

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING - AI & ML

COURSE MODULE FOR THE SESSION 2026-2027(ODD)

Course Syllabi with CO's

Faculty Name: Vanitha G Naik			Academic Year:2026-2027			
Department: Computer Science & Engineering-AI and ML						
Course Code	Course Title	Core/Elective	Contact Hours			Total Hrs/Sessions
			L	T	P	
BCS501	Software engineering & project management	Core	2	2	-	52
Topics Covered as per Syllabus						
<u>Module-1</u> Software and Software Engineering: The nature of Software, The unique nature of WebApps, Software Engineering, The software Process, Software Engineering Practice, Software Myths. Process Models: A generic process model, Process assessment and improvement, Prescriptive process models: Waterfall model, Incremental process models, Evolutionary process models, Concurrent models, Specialized process models. Unified Process, Personal and Team process models.						
<u>Module-2</u> Understanding Requirements: Requirements Engineering, Establishing the groundwork, Eliciting Requirements, developing use cases, Building the requirements model, Negotiating Requirements, Validating Requirements. Requirements Modeling Scenarios, Information and Analysis classes: Requirement Analysis, Scenario based modeling, UML models that supplement the Use Case, Data modeling Concepts class Based Modeling						
<u>Module-3</u> AGILE DEVELOPMENT: What is Agility? Agility and the cost of change. What is an agile Process? Extreme Programming (XP), Other Agile Programming (dels, A tool set for Agile process. Principles that guide practice: Software Engineering Knowledge, Core principles, Principles that guide each framework activity.						
<u>Module-4</u> Introduction to Project Management: Introduction, Project and Importance of Project Management, Contract Management, Activities Covered by Software Project Management, Plans, Methods and Methodologies, some ways of categorizing Software Projects, Stakeholders, Setting Objectives, Business Case, Project Success and Failure, Management and Management Control, Project Management lifecycle, Traditional Versus Modern Project Management Practices.						
<u>Module-5</u> Software Quality: Introduction, the place of software quality in project planning, Importance of software quality, defining software quality, quality models, ISO 9126, product and process metrics, product versus process quality management, Quality Management systems, process capability models, techniques to enhance software quality, testing, Software reliability, quality plans.						

DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING - AI & ML

List of Textbooks

1. Roger S. Pressman: Software Engineering-A Practitioners approach, 7th Edition, Tata Mc GrawHill.
2. Bob Hughes, Mike Cotterell, Rajib Mall: Software Project Management, 6th Edition, McGraw Hill Education, 2018.

Reference:

1. An Integrated Approach to Software Engineering, Wiley India.

List of URLs, Textbooks, Notes, Multimedia Content etc

1. https://onlinecourses.nptel.ac.in/noc20_cs68/preview
2. https://www.youtube.com/watch?v=WxkP5KR_Emk&list=PLrjkTql3jnm9b5nrggx7Pt1G4UAHeFlJ
3. <http://elearning.vtu.ac.in/econtent/CSE.php>
4. <http://elearning.vtu.ac.in/econtent/courses/video/CSE/15CS42.html>
5. [https://nptel.ac.in/courses/128/106/128106012/\(DevOps\)](https://nptel.ac.in/courses/128/106/128106012/(DevOps))

Course Outcomes

After studying this course, students will be able to

- CO1. Understand the activities involved in software engineering and analyze the role of various process models
- CO2. Explain the basics of object-oriented concepts and build a suitable class model using modelling techniques
- CO3. Describe various software testing methods and to understand the importance of agile methodology and DevOps
- CO4. Illustrate the role of project planning and quality management in software development
- CO5. Understand the importance of activity planning and different planning models.

The Correlation of Course Outcomes (CO's) and Program Outcomes (PO's)

Subject Code: BCS501	Title: Software Engineering and Project Management						Faculty Name: Vanitha G Naik					
List of Course Outcomes	Program Outcomes											Total
	PO-1	PO-2	PO-3	PO-4	PO-5	PO-6	PO-7	PO-8	PO-9	PO-10	PO-11	
CO-1	2	3	3	-	-	3	3	-	-	-	-	14
CO-2	2	3	3	-	3	-	-	-	-	-	-	11
CO-3	2	3	-	-	2	-	-	-	-	-	-	07
CO-4	2	-	-	-	3	-	-	-	3	2	3	13
CO-5	2	-	-	-	-	-	-	-	2	-	2	06
Total	10	9	6	-	8	3	3	-	5	2	5	51

Note: 3 Strong Contribution 2 Average Contribution 1 Weak Contribution

– No Contribution