Software Engineering (24 hours)

Sessions 3 & 4

Lecture

- Introduction to software engineering
  - Software Process
  - Software Process Model
  - Software Product
- Importance of Software engineering
- Software Development Life Cycles
- Requirements Engineering
  - Types of Requirements
  - Steps involved in Requirements Engineering
  - Requirement Analysis Modelling

Lab

- Prepare software requirement specification for the final project

Sessions 5 & 6

Lecture

- Design and Architectural Engineering
  - Characteristics of Good Design
  - Function Oriented vs Object Oriented System
  - Modularity, Cohesion, Coupling, Layering
  - Design Models
  - UML
- Coding
  - Programming Principles
  - Coding Conventions
- Object Oriented Analysis and Design

Lab

- Create the initial use-cases, activity diagram and ER diagram for the final project

Sessions 7 & 8

Lecture

- Introduction to Agile development model
- Agile development components
- Benefits of Agile
- Introduction to different tools used for agile web development
- Introduction to Atlassian Jira
  - Add Project
  - Add Tasks and sub-tasks
  - Create sprints with tasks
- Case study of developing web application using agile methodology

Lab

Create different sprints in Atlassian Jira for different features