NATIONAL INSTITUTE OF TECHNOLOGY: TIRUCHIRAPPALLI –620 015.
Department of Computer Science & Engineering

COURSE PLAN

1. Course Outline			
Course Title	Software Engineering		
Course Code	CSPC34		
Department	CSE	**No. of Credits**	3-0-1-4
Pre-requisites Course Code	NIL	**Faculty Name**	Dr. M. Amutha Prabakar
E-mail	amuthap@nitt.edu	**MobileNo.**	9042470330
Course Type	PC		

2. Course Overview
Teaches and gives Knowledge of Software Engineering design principles and complexity. Explains various software development model with case studies

3. Course Objectives
- To understand the Software Engineering Practice& Process Models   - To understand Design Engineering, Web applications, and Software Project Management   - To gain knowledge of the overall project activities

4. Course Outcomes (CO)
1. Assessment in each module gives the overall Software engineering practice 2. Ability to enhance the software project management skills 3. Ability to comprehend the systematic methodologies involved in SE 4. Ability to design and develop a software product in accordance with SE principles

5. Course Outcome (CO)	Aligned Programme Outcome (PO)							
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8
Assessment in each module gives the overall Software engineering practice	B	M	M	S	S	S	S	S
Ability to enhance the software project management skills	B	S	M	M	S	S	S	S
Ability to comprehend the systematic methodologies involved in SE	B	B	M	S	S	S	S	B

Ability to design and develop a software product in accordance with SE principles	B	B	M	M	M	S	S	S

$$S = 0.6 \qquad M = 0.4 \qquad B = 0.0$$

5. Course Teaching and Learning Activities

Weeks	hours	Title	Mode of Delivery
1	1	Introduction: Role of Software Engineer Software Components	Chalk and board
	2	Software Characteristics, Software Crisis	Chalk and board
	3	Software Engineering Processes	Chalk and board, PPT
2	4	Similarity and Differences from Conventional Engineering Processes, Quality Attributes	Chalk and board, PPT
	5	Assessment Discussion Class How Software Engineering Changes? Software Development Life Cycle (SDLC) Models: Water Fall Model, Prototype Model, Spiral Model	Chalk and board, PPT
	6	Evolutionary Development Models, Iterative Enhancement Models, Choosing a social relevant problem - Summary Team Report	Chalk and board, PPT
3	7	Requirement Engineering Process: Elicitation, Analysis	Chalk and board, PPT
	8	Documentation, Review and Management of User Needs	Chalk and board, PPT
	9	Feasibility Study	Chalk and board, PPT
4	10	Information Modelling	Chalk and board, PPT
	11	Data Flow Diagrams	Chalk and board, PPT
	12	Entity Relationship Diagrams, Designing the architecture	Chalk and board, PPT
5	13	Assessment: Impact of Requirement Engineering in their problem	Chalk and board, PPT
	14	Decision Tables, SRS Document, IEEE Standards for SRS	Chalk and board, PPT
	15	Architectural design, component level design, user interface design, WebApp Design. Submission of SRS Document for Team Project	Chalk and board, PPT
6	16	user interface design, WebApp Design	Chalk and board, PPT
	17	Submission of SRS Document for Team Project	Chalk and board, PPT
	18	Quality concepts, Review techniques	Chalk and board, PPT
7	19	Software Quality Assurance (SQA): Verification and Validation	Chalk and board, PPT
	20	SQA Plans, Software Quality Frameworks	Chalk and board, PPT
	21	Assessment: Framing SQA Plan. ISO 9000 Models	Chalk and board, PPT

8	22	SEI-CMM Model and their relevance to project Management- other emerging models like People CMM	Chalk and board, PPT
	21	Testing Objectives, Unit Testing, Integration Testing	Chalk and board, PPT
	22	Acceptance Testing, Regression Testing	Chalk and board, PPT
9	23	Testing for Functionality and Testing for Performance	Chalk and board, PPT
	24	Top-Down and Bottom-Up Testing	Chalk and board, PPT
	25	Software Testing Strategies - Strategies: Test Drivers and Test Stubs	Chalk and board, PPT
10	26	Structural Testing (White Box Testing)	Chalk and board, PPT
	27	Functional Testing (Black Box Testing)	Chalk and board, PPT
	28	Testing conventional applications, object oriented applications, and Web applications	Chalk and board, PPT
11	29	Formal modelling and verification	Chalk and board, PPT
	30	Software configuration management Product metrics	Chalk and board, PPT
	31	Assessment: Team Analysis in Metrics Calculation	Chalk and board, PPT
12	32	Project Management Concepts, Process and Project Metrics	Chalk and board, PPT
	33	Estimation for Software projects, Project Scheduling	Chalk and board, PPT
	34	Risk Management, Maintenance and Reengineering	Chalk and board, PPT
13	35	Assessment: Preparation of Risk mitigation plan	Chalk and board, PPT

6. Course Assessment Methodology

Sl. No	Mode of Assessment	Week/Date	Duration	Marks
1.	Cycle Test - 1	5th week	1 Hour	20
2.	Cycle Test - 2	11th week	1 Hour	20
3.	Assignment	4th & 8th week		10
4.	End Semester Exam	November last Week	3 Hours	50
			Total	100

7.Essential Readings

Text Book
1. R. S. Pressman, "Software Engineering: A Practitioners Approach", McGraw Hill, 7 thedition, 2010
2. Rajib Mall, "Fundamentals of Software Engineering", PHI Publication, 3rdedition, 2009
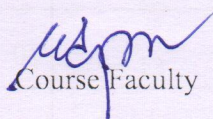3. PankajJalote, "Software Project Management in practice", Pearson Education, New Delhi, 2002
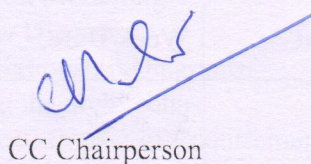
Course Exist Survey

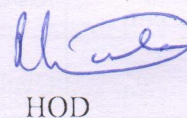Student feedback form will be collected at the end of the course through MIS

Course Policy

Attendance- Students having 75% to 100% attendance are eligible for writing the End semester Examination. Students having attendance between 65% & 75% with valid reasons can write the end semester exam after attending extra classes. Students havingless than 65% have to redo the course. Student should not absent for the assessment. If the reason for absence is genuine, the student can reappear for reassessment.

For Senate's Consideration

| Course Faculty | CC Chairperson | HOD |