



## COURSE DATASHEET

<b>Semester:</b>	2014/15/2
<b>Course:</b>	Software development process and Software Quality Assurance
<b>Code:</b>	VEMKFIM312S
<b>Responsible department:</b>	Department of Process Engineering
<b>Department code:</b>	MKFO
<b>Responsible instructor:</b>	Zsolt Ulbert

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### Course objectives:

Modern IT skills including programming skills and software engineering knowledge have indispensable role in many engineering fields. The course aims to provide theoretical and practical knowledge of software development methodologies and the phases of software development. It provides an overview of the traditional and the modern software development methodologies, the basics of object-oriented software development and software quality assurance. During practical lessons students will gain their practical skills in using classes and objects in C++ programs and learn basic UML by solving practical examples.

### Course content:

Theoretical knowledge:

Object-oriented development, software development methodologies, agile software development methodologies, Rational Unified Process (RUP) software development methodology (requirements, analysis and design), software testing, development of safety-critical systems, software project management, software quality assurance, software costing

Practical topics:

C++ programming (classes, objects, constructor and destructor functions, generalization and inheritance), creating UML models (use case, class, activity, sequence and collaboration diagrams preparation), simple software design project.

### Requirements, evaluation and grading:

The whole content of lectures is included in one final written examination held in the last week of semester. During the semester, students have to prepare an assignment solving C++ programming tasks. The assignment has to be presented in a 10 minute oral presentation. The final mark is determined according to following table based on the weighted average of the written examinations and the assignment (final written examination 80%, assignments 20%).

above 80% excellent (5)

70%-79% good (4)

60%-69% medium (3)



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### Requirements, evaluation and grading:

50%-59% pass (2)

below 50% fail (1)

Replacement of the final written examination is not possible, in this case the written examination contributes to the final mark by weight of 0%. The final written examinations can be improved one time in the first week of exam period.

Conditions for teacher's signature:

The assignment to be prepared and presented, the absences from practical lessons will not exceed the 35% of total number of lessons.

### Required and recommended readings:

Ian Sommerville. *Software Engineering, Eight Edition*. Addison-Wesley, 2007.

Roger S. Pressman. *Software Engineering, A Practitioner's Approach*, McGraw Hill, 2005.

Robert A. Maksimchuk és Eric J. Naiburg. *UML for Mere Mortals*, Addison-Wesley Professional, 2004.

Object Management Group. *UML Resource Page*, <http://www.uml.org/>

Rational Unified Process, Wikipedia: [http://en.wikipedia.org/wiki/Rational\\_Unified\\_Process](http://en.wikipedia.org/wiki/Rational_Unified_Process)

RUP: Overview, <http://sce.uhcl.edu/helm/RationalUnifiedProcess/indexRUP.htm>

Scrum (software development), Wikipedia:

[http://en.wikipedia.org/wiki/Scrum\\_\(software\\_development\)](http://en.wikipedia.org/wiki/Scrum_(software_development))

Extreme programming, Wikipedia: [http://en.wikipedia.org/wiki/Extreme\\_programming](http://en.wikipedia.org/wiki/Extreme_programming)

Feature-driven development, Wikipedia: [http://en.wikipedia.org/wiki/Feature-driven\\_development](http://en.wikipedia.org/wiki/Feature-driven_development)