SYLLABUS

1. Data about the program of study

1.1 Institution	The Technical University of Cluj-Napoca
1.2 Faculty	Faculty of Automation and Computer Science
1.3 Department	Computer Science
1.4 Field of study	Computer Science and Information Technology
1.5 Cycle of study	Bachelor of Science
1.6 Program of study / Qualification	Computer science/ Engineer
1.7 Form of education	Full time
1.8 Subject code	53.

2. Data about the subject

2.1 Subject name	***Information Systems***				
2.2 Course responsible / lecturer	Assoc. prof. dr. eng. Ovidiu Pop – Ovidiu.Pop@cs.utcluj.ro				
2.3 Teachers in charge of seminars/ laboratory / project	Assoc. prof. dr. eng. Ovidiu Pop – Ovidiu.Pop@cs.utcluj.ro				
2.4 Year of study	IV	2.5 Semester	2	2.6 Type of assessment (E - exam, C - colloquium, V - verification)	E
2.7 Subject category	*DF – fundamentală, DD – în domeniu, DS – de specialitate, DC – complementară*				DS
	DI – Impusă, DOp – opțională, DFac – facultativă				DI

3. Estimated total time

3.1 Number of hours per week	4	of which:	Course	2	Seminars		Laboratory	2	Project
3.2 Number of hours per semester	56	of which:	Course	28	Seminars		Laboratory	28	Project

3.3 Individual study:	
(a) Manual, lecture material and notes, bibliography	20
(b) Supplementary study in the library, online and in the field	20
(c) Preparation for seminars/laboratory works, homework, reports, portfolios, essays	15
(d) Tutoring	
(e) Exams and tests	5
(f) Other activities:	9

3.4 Total hours of individual study (suma (3.3(a)…3.3(f)))	69
3.5 Total hours per semester (3.2+3.4)	125
3.6 Number of credit points	5

4. Pre-requisites (where appropriate)

4.1 Curriculum	Software engineering (UML), database design
4.2 Competence	Object-oriented design, UML usage

5. Requirements (where appropriate)

5.1. For the course	50% (attendance)
5.2. For the applications	80% (attendance)

6. Specific competence

6.1 Professional competences	**C4 -** Improving the performances of the hardware, software and communication systems (1 credit) **C4.1** - Identifying and describing the defining elements of the performances of the hardware, software and communication systems **C4.2** - Explaining the interaction of the factors that determine the performances of the hardware, software and communication systems **C4.3 -** Applying the fundamental methods and principles for increasing the performances of the hardware, software and communication systems

	C4.4 - Choosing the criteria and evaluation methods of the performances of the hardware, software and communication systems **C4.5** - Developing professional solutions for hardware, software and communication systems based on performance optimization **C5 -** Designing, managing the lifetime cycle, integrating and ensuring the integrity of hardware, software and communication systems (1 credit) **C5.1** - Specifying the relevant criteria regarding the lifetime cycle, quality, security and the computing system's interaction with the environment and the human operator **C5.2** - Using interdisciplinary knowledge for adapting the computing system to the specific requirements of the application field **C5.3** - Using fundamental principles and methods for ensuring the security, the safety and ease of exploitation of the computing systems **C5.4** - Proper utilization of the quality, safety and security standards in the field of information processing **C5.5** - Creating a project including the problem's identification and analysis, its design and development, also proving an understanding of the basic quality requirements **C6 -** Designing intelligent systems (2 credits) **C6.1** - Describing the components of intelligent systems **C6.2** - Using domain-specific tools for explaining and understanding the functioning of intelligent systems **C6.3** - Applying the fundamental methods and principles for specifying solutions for typical problems using intelligent systems **C6.4** - Choosing the criteria and evaluation methods for the quality, performances and limitations of intelligent systems **C6.5** - Developing and implementing professional projects for intelligent systems
6.2 Cross competences	N/A

7. Discipline objective (as results from the *key competences gained*)

7.1 General objective	Improve requirements management and design abilities of students in their senior year.
7.2 Specific objectives	Apply RUP metholologies for requirements management and design patterns

8. Contents

8.1 Lectures	Hours	Teaching methods	Notes
Requirements Maturity Management	2	Video presentation	
RUP – Overview and Best Practices	2		
RUP –Iterative Development	2		
The Requirements Discipline	2		
Capturing Requirements: Use Cases (I)	2		
Capturing Requirements: Use Cases (II) – Best Practices	2		
Analysis Model Artifacts: Vision, Glossary, Supplementary Specification (I)	2		
Analysis Model Artifacts: Vision, Glossary, Supplementary Specification (II)	2		
Domain Model	2		
GRASP Design Patterns (I)	2		
GRASP Design Patterns (II)	2		
Use Case Realizations with GRASP Design Patterns (I)	2		
Use Case Realizations with GRASP Design Patterns (II)	2		
Use Case Realizations with GRASP Design Patterns (III)	2		
Bibliography 1. Craig Larman – Applying UML and Patterns (2003)			

2. Alistair Cockburn – Writing Effective Use Cases (2002)			
8.2 Applications – Seminars/Laboratory/Project	Hours	Teaching methods	Notes
Requirements Artifacts: Vision, Glossary, Supplementary Specification	4	Students are encouraged to use their knowledge in implementation projects	
Generate a Vision document based on a RUP template	4		
Generate a Supplementary Specification document based on a RUP template	4		
Requirements Artifacts: Use Cases	4		
Generate a Use Case document based on a RUP template	4		
Generate an Analysis Model	4		
Lab Assessment	4		
Bibliography 1. Keneth Rubin – Essential Scrum (2012)			

**Se vor preciza, după caz: tematica seminariilor, lucrările de laborator, tematica și etapele proiectului.*

9. Bridging course contents with the expectations of the representatives of the community, professional associations and employers in the field

The knowledge gained overlapping demands of all IT employers.

10. Evaluation

Activity type	Assessment criteria	Assessment methods	Weight in the final grade
Course	Theory and problem solving	exam	90%
Seminar			
Laboratory	Ability to apply theoretical knowledge	Artefacts evaluation	10%
Project			

Minimum standard of performance:
Proven understanding of requirements artifacts and ability to generate a design model.
Grade calculus: 90-% exam, 10% lab
Conditions for participating in the final exam: Lab ≥ 5
Conditions for promotion: Grade ≥ 5
Note: students attending less than 50% of the lectures are not entitled to address any claims with respect to their evaluation

Date of filling in:	**Titulari**	**Titlu Prenume NUME**	**Semnătura**
	Course	Assoc. prof. dr. eng. Ovidiu Pop	
	Applications	Assoc. prof. dr. eng. Ovidiu Pop	

Date of approval in the department	Head of department Prof.dr.ing. Rodica Potolea
Date of approval in the Faculty Council	Dean Prof.dr.ing. Liviu Miclea