GUJARAT UNIVERSITY

K. S. SCHOOL OF BUSINESS MANAGEMENT

[Five Years' (Full-time) Integrated Degree Course]

Semester-5 [M.Sc. (CA & IT)]

Subject Code: - KS_C_CC-353
Subject Name: - Software Engineering
Course Credit: - 3

Objective:

Learning Development Process, Select and Apply Appropriate Metrics to Estimate Understand, Analyze and Model User's Requirements, Select Appropriate Process Model apply it to All Stages of Software Development Life Cycle, Select and Apply Appropriate Design Methodology, Decide the Feasibility of Using and Applying Agile Software Size, Effort, and Cost. Prepare Project Schedule, and Monitor the Project Progress, Systems Analysis and Design, Database Management System, Algorithm and Programming knowledge

Unit No.	Course Content	Weight-age (%)
1	**Software and Software Engineering :-** Nature of Software , web applications, software engineering, Software Process , practice, Software Myths **Software Engineering Process Models :-** Prescriptive Process Models **Agile Development:-** Agile Process, Extreme Programming (XP), Brief Overview of Other Agile Process Models: Adaptive Software Development, Scrum	**(20%)**
2	**Requirements Modeling:-**Requirements Engineering, Groundwork for Understanding of Software Requirements, Negotiating Requirements, Validating Requirements, Requirement Analysis, **Design Concepts :-** Software Quality Guidelines and attributes, Design Concepts, Design Model **Architectural Design :-** Architectural Styles, Architectural Design	**(20%)**
3	**Component-Level Design :-** Three Views of Component, Designing Class-Based Components, **User Interface Design :-** Golden Rules of User Interface Design; WebApp Interface Design **WebApp Design :-** Design Pyramid for WebApp; WebApp	**(20%)**

	Interface Design; Aesthetic Design of WebApp; Content Design for WebApp; Architecture Design; Navigation Design; Component-Level Design	
4	**Quality Concepts :-** What is Quality, Software Quality, **Software Review : -** Overview of Review Techniques , Cost impact of Software Defect; Defect Amplification & Removal , Review Metrics , Informal Review, Formal Technical Review **Software Testing :-** A Strategic Approach to Software Testing, issues; Testing Strategies for conventional software, object oriented software and Webapp, Validation Testing, System Testing	**(20%)**
5	**Testing Conventional Application :-** Software Testing Fundamental **,** White-Box Testing, Basic Path Testing , Black Box Testing, **Product Metrics :-** Framework for Product Metrics: measures, metrics and Indicators, Function Based Metrics ;Metrics for source code, Metrics for Maintenances **Mobile App Design and Testing strategies :-** Technical consideration developing mobile app, mobility environment, Testing strategies, comparition with conventional approach, testing tool and environment	**(20%)**

Recommended Lecture Scheme: Approximately 40 to 45 hours in a semester

Recommended Practical Scheme: Not Applicable

Assignment: Minimum five assignments should be given.

Main Reference Books:

1. Roger S. Pressman, “Software Engineering – A Practitioner’s Approach”, TATA McGraw Hill Publications, 7th Edition.
2. *Roger S. Pressman, “Software Engineering – A Practitioner’s Approach”, TATA McGraw Hill Publications, 8th Edition.

Reference Books:

1. Sommerville, “Software Engineering”, Pearson Education,8th Edition.
2. Waman S. Jawadekar, “Software Engineering – Principles and Practices”, TMGH Publication
3. Rajib Mall, Fundamentals of Software Engineering, Prentice-Hall, 2011.
4. Jibitesh Mishra and Ashok Mohanty, “Software Engineering”, PERSON
5. Subhajit Datta, “Software Engineering Concept and Application”, OXFORD
6. Pankaj Jalote, “Software Engineering – A Precise Approach”, Wiley India
7. Waman S. Jawadekar, “Software Engineering – A Primer”, TMGH Publication
8. Shari Lawrence Pfleeger and Joanne M. Atlee, “Software Engineering – Theory and Practice”, Pearson Education, 3rd Edition.