



K L Deemed to be University
CSE-1 -- KLVZA
Course Handout
2025-2026, Odd Sem

Course Title	:ADAPTIVE SOFTWARE ENGINEERING
Course Code	:23CI2001
L-T-P-S Structure	: 3-1-0-0
Pre-requisite	:
Credits	: 4
Course Coordinator	:BANDLA NIROSHA
Team of Instructors	:
Teaching Associates	:

Syllabus :Software and Software Engineering: Nature of software, software application domains, unique nature of web applications, software engineering, software process, product and process, software engineering practice, software myths. Process Models: Generic process model, prescriptive process models, specialized process models, unified process, personal and team process models, product and process, Reverse Engineering. requirements - Requirements Development Methodology - Specifying Requirements - Eliciting Accurate Requirements -Documenting Business Requirements - Defining User Requirements - Validating Requirements – Achieving Requirements Traceability - Managing Changing Requirements - Reviews, Walkthroughs, and Inspections, SRS Vs User Stories. Agile Modelling, Extreme Programming. Scrum, Kanban, SAFE Methodology, Project Monitoring Tool using JIRA, Design Patterns - Architectural Patterns - Model Driven Architectures. A strategic approach to software testing, strategic issues, test strategies for conventional software, Black-Box and White-Box testing, validation testing, system testing. risk management in software engineering projects - Project Planning and Estimation.

Text Books :Text Books :1. Roger S.Pressman, “Software Engineering – A Practitioner’s Approach” 7th Edition, Mc Graw Hill,(2022). 2. Ian Sommerville, “Software Engineering”, Tenth Edition, Pearson Education, (2022).

Reference Books :1. Agile Software Development Ecosystems, Jim Highsmith, 1st Addison Wesley 2. Agile Modelling: Effective Practices for Extreme Programming and the Unified Process, Scott Amber,1st John Wiley &Son

Web Links :Resource 1: JIRA JIRA SOFTWARE <https://www.atlassian.com/software/jira> Resource 2: KANBAN KANBAN METHODS <https://www.digite.com/kanban/what-is-kanban/> Resource 3: Scaled agile Agile Methodology <http://www.scaledagileframework.com> Resource 4: TESTING SOFTWARE TESTING <https://www.guru99.com/test-driven-development.html>

MOOCs :MOOCs Resource 1: JIRA SOFTWARE Atlassian University <https://university.atlassian.com/student/path/815443-jira-fundamentals> MOOCs Resource 2: JIRA TOOL UDEMY 1 <https://www.udemy.com/course/learn-jira-complete-from-scratch-to-expert/> MOOCs Resource 3: JIRA PROJECT MANAGEMENT MYGREATLEARNING 1 <https://www.mygreatlearning.com/academy/learn-for-free/courses/jira-project-management>

COURSE OUTCOMES (COs):

CO NO	Course Outcome (CO)	PO/PSO	Blooms Taxonomy

			Level (BTL)
CO1	Understand the software development life cycle and associated process models and Reverse Engineering.	PO3,PSO2	3
CO2	Apply the Requirement modelling and Agile and Extreme Programming.	PO2,PO3,PO4,PSO2	3
CO3	Apply the Agile Models such as Scrum, kanban and SAFE Methodology. Analyze the JIRA tool for project monitoring and identify the suitable design patterns for project development.	PO2,PO3,PO5,PSO2	4
CO4	Analyze various testing strategies and examine the risk management factors.	PO1,PO2,PO3,PSO2	4

COURSE OUTCOME INDICATORS (COIs)::

Outcome No.	Highest BTL	COI-1	COI-2	COI-3	COI-4
CO1	3	Btl-2 Summarize Perspective, Evolutionary, Specialized and Unified Process Models	Btl-2 Illustrate various Process models as a part of SDLC	Btl-3 Summarize about Reverse Engineering	
CO2	3	Btl-2 Distinguish Agile and XP	Btl-2 Understand Requirement modelling and Agile and Extreme Programming.	Btl-3 Agile Modelling, Extreme Programming.	
CO3	4	Btl-2 Classify Various Agile Models such as Scrum, kanban and SAFe Methodology	Btl-3 Build Agile Models such as Scrum, kanban, SAFe Methodology. Apply Design Pattern Methods for Developing a Software.	Btl-3 Apply JIRA TOOL for Project Monitoring	Btl-4 Model Driven Architectures
CO4	4	Btl-2 Distinguish various Test Strategies	Btl-2 Understand Various Testing Strategies for assess the quality of software	Btl-3 Examine the Risk Factors in Software Engineering Projects	Btl-4 Software testing : A strategic approach to software testing, Strategic issues

