

1. Introduction to Software Project Management

- Overview of software project management
- Role of a software project manager
- Software development life cycle (SDLC)

2. Project Planning and Scheduling

- Project scope and requirements gathering
- Work Breakdown Structure (WBS)
- Estimation techniques (e.g., function point analysis, use case points)
- Gantt charts and network diagrams
- Critical Path Method (CPM) and Program Evaluation and Review Technique (PERT)
- Resource allocation and levelling

3. Risk Management

- Identifying risks in software projects
- Risk analysis and prioritisation
- Risk mitigation strategies
- Contingency planning

4. Project Cost Management

- Budget estimation and cost forecasting
- Cost control and management
- Earned value management (EVM)

5. Quality Management

- Quality assurance and quality control
- Software testing strategies
- Metrics and models for software quality

6. Team Management and Leadership

- Building and leading a project team
- Communication management
- Conflict resolution
- Stakeholder management
- Team motivation and performance tracking

7. Agile Project Management

- Introduction to Agile methodologies (Scrum, Kanban, etc.)
- Agile project planning and execution
- Role of the Scrum Master and Product Owner
- Sprint planning and retrospectives

8. Software Configuration Management

- Version control systems (e.g., Git)
- Change management processes
- Configuration audits and baseline management

9. Project Monitoring and Control

- Tracking project progress
- Performance measurement techniques
- Managing project scope creep
- Handling project changes and deviations

10. Project Closure and Evaluation

- Closing software projects
- Post-project evaluation and lessons learned
- Deliverable handover and documentation
- Project audit and retrospective

11. Tools and Techniques in Software Project Management

- Introduction to project management tools (e.g., MS Project, Jira, Trello)
- Software metrics and KPIs

- Automation tools for project management

12. Ethical and Legal Considerations

- Software project ethics
- Intellectual property rights and software licensing
- Compliance and regulatory requirements

13. Case Studies and Best Practices

- Real-world software project management scenarios
- Lessons learned from successful and failed projects
- Industry best practices for managing software projects

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