GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

AGILE METHODOLOGIES

(Professional Elective –III)

Course Code: GR20A3128 **L/T/P/C:3/0/0/3**

IV Year I Semester

Prerequisites:
Students are expected to have knowledge in principles of software engineering

Course Objectives:

1. To understand the benefits and pitfalls of agile model.
2. To understanding of agile software development practices and how small teams can apply them to create high- quality software.
3. To provide a good understanding of software design and a set of software technologies.
4. To do a detailed examination and demonstration of Agile development and testing techniques.
5. To understand Agile development and testing.

Course Outcomes:

1. Realize the importance of interacting with business stakeholders in determining the requirements for a software system.
2. Perform iterative software development processes: how to plan them, how to execute them.
3. Develop techniques and tools for improving team collaboration and software quality.
4. Perform Software process improvement as an ongoing task for development teams.
5. Show how agile approaches can be scaled up to the enterprise level.

UNIT-I

Introduction: Agile Definition, How to be Agile, Theories for Agile Management – Agile Software Development – Traditional Model vs. Agile Model – Classification of Agile Methods, Understanding XP, Values and Principles, Improve the Process, Eliminate Waste, Deliver Value.

UNIT-II

Practicing XP: Thinking, Pair Programming, Energized Work, Informative Workspace, Root-Cause Analysis, Retrospectives, Collaborating, Sit Together, Real Customer Involvement, Ubiquitous Language, Stand-Up Meetings, Coding Standards, Iteration Demo, Reporting.

UNIT-III

Releasing: Done Done, No Bugs, Version Control, Ten-Minute Build, Continuous Integration, Collective Code Ownership, Documentation.

UNIT-IV

Planning: Vision, Release Planning, Risk Management, Iteration Planning, Stories, Estimating.

UNIT -V

Developing: Incremental Requirements, Customer Tests, Test- Driven Development, Refactoring, Incremental Design and Architecture, Spike Solutions, Performance Optimization.

TEXT BOOKS:

1. James Shore and Shane Warden, "The Art of Agile Development", O'REILLY,2007.
2. Robert C. Martin, "Agile Software Development, Principles, Patterns, and Practices" , PHI,2002

REFERENCE BOOKS

1. Craig Larman, ―Agile and Iterative Development: A Managers Guide, Addison-Wesley, 2004.
2. Kevin C. Desouza, ―Agile Information Systems: Conceptualization, Construction, and Management, Butterworth-Heinemann, 2007.