PROGRAM OUTCOMES & PROGRAM SPECIFIC OUTCOMES (POs/PSOs)

Po No.	Program Outcome
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Lecture Course DELIVERY Plan:

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	EvaluationComponents
1	CO1	COI-1	Software and Software Engineering, Nature of software	T BOOK [1],CH1.1,1.2,Page no 1-11	Chalk,PPT,Talk	ALM,End Semester Exam,Home Assignment,SEM-EXAM1
2	CO1	COI-1	Software application domains	T BOOK [1],CH1.1,1.2,Page no 1-11	PPT,Talk	Home Assignment,SEM-EXAM1
3	CO1	COI-2	Unique nature of web applications	T BOOK [1],CH1.3-1.6,Page no 12-23	Chalk,PPT,Talk	ALM,Home Assignment
4	CO1	COI-2	Software engineering, software process	T BOOK [1],CH1.3-1.6,Page no 12-23	PPT,Talk	Home Assignment,SEM-EXAM1
5	CO1	COI-2	Software engineering practice , Software myths	T BOOK [1],CH1.3-1.6,Page no 12-23	Chalk,PPT,Talk	ALM,End Semester Exam
6	CO1	COI-3	Process Models : Generic process model , prescriptive process models	T BOOK [1], CH 2.1-2.3,Page no 30-49	Chalk,PPT,Talk	Home Assignment,SEM-EXAM1
7	CO1	COI-3	Specialized process models & Unified process model	T BOOK [1], CH 2.4,2.5,Page no 50-55	PPT,Talk	ALM,End Semester Exam
8	CO1	COI-3	Personal process models Indetailed explanation	T BOOK [1],CH 2.6,2.8,Page no 56-61	PPT,Talk	End Semester Exam,SEM-EXAM1
9	CO1	COI-3	Team process models,Reverse Engineering	T BOOK [1],CH 2.9.6,Page no 772-776	PPT,Talk	ALM,Home Assignment,SEM-EXAM1
10	CO2	COI-1	Requirements Development Methodology - Specifying Requirements	T BOOK [1], CH 5.5-5.7,Page no 138-144	Chalk,PPT,Talk	ALM,Home Assignment
11	CO2	COI-	Eliciting Accurate	T BOOK [1], CH 5.5-	Chalk,PPT,Talk	ALM,SEM-EXAM1

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	EvaluationComponents
		1	Requirements	5.7,Page no 138-144		
12	CO2	COI-1	Documenting Business Requirements	T BOOK [1], CH 5.5-5.7,Page no 138-144	Chalk,PPT,Talk	ALM,SEM-EXAM1
13	CO2	COI-2	Defining User Requirements	T BOOK [3], CH 3, Pageno 25-30	Chalk,PPT,Talk	ALM,SEM-EXAM1
14	CO2	COI-2	Validating the Requirements	T BOOK [3], CH 3, Pageno 25-30	Chalk,PPT,Talk	ALM,SEM-EXAM1
15	CO2	COI-2	Achieving Requirements Traceability	T BOOK [3], CH 3, Pageno 25-30	PPT,Talk	ALM,SEM-EXAM1
16	CO2	COI-3	Reviews, Walkthroughs, and Inspections	T BOOK [3],CH 8, Page no 138-154	PPT,Talk	ALM,SEM-EXAM1
17	CO2	COI-3	SRS Vs User Stories	T BOOK [3],CH 8, Page no 138-154	Chalk,PPT,Talk	ALM,SEM-EXAM1
18	CO2	COI-3	Agile Modelling	T BOOK [3],CH 8, Page no 165-170	PPT,Talk	ALM,SEM-EXAM1
19	CO2	COI-3	Extreme Programming.	T BOOK [3],CH 8, Page no 165-170	Chalk,PPT,Talk	ALM,SEM-EXAM1
20	CO3	COI-1	SCRUM	T BOOK [3], CH 7, Pageno 109-129	Chalk,PPT,Talk	ALM,End Semester Exam,SEM-EXAM2
21	CO3	COI-1	Kanban	T BOOK [3], CH 7, Pageno 130-135	Chalk,PPT,Talk	End Semester Exam,Home Assignment,SEM-EXAM2
22	CO3	COI-2	SAFe Methodology	T BOOK [3], CH 7, Pageno 130-135	Chalk,PPT,Talk	ALM,SEM-EXAM2
23	CO3	COI-2	Project Monitoring Tool using JIRA	Web reference-1	PPT,Talk	ALM,SEM-EXAM2
24	CO3	COI-2	Design Patterns	Web reference-2	PPT,Talk	ALM,Home Assignment
25	CO3	COI-	Architectural	web reference -3	PPT,Talk	ALM,Home

