

Lecture Plan		
Name of the college: Government College of Arts, Science and Commerce, Sanquelim- Goa		
Name of Faculty: Mr. Amar R. Naik	Subject: Computer Science	
Paper code: CSC-302 Software Engineering	Program: T.Y.B.Sc.	Division: -
Academic year: 2025 - 2026	Semester: V	Total Lectures: 45 T, 30 P
Course Objectives: This course will enable the student to: 1. Recall Agile values, principles, scrum techniques 2. Describe software development, Agile methods 3. Explain Evolution, fundamentals of software engineering, Agile development 4. Compare the different methods used in software development 5. Discuss source control tools for collaborative work, testing methods 6. Justify the need of software development, testing of software, continuous integration		
Course Outcomes: Upon completion of the course students should be able to : - Remember the concepts of software Engineering - Understand Agile values, principles, scrum techniques - Apply software engineering, Agile methods in software development - Analyze software Evolution, Agile Approach, SCRUM, Design and implementation and Quality testing		

Month	Lecture From	Lecture To	No. of lectures allotted	Topic, Subtopic to be covered	Exercise/ Assignment	ICT Tools	Reference books
June	20/06/2025	21/06/2025	1	- Syllabus Overview, Marks Distribution, Introduction to Software Engineering		Laptop, LCD Projector, PPT	Pankaj Jalote , Integrated Approach to Software Engineering
June	23/06/2025	28/06/2025	3	- Software Development phases, Requirements Analysis - SD: Design - SD: Implementation, Testing and Maintenance		Laptop, LCD Projector, PPT	Pankaj Jalote , Integrated Approach to Software Engineering
June - July	30/06/2025	05/07/2025	3	- SDLC, Waterfall methodology - Prototyping model - Iterative model	Compare two SDLC models	Laptop, LCD Projector, PPT	Pankaj Jalote , Integrated Approach to Software Engineering
July	07/07/2025	12/07/2025	3	- Reverse engineering, reengineering, Revision - Introduction to Source Control tools - versioning - Types of VCS		Laptop, LCD Projector, PPT	Progit
July	14/07/2025	19/07/2025	3	- Check-in/checkout, commit - Branching - Merging	Create Git repository demo	Laptop, LCD Projector, PPT	Progit
July	21/07/2025	26/07/2025	3	- Synchronization, Revision - Agile Approach: Agile Framework, Comparison of Tradition S/W development with Agile - Agile Manifesto, Agile Values		Laptop, LCD Projector, PPT	Chris Sims - Elements of Scrum
July - August	28/07/2025	02/08/2025	3	- Agile Processes		Laptop, LCD Projector, PPT	Chris Sims - Elements of Scrum
August	04/08/2025	09/08/2025	3	- ISA I, Extreme Programming - Scrum	Write User stories	Laptop, LCD Projector, PPT	S. Kenneth Rubin, - Essential Scrum

				- User stories 3Cs, examples			
August	11/08/2025	16/08/2025	3	- Estimation, Velocity, capacity - Estimation using story points, Planning poker - Sprint, Sprint backlog	Estimate User stories using story points	Laptop, LCD Projector, PPT	S. Kenneth Rubin, - Essential Scrum
August	18/08/2025	23/08/2025	3	- Product backlog, PBI - Scrum roles - Scrum artifacts		Laptop, LCD Projector, PPT	S. Kenneth Rubin, - Essential Scrum
August	25/08/2025	25/08/2025	1	- Scrum ceremonies		Laptop, LCD Projector, PPT	S. Kenneth Rubin, - Essential Scrum
September	02/09/2025	06/09/2025	2	- ISA II, Design and implementation using XP: Overview - XP Values		Laptop, LCD Projector, PPT	Martin Fowler - Code Complete
September	08/09/2025	13/09/2025	3	- XP Practices - TDD - Refactoring (code smells)	Identify code smells	Laptop, LCD Projector, PPT	Martin Fowler - Code Complete
September	15/09/2025	20/09/2025	3	- Refactoring techniques, examples, guidelines - Unit testing, Pair Programming - Quality assurance: Verification & Validation		Laptop, LCD Projector, PPT	- Martin Fowler - Code Complete - Pankaj Jalote - Integrated Approach to Software Engineering
September	22/09/2025	27/09/2025	3	- Testing approaches, Code Inspections - Test plan, Test case design - Types of testing - Testing tools, Junit, selenium	Design simple test cases	Laptop, LCD Projector, PPT	Pankaj Jalote - Integrated Approach to Software Engineering
September - October	29/09/2025	04/10/2025	3	- Build tools - Iteration and release planning - Continuous integration		Laptop, LCD Projector, PPT	Pankaj Jalote - Integrated Approach to Software Engineering
October	06/10/2025	11/10/2025	3	- ISA III, Revision		Laptop, LCD Projector, PPT	
October	13/10/2025	18/10/2025	3	- Solving past Question papers		Laptop, LCD Projector, PPT	

