BITL303: SOFTWARE ENGINEERING

Teaching Scheme					Evaluation Scheme					
Th	Tu	Pr	Total	Credit	Theory			Practical		Total
					TAE	CAE	ESE	INT	EXT	
3	--	--	3	3	10	15	50	--	--	75

Course Objectives	This course introduces basic idea of software engineering while making them aware of basic mechanism of software engineering.
	It is aimed at developing skills to provide development solutions to variety of real life situations which involve software engineering.
	Students learn appropriate cost estimations for developed software.
	This course provides career opportunities in subject area of software requirement, software design, and software testing quality management, Configuration management.
Course Outcomes	Identify life cycle models involved in designing software.
	Develop an appropriate design technique for software development problems and analyze them with proper requirements.
	Apply advanced development technique and tools in software analysis, modeling , design and testing software
	To be aware of different life cycle models , requirement dictation process analysis modeling and specification & architectural detailed
	Apply Project planning and management, Use of CASE tools In recent Areas

Mapping of Course Outcomes with Program Outcomes and Program Specific Outcomes:

Course Outcomes	Program Outcomes and Program Specific Outcomes														
	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10	PO 11	PO 12	PSO 1	PSO 2	PSO 3
CO1	3	2	3		-			-			3		-	-	
CO2	3	2	3		-			-			3		-	-	
CO3	2	3	3		2			1			3		3	2	
CO4	2	3	3		-			-			3		3	3	
CO5	3	-	3		1			-			3		-	3	
CO6	3	2	3		3			-			3		3	3	

Course Contents:

Unit	Contents	Hours
I	**SOFTWARE PROCESS** Introduction to Software Engineering, Software Process, Perspective and Specialized Process Models – Software Project Management: Estimation – LOC and FP Based Estimation, COCOMO Model – Project Scheduling – Scheduling, Earned Value Analysis – Risk Management.	8
II	Software• project estimation and planning, decomposition techniques, LOC and FP estimation, effect estimation, risk analysis, identification, projection, assessment, management and monitoring, software reengineering, requirement analysis, tasks, analyst, software prototyping, specification principles, representation and the software requirements specification.	7
III	Object oriented analysis and data modeling object oriented concepts, identifying objects, specifying attributes, defining operations, inter object communication finalizing object definition, object oriented analysis modeling. data modeling, data objects, attributes and relationships entity relationship diagrams, alternative analysis techniques, requirement analysis methods, data structure oriented methods, data structured system development warner diagrams and the DSSD approach, Jackson system development.	8
IV	Software design fundamentals, The design process, design fundamentals, effective modular, design dataflow oriented design, transform analysis, transaction analysis, design heuristics, object oriented design. Object oriented design concepts, object oriented design methods. Refining operations, program components & interfaces, implementation detail design, User interface design, human factors, human computer interface design, interface-design guidelines, interface standards.	7
V	Software quality assurance, software quality factors quality assurance, quality metrics, Halstead's S/W science, software testing techniques, S/W testing fundamentals; White box testing, black box-testing, validation testing, system testing, debugging software maintenance maintainability, maintenance tasks, reverse engineering and re-engineering.	7
VI	Recent Trends And Applications	3

Text Books	1.	Roger S. Pressman, "Software Engineering – A Practitioners Approach", Seventh Edition, McGraw-Hill International Edition, 2010.
E--Books	1.	
	2.	
Reference Books	1.	Ian Sommerville, "Software Engineering", 9th Edition, Pearson Education Asia, 2011.

	2.	Rajib Mall, “Fundamentals of Software Engineering”, Third Edition, PHI Learning Private Limited, 2009.
	3.	PankajJalote, “Software Engineering, A Precise Approach”, Wiley India, 2010.
	4.	Kelkar S.A., “Software Engineering”, Prentice Hall of India Pvt Ltd, 2007.
	5.	Stephen R.Schach, “Software Engineering”, Tata McGraw-Hill Publishing Company Limited, 2007.
	6.	http://nptel.ac.in/.
on line TL Material	1.	
	2.	
	3.	