EC-360 Software Engineering - Course Contents

a. **Credits:** 3+0

b. **Text Books:**

1. Software Engineering, Ian Sommerville, 7th Edition, Addison Wesley, Latest Edition.

2. Software Engineering, A Practioner's Approach, Roger S. Pressman, 5th Edition McGraw Hill, 2001.

a. **Objectives/Goals:**

To introduce students to the fundamentals of Software Engineering and impart through understanding of the latest Software Engineering practice and concepts.

d. **Course Outcomes:**

1. Get broad overview of the subject.

2. Understand about critical systems, the impact of their failures, various dimensions of dependability and other properties according to which these systems can be evaluated.

3. Understand concept of the software process and various generic software process models.

4. Know about the principal tasks of software project management and the need for project planning in all software projects.

5. Understand the concepts of user/system requirements as well as functional/non-functional requirements.

6. Know about various kinds of system models which can be developed during requirement engineering, system analysis and design process.

7. Understand importance of architectural design in software systems is important and what kinds of architectural styles, modular decompositions and controls can be considered.

8. Know about the fundamentals of object-oriented (OO) design process, and various UML models which can be used during the OO design process.

9. Know about the modern technique for rapid software development and the latest software development concepts of agile methods, extreme programming and prototyping.

e. **Topics:**

1. Introduction to Software Engineering
2. The Software Process
3. Project Management
4. Requirements Engineering
5. Structured Techniques
6. Object Oriented Analysis and Design
7. Introduction to UML
8. Software Testing
9. Software Cost Estimation
10. Configuration Management

Case studies will be discussed and given as Assignments to students.