



SWARNANDHRA

COLLEGE OF ENGINEERING & TECHNOLOGY (AUTONOMOUS)

Accredited by National Board of Accreditation, AICTE, New Delhi, Accredited by NAAC with "A" Grade – 3.32 CGPA, Recognized under 2(f) & 12(B) of UGC Act 1956, Approved by AICTE, New Delhi, Permanent Affiliation to JNTUK, Kakinada Seetharampuram, W.G.DT., Narsapur-534280, (Andhra Pradesh)

DEPARTMENT OF ARTIFICIAL INTELLIGENCE & DATA SCIENCE

TEACHING PLAN

Course Code	Course Title	Semester	Branches	Contact Periods /Week	Academic Year	Date of commencement of Semester
20AM5E01	PRINCIPLES OF SOFTWARE ENGINEERING	V	AI&DS	6	2024-25	03-06-2024
COURSE OUTCOMES						
CO1.	Identify, formulate the various software engineering concepts.					
CO2.	Analyze different software development process models.					
CO3.	Analyze and specify software requirements with various stake- holders of a software development project.					
CO4.	Apply systematic procedure for software design and deployment.					
CO5.	Compare and contrast the various testing methods and art of debugging.					
UNIT	Outcomes / Bloom's Level	Topics No.	Topics/Activity	Text Book / Reference	Contact Hour	Delivery Method
SOFTWARE AND SOFTWARE ENGINEERING						
I	CO1. Identify, formulate the various software engineering concepts	1.1	Define Software and characteristics	T1	1	Chalk and Talk
		1.2	Software application domains	T1	1	
		1.3	Legacy software	T1	1	
		1.4	Software engineering definition	T1	1	
		1.5	Layered technology	T1	1	
		1.6	Software process	T1	1	
		1.7	Generic process framework activities	T1	1	
		1.8	Umbrella activities	T1	1	
		1.9	Software engineering practices and essence of practice	T1	1	
		1.10	Software myths and Reality	T1	1	
		1.11	Generic process model	T1	1	
		1.12	Capability, Maturity Model Integration	T1	1	1
Total					12	
PROCESS MODELS						
II		2.1.	Process assessment and improvement	T1	1	Chalk and Talk



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CO2. Analyze different software development process models	2.2	Prescriptive Process models	T1	1	PPT	
	2.3	Waterfall Model	T1	1		
	2.4	Incremental Process Model	T1	1		
	2.5	Evolutionary Process Models	T1	1		
	2.6	Prototyping	T1	1		
	2.7	Spiral model	T1	1		
	2.8	The Unified Process	T1	1		
	2.9	Personal and Team process models	T1	1		
	2.10	Agility and the cost of change	T1	1		
	2.11	Agility Principles	T1	1		
	2.22	the politics of agile development	T1	1		
	Revision of human factors					
TOTAL				12		
REQUIREMENTS ANALYSIS AND SPECIFICATION						
III	CO3. Analyze and specify software requirements with various stake holders of a software development project	3.1	Functional Requirements	T1	1	Chalk & Talk
		3.2	Non- Functional Requirements	T1	1	
		3.3	Software Requirements Document	T1	1	
		3.4	Requirements Specification	T1	1	
		3.5	Requirements Engineering	T1	1	
		3.6	Establishing the Ground work	T2	1	
		3.7	Eliciting Requirements (elicitation)	T2	1	
		3.8	Developing Use cases	T2	1	
		3.9	Requirements Planning	T2	1	
		3.10	Requirements Change management	T1	1	
Revision of requirements management				1	PPT	
TOTAL				11		
SOFTWARE DESIGN						
IV	CO4. Apply systematic procedure for software design and deployment	4.1	Design process,	T1	1	Chalk & Talk
		4.2	Design concepts:	T1	1	
		4.3	Abstraction,	T1	1	
		4.4	Architecture, Patterns,	T1	1	
		4.5	Separation of Concerns,	T1	1	
		4.6	Modularity and Information hiding	T1	1	
		4.7	Functional independence,	T1	1	
		4.8	Refinement and Aspects,	T1	1	



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		4.9	Object oriented design concepts,	T1	1	
		4.10	Data Design Elements	T1	1	
		4.11	Architectural Design elements	T2	1	
		4.12	Interface Design Elements,	T2	1	
		4.13	Component-Level Design Elements,	T2	1	
		4.14	Designing Class Based Components:	T2	1	
		4.15	Basic Design Principles,	T2	1	PPT
		4.16	Cohesion and coupling.	T2	1	PPT
		Revision of Object oriented design concepts				PPT
TOTAL					16	
TESTING						
V	CO5. Compare and contrast the various testing methods and art of debugging	5.1	Elements of software quality assurance	T2	1	Chalk & talk
		5.2	SQA Tasks and Goals.	T2	1	
		5.3	The strategies for Conventional Strategies	T2	1	
		5.4	Unit Testing – Integration Testing	T2	1	
		5.5	Test Strategies for Object- Oriented Software	T2	1	
		5.6	Software testing fundamentals, white box testing- Basis path testing	T2	2	
		5.7	Flow graph Notation, independent Program paths	T2	1	
		5.8	The Debugging process	T2	1	PPT, Videos
		5.9	Psychological Considerations	T2	1	
		5.10	Debugging Strategies	T2	1	
		5.11	Correcting the error.	T2	1	
TOTAL					14	
CUMULATIVE PROPOSED PERIODS					64	
Text Books:						
S. No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION					
T1	A practitioner's Approach- Roger S. pressman, Software Engineering, 8th edition, McGraw-Hill international Edition, 2014.					
T2	Ian Sommerville, Software Engineering, 10th Edition, Pearson Education Asia, 2017.					
Reference Books:						
S. No.	AUTHORS, BOOK TITLE, EDITION, PUBLISHER, YEAR OF PUBLICATION					



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R1	Pankaj Jalote's Software Engineering, 9 th Edition A Precise Approach 2010
R2	Shely Cashman Rosenblatt, Systems Analysis and Design, 9 th Edition, Thomson publications, 2016.
R3	Rajib Mall, Fundamentals Of Software Engineering, 5 th Edition, PHI, 2018.
Web Details	
	https://nptel.ac.in/courses/106101061/
	https://nptel.ac.in/courses/106105182
	https://archive.nptel.ac.in/courses/106/101/106101061/
	https://onlinecourses-archive.nptel.ac.in/noc18_cs43
	https://archive.nptel.ac.in/content/syllabus_pdf/106105182.pdf

	Name	Signature with Date
i.	Faculty	B.Haritha
ii.	Course Coordinator	Dr.G.Sudhakar
iii.	Module Coordinator	K.Jai Prakash
iv.	Program Coordinator	Dr.B.Rama Krishna


Principal