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	EvaluationComponents
		3	Patterns			Assignment,SEM-EXAM2
26	CO3	COI-3	Model Driven Architectures	web reference -3	Chalk,PPT,Talk	ALM,Home Assignment,SEM-EXAM2
27	CO3	COI-4	Software testing	T BOOK [1], CH17.1-17.3 Page no 450-464	PPT,Talk	ALM,End Semester Exam,Home Assignment
28	CO3	COI-4	Identify strategic approach to software testing	T BOOK [1], CH17.1-17.3 Page no 450-464	PPT,Talk	ALM,SEM-EXAM2
29	CO3	COI-4	Test strategies for conventional software	T BOOK [1],CH17.7,17.7,18.3,18.6 Page no 467-472, 485,495-	PPT,Talk	ALM,Home Assignment,SEM-EXAM2
30	CO4	COI-1	Black box testing indetailed explanation	T BOOK [1],CH17.7,17.7,18.3,18.6 Page no 467-472, 485,495-501	Chalk,PPT,Talk	End Semester Exam,SEM-EXAM2
31	CO4	COI-1	White box testing	T BOOK [1],CH17.7,17.7,18.3,18.6 Page no 467-472, 485,495-501	PPT,Talk	Home Assignment,SEM-EXAM2
32	CO4	COI-2	Validation testing	T BOOK [1],CH17.7,17.7,18.3,18.6 Page no 467-472, 485,495-501	PPT,Talk	ALM,SEM-EXAM2
33	CO4	COI-2	system testing	web reference	PPT,Talk	ALM,SEM-EXAM2
34	CO4	COI-2	system testing types	web reference	PPT,Talk	ALM,HA
35	CO4	COI-3	Estimation and Project Planning	web reference-3	PPT,Talk	ALM,HA
36	CO4	COI-3	Function point analysis	Web reference -4	PPT,Talk	ALM,SEM-EXAM2
37	CO4	COI-	Cocomo model	web reference -4	PPT,Talk	ALM,End Semester

Sess.No.	CO	COI	Topic	Book No[CH No][Page No]	Teaching-Learning Methods	EvaluationComponents
		4				Exam,SEM-EXAM2
38	CO4	COI-4	Risk management and project planning	web reference -4	PPT,Talk	ALM,HA
39	CO4	COI-4	Risk Refinement and project planning estimation of project planning	web reference-4	PPT,Talk	ALM,SEM-EXAM2

Lecture Session wise Teaching – Learning Plan

SESSION NUMBER : 1

Session Outcome: 1 Students will be able to explain the nature of software, differentiate software engineering concepts, and identify various software application domains.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance	1	Talk	--- NOT APPLICABLE ---
20	Overview of the Course Handout	2	PPT	--- NOT APPLICABLE ---
20	Software and Software Engineering,Nature of software	2	Talk	Group Discussion
5	Ask for any doubts through Public chat/ Break	2	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 2

Session Outcome: 2 Students will be able to explain the software application domains of web applications and distinguish them from traditional software systems

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---

35	Software application domains	2	PPT	--- NOT APPLICABLE ---
10	Ask for any doubts through Public chat/ Break	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 3

Session Outcome: 3 Students will be able to explain the unique characteristics of web applications and distinguish them from traditional software systems

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
30	Unique nature of web applications	2	PPT	--- NOT APPLICABLE ---
10	Ask for any doubts through Public chat/ Break	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 4

Session Outcome: 4 Students will be able to explain the fundamental concepts of software engineering and describe the phases and technologies involved in the software process.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
35	Software engineering, software process	3	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 5

Session Outcome: 5 Students will be able to explain core software engineering practices and debunk common software myths through critical thinking and discussion

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
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5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Software engineering practice , Software myths	3	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 6

Session Outcome: 6 Students will be able to describe the structure of generic process models and differentiate among prescriptive process models used in software development

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	1	Talk	--- NOT APPLICABLE ---
40	Process Models : Generic process model , prescriptive process models	2	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 7

Session Outcome: 7 Students will be able to explain specialized and unified process models and apply them to real-world software development contexts

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Specialized process models & Unified process model	3	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 8

Session Outcome: 8 Students will be able to describe personal and team process models and understand their relevance in individual and collaborative software development

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Personal process models	3	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	2	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 9

Session Outcome: 9 Students will be able to describe personal and team process models and reverse engineering understand their relevance in individual and collaborative software development

