

SYLLABUS¹

1. Information about the Program

1.1 Higher education institution	Politehnica University of Timișoara
1.2 Faculty ² / Department ³	Automation and Computers / Computers
1.3 Chair	-
1.4 Domain of study	Computers and Information Technology / 20.60.10.10
1.5 Study level	Bachelor
1.6 Study programme / Qualification	Computers / Engineer

2. Information about the Course

2.1 Course	Software Engineering Fundamentals						
2.2 Lecturer	Sl. Dr. Ing. Petru Florin Mihancea						
2.3 Academic staff for seminars/labs							
2.4 Study year	2	2.5 Semester	4	2.6 Assessment type	E	2.7 Type	Mandatory

3. Total time estimated (hours/ semester of didactical activities)

3.1 Hours / week	5	of which:	3.2 lecture hours	2	3.3 seminar/lab hours	3
3.4 Total curriculum hours	70	of which:	3.5 lecture hours	28	3.6 seminar/lab hours	42
Time distribution						hours
Study using manuals, support materials, bibliography and notes						35
Supplementary documentation in library, speciality electronic platforms and on site						
Supplementary preparation for seminars/labs, homeworks, reviews, portofolios and essays						28
Tutoring activities						
Exams						2
Other						
3.7 Total - hours of individual study						65
3.8 Total - hours per semester						135
a. Credits						5

4. Prerequisites (if appropriate)

4.1 curriculum	<ul style="list-style-type: none"> Object-Oriented Programming, Computer Programming, Programming Techniques, Data Structures and Algorithms
4.2 competencies	<ul style="list-style-type: none"> Programming knowledge with special focus on object-orientation

5. Conditions (if appropriate)

5.1 for lectures	<ul style="list-style-type: none"> large room, video projector / beamer, projection screen
5.2 for seminars/labs	<ul style="list-style-type: none"> black/white board, sufficiently large laboratory to accomodate the working group, computers with Java programming language + virtual machines, Eclipse integrated development environment

¹ Formularul corespunde Fișei Disciplinei promovată prin OMECTS 5703/18.12.2011 (Anexa3);
² Se înscrie numele facultății care gestionează programul de studiu căruia îi aparține disciplina;
³ Se înscrie numele departamentului căruia i-a fost încredințată susținerea disciplinei și de care aparține titularul cursului;

6. Specific competencies acquired

Professional competencies ⁴	<ul style="list-style-type: none"> • Designing, managing the lifecycle, integration and integrity of hardware, software and communication systems • Problem solving using the instruments of computer science and engineering • Operating with fundamentals of sciences, engineering, and computer science
Transversal competencies	<ul style="list-style-type: none"> •

7. Objectives of the course (issued from the list of the competencies acquired)

7.1 Aim	<ul style="list-style-type: none"> • The main objective of the course is to introduce our students into the world of industrial development of software
7.2 Specific objectives	<ul style="list-style-type: none"> • For this purpose different ways of planning the development of a program (i.e. life cycle and development models) are presented together with the description of the engineering methods and tools used in different development phases of an industrial program. The course pays special attention on aspects of object-oriented software engineering

8. Content

8.1 Lecture	Hours	Instruction methods
Introduction - About software engineering, software life cycle and development processes	6	Presentations based on slides, discussions, explanations, exemplifications
Requirements Engineering - Basic notions, requirements capturing techniques, UML for requirements	4	
Analysis and Design - Basic notions, high-level and fine-grained design, UML for analysis and design	10	
Testing - Basic notions, testing techniques (e.g. white-box, black-box)	8	

⁴ Aspectul competențelor profesionale va fi tratat cf. Metodologiei OMECTS 5703/18.12.2011. Se vor prelua competențele care sunt precizate în Registrul Național al Calificărilor din Învățământul Superior RNCIS (http://www.rncis.ro/portal/page?_pageid=117,70218&_dad=portal&_schema=PORTAL) pentru domeniul de studiu de la pct. 1.4 și programul de studii de la pct. 1.6 din această fișă.

10.5 Seminar /labs	Solving problems like the ones discussed/solved/exemplified during the applicative classes	Written or oral examinations	1/3
10.6 Minimal performance standards (minimal specific knowledge required for passing the exam, the means to assess mastering the specific knowledge)			
<ul style="list-style-type: none"> To pass the final exam a student must correctly answer at 50% (minimum mark of 5) of the proposed subjects (for both parts individually - the exam mark is the average). To pass the applicative part, a student must obtain a minimum mark of 5 (average). The subjects are going to be choose in such a manner that they would be representative for the entire discipline (with some aspects only tangentially addressed while other addressed in-depth) 			

11. International compatibility

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| <ol style="list-style-type: none"> ETH Zurich, http://www.inf.ethz.ch/education/course_catalog CMU Pittsburgh http://isri.cmu.edu/education/undergrad/ Oxford University, http://www.cs.ox.ac.uk/softeng/courses/subjects.html |
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Date

Signature of the course instructor

Signatures of the academic staff for seminars/labs

10.10.2013

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Date of approval in the Department

Signature of the Department Director

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