

## Department of Computer Science (Optional)

### Revised Syllabus of I Year Advanced Diploma Program (PG)

#### Preamble:

Agile Project Management is Certificate program. This course will explore the history, approach, and philosophy of Agile project management, including the Scrum and Kanban framework. You will learn how to differentiate and blend Agile and other project management approaches. As you progress through the course, you will learn more about Scrum and Kanban, exploring its pillars and values and comparing essential Scrum and kanban team roles. You will discover how to build, manage, and refine a product backlog, implement Agile's value-driven delivery strategies, and define a value roadmap. You will also learn strategies to effectively organize the five important Scrum events for a Scrum team, introduce an Agile or Scrum approach to an organization, and coach an Agile team. Finally, you will learn how to search for and land opportunities in Agile roles.

#### Program Objectives of the Course:

##### Students will be able to :

1. The acquisition of knowledge and practical experience in the field of software project management using modern agile methods in the management of IT projects.
2. Practices in modern agile methods used to automate the management of software development;
3. Acquisition of research skills, self-study and tools for software project management in different areas of software engineering.
4. Learn Principles and methodology for agile project management;
5. Components of management models in agile project management.
6. Possibilities and methods of work with software tools using the agile project management.
7. Apply agile methods for the success of all kind of project.
8. Skills: Work with the requirements using agile methods in project management.
9. Scheduling and allocation of resources using agile methods in project management; Work with software development tools using agile methods in project management.

#### Program Outcomes:

Student should be able to:

1. To Understand the Principles and methodology for agile project management;
2. To know the components of management models in agile project management;
3. To know: • Possibilities and methods of work with software tools using the agile project management.
4. Work with the requirements using agile methods in project management.
5. Scheduling and allocation of resources using agile methods in project management.
6. Work with software development tools using agile methods in project management.
7. Apply agile methods for the success of all kind of project.

## I Year Advanced Diploma Programme

1. Title: Agile Project Management
2. Year of Implementation: 2020
3. Duration: One Year
4. Pattern: Semester
5. Medium of Instruction: English
6. Contact hours: 7 hours/week
8. Structure of Course:

## Syllabus Structure (PG)

Year	Semester	Course No.	Course Code	Contact Hours	Credits (1Credit=15 H)	Total Marks	
1	I	CT I	ADCST 101	30	2	75	
		CL I	ADCSL101	60	2	150	
	II	CT II	ADCST 202	30	2	75	
		CL II	ADCSL202	60	2	150	
	Annual	CP I	ADCSP101	60	2	150	
	<b>Total</b>				<b>240</b>	<b>10</b>	<b>600</b>
2	III	CT III	ADCST 303	30	2	75	
		CL III	ADCSL303	60	2	150	
	IV	CT IV	ADCST 404	30	2	75	
		CL IV	ADCSL404	60	2	150	
	Annual	CP II	ADCSP 202	60	2	150	
	Industrial and or Incubation and or Research and or Field Training				60	2	-
	<b>Total</b>				<b>270</b>	<b>12</b>	<b>600</b>
<b>Total</b>				<b>510</b>	<b>22</b>	<b>1200</b>	

AD: Advanced Diploma, \*: Departmental Code (C: Chemistry, MI: Microbiology, CSE: Computer Science (Entire), etc)

C: Course, T: Theory, L: Lab (Practical), P: Project

Total No. of Papers: 10 (Theory: 04, Practical: 04, Project: 02) Theory and Practical: Semester, **Project: Annual**

**Semester I****CT-I: ADCST 101: Title: Agile Foundation-I****(Contact Hrs: 30 Credits: 2)****Course Objectives:-**

1. To impart basic Project Managementsystems.
2. To Understand the Company environment.

**Unit I: The Essentials of the Agile Foundation (15)**

The Necessities of Project and Project Management (PM), A brief history of Agile , Waterfall Model, Distinguishing Agile from Waterfall, Building an Agile –workflow , What is Agile Planning?, The four values of the Agile Manifesto, The 12 principles of the Agile Manifesto, Agile Development, Toolset for the agile process, Extreme Programming, Agile Industries.

**Unit II: Tools used in Agile (15)**

Comparison between Non-Agile and Agile Project, Three stages of Agile Project. Tools used in Agile project management : JIRA, Orange scrum, Kanban, ActiveCollab, Sprintly, Zepel, Trello, Github Project Management, Pivotal Tracker, Backlog, Wrike, Top Scrum Software Tools in 2021

**Learning Outcomes:**

After completion of the unit, Student is able to,

1. The course aims helping students to gain a solid understanding of the crucial and growing role played by project management in all areas of the modern business.
2. This course will also enable the students to expand their business communication with the technical terminology necessary for participating and/or running projects internationally.

