AMITY UNIVERSITY

UTTAR PRADESH

Course Title: Agile Software Development

Credit Units:

L	T	P/ S	SW/ F W	No. of PSDA	TOTAL CREDIT UNITS
2	0	0	2	2	3

Course Level: UG
Course Code: IT401

Course Objectives:

Agile Development training course will give an understanding of what Agility means, when and why to employ Agile development, the pitfalls, issues and common mistakes to watch out for, and will cover key methodologies including Scrum and Kanban. We will also cover approaches, tools and scenarios to introduce Agile to your organization effectively.

Pre-requisites: Knowledge of software development, project management

Course Contents/Syllabus:

	Weightage (%)
Module I	**20**
Descriptors/Topics Agile development, Classification of methods, Introduction and background, Agile Manifesto and Principles, Overview of Scrum, Extreme Programming, Feature Driven development, Lean Software Development, Agile project management, Design and development practices in Agile projects, Test Driven Development, Continuous Integration, Refactoring, Pair Programming, Simple Design, User Stories, Agile Testing, Agile Tools	
Module II	**20**
Descriptors/Topics Introduction to Scrum, Project phases, Agile Estimation, Planning game, Product backlog, Sprint backlog, Iteration planning, Initial Stages of Building a Requirement Document, Techniques for Requirements Elicitation, Burn down chart, Sprint planning and retrospective, Daily scrum, Scrum roles – Product Owner, Scrum Master, Scrum Team, Tools for Agile project management.	
Module III	

Descriptors/Topics User story definition, Characteristics and content of user stories, Agile design practices, Role of design Principles including Single Responsibility Principle, Open Closed Principle, Need and significance of Refactoring, Refactoring Techniques, Continuous Integration	**10**
Module IV	**20**
Descriptors/Topics The Agile lifecycle and its impact on testing, The agile alliances, Test-Driven Development (TDD), Testing user stories - acceptance tests and scenarios, Planning and managing testing cycle, Test automation, Tools to support the Agile tester, Agile testing – Nine principles and six concrete practices for testing on agile teams.	
Module V	**20**
Descriptors/Topics Market scenario and adoption of Agile, Roles in an Agile project, Agile applicability, Agile in Distributed teams, Business benefits, Challenges in Agile, Risks and Mitigation, Agile projects on Cloud, Balancing Agility with Discipline, Agile rapid development technologies.	
Module VI	**10**
Descriptors/Topics Industry based case studies: Project based on Agile methods, JIRA tool	

Course Learning Outcomes:

- Articulate the agile principles, practices, and roles of Scrum.
- Perform Scrum Release Planning, and Scrum Sprint Planning.
- Deconstruct user stories into tasks and ideal day estimates.
- End a Sprint with Sprint Reviews and Sprint Retrospectives.
- Use Scrum with multiple, or distributed, project teams.
- Easily pass any Certified Scrum Master certification class.

Pedagogy for Course Delivery:

The class will be taught using remote teaching methodology. Students' learning and assessment will be on the basis of four quadrants and flipped class method. E-content will be also provided to the students for better learning. The class will be taught using theory, practical and case-based method.

List of Professional Skill Development Activities (PSDA)

I. Quiz
II. Presentation

Assessment/ Examination Scheme:

Theory L/T (%)	Lab/Practical/Studio (%)	Total
100%	NA	100%

Theory Assessment (L&T):

Continuous Assessment/Internal Assessment						End Term Examination
Components (Drop down)	**Attendance**	**Class Test**	**HA**	**Quiz**	**Presentation**	**EE**
Weightage (%)	5	15	10	5	5	60

Text Books:

1. Agile Software Development with Scrum by Ken Schawber, Mike Beedle Publisher: Pearson
2. Agile Software Development, Principles, Patterns and Practices by Robert C. Martin Publisher: Prentice Hall
3. Agile Testing: A Practical Guide for Testers and Agile Teams by Lisa Crispin, Janet Gregory Publisher: Addison Wesley

Reference Books:

1. Agile Software Development: The Cooperative Game By Alistair Cockburn Publisher: Addison Wesley.
2. User Stories Applied: For Agile Software by Mike Cohn