COMSATS University Islamabad
Department of Computer Science
Course Description Form (CDF)

Course Information

Course Code: **CSC291** | Course Title: **Software Engineering Concepts**
Credit Hours: **3(3,0)** | Lecture Hours/Week: **3**
Lab Hours/Week: **0** | Pre-Requisites: **None**

Catalogue Description:

This course introduces the different software process models by illustrating its phases and principles of software engineering. Topics include Overview of Software Engineering; Software Process Models; Requirement Engineering Concepts; Software Design; Design Modeling; Software Quality Engineering; Software Project Management; Software Maintenance and Software Evolution.

Unit wise Major Topics:

Unit	Topic	No of teaching hours
1.	Software Engineering: Overview, and Process Models.	6
2.	Requirement Engineering: Concepts, Elicitation, Analysis, Specification, Modeling and Validation.	9
3.	Software Design: Concepts, Architectures, and Modeling.	12
4.	Software Quality Engineering: Concepts, and Approaches to Software Testing.	12
5.	Overview of Software Project Management.	3
6.	Software Maintenance and Software Evolution.	3
Total Contact Hours		**45**

Mapping of CLOs and SOs

Sr.#	Unit #	Course Learning Outcomes	Blooms Taxonomy Learning Level	SO
CLO-1	1	Explain the concept of software engineering along with its processes and deliverables.	*Understanding*	1
CLO-2	2	Identify functional and non-functional requirements for a medium sized software system.	*Analyzing*	2
CLO-3	3	Construct appropriate design models for the structure and behavior of a medium sized software system.	*Applying*	2-4
CLO-4	4	Apply software testing and quality assurance techniques to medium sized software.	*Applying*	2,4
CLO-5	5-6	Demonstrate software project management skills and maintenance process.	*Applying*	2,4

CLO Assessment Mechanism

Assessment Tools	CLO-1	CLO-2	CLO-3	CLO-4	CLO-5
Quizzes	Quiz 1	Quiz 2	Quiz 3	Quiz 4	-
Assignments	-	Assignment 1	Assignment 2	Assignment 3	Assignment 4
Mid Term Exam	Mid Term Exam	Mid Term Exam	Mid Term Exam	-	-
Final Term Exam	Final Term Exam				

Text and Reference Books

Textbooks:

1. Software Engineering: A Practitioner's Approach, Roger S. Pressman & Bruce R. Maxim, McGraw-Hill, 2020.
2. Engineering Software Products: An Introduction to Modern Software Engineering, Ian Sommerville, Pearson Education Limited, 2021.

Reference Books:

1. Software Engineering, Ian Sommerville, Pearson Education Limited, 2016.
2. Software Engineering with UML, Bhuyan Unhelkar, CRC Press, 2018.