 7 – CLO3
<b>TOTAL 100%</b>			

#### **Grading Scale:**

Letter Grade	% Grade	Grade Points
A+	98%-100%	4.00
A	93-97%	4.00
A-	90%-92%	3.67
B+	88%-89%	3.33
B	83%-87%	3.00
B-	80%-82%	2.67
C+	78%-79%	2.33
C	73%-77%	2.00
C-	70%-72%	1.67
D+	68-69%	1.33
D	63%-67%	1.00



Letter Grade	% Grade	Grade Points
D-	60%-62%	0.67
F	<60	0.00
W	N/A	N/A

*Students may also be granted Withdrawal (W), if they withdraw from the course, or an Incomplete (I) should their circumstances permit.*

*A student who feels they were graded unfairly, or who seeks to dispute a grade, may initiate a grade appeal process. Refer to [University Policies](#) for more information on withdrawals and appeals.*

## Course Schedule

### UNIT 1: Introduction to Software Engineering Concepts

- Watch/Read early enough in the unit to enable completion of the related assignments - suggest by 3rd-4th day of the unit.
- Discussion first response due by the 4th day of the week.
- Discussion replies due by the 7th day of the week.

### UNIT 2: Software Design and Architecture

- Watch/Read early enough in the unit to enable completion of the related assignments - suggest by 3rd-4th day of the unit.
- Assignment Activity submission due 7th day of the week.

### UNIT 3: Emerging Industry Trends in Software Engineering

- Watch/Read early enough in the unit to enable completion of the related assignments - suggest by 3rd-4th day of the unit.
- Discussion first response due by the 4th day of the week.
- Discussion replies due by the 7th day of the week.

### UNIT 4: Advanced Problem-Solving in Software Engineering

- Watch/Read early enough in the unit to enable completion of the related assignments - suggest by 3rd-4th day of the unit.
- Discussion first response due by the 4th day of the week.
- Discussion replies due by the 7th day of the week.
- Assignment Activity submission due 7th day of the week.

### UNIT 5: Role-Specific Skills in Software Engineering

- Watch/Read early enough in the unit to enable completion of the related assignments - suggest by 3rd-4th day of the unit.
- Discussion first response due by the 4th day of the week.
- Discussion replies due by the 7th day of the week.
- Assignment Activity submission due 7th day of the week.



## **UNIT 6: Team Collaboration and Agile Practices**

- Watch/Read early enough in the unit to enable completion of the related assignments - suggest by 3rd-4th day of the unit.
- Discussion first response due by the 4th day of the week.
- Discussion replies due by the 7th day of the week.

## **UNIT 7: Real-World Applications and Problem Solving**

- Watch/Read early enough in the unit to enable completion of the related assignments - suggest by 3rd-4th day of the unit.
- Assignment Activity submission due 7th day of the week.

## **UNIT 8: Evaluating the Business Impact of Software Solutions**

- Watch/Read early enough in the unit to enable completion of the related assignments - suggest by 3rd-4th day of the unit.
- Discussion first response due by the 4th day of the week.
- Discussion replies due by the 7th day of the week.

## ***University Policies & Processes***

### **Late Work/Make-up Policy**

Please review the [Late Work](#) policy in the University Catalog.

### **Code of Conduct**

University of the People expects that students conduct themselves in a respectful, collaborative, and honest manner at all times. Harassment, threatening behavior, or deliberate embarrassment of others will not be permitted. Any conduct that interferes with the quality of the educational experience is not allowed and may result in disciplinary action, such as course failure, probation, suspension, or dismissal. For more information on this topic, please review the [General Code of Conduct](#) in the University Catalog.

### **Procedures for Resolving Academic Grievances/Appeals**

If you believe that the final grade you received for a course is erroneous, unjust, or unfair, please contact your course instructor. This must be done within seven days of the posted final grade. For more information on this topic, please review the [Grievance Policy](#) and [Grade Appeals](#) Procedure in the University Catalog.

### **Withdrawal and Drop Date Policy**

Please review the [Course Drops and Withdrawals](#) policy of the University Catalog.

### **Academic Integrity and Plagiarism**

Please review the [Code of Academic Integrity](#) in the University catalog.

### **Intellectual Property**

UoPeople respects the intellectual property rights of others who seek to create, preserve, and disseminate knowledge through teaching, collective learning, and continued research at the University at large. For more information on this topic, please review the [Intellectual Property](#) policy in the University catalog.



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### **Reasonable Accommodations**

Contact your Program Advisor to open a request for support.

### ***Student Support Services & Resources***

#### **English Programs**

Academic Advising: [advising@uopeople.edu](mailto:advising@uopeople.edu)

Financial Aid: [financial.aid@uopeople.edu](mailto:financial.aid@uopeople.edu)

Library Resources: [library@uopeople.edu](mailto:library@uopeople.edu)

Payment Processing: [payments@uopeople.edu](mailto:payments@uopeople.edu)

Student Services: [student.services@uopeople.edu](mailto:student.services@uopeople.edu)

Technical Support: [support@uopeople.edu](mailto:support@uopeople.edu)