RASHTRASANT TUKADOJI MAHARAJ NAGPUR UNIVERSITY, NAGPUR
FOUR YEAR BACHELOR OF TECHNOLOGY (B.Tech) DEGREE COURSE
SEMESTER: V (C.B.C.S.)
BRANCH: COMPUTER SCIENCE AND ENGINEERING

Fifth Semester:-

S. N.	Subject	Teaching Scheme			Evaluation Scheme			Credits	Category
		L	T	P	CA	UE	Total		
1	Artificial Intelligence	3	1	-	30	70	100	4	PCC-CS
2	Artificial I Intelligence-Lab	-	-	2	25	25	50	1	PCC-CS
3	Design & Analysis of Algorithms	3	1	-	30	70	100	4	PCC-CS
4	Design & Analysis of Algorithms –Lab	-	-	2	25	25	50	1	PCC-CS
	Software Engineering & Project Management	3	-	-	30	70	100	3	PCC-CS
5	Elective-I	3	-	-	30	70	100	3	PEC-CS
6	Effective Technical Communication	2	-	-	15	35	50	2	HSMC
7	Profesional Skills Lab I			2	25	25	50	1	ESC
8	Yoga and Meditation (Audit Course)	2	-	-	50	-	-	Audit	MC
	Total	**16**	02	**06**			**600**	**19**	

Elective-I: 1. TCP/IP 2. Design Patterns 3. Data Warehousing and Mining

[Mrs. B. P. Dharaskar]

[Ms. Mona Nilchandani]

Dr. S. V. Sonekar
chairman

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Subject: **Software Engineering and Project Management** Subject Code: **BTECH_CSE-503T**

Load	Lecture	Tutorial	Credits	College Assessment Marks	University Evaluation	Total Marks
36 Hrs	**3**	**-**	**3**	**30**	**70**	**100**

Course Objectives:

1	To understand general idea of software engineering
2	To develop skills to design various software process models
3	To develop skills required for software testing and various risk strategies

Course Outcomes:
At the end of this course students are able to:

CO1	Understand software engineering methods, practices, process models and application.
CO2	Analyse various software engineering life cycle models and apply methods for design and development of software projects.
CO3	Analyze and extract requirements for product and translate these into a documented design using different modeling techniques.
CO4	Understand and apply software testing methods and types, And to understand debugging concept with various testing methods.
CO5	Identify and apply the principles, processes and main knowledge areas for Software Projec Management

SYLLABUS:

UNIT-I

Basics: Introduction to Software Engineering, Software Myths, Software Engineering-A Layered Technology. Software Process Models: The Waterfall Model, Incremental Process Models, Evolutionary Process Models, Specialized Process Models, Agile Process Models

UNIT-II

Measures Metrics and Indicator, Metrics for process & projects: Software measurement, metrics for software quality.
System Engineering: Hierarchy, Business Process Engineering, Product Engineering, System Modeling, Requirements Engineering: Requirements Analysis, Analysis
Modeling Approaches, Data Modeling, Object-Oriented Analysis, Scenario-Based Modeling, Flow-Oriented Modeling, Class-based Modeling, Behavioral Model

UNIT-III

Design Engineering Concepts, Design Model, Pattern-Based Software Design,
Architectural Design, Mapping data flow into software architecture, Cohesion, Coupling, User interface analysis and Design.

UNIT-IV

Debugging, Software Testing Fundamentals, Black-Box Testing, White-Box Testing, Metrics for Source Code

Risk Management: Risk strategies, Software risks, Risk identification, Risk refinement, RMMM

UNIT-V

Quality Management: Quality Concepts, Software Quality Assurance, Software Reviews, Formal Technical Review, Software Reliability, Change Management: Software Configuration Management, SCM Repository, SCM Process, Reengineering: Software reengineering, Reverse Engineering, Restructuring, Forward Engineering

Text Books:

1. Software Engineering-A Practitioner's Approach (Sixth Edition) by Roger Pressman (TMH)
2. Software Engineering (Ninth Edition)-Ian Summerville (Pearson)
3. Software Engineering for students (4th Edition)- Douglas Bell(Pearson)

Reference Books:

1. Schaum's Outline of Theory and Problems of Software Engineering by David Gustafson (TMH)
2. Software Engineering (Third Edition) by K. K. Aggarwal and Yogesh Singh (New age International Publishers)
3. Software Engineering, Theory and Practice(4th Edition)- Pfleeger, Atlee(Pearson)