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Team process models,Reverse Engineering	3	PPT	--- NOT APPLICABLE ---
5	Discussion and Additional Information	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 10

Session Outcome: 1 Students will be able to explain the methodology for developing and specifying software requirements effectively

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	1	Talk	--- NOT APPLICABLE ---
20	Requirements Development Methodology - Specifying Requirements	2	PPT	Quiz/Test Questions
5	Ask for any doubts through Public chat/ Break	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 11

Session Outcome: 2 Students will be able to describe techniques for eliciting accurate requirements and document clear, complete business requirements

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Eliciting Accurate Requirements	3	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	2	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 12

Session Outcome: 3 Students will be able to describe techniques for eliciting accurate requirements and document clear, complete business requirements

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Documenting Business Requirements	3	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	2	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 13

Session Outcome: 4 Students will be able to define user requirements clearly and explain methods for validating those requirements to ensure alignment with user needs

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Defining User Requirements	3	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	2	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 14

Session Outcome: 5 Students will be able to define user requirements clearly and explain methods for validating those requirements to ensure alignment with user needs

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Validating the Requirements	3	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 15

Session Outcome: 6 Students will be able to explain the concept of requirements traceability and identify how it ensures consistency and completeness throughout the software development lifecycle

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Achieving Requirements Traceability	3	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 16

Session Outcome: 6 Students will be able to describe and differentiate between reviews, walkthroughs, and inspections used in software quality assurance.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Reviews, Walkthroughs, and Inspections	3	PPT	--- NOT APPLICABLE ---
5	Discussion and Additional Information	3	Talk	--- NOT APPLICABLE

SESSION NUMBER : 17

Session Outcome: 7 Students will be able to describe and differentiate between reviews, walkthroughs, and inspections used in software quality assurance.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	SRS Vs User Stories	3	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	2	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 18

Session Outcome: 8 Students will be able to explain the concept of agile modeling and identify how it ensures consistency and completeness throughout the software development lifecycle

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Agile Modelling	3	PPT	--- NOT APPLICABLE ---
5	Discussion and Additional Information	2	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 19

Session Outcome: 9 Students will be able to explain the concept of extreme programming and identify how it ensures consistency and completeness throughout the software development lifecycle

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Extreme Programming.	3	PPT	--- NOT APPLICABLE ---

5	Discussion and Additional Information	3	Talk	--- NOT APPLICABLE ---
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SESSION NUMBER : 20

Session Outcome: 1 Students will be able to explain the Scrum framework and understand its application in managing software projects using GitHub.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance & Recap	1	Talk	--- NOT APPLICABLE ---
35	SCRUM	3	PPT	Seminars
5	Ask for any doubts through Public chat/ Break	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 21

Session Outcome: 2 Students will be able to explain the kanban framework and understand its application in managing software projects using GitHub.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Kanban	3	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	2	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 22

Session Outcome: 3 Students will be able to explain the safe methodology and understand its application in managing software projects using GitHub.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	SAFe Methodology	3	PPT	--- NOT APPLICABLE ---

5	Ask for any doubts through Public chat/ Break	4	Talk	--- NOT APPLICABLE ---
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SESSION NUMBER : 23

Session Outcome: 4 Students will be able to explain the features of JIRA and understand its use in monitoring and managing software projects

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Project Monitoring Tool using JIRA	4	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 24

Session Outcome: 5 Students will be able to explain common design patterns and illustrate their application using appropriate examples and diagrams

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
30	Design Patterns	3	PPT	--- NOT APPLICABLE ---
10	LMS CASE STUDY	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 25

Session Outcome: 6 Students will be able to explain common architectural patterns and illustrate their application using appropriate examples and diagrams

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---

35	Architectural Patterns	3	PPT	--- NOT APPLICABLE ---
5	Discussion and Additional Information	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 26

Session Outcome: 8 Students will be able to explain the fundamentals of Model driven architectures and identify strategic approaches for effective test planning and execution

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
35	Model Driven Architectures	3	PPT	--- NOT APPLICABLE ---
5	Discussion and Additional Information	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 27

Session Outcome: 7 Students will be able to explain the fundamentals of software testing and identify strategic approaches for effective test planning and execution

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
35	Software testing	4	PPT	--- NOT APPLICABLE ---
10	Discussion and Additional Information	4	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 28

Session Outcome: 9 Students will be able to explain the fundamentals of software testing and identify strategic approaches for effective test planning and execution

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
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5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Identify strategic approach to software testing	3	PPT	--- NOT APPLICABLE ---
5	Quiz though LMS and Discussion	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 29

Session Outcome: 9 Students will be able to explain the fundamentals of software testing and identify strategic approaches for effective test planning and execution

