

COURSE TITLE: Software Engineering

Institute/Division: Faculty of Electrical and Computer Engineering - E5

Course code E5softEn

Erasmus subject code 11.3

Number of contact hours: 45 (20h lectures, 20h laboratory, 5h project)

Course duration: 1 semester

ETCS credits: 6

Course description: Software engineering ethics, Life cycle, Software process models, The Rational Unified Process, Extreme programming, Agile project management, Requirements engineering, Functional and non-functional requirements, The software requirements document, Requirements specification, Requirements elicitation and analysis, Requirements validation, System modeling, Interaction models, Structural models, Behavioral models, Model-driven engineering, Architectural design decisions, Software Quality, Software Testing, Software Maintenance and Control, Computer Aided Software Engineering,

Software Engineering Laboratory, is prepared by MSc D, Grela

Laboratory concerns on reusable object-oriented software, so called design patterns. The idea is that when designing a new class hierarchy, though implementation details may differ, you often find yourself using the same kinds of solutions over and over again. Rather than approaching each design task out of context as an individual, isolated problem, the strategy is to study the task and identify the underlying design pattern most likely to be applicable, and follow the class structure outlined by that pattern. Software Engineering laboratory helps object-oriented programmers to take full advantage of the extra power offered by Java language.

Most important design patterns discussed during this course are: Composite, Chain Of Responsibility, Decorator, Flyweight, Bridge, Prototype and Builder.

Course type: Lectures, computer laboratory and project

Literature

1. Ian Sommerville, Software Engineering, Pearson 2010
2. IEEE Recommended Practice for Software Requirements Specifications, IEEE Computer Society, IEEE Std 830-1998
3. Erich Gamma, Richard Helm, Ralph Johnson and John Vlissides, Design Patterns: Elements of Reusable Object-Oriented Software

Assessment method Project and laboratory exercises

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