

PRASAD V. POTLURI SIDDHARTHA INSTITUTE OF TECHNOLOGY
(Autonomous) Kanuru, Vijayawada-520007
Department of Computer Science & Engineering (Data Science)
IV B. Tech – I Semester

Agile Methodologies

Course Code	23DS4702A	Year	IV	Semester	I
Course Category	PEC	Branch	CSE (Data Science)	Course Type	Theory
Credits	3	L-T-P	3-0-0	Prerequisites	Software Project Management
Continuous Internal Evaluation	30	Semester End Evaluation	70	Total Marks	100

Course Outcomes

Upon Successful completion of course, the student will be able to

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CO1	Describe Agile concepts, principles, and project management practices including Agile Manifesto, team interactions, ethics, design, testing, and documentation for effective software development.	L2
CO2	Apply Agile processes, methodologies (Scrum, Lean, Crystal, FDD, XP), roles, and requirements engineering techniques to develop and manage software systems in dynamic environments.	L3
CO3	Use Agile development practices, Extreme Programming lifecycle, knowledge sharing models, and requirements management techniques to handle evolving software requirements effectively.	L3
CO4	Analyze Agile requirements techniques, product development practices, quality assurance methods, and metrics to assess software quality and improve development processes	L4

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3: Substantial, 2: Moderate, 1: Slight)

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Syllabus		
Unit No	Content	Mapped CO
I	Agile Methodology: Theories for Agile Management, Agile Software Development, Traditional Model vs. Agile Model, Classification of Agile Methods, Agile Manifesto and Principles. Agile Project Management: Agile Team Interactions, Ethics in Agile Teams, Agility in Design, Testing, Agile Documentations, Agile Drivers, Capabilities and Values.	CO1, CO2
II	Agile Process: Lean Production - SCRUM, Crystal, Feature Driven Development- Adaptive Software Development Extreme Programming: Method Overview – Lifecycle – Work Products, Roles and Practices.	CO1, CO2, CO3.
III	Agile Knowledge Sharing: Role of Story-Cards – Story-Card Maturity Model (SMM). Agility in Requirements Engineering: Impact of Agile Processes in RE, Current Agile Practices, Variance, Overview of RE Using Agile, Managing Unstable Requirements	CO1, CO2, CO3.
IV	Agile Requirements Techniques and Management: Requirements Elicitation, Agile Requirements Abstraction Model, Requirements Management in Agile Environment, Agile Requirements Prioritization, Agile Requirements Modeling. Generation – Concurrency in Agile Requirements Generation.	CO2, CO3, CO4.
V	Agile Product Development and Metrics: Agile Product Development, Agile Metrics, Feature Driven Development (FDD), Financial and Production Metrics in FDD. Agile Quality Assurance: Agile Approach to Quality Assurance, Test Driven Development, Agile Approach in Global Software Development.	CO1 CO3, CO4.

Learning Resources
Text Books
1. Learning Agile, Andrew Stellman, Jill Alison Hart, 1st Edition, 2015, O'Reilly. 2. Agile Management for Software Engineering: Applying the Theory of Constraints for Business Results, David J. Anderson, 1st Edition, 2003, Prentice Hall PTR.
Reference Books
1. Head First Agile, Andrew Stellman, Jennifer Greene, 1st Edition, 2017, O'Reilly. 2. Essential Scrum: A Practical Guide to the Most Popular Agile Process, Kenneth S. Rubin, 1st Edition, 2013, Addison-Wesley.
e-Resources & other digital material
1. Agile Methodologies: Agile Methodology Tutorial - GeeksforGeeks