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
35	Test strategies for conventional software	3	PPT	--- NOT APPLICABLE ---
10	Ask for any doubts through Public chat/ Break	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 30

Session Outcome: 1 Students will be able to explain the fundamentals of software testing and identify strategic approaches for effective test planning and execution

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	1	Talk	--- NOT APPLICABLE ---
40	Black box testing indetailed explanation	3	PPT	Fish Bowl
5	Ask for any doubts through Public chat/ Break	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 31

Session Outcome: 3 Students will be able to explain the fundamentals of software testing and identify strategic approaches for effective test planning and execution

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
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5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
35	White box testing	3	PPT	--- NOT APPLICABLE ---
10	Problems Discussion	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 32

Session Outcome: 3 Students will be able to explain the fundamentals of software testing and identify strategic approaches for effective test planning and execution

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Validation testing	3	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 33

Session Outcome: 4 Students will be able to describe system testing strategies and identify their applications in verifying software functionality without knowledge of internal code structure

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	system testing	3	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 34

Session Outcome: 5 Students will be able to describe system testing strategies and identify their applications in verifying software functionality without knowledge of internal code structure

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	system testing and its significance and importance.	3	PPT	--- NOT APPLICABLE ---
5	Discussion and Additional Information	4	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 35

Session Outcome: 5 Students will be able to explain the concept of estimation project planning and apply it to estimate the size of a software project

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Estimation and Project Planning	3	PPT	--- NOT APPLICABLE ---
5	Discussion and Additional Information	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 36

Session Outcome: 6 Students will be able to explain the concept of Function Point Analysis and apply it to estimate the size of a software project

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Function point analysis	3	PPT	--- NOT APPLICABLE ---
5	Ask for any doubts through Public chat/ Break	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 37

Session Outcome: 6 Students will be able to explain the COCOMO model and apply it to estimate the effort, cost, and schedule for software development projects.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Cocomo model	4	PPT	--- NOT APPLICABLE ---
5	Discussion and Additional Information	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 38

Session Outcome: 7 The session integrates risk scenarios and planning techniques to help students relate risk handling to software project success

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Risk management and project planning	3	PPT	--- NOT APPLICABLE ---
5	Discussion and Additional Information	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 39

Session Outcome: 7 Students will be able to explain the key elements of software project planning and apply estimation techniques for effective project scheduling and resource allocation.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
35	Risk Refinement and project planning estimation of project planning	3	PPT	--- NOT APPLICABLE ---
10	course summary	4	Talk	--- NOT APPLICABLE ---

Tutorial Course DELIVERY Plan:

List of Experiments supposed to finish in Open Lab Sessions:

Lab session no	List of Experiments	CO-Mapping
1	Understand the tool Star UML, Use Case, Class, Sequence, Activity and State chart diagram by using star UML	CO1
2	Understand Use case, Class, Sequence, Activity and State chart Diagram for LMS	CO1
3	Understand Use case, Class, Sequence, Activity and State Chart Diagram for Admission process	CO1
4	Use case, Class, Sequence, Activity and State chart diagram, Online bank ATM	CO2
5	Create a scrum project of 5 members (Team Managed project) for the following issues. Draw the work flows for the same. a. A customer wants to pay the bill online (EPIC)	CO2
6	Create a scrum project and explore different templates available.	CO2
7	Navigate into the project created and create report on the same.	CO3
8	Create a dashboard in Jira by using the following Hints	CO3
9	Working on the Project Transport Department through scrum model in GitHub	CO3
10	Working on the Project AAS through scrum model in GitHub	CO4
11	Working on the Project KLU ERP through scrum model in GitHub	CO4
12	Working on the Project Pollution Analysis through scrum model in GitHub1	CO4

Tutorial Session wise Teaching – Learning Plan

SESSION NUMBER : 1

Session Outcome: 1 Understand the tool Star UML, Use Case, Class, Sequence, Activity and State chart diagram by using star UML

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
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5	Attendance & Recap	1	Talk	--- NOT APPLICABLE ---
40	Discussion of course handout	2	PPT	One minute paper
5	Understand the tool Star UML, Use Case, Class, Sequence, Activity and State chart diagram by using star UML	3	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 2

Session Outcome: 2 Students will be able to explain and interpret Use Case, Class, Sequence, Activity, and State Chart diagrams for a Learning Management System (LMS).

