National Institute of Technology, Tiruchirappalli

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE OUTLINE TEMPLATE			
Course Title	Software Engineering		
Course Code	CSPC34		
Department	CSE	**No. of Credits**	4
Pre-requisites Course Code		**Faculty Name**	Dr. R. Mohan
E-mail	rmohan@nitt.edu,	**Telephone No.**	0431 - 2503210
Course Type	PC		

COURSE OVERVIEW
• This course mainly describes about various software Engineering Practice & Process models for an efficient software design.
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.

COURSE OUTCOMES (CO)
• Assessment in each module gives the overall Software engineering practice. • Ability to enhance the software project management skills • Ability to comprehend the systematic methodologies involved in SE • Ability to design and develop a software product in accordance with SE principles

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.	S	S	M	S	B	B	M	B
Ability to enhance the software project management skills	S	S	M	M	B	B	S	B
Ability to comprehend the systematic methodologies involved in SE	S	S	M	S	B	B	M	B
Ability to design and develop a software product in accordance with SE principles	S	S	M	B	B	S	M	S

S = 0.6 M = 0.4 B = 0.0

COURSE TEACHING AND LEARNING ACTIVITIES							
L.No	Title	Type		Mode of delivery			
		L	T	C& T	PPT	VL/ VC	DEMO
UNIT I							
1.	Introduction to Software Engineering	√		√			
2.	Software Components, Software Characteristics,	√		√			
3.	Software Crisis and Software Engineering Process	√		√			
4.	Conventional Engineering Process	√		√			
5.	Quality Attributes and Quality Management	√		√			
6.	SDLC Models – Waterfall model, Prototype model, Spiral model	√		√			
7.	SDLC Models-Evolutionary development, Iterative Enhancement	√		√			

UNIT II							
8.	Introduction to Requirement Engineering Process	√		√			
9.	Elicitation,Analysis,Documentation	√		√			
10.	Review and Management of User needs	√		√			
11.	Explanation on Feasibility study and Information Modelling	√		√			
12.	Data Flow Diagrams and Examples	√		√			
13.	Entity Relationship diagrams	√		√			
14.	Architecture Design	√		√			
15.	Software Requirement Specification	√		√			
16.	Component level design and User interface design	√		√			
UNIT III							
17.	Introduction to Quality Concepts	√		√			
18.	Review Techniques	√		√			
19.	Software Quality Assurance	√		√			
20.	Verification and Validation	√		√			
21.	Framing of SQA plans for efficient design	√		√			
22.	Explanation on Software Quality Frameworks	√		√			
23.	Capability Maturity Model	√		√			
UNIT IV							
24.	Introduction to testing objectives	√		√			
25.	Unit testing and Integration testing	√		√			
26.	Acceptance Testing and Regression Testing	√		√			
27.	Functionality Testing and Performance Testing	√		√			
28.	Top-Down and Bottom-up Testing	√		√			
29.	Introduction to Software Testing Strategies and Test Drivers and Test Stubs	√		√			
30.	White Box Testing and Black-box Testing	√		√			
31.	Object Oriented Applications	√		√			
32.	Formal Modelling and Verification	√		√			
33.	Software Configuration Management	√		√			
34.	Product Metrics	√		√			
UNIT V							
35.	Project Management Concepts	√		√			
36.	Process ad Project Metrics	√		√			
37.	Software Product Estimation	√		√			

38.	Project Scheduling	√		√			
39.	Risk Management and Maintenance	√		√			
40.	Reengineering Process	√		√			

COURSE ASSESSMENT METHODS				
Sl. No.	**Mode of Assessment**	**Week/Date**	**Duration**	**Marks**
1	Cycle Test – 1	6th week	1 hour	20
2	Cycle Test – 2	12th week	1 hour	20
3	Assignment	4th, 10th weeks	_	10
4	End Semester Exam	April 4th week	3 hours	50
			Total	100

COURSE EXIT SURVEY (Mention the ways in which the feedback about the course is assessed and indicate attainment also)

- Student's feedback report – (After the first cycle test and before the end semester exam)

COURSE POLICY (including plagiarism, academic honesty, attendance, etc.)

- Participation in class discussion is strongly encouraged.
- Please turn off electronic devices during classes, such as cell phones, iPods, and laptops.

Essential Readings (Textbooks, Reference Books,Websites,Journals,etc/.)

- R. S. Pressman, "Software Engineering: A Practitioners Approach", McGraw Hill, 7th edition, 2010
- Rajib Mall, "Fundamentals of Software Engineering", PHI Publication, 3rdedition, 2009
- PankajJalote, "Software Project Management in practice", Pearson Education, New Delhi, 2002.

FOR SENATE'S CONSIDERATION	
Course Faculty:	(Dr. R. Mohan)
CC-Chairperson:	
HoD/CSE :	