

## Course Timeline

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Here is a suggested timeline for covering the topics in a 3-month course:

### **\*\*Month 1: Foundations of Software Engineering (Weeks 1-4)\*\***

#### **\* Week 1: Introduction to Software Engineering, Nature of Software**

- + Topics: Software definition, characteristics, types, and role in society
- + Overview of software engineering, its importance, and historical context

#### **\* Week 2: Overview of Software Engineering**

- + Topics: Software development life cycle, software engineering disciplines, and professional software engineering
- + Software engineering principles, ethics, and code of conduct

#### **\* Week 3: Software Engineering Practice**

- + Topics: Software development methodologies, software engineering activities, and software engineering tools
- + Introduction to software process structure and software process models

#### **\* Week 4: Agile Software Development**

- + Topics: Introduction to Agile, Agile principles, and Agile values
- + Overview of Agile process models and Agile development techniques

### **\*\*Month 2: Requirements Engineering and Design (Weeks 5-8)\*\***

#### **\* Week 5: Requirements Engineering Process**

- + Topics: Introduction to requirements engineering, requirements elicitation, and analysis
- + Functional and non-functional requirements, and requirements documentation

#### **\* Week 6: Context Models and Interaction Models**

- + Topics: Context modeling, interaction modeling, and system modeling
- + Introduction to structural and behavioral models

#### **\* Week 7: Architectural Design and Model-Driven Engineering**

- + Topics: Introduction to architectural design, design principles, and design patterns
- + Model-driven engineering, UML diagrams, and architectural views

#### **\* Week 8: Design and Implementation**

- + Topics: Detailed design, implementation, and coding
- + Design patterns, coding standards, and best practices

### **\*\*Month 3: Testing, Quality Assurance, and Project Management (Weeks 9-12)\*\***

#### **\* Week 9: Software Testing and Quality Assurance**

- + Topics: Introduction to software testing, testing levels, and testing types
- + Quality assurance, quality metrics, and testing frameworks

#### **\* Week 10: Software Evolution and Maintenance**

- + Topics: Software evolution, software maintenance, and software re-engineering
- + Introduction to project management and project planning

#### **\* Week 11: Configuration Management and Change Control**

- + Topics: Configuration management, version control, and change control
- + Introduction to software process improvement

#### **\* Week 12: Project Management, Planning, and Software Process Improvement**

- + Topics: Project management, project planning, and resource allocation
- + Software process improvement, ISO/IEC 15504, and CMMI

This timeline allows for a balanced coverage of the topics, with a gentle introduction to software engineering