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
25	Understand Use case, Class, Sequence, Activity and State chart Diagram for LMS	3	PPT	--- NOT APPLICABLE ---
20	LMS CASE STUDY	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 3

Session Outcome: 3 Students will be able to explain and interpret Use Case, Class, Sequence, Activity, and State Chart diagrams for the Admission Process of an academic system.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
35	Understand Use case, Class, Sequence, Activity and State Chart Diagram for Admission process	3	PPT	--- NOT APPLICABLE ---
10	Discussion and Additional Information	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 4

Session Outcome: 1 Students will be able to explain and interpret basic UML diagrams—Use Case, Class, Sequence, Activity, and State Chart—using the StarUML tool.

Time(min)	Topic	BTL	Teaching-Learning	Active Learning
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			Methods	Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Use case, Class, Sequence, Activity and State chart diagram, Online bank ATM	3	PPT	Group Discussion
5	LMS CASE STUDY	2	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 5

Session Outcome: 2 Students will be able to explain and interpret Use Case, Class, Sequence, Activity, and State Chart diagrams for an Online Bank ATM system.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
25	Create a scrum project of 5 members (Team Managed project) for the following issues. Draw the work flows for the same. a. A customer wants to pay the bill online (EPIC)	3	PPT	--- NOT APPLICABLE ---
20	Ask for any doubts through Public chat/ Break	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 6

Session Outcome: 3 Students will be able to describe the structure of a Scrum project and explain the purpose of different templates used in Scrum project management

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
35	Create a scrum project and explore different templates available.	3	Talk	--- NOT APPLICABLE ---
10	Discussion and Additional Information	3	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 7

Session Outcome: 1 Students will be able to navigate an existing Scrum project and generate a summary report highlighting sprint progress, team roles, and workflow updates.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
40	Navigate into the project created and create report on the same.	3	PPT	Seminars
5	LMS CASE STUDY	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 8

Session Outcome: 2 Students will be able to create a customized dashboard in Jira by using predefined widgets and filters to visualize project progress and team metrics.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
30	Create a dashboard in Jira by using the following Hints	3	PPT	--- NOT APPLICABLE ---
10	Discussion and Additional Information	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 9

Session Outcome: 3 Students will be able to apply Scrum practices using GitHub Projects to organize, assign, and track tasks for a Transport Department software project.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
35	Working on the Project Transport Department through scrum model in GitHub	3	PPT	--- NOT APPLICABLE ---
5	Discussion and Additional Information	4	PPT	--- NOT APPLICABLE ---

SESSION NUMBER : 10

Session Outcome: 1 Students will be able to apply Scrum practices using GitHub Projects to manage and track the progress of tasks in the AAS project.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
5	Attendance & Recap	1	Talk	--- NOT APPLICABLE ---
40	Working on the Project AAS through scrum model in GitHub	3	PPT	Fish Bowl
5	LMS CASE STUDY	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 11

Session Outcome: 2 Students will be able to apply Scrum principles to manage and track tasks in the KLU ERP project using GitHub Projects.

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance & Recap	2	PPT	--- NOT APPLICABLE ---
35	Working on the Project KLU ERP through scrum model in GitHub	3	Talk	--- NOT APPLICABLE ---
5	Discussion and Additional Information	4	Talk	--- NOT APPLICABLE ---

SESSION NUMBER : 12

Session Outcome: 3 Students will be able to apply Scrum practices using GitHub Projects to manage the development of a Pollution Analysis system

Time(min)	Topic	BTL	Teaching-Learning Methods	Active Learning Methods
10	Attendance & Recap	2	Talk	--- NOT APPLICABLE ---
30	Working on the Project Pollution Analysis through scrum model in GitHub1	4	PPT	--- NOT APPLICABLE ---
10	overview of course	4	Talk	--- NOT APPLICABLE ---

Practical Course DELIVERY Plan: NO Delivery Plan Exists

Practical Session wise Teaching – Learning Plan

No Session Plans Exists

Skilling Course DELIVERY Plan: NO Delivery Plan Exists

Skilling Session wise Teaching – Learning Plan

No Session Plans Exists

WEEKLY HOMEWORK ASSIGNMENTS/ PROBLEM SETS/OPEN ENDED PROBLEM-SOLVING EXERCISES etc:

