CSEN2111	AGILE SOFTWARE DEVELOPMENT	L	T	P	S	J	C
		3	0	0	0	0	3
Pre-requisite	None						
Co-requisite	None						
Preferable exposure	None						

Course Description:

Agile software development practices enable customer centric software development with collaborative teamwork centred around people. This course elaborates agile development principles and techniques covering the entire software development process from problem conception through development, testing and deployment to equip the learner with practical software development methodology.

Course Educational Objectives:

1. To understand the agile concept and its importance in software development.
2. To acquire complete knowledge on Extreme programming.
3. To know complete modelling of agile processes on the XP environment.
4. To acquire knowledge on Scrum.
5. To familiar with Feature driven development

UNIT 1 Introduction 9 hours

Introduction: The Agile manifesto, Agile methods, XP: Extreme Programming, DSDM, SCRUM, feature- Driven Development, Test Driven Development, modelling misconceptions, agile modelling, tools of misconceptions, updating agile models.

UNIT 2 Extreme Programming 9 hours

Introduction, core XP values, the twelve XP practices, about extreme programming, planning XP projects, test first coding, making pair programming work.

UNIT 3 Agile Modelling and XP 9 hours

Agile Modelling and XP: Introduction, the fit, common practices, modelling specific practices, XP objections to agile modelling, agile modelling and planning XP projects, XP implementation phase.

UNIT 4 Scrum 9 hours

Scrum Framework, Agile Principles, Sprints, Requirements and User Stories, Product backlogs, Estimation and Velocity, Roles, Planning, Multi-level Planning, Release Planning, Sprint planning.

UNIT 5 Feature-Driven Development, Test Driven Development and Release Management 9 hours

Feature-Driven Development: Introduction, incremental software development, Regaining Control,
motivation behind FDD, planning an iterative project, architecture centric, FDD and XP.
Test Driven Development: Unit Tests, Integration Tests, End-to-End Tests, Customer Tests.
Release Management: Version Control, Continuous Integration.

Textbook(s):

1. John Hunt, Agile Software Construction,1st Edition, Springer,2005
2. Craig Larman, Agile and Iterative Development: A Manager's Guide, Addison-Wesley, Pearson Education – 2004
3. Pearson, Robert C. Martin, Juli, James Shore, Chromatic 2013, The Art of Agile Development, O'Reilly Media
4. Elisabeth Hendrickson, Agile Testing, Quality Tree Software Inc 2008.

Reference Book(s):

1. Andrew Stellman, Jenifer Greene, Headfirst Agile, O'Reilly, 2017
2. Peggy Gregory, Casper Lassenius, Xiaofeng Wang Philippe Kruchten (Eds.), Agile Processes in Software Engineering and Extreme Programming, 22nd International Conference on Agile Software Development, XP 2021 Virtual Event, June 14–18, 2021, Proceedings, Springer
3. Peggy Gregory, Philippe Kruchten (Eds.), Agile Processes in Software Engineering and Extreme Programming – Workshops XP 2021 Workshops Virtual Event, June 14–18, 2021 Revised Selected Papers, 2021
4. Ian Somerville, Software Engineering, 10th edition, Pearson, 2016

Course Outcomes: After successful completion of the course the student will be able to:

1. use agile methods in various development environments.
2. apply Xtreme programming confidently.
3. understanding of Agile Modelling XP Projects.
4. design and develop applications in Scrum environments.
5. develop abilities on Feature Driven Development.

CO-PO Mapping:

	Programme Outcomes (POs)												PSOs		
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**1**	**2**	**3**
CO1	2					1							2		
CO2			3	2					2					1	
CO3		2	2												1
CO4		1											2		
CO5			1		2							2		2	

Note: 1 - Low Correlation 2 - Medium Correlation 3 - High Correlation

APPROVED IN:

BOS : 06-09-2021 **ACADEMIC COUNCIL: 01-04-2022**

SDG No. & Statement:

SDG 4 Quality Education

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. Learning about the importance of Agility that suits with the current Software industry requirements lead to develop the various applications

SDG Justification: