



Essentials of Software Project Management

PROGRAM DESCRIPTION

Essentials of Software Project Management is a 12-hour online course. It is a component of the Software Quality Institute's Software Project Management (SWPM) Certificate Program. SWPM contains three courses: 1) Essentials of Software Project Management, 2) Principles of Software Testing and Quality Assurance, and 3) Management of Software Technology and Teams. All three courses are required for certification, but all may be taken as a stand-alone course. The courses may be taken in any order.

SWPM offers a thorough view of the most up-to-date software best practices, taught by expert practitioners from industry. With a focus specifically on software, the Software Project Management Certificate program results in a working knowledge that incorporates quality, applicability, profitability and timeliness.

COURSE DESCRIPTION

The Essentials of Software Project Management course is designed to prepare software project managers, novice or experienced, with project management skills needed to better manage software projects. Built along the software project management lifecycle, this course covers detailed topics of the basic concepts of software project management, including initiating, planning, controlling, executing, and closing projects. The course will also cover how software projects should be managed, from inception to post implementation review.

This Essentials course will also cover the software engineering artifacts required for development of each phase of the software engineering lifecycle including requirements modeling and analysis, software architecture and design.

After successful completion of the course, the student will understand how standard engineering practices apply to software products including life cycle development processes. The student will learn to manage software as a distinct project, use specifications and descriptions, make use of modeling techniques, complete reviews and audits, confirm product development with planned verification, and validation and testing. Throughout the course, we will be applying the systems engineering and program management principles to industry case studies. Students who take this course will improve their management skills and abilities to define the project scope, create a workable project plan, and manage within the budget and schedule.

KEY LEARNING OBJECTIVES:

- Defining the project scope
- Lifecycle and process
- Software project schedule
- Project monitoring and control
- Communication and closeout
- Key software deliverables through each phase of the software development life cycle



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COURSE CURRICULUM

Week 1 – Overview of SWPM

- *Topics include* basic SWPM definitions; introduction to projects; SDLC; SWEBOK; SW lifecycles; SMART objectives; management control
- *Total run-time* 0:57:43

Week 2 – Lifecycle and Process

- *Topics include* project and product processes; process models; predictive software life cycle models and characteristics: waterfall, v-shaped, prototyping, spiral, RAD, and incremental; object-oriented models: lean, agile, XP, scrum, and RUP
- *Total run-time* 1:53:54

Week 3 – Software Scheduling

- *Topics include* WBS; project scheduling; estimation techniques
- *Total run time* 1:30:19

Week 4 – Monitoring and Control

- *Topics include* control systems; introductory project risk management; earned value management; critical chain buffer management
- *Total run-time* 2:04:51

Week 5 – Communication and Closeout

- *Topics include* project communication; project reporting; post performance analysis; phase and project closeout
- *Total run-time* 0:59:32

Week 6 – Requirements Analysis

- *Topics include* requirements engineering; software requirements; customer rights and responsibilities; methods for eliciting requirements; joint application design; vision and scope document
- *Total run-time* 1:31:17

Week 7 – Requirements Modeling

- *Topics include* problem framing; use cases, misuse cases, and user stories; data requirements and ERDs; context diagrams; data flow diagrams; prototypes; requirements validation techniques
- *Total run-time* 1:31:26

Week 8 – Software Design

- *Topics include* design challenges; design concepts; heuristics; practices; coupling and cohesion; architecture; object-oriented metrics; MVC
- *Total run-time* 1:43:18