Week	Assignment Type	Assignment No	Topic	Details	co
1	Weekly Homework Assignments	1	Define adaptive software engineering. How does it differ from traditional software engineering? Discuss the importance of flexibility and change management in adaptive systems. Explain with examples where adaptive software systems are necessary. What are the key principles of adaptive software development?	The home assignments for Adaptive Software Engineering (ASE) are designed to deepen students' understanding of how software systems can evolve in response to changing environments, user needs, and technological landscapes.	CO1
4	Weekly Homework Assignments	2	Explain how requirements engineering changes in adaptive software engineering. Compare adaptive vs. evolutionary and agile development approaches. What are the key architectural requirements for building adaptive software? Discuss how stakeholder needs are continuously re-evaluated in adaptive software	These assignments offer a balanced mix of theoretical, analytical, and practical tasks, enabling learners to critically engage with core concepts of adaptiveness in software engineering.	CO2
9	Weekly Homework Assignments	3	What is a self-adaptive system model? Give examples. Describe any This unit encourages exploration of model two architectural patterns that support adaptiveness. How do model-driven approaches support adaptive software design? Write short notes on: Goalbased modeling .	This unit encourages exploration of model-based two architectural patterns that support adaptiveness. How do model-driven approaches support adaptive software design? Write short notes on: Goalbased modeling engineering, including the use of goalbased models, and adaptive frameworks	CO3
12	Weekly Homework Assignments	4	Describe the MAPE-K loop with a detailed diagram and explain each component. What mechanisms are	Here, the focus shifts to implementation and monitoring aspects. Students	CO4

			used for runtime monitoring of adaptive systems? How do adaptive systems handle uncertainty at runtime? Design a use-case of a selfhealing system and explain its adaptation logic	are asked to illustrate mechanisms such as sensors, effectors, and self-healing loops	
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COURSE TIME TABLE:

	Hour	1	2	3	4	5	6	7	8	9
Day	Component									
Mon	Theory	-	-	-	-	-	-	-	--	--
	Tutorial	-	-	-	-	-	-	-	--	--
	Lab	-	-	-	-	-	-	-	--	--
	Skilling	-	-	-	-	-	-	-	--	--
Tue	Theory	-	-	-	-	-	-	-	--	--
	Tutorial	-	-	-	-	-	-	-	--	--
	Lab	-	-	-	-	-	-	-	--	--
	Skilling	-	-	-	-	-	-	-	--	--
Wed	Theory	-	-	-	-	-	-	-	--	--
	Tutorial	-	-	-	-	-	-	-	--	--
	Lab	-	-	-	-	-	-	-	--	--
	Skilling	-	-	-	-	-	-	-	--	--
Thu	Theory	-	-	-	-	-	-	-	--	--
	Tutorial	-	-	-	-	-	-	-	--	--
	Lab	-	-	-	-	-	-	-	--	--
	Skilling	-	-	-	-	-	-	-	--	--
Fri	Theory	-	-	-	-	-	-	-	V-S101,V-S102,V-S103,V-S104,V-S105,V-S106,V-S107,V-S108,V-S109,V-S201,V-S202,V-S203,V-	V-S101,V-S102,V-S103,V-S104,V-S105,V-S106,V-S107,V-S108,V-S109,V-S201,V-S202,V-S203,V-

									S204,V-S205,V-S206,V-S207,V-S208	S204,V-S205,V-S206,V-S207,V-S208
	Tutorial	-	-	-	-	-	-	-	--	--
	Lab	-	-	-	-	-	-	-	--	--
	Skilling	-	-	-	-	-	-	-	--	--
Sat	Theory	-	-	-	-	-	-	-	--	--
	Tutorial	-	-	-	-	-	-	-	--	--
	Lab	-	-	-	-	-	-	-	--	--
	Skilling	-	-	-	-	-	-	-	--	--
Sun	Theory	-	-	-	-	-	-	-	--	--
	Tutorial	-	-	-	-	-	-	-	--	--
	Lab	-	-	-	-	-	-	-	--	--
	Skilling	-	-	-	-	-	-	-	--	--

REMEDIAL CLASSES:

Supplement course handout, which may perhaps include special lectures and discussions that would be planned, and schedule notified according

SELF-LEARNING:

Assignments to promote self-learning, survey of contents from multiple sources.

S.no	Topics	CO	ALM	References/MOOCs
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DELIVERY DETAILS OF CONTENT BEYOND SYLLABUS:

Content beyond syllabus covered (if any) should be delivered to all students that would be planned, and schedule notified accordingly.