PRACTICALS

June	20/06/2025	21/06/2025	-	-	-	-	-
June	23/06/2025	28/06/2025	2	GIT	Git Implementation	Laptop, LCD Projector, GIT Bash	Progit
June - July	30/06/2025	05/07/2025	2	GIT	Git Implementation	Laptop, LCD Projector, GIT Bash	Progit
July	07/07/2025	12/07/2025	2	GIT	Git Implementation	Laptop, LCD Projector, GIT Bash	Progit
July	14/07/2025	19/07/2025	2	GIT	Git Implementation	Laptop, LCD Projector, GIT Bash	Progit
July	21/07/2025	26/07/2025	2	User stories		Laptop, LCD Projector, Google Doc	S. Kenneth Rubin, - Essential Scrum
July - August	28/07/2025	02/08/2025	2	User stories estimation	Write User Stories	Laptop, LCD Projector, Google spreadsheet	S. Kenneth Rubin, - Essential Scrum
August	04/08/2025	09/08/2025	2	Burndown Charts	Create burndown chart	Laptop, LCD Projector, Google spreadsheet	S. Kenneth Rubin, - Essential Scrum
August	11/08/2025	16/08/2025	2	Scrum board and Trello	Create Trello board	Laptop, LCD Projector, Trello	S. Kenneth Rubin, - Essential Scrum
August	18/08/2025	23/08/2025	2	Junit	Test simple Java program	Laptop, LCD Projector, Eclipse	https://docs.junit.org/current/user-guide/
August	25/08/2025	25/08/2025	2	Junit		Laptop, LCD Projector, Eclipse	https://docs.junit.org/current/user-guide/
September	02/09/2025	06/09/2025	2	Selenium	Automate login form test	Laptop, LCD Projector, Eclipse	https://www.selenium.dev/documentation/
September	08/09/2025	13/09/2025	2	Selenium		Laptop, LCD Projector, Eclipse	https://www.selenium.dev/documentation/
September	15/09/2025	20/09/2025	2	Refactoring	Refactor	Laptop, LCD Projector, Eclipse	Martin Fowler - Code Complete
September	22/09/2025	27/09/2025	2	Debugging and defect tracking	Debug code	Laptop, LCD Projector, Eclipse, Bugzilla	https://www.bugzilla.org/
September -	29/09/2025	04/10/2025	2	Maven Build	Build project	Laptop, LCD Projector,	https://maven.apache.org/guides/getting-

October						Eclipse	started/maven-in-five-minutes.html
October	06/10/2025	11/10/2025	2	Javadoc, Revision	Generate documentation	Laptop, LCD Projector, Eclipse	https://www.eclipse.org/documentation/
October	13/10/2025	18/10/2025	2	Revision			

* Assessment Rubrics

Component	Max Marks
ISA 1	7.5
ISA 2	7.5
ISA 3	7.5
Best 2 ISAs	
Practical Examination	25
Semester End Examination	60