

## Course Timeline

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Here is a suggested timeline to cover the specified topics in a 3-month course:

### **\*\*Month 1: Introduction to Software Engineering and Process\*\***

#### **\* Week 1: Nature of Software, Overview of Software Engineering**

■+ Topics: Definition of software, software crisis, software engineering principles, software development

■+ Assignments: Introduction to software engineering, software development life cycle diagram

#### **\* Week 2: Professional Software Development, Software Engineering Practice**

■+ Topics: Roles and responsibilities in software development, software engineering principles, software

■+ Assignments: Software development team roles, software engineering principles essay

#### **\* Week 3: Software Process Structure, Software Process Models**

■+ Topics: Software process, process models, waterfall model, V-model

■+ Assignments: Software process diagram, process model comparison

### **\*\*Month 2: Agile Development and Requirements Engineering\*\***

#### **\* Week 4: Agile Software Development, Agile Process Models**

■+ Topics: Agile manifesto, agile principles, Scrum, Kanban

■+ Assignments: Agile manifesto analysis, Scrum framework diagram

#### **\* Week 5: Agile Development Techniques, Requirements Engineering Process**

■+ Topics: Agile development techniques, user stories, requirements engineering process

■+ Assignments: User story writing, requirements engineering process diagram

#### **\* Week 6: Functional and Non-Functional Requirements, Context Models**

■+ Topics: Functional and non-functional requirements, context models, use cases

■+ Assignments: Requirements categorization, context model diagram

### **\*\*Month 3: Design, Implementation, Testing, and Management\*\***

#### **\* Week 7: Interaction Models, Structural Models, Behavioral Models**

■+ Topics: Interaction models, structural models, behavioral models, UML diagrams

■+ Assignments: UML diagram creation, model comparison

#### **\* Week 8: Model-Driven Engineering, Architectural Design**

■+ Topics: Model-driven engineering, architectural design, design patterns

■+ Assignments: Architectural design diagram, design pattern analysis

#### **\* Week 9: Design and Implementation, UML Diagrams**

■+ Topics: Design and implementation, UML diagrams, class diagrams

■+ Assignments: Design and implementation plan, UML diagram creation

#### **\* Week 10: Software Testing and Quality Assurance, Software Evolution**

■+ Topics: Software testing, quality assurance, software evolution

■+ Assignments: Testing plan, software evolution scenario

#### **\* Week 11: Project Management and Planning, Configuration Management**

■+ Topics: Project management, project planning, configuration management

■+ Assignments: Project plan, configuration management plan

#### **\* Week 12: Software Process Improvement**

■+ Topics: Software process improvement, CMMI, ISO 9001

■+ Assignments: Process improvement plan, CMMI analysis

This timeline is just a suggestion and can be adjusted according to the class size, student background, and