Krantiguru Shyamji Krishna Verma Kachchh University, Bhuj
Master of Science (Computer Applications & Information Technology)
Semester: VI

Paper Code: CECS613		**Total Credit :** 4
Title of Paper: Software Engineering		**Total Marks :** 70 **Time :** 3 Hrs
Unit	**Description**	**Weighting**
I	**Introduction** Introduction : Software and Software Engineering General Characteristics of Software Process Phases in Software development Effort and Error Distribution Process Models : Waterfall, Prototype, Iterative enhancement, spiral Software metrics : introduction, product metrics, process metrics	**20%**
II	**Requirement Specification and Software Project Planning** Introduction : Software Requirement Specification (SRS) and Needs Problem Analysis - Structuring Information Introduction to UML Software Requirement Specifications (SRS), Characteristics and Components of SRS Specification language (Structured English, Regular Expression and Decision Table) Structure of SRS, Validation of SRS	**20%**
III	Introduction: Software Projects, Planning, Categories of Software projects Overview of Cost estimation, Uncertainty in cost estimation, size estimation, COCOMO Model (with example) Project Monitoring Plan : Time sheets, Reviews, Cost- schedule milestone and Earned value method Software Quality Assurance Plans (SQAP) Overview of Risk Management **Software Design** Introduction : System Design Design Objectives and Design Principles Design Concepts - Top down and Bottom up approach, Problem Partition, Abstraction, Modularity, Module Level concept, Coupling, Cohesion	**20%**
IV	Overview of structured design Function v/s Object Oriented approach Design Specification, Verification Introduction: Detailed Design Module Specification, Desirable properties, functional module specification, Data abstraction specification PDL, Logic/ Algorithm Design Design Verification – Design Walkthrough, Critical Design review, Consistency checkers	**20%**
V	**Coding and Testing** Introduction: Coding, Top Down and Bottom Up approach for coding Structured programming, Information Hiding Programming style, Internal documentation	**20%**
Basic Text & Reference Books :-		
1.	An Integrated Approach to Software Engineering : By Pankaj Jalote, Narosa Publishing House, Second Edition,1997	
2.	Software Engineering a practitioner's approach : By Roger S. Pressman, Tata McGraw-Hill, 5th Edition	
3.	Software Engineering Fundamentals, By Richard Fairley, Tata McGraw Hill	
4.	Software Engineering By Ian Somnmerville, Addition- Wesley, 5th Edition, 2000	

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Unit	**Description**		**Total Marks**
I	Q.1 (A) Answer the Following. (Definitions, Blanks, Full Forms, True/False, Match the Following)	06	14
	Q.1 (B) Medium / Long Questions. (With Internal Option)	08	
II	Q.2 (A) Answer the Following. (Definitions, Blanks, Full Forms, True/False, Match the Following)	06	14
	Q.2 (B) Medium / Long Questions. (With Internal Option)	08	
III	Q.3 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.3 (B) Medium / Long Questions. (With Internal Option)	08	
IV	Q.4 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.4 (B) Medium / Long Questions. (With Internal Option)	08	
V	Q.5 (A) Short / Medium Questions (With Internal Option)	06	14
	Q.5 (B) Medium / Long Questions. (With Internal Option)	08	