University of Computer Studies, Yangon
2019-2020 Academic Year
Faculty of Information Science

Course Code	IS-101	Course Title	Software Engineering I
Semester	Second	Course Coordinator	Dr. Khine Khine Oo
No of Credit Units	3		
Semester Hours	40 Hours		
Weeks	16 Weeks		
Period	48 Periods (1 period :50 Mins) 3 periods per week		

Course Description

The purpose of this course is to enable students to know how to build successful software products using appropriate process models that are ready to meet the challenges of twenty-first century. Students can use their software engineering knowledge to develop a clear understanding of requirements and lead to the specification of requirements and design representation for software to be built.

Course Objectives

- To understand the software process models and software engineering practice

- To understand measurement, planning and self-direction as key ingredients for successful software process

- To understand why agile methods are important for current modern economy
- To understand requirement engineering is a solid foundation for design and construction
- To understand the requirement modeling that describe what the customer requires, establish a basic for the creation of software design, valid requirements when the software is built

Learning Outcomes

Students who complete the course will be

- Know what software engineering is and why it is important.

- Know the activities that are involved in the system engineering process.

- Understand the concept of software processes and software process models.

- Emphasize the concept of user requirements and system requirements and different types of requirements and how they are organized into a requirement specification document.

- Understand the differences between functional and non-functional requirements

- Understand the principals of requirements of engineering activities and their relationship

- Know the several techniques of requirements elicitation, analysis, negotiation, validating

- Know the importance of requirements monitoring and requirements review.

- Understand why requirement management is necessary

Prerequisites

None

Major Topics Covered in the Course

(1) Software and Software Engineering
(2) Process Models
(3) Agility and Process
(4) Recommended Process Model
(5) Understanding Requirements
(6) Requirements Modeling - A Recommended Approach

Text Book

Software Engineering: A Practitioner's Approach, 9th Edition, Roger Pressman and Bruce Maxim, McGraw Hill Education, 2019.

References

Software Engineering: A Practitioner's Approach, 8th Edition, Roger Pressman and Bruce Maxim, McGraw Hill Education, 2014.

Software Engineering: A Practitioner's Approach, 7th Edition, Roger Pressman, McGraw Hill Education, 2010.

Learning Assessments

Final Exam	- 50%
Class Participation	-10 %
Assignment	- 10%
Quiz	- 10%
Practical Assessment	- 10%
Project	- 10%

Course Policy

Participation

Attendance is a prerequisite, not a substitute for class participation. Participation mechanisms include: (1) responding to questions asked in class, (2) initiating discussions on new points in class and (3) discussing cases and offering solutions to problems .

Tutorial Test and Quizzes

The student is expected to complete the tutorial tests and Quizzes at the scheduled time. If a tutorial test or quiz is missed, there will be no make-ups tutorial or quiz for missing student. No make –ups test or resubmission and extra credit test are not available in this course. Tutorial tests and quizzes are based upon all learning objectives to be reached before the scheduled date.

Assignment

There will be theory and practical assignments which must be submitted. The assignment may be individual or Group. The individual assignment is individual work and tests the ability of each student. Group assignment is team work and tests the ability of collaboration of student to complete the given work.

The due dates for the given assignments are going to be declared by the instructor and there will be no make-ups or individual extensions. No make –ups Assignment or resubmission and extra credit assignment are not available in this course.

In addition to the hardcopies of assignments, electronic (and certifiably virus free) copies should be e-mailed to instructor on the date they are due.

Project

The paper project will be prepared and make the presentation at the end of first semester. The project must be based on the lecture of this course and it is group assignment. The project guideline and schedule are declared by the instructor.

Intellectual Honesty

By departmental policy, the discovery of plagiarism (i.e. copying from another's assignment paper or practical solution or tutorial paper) will result in a reduction of result marks of relevant students.

Tentative Lecture

IS-101 **: Software Engineering I**   **Second Semester**
Text Book **: Software Engineering: A Practitioner's Approach, 9th Edition,**
     Roger Pressman and Bruce Maxim
Periods **: 48 Periods for 16 Weeks (3 Periods * 16 Weeks)**

No	Content	Weeks	Remark
1	Software and Software Engineering		
	1.1 Defining the Discipline		
	1.2 The Software Process		
	1.3 Software Engineering Practice	Week 1	
	1.4 Software Development Myths		
	1.5 Summary	Week 2	
2	Process Models		
	2.1 Prescriptive Process Models		
	2.2 Specialized Process Models	Week 3	
	2.3 The Unified Process		
	2.4 Process Technology	Week 4	
	2.5 Product and Process		
	2.6 Summary	Week 5	
3	Agility and Process		
	3.1 What is Agility?	Week 6	
	3.2 Agility and the Cost of Change		
	3.3 What is an Agile Process?		
	3.4 Extreme Programming	Week 7	
	3.5 A tool Set for the Agile Process		
	3.6 Summary	Week 8	
4	Recommended Process Model		
	4.1 Core Principles		
	4.2 Work Practices	Week 9	
	4.3 Summary	Week 10	
5	Understanding Requirements		
	5.1 Requirement Engineering		
	5.2 Eliciting Requirements	Week 11	
	5.3 Developing Use Cases	Week 12	
	5.4 Negotiating Requirements		
	5.5 Validating Requirements		
	5.6 Summary	Week 13	
6	Requirements Modeling - A Recommended Approach		
	6.1 Requirement Analysis	Week 14	
	6.2 Analysis Packages		
	6.3 Summary	Week 15	
7	Project	Week 16	