SIR SYED UNIVERSITY OF ENGINEERING & TECHNOLOGY
SOFTWARE ENGINEERING DEPARTMENT

COURSE INFORMATION SHEET

Session: Spring-2021

Course Title: Introduction to Software Engineering

Course Code: SWE - 106

Credit Hours: 2+0

Pre-Requisite: Introduction to Computing, Programming Fundamentals

COURSE OBJECTIVE:

This course provides rich learning experiences to educate future software engineers for success in a rapidly evolving computing field. The program help students lay the foundation for achievement of the objectives like agile software developers with a comprehensive set of skills, capable of team and organizational leadership in computing project settings and have a broad understanding of ethical application of computing based solutions to the society and organizations. Also, acquire skills and knowledge to advance their career including professional, communication, analytic and software technical skills.

COURSE OUTLINE:

Overview of Software Engineering, Professional software development, Software engineering practice, Software process models, Agile software development, Requirements engineering, Functional and non-functional requirements, Models and model driven engineering, Architecture and Design, UML diagrams, Design patterns, Software testing and quality assurance, Software evolution, Project management and project planning, configuration management, Software Process improvement.

COURSE LEARNING OUTCOMES:

No.	Course Learning Outcomes (CLOs)	Bloom's Taxonomy
CLO 1	Describes a variety of different views of software process, considering all important process models and addressing the debate between prescriptive and agile processes	C1 (Remembering)
CLO 2	Explains the analysis and design methods with an emphasis on modeling and Web applications domains	C2 (Understanding)
CLO 3	Discovers the concepts, procedures, techniques, and methods on an effective testing strategy.	C3 (Applying)

GRADING POLICY:

Assessment Tools	Percentage
Quizzes	10%
Assignments	10%
Midterm Exam	30%
Final Exam	50%
TOTAL	**100%**

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Recommended Books:

- **Software Engineering (A Practitioner's Approach) By Roger S. Pressman, McGraw Hill (7th Edition)**
- **Software Engineering (A Practitioner's Approach) By Roger S. Pressman & Maxim B. R., McGraw Hill (8th Edition)**

Reference Books:

- **Software Engineering by Sommerville I., Pearson (9th Edition)**
- **Software Engineering by Sommerville I., Pearson (10th Edition)**

LECTURE PLAN

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Week No.	Week Dates	Topics	Required Reading	Key Dates
1	15-02-2021 to 19-02-2021	Hardware and Software Failure Curves, Software Development Life Cycle	R.S.P.-Chap 1: pg. 3 - 9 pg. 4 - 7, 12-14	
2	22-02-2021 to 26-02-2021	Process Models, Generic Process Model, Prescriptive Process Evolutionary Models,	R.S.P. -Chap 2: pg. 31-35	
3	01-03-2021 to 05-03-2021	Concurrent Models, Specialized Process Models, Unified Process, Team Software Process, Personal Software Process	R.S.P. -Chap 2: Pg. 38-45, 46-48 pg. 50-52	Quiz # 1
4	08-03-2021 to 12-03-2021	What is Agile and Agility, Agility Concepts, Agile Process and Implementation	R.S.P. -Chap 2: pg. 56-58, 67-71	Assignment # 1
5	15-03-2021 to 19-03-2021	Extreme Programming, XP, Industrial, Agile Models, Adaptive, Scrum	R.S.P. -Chap 3: pg. 72-79	
6	22-03-2021 to 26-03-2021	Dynamic Systems Development Method, Crystal, Project Management Concepts , Principles that Guide Process	R.S.P. -Chap 3: pg. 72-84, 85-89 Chap 4: pg. 97-100 pg. 647-655	Assignment # 2
7	29-03-2021 to 02-04-2021	Requirements Engineering, Eliciting Requirements, Developing the Use Cases, Class Diagram and State Diagrams	R.S.P. -Chap 5: pg. 120-126, 127-134, 135-144	Quiz # 2

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8		**Midterm Examination** **(05-04-2021 to 10-04-2021)**		
9	12-04-2021 to 16-04-2021	Design Process, Design Concepts, Design Concepts and Model	R.S.P. -Chap 8: pg. 225-230 pg. 231-237	
10	19-04-2021 to 23-04-2021	Design Pyramid for Web apps, Web App Interface Design, Object Oriented Hypermedia Design Method OOHDM	R.S.P. -Chap 13: pg. 374-380 pg. 381-385 pg. 385-392	
11	26-04-2021 to 30-04-2021	Software Quality, Software Quality Dilemma, Achieving Software Quality, Quality Control Assurance	R.S.P. -Chap 14: pg. 399-402 pg. 402-406 pg. 407-413	
12	03-05-2021 to 07-05-2021	Test Strategies for Conventional Software, Object Oriented Software and Web Apps, Internal and External Views of Testing	R.S.P. -Chap 17: pg. 450-457 pg. 457-467 pg. 468-476	Assignment # 3
13	10-05-2021 to 14-05-2021	White Box Testing, Black Box Testing, Model Based Testing, Basis Path Testing	R.S.P. -Chap 18: pg. 482-494 pg. 495-501 pg.502-507	
14	17-05-2021 to 21-05-2021	What is Client Server, Real Time, Testing Patterns, Software Configuration Management	R.S.P. -Chap 18: pg. 502-507 pg. 502-507 pg. 585-595	Quiz # 3
15	24-05-2021 to 28-05-2021	The Software Configuration Management Process Configuration Management for Web Apps	R.S.P. -Chap 22: pg. 596-607	
16	31-05-2021 to 04-06-2021	Observations on Estimation	R.S.P. -Chap 26: pg. 692-698	
		Final Examination **(07-06-2021 to 19-06-2021)**		