S.no	Advanced Topics, Additional Reading, Research papers and any	CO	ALM	References/MOOCs
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EVALUATION PLAN:

Evaluation Type	Evaluation Component	Weightage/Marks		Assessment Dates	Duration (Hours)	CO1	CO2	CO3	CO4
End Semester Summative Evaluation Total= 40 %	End Semester Exam	Weightage	40		180	10	10	10	10
		Max Marks	100			25	25	25	25
In Semester Formative Evaluation Total= 26 %	Home Assignment and Textbook	Weightage	5		120	1.25	1.25	1.25	1.25
		Max Marks	40			10	10	10	10
	Tutorial	Weightage	15		120	3.75	3.75	3.75	3.75
		Max Marks	100			25	25	25	25
	ALM	Weightage	6		120	1.5	1.5	1.5	1.5
		Max Marks	100			25	25	25	25
In Semester Summative Evaluation Total= 34 %	Semester in Exam-II	Weightage	17		90			8.5	8.5
		Max Marks	50					25	25
	Semester in Exam-I	Weightage	17		90	8.5	8.5		
		Max Marks	50			25	25		

ATTENDANCE POLICY:

Every student is expected to be responsible for regularity of his/her attendance in class rooms and laboratories, to appear in scheduled tests and examinations and fulfill all other tasks assigned to him/her in every course. In every course, student has to maintain a minimum of 85% attendance to be eligible for appearing in Semester end examination of the course, for cases of medical issues and other unavoidable circumstances the students will be condoned if their attendance is between 75% to 85% in every course, subjected to submission of medical certificates, medical case file and other needful documental proof to the concerned departments.

DETENTION POLICY :

In any course, a student has to maintain a minimum of 85% attendance and In-Semester Examinations to be eligible for appearing to the Semester End Examination, failing to fulfill these conditions will deem such student to have been detained in that course.

PLAGIARISM POLICY :

Supplement course handout, which may perhaps include special lectures and discussions

COURSE TEAM MEMBERS, CHAMBER CONSULTATION HOURS AND CHAMBER VENUE DETAILS:

Supplement course handout, which may perhaps include special lectures and discussions

Name of Faculty	Delivery Component of Faculty	Sections of Faculty	Chamber Consultation Day (s)	Chamber Consultation Timings for each day	Chamber Consultation Room No:	Signature of Course faculty:
Vudatha Chandra Prakash	L	102-MA	-	-	-	-

Vudatha Chandra Prakash	T	102-MA	-	-	-	-
Prasanth Yalla	L	103-MA	-	-	-	-
Prasanth Yalla	T	103-MA	-	-	-	-
Venkata Kasula	L	105-MA	-	-	-	-
Venkata Kasula	T	105-MA	-	-	-	-
Sabbineni Rao	L	203-MA	-	-	-	-
Sabbineni Rao	T	203-MA	-	-	-	-
Chaitanya Krishna Bondalapu	L	205-MA	-	-	-	-
Chaitanya Krishna Bondalapu	T	205-MA	-	-	-	-
V V Satyanarayana Kopparti	L	107-MA	-	-	-	-
V V Satyanarayana Kopparti	T	107-MA	-	-	-	-
Amarendra Kothalanka	L	109-MA	-	-	-	-
Amarendra Kothalanka	T	109-MA	-	-	-	-
Vijaya Sonthi	L	207-MA	-	-	-	-
Vijaya Sonthi	T	207-MA	-	-	-	-
sambasivarao lankoji	L	108-MA	-	-	-	-
sambasivarao lankoji	T	108-MA	-	-	-	-
komali Govindu	L	204-MA	-	-	-	-
komali Govindu	T	204-MA	-	-	-	-
S V SURESH BABU MATLA	L	104-MA	-	-	-	-
BANDLA NIROSHA	L	101-MA	-	-	-	-
BANDLA NIROSHA	T	101-MA	-	-	-	-
swathi buradagunta	L	208-MA	-	-	-	-
swathi buradagunta	T	208-MA	-	-	-	-
Lavanya Choutupalli	L	202-MA	-	-	-	-
Lavanya Choutupalli	T	202-MA	-	-	-	-

PRASANNA KUMAR LAKINENI	L	106-MA	-	-	-	-
PRASANNA KUMAR LAKINENI	T	106-MA	-	-	-	-
KARI SUMANTH	L	206-MA	-	-	-	-
KARI SUMANTH	T	206-MA	-	-	-	-
GUTTI YATEESH	L	201-MA	-	-	-	-
GUTTI YATEESH	T	201-MA	-	-	-	-

GENERAL INSTRUCTIONS

Students should come prepared for classes and carry the text book(s) or material(s) as prescribed by the Course Faculty to the class.

NOTICES

Most of the notices are available on the LMS platform.

All notices will be communicated through the institution email.

All notices concerning the course will be displayed on the respective Notice Boards.

Signature of COURSE COORDINATOR

(BANDLA NIROSHA)

Signature of Department Prof. Incharge Academics & Vetting Team Member

Department Of CS&IT

HEAD OF DEPARTMENT:

Approval from: DEAN-ACADEMICS

(Sign with Office Seal) [object HTMLDivElement]