INT373:AGILE DRIVEN DEVELOPMENT AND PROJECT MANAGEMENT

L:2 T:0 P:2 Credits:3

Course Outcomes: Through this course students should be able to

CO1 :: explain the principles and values of Agile methodologies and the roles, ceremonies, and artifacts in the Scrum framework.

CO2 :: understand the roles and responsibilities within an Agile team and the importance of cross-functional collaboration and effective communication

CO3 :: apply Agile practices to simulate an Agile environment, including backlog management, Scrum ceremonies, and customer-centric product development

CO4 :: apply Agile engineering techniques to improve code quality and collaboration

CO5 :: analyze frameworks for scaling Agile to large teams and identify strategies for addressing challenges in distributed Agile projects

CO6 :: analyze product management strategies to enhance product quality and value delivery

Unit I

Introduction to Agile Methodologies : Agile principles and values, roles, ceremonies, artifacts, Comparison between Agile and traditional project management

Overview of Scrum framework : setting up a Scrum board and backlog (using tools like Jira or Trello), Daily standup and retrospective

Unit II

Agile Team Dynamics and Collaboration : different roles in an Agile team, Product Owner, Scrum Master, Building and managing cross-functional teams

Role of Product Manager in Agile Development : Effective communication and conflict resolution within Agile teams, Team-based exercises to simulate cross-functional collaboration, Role-playing exercises for Product Owner, Scrum Master and team roles

Unit III

Introduction to Project Management in Agile : Product Manager in Agile, Project life cycle and road map development, Customer-centric product development

Backlog management and prioritization techniques : MoSCoW and WSJF, Creating a product road map and prioritizing the backlog, Case studies on customer-centric development in Agile

Unit IV

Agile Engineering Practices : Test-Driven Development (TDD) and Behavior-Driven Development (BDD), Pair programming and continuous integration

Agile metrics : Velocity, burndown, cycle time, Hands-on exercises in TDD and BDD using simple coding projects, Pair programming practice with peer evaluations, Using Agile metrics in project management tools to track progress

Unit V

Scaling Agile in Large Projects : Introduction to Scaling Agile frameworks, SAFe, LeSS, Scrum@Scale, Agile practices for distributed and large teams, Challenges and best practices for scaling Agile in enterprises, Creating and managing a scaled Agile setup using tools, Group projects simulating distributed Agile teams

Unit VI

Advanced Product Management in Agile : Product strategy and market fit analysis, Data-driven product decisions and A/B testing, Managing technical debt in Agile projects, Conducting a market fit analysis using case studies, Running A/B testing simulations for product decisions, Analyzing technical debt in coding exercises and devising refactoring strategies

List of Practicals / Experiments:

List of Practicals

- Setting Up a Scrum Board
- Conducting Daily Standups
- Role-Playing Agile Team Dynamics

- Backlog Prioritization Techniques
- Test-Driven Development (TDD) Hands-On
- Behavior-Driven Development (BDD) Workshop
- Sprint Retrospective Exercise
- Check and test different agile metrics
- Pair Programming Practice
- Simulating Distributed Agile Teams
- Scaling Agile Frameworks Simulation
- A/B Testing Simulation

Text Books:

1. SUCCEEDING WITH AGILE: SOFTWARE DEVELOPMENT USING SCRUM by MIKE COHN, PEARSON

References:

1. SOFTWARE PROJECT MANAGEMENT by BOB HUGHES, MIKE CORETELL AND RAJIB MALL, MCGRAW HILL EDUCATION

2. HANDS-ON AGILE SOFTWARE DEVELOPMENT WITH JIRA: DESIGN AND MANAGE SOFTWARE PROJECTS USING THE AGILE METHODOLOGY by DAVID HARNED, PACKT PUBLISHING

3. ESSENTIAL SCRUM: A PRACTICAL GUIDE TO THE MOST POPULAR AGILE PROCESS by KENNETH S. RUBIN, ADDISON-WESLEY