**Reference Books:**

1. A toolkit for reaping the rewards from all your business projects by Robert Buttrick Prentice Hall / Financial Times, Fourth edition, 2010
2. Manifesto for Agile Software Development <http://agilemanifesto.org/>
3. Principles behind the Agile Manifesto <http://agilemanifesto.org/principles.html>
4. Agile Handbook <http://agilehandbook.com/agile-handbook.pdf>

**CT-I: ADCSL101: (Practical): Agile Project Management Lab****(Contact Hrs. : 60 Credits: 02)****Learning Objectives: 4**

1. To impart basic Project Managementsystems.
2. To Understand the Company environment.

**List of Practical's (15)**

1. Discuss requirements of Project and Project Management (PM).
2. Implement your project using Waterfall Model.
3. Distinguishing Agile from Waterfall.
4. Discuss 12 principles of the Agile Manifesto.
5. Discuss the comparison between Non-Agile and Agile Project,
6. Three stages of Agile Project.
7. Tools used in Agile project management : JIRA, Orange scrum, Kanban ,
8. Discuss the frameworks of Active Collab, Sprintly, Zepel, Trello,
9. Discuss the frameworks of Github Project Management, Pivotal Tracker, Backlog, Wrike,  
Top Scrum Software Tools in 2021
10. Discuss the frameworks of Pivotal Tracker, Backlog, Wrike.

**Learning Outcomes: 4**

After completion of the unit, Student is able to

1. Review foundational agile concepts.
2. Understand the Agile Manifesto and the supporting mindset.
3. Review the different approaches to the agile methodology.
4. Evaluate value associated with an agile project.

**Reference Books:**

1. Craig Larman "Agile and Iterative Development – A Manager's Guide" Pearson Education – 2004
2. Agile Software Development, Principles, Patterns, and Practices, Robert C. Martin, Prentice Hall; 1st edition, 2002

**Semester II****CT-II: ADCST 202: Title: Agile Framework -I****(Contact Hrs: 30 Credits: 2)****Learning Objectives: 2**

1. Optimizing the flow of valuable work.
2. Building a Scrum sprints and events.

**Unit I: Essentials of Scrum and Agile****(15)**

Introduction, What Is Scrum and Agile? Agile Manifesto, When to Use Scrum vs. When to Use Traditional Methods, Facts and Fictions about Scrum , Project Management Challenges, SCRUM – process flow, roles & cycle description, sprint planning meeting, backlog, & sprint execution, Agile Practices, Refactoring & pair programming, Testing versus scripted testing, tools for project management, Planning Quality Management, Performing Quality Assurance, Tools & Techniques for Quality Control, Typical Scrum Timeline , Scrum Roles, Scrum Team Role 1: The Product Owner, Role 2: The Scrum Master, Role 3: The Development Team, Other Roles.

**Unit II: Framework of Scrum****(15)**

Scrum Events, Time-Box Concept, Event 1: The Sprint, Event 2: Sprint Planning, Event 3: Daily Scrum ,Event 4: Sprint Review , Event 5: Sprint Retrospective , Product Backlog Grooming , Slack , Scrum , Artifacts, Artifact 1: Product Backlog, Artifact 2: Sprint Backlog ,Artifact 3: Increment, Artifact 4: Definition of “Done” ,Artifact 5: Monitoring Progress toward a Goal, Artifact 6: Monitoring Sprint Progress.

**Learning Outcomes: 2**

After completion of the unit, Student is able to

1. Construct agile planning strategy and timeline.
2. The course aims helping students to gain the knowledge about how to build products such as software applications.

**Reference Books:**

1. Agile Testing: A Practical Guide for Testers and Agile Teams By Lisa Crispin, Janet Gregory, Addison
2. Elisabeth Hendrickson, “Agile Testing” Quality Tree Software Inc 2008

**CT-II: ADCSL202: (Practical): Agile Project Management Lab****(Contact Hrs. 60 Credits: 02)****Learning Objectives: 4**

1. To impart basic Project Managementsystems.
2. To Understand the Company environment.

**List of Practical's (15)**

1. Discuss the interface of JIRA.
2. Discuss the frameworks of Github.
3. Discuss the Scrum framework
4. Case study: College website using Scrum framework.
5. Case study: Library management system using Scrum framework.
6. Case study: any Company management website using Scrum framework.
7. Case study: Any Hospital management website using Scrum framework.
8. Case study : On your project

**Learning Outcomes: 4**

After completion of the unit, Student is able to ,

1. The course aims helping students to gain a solid understanding of the crucial and growing role played by project management in all areas of the modern business.
2. This course will also enable the students to expand their business communication with the technical terminology necessary for participating and/or running projects internationally.

**Reference Books:**

1. A toolkit for reaping the rewards from all your business projects by Robert Buttrick  
Prentice Hall / Financial Times, Fourth edition, 2010
2. Manifesto for Agile Software Development <http://agilemanifesto.org/>
3. Principles behind the Agile Manifesto <http://agilemanifesto.org/principles.html>
4. Agile Handbook <http://agilehandbook.com/agile-handbook.pdf>

**CP-I: ADCSP101(Project):**  
**(Contact Hrs. 30/60, Credits: 1/2 )**

Every student should take up a project and submit in the report the work he/she has carried out. Project work will be accessed independently at the time of practical examination

**BOS Sub-Committee**

1. Chairman -Dr. More Sharmila S.
2. Member – Ms Atar Roshani U.  
-Ms Shendge G. P.

**Expert Committee**

1. Name of Academic Expert: Prof .Dr Bhavana Narain.
2. Name of Industrial Expert: Mr. Asif Hamid Shaikh  
Software Engineer, Utopia Automation and Control Pvt. Ltd.