GUJARAT TECHNOLOGICAL UNIVERSITY
DIPLOMA IN INFORMATION TECHNOLOGY
Semester: 4

Subject Name   SOFTWARE ENGINEERING

Sr.No	Course content
1.	**INTRODUCTION TO SOFTWARE AND SOFTWARE ENGINEERING** 1.1 Evolution of software 1.2 Definition of software 1.3 Software Characteristics 1.4 Software Applications

2.	**SOFTWARE PROCESS AND PROCESS MODEL**
	2.1 Software Engineering as layered technology
	2.2 The Software Process
	2.3 Linear Sequential Model
	2.4 Prototyping Model
	2.5 RAD Model
	2.6 Evolutionary Software Process Model
	      2.6.1 Incremental Model
	      2.6.2 Spiral Model

3.	**SYSTEM REQUIREMENT SPECIFICATIONS**
	3.1 An Example: What is the need?
	3.2 Role and Tasks of System Analyst
	3.3 Data Dictionary
	3.4 Feasibility Analysis
	3.5 Data Flow Diagrams
	      3.5.1 Context Diagram
	      3.5.2 Logical Data Flow Diagram
	      3.5.3 Physical Data Flow Diagram

4.	**SOFTWARE PROJECT MEASUREMENT**
	4.1 Measures, Metrics and Indicators
	4.2 Software Measurement
	      4.2.1 Size-Oriented Metrics
	      4.2.2 Function-Oriented Metrics
	4.3 Software Quality Measures
	4.4 Scheduling and Time line Chart

5.	**SOFTWARE PROJECT PLANNING** 5.1 Software Scope 5.2 Resources 5.3 Estimation Techniques 5.4 Empirical Estimation Model 5.5 Outsourcing
6.	**RISK MANAGEMENT** 6.1 Risk Strategies 6.2 Software Risks 6.3 Risk Identification

	6.4 Risk Projection 6.5 RMMM Plan
7.	**SOFTWARE QUALITY ASSURANCE** 7.1 Quality Concepts 7.2 SQA 7.3 Software Reviews and FTR 7.4 Defect Amplification Model 7.5 Software Reliability
8.	**SOFTWARE TESTING METHODS** 8.1 Software Testing Fundamentals 8.2 Test CASE Design 8.3 White Box Testing 8.4 Basis Path Testing 8.5 Control Structure Testing 8.6 Black Box Testing 8.7 Unit Testing 8.8 Integration Testing 8.9 Validation Testing 8.10 System Testing 8.11 What is CASE?
9.	**FUTURE PATH** 9.1 Importance of Software 9.2 The Scope Of Change 9.3 The "New" Software Engineering Process 9.4 New Modes of Representation

LABORATORY EXPERIENCES

1. To sturdy software characteristics.

2. To study different types of software applications.

3. To understand and development various process models.

4. To study Logical Data Flow Diagrams.

5. To study Logical Data Flow Diagrams.

6. To study & Explain software measurement metrics

7. To study Project Estimation.

8. To study software risks.

9. To Study Software Quality Assurance (S.Q.A.) concept.

10. To study different software testing methods

11. Overview of CASE Tool.

REFERENCES BOOKS

1. Software Engineering Somerville – Pearson education PHI

2. Software Engineering 4th Edition Roger S. Pressman MGH

3. Fundamentals of Software Engineering Rajib Mall, PHI

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