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	44.

2. Data about the subject

2.1 Subject name				*Practical work in the specialization*	
2.2 Course responsible/lecturer				Assoc. prof. dr. eng. Tiberiu Marita	
2.3 Teachers in charge of seminars/ laboratory/ project				Internship supervisors appointed by the faculty: Sl.dr.ing. Marcel Antal, S.l. dr.ing. Itu Razvan, Conf. dr.ing. Anca Hangan, Conf.dr.ing.Camelia Lemnaru, Prof. dr. ing Adrian Groza, Conf.dr.ing. Victor Bacu, Conf. dr. ing. Tiberiu Marita	
2.4 Year of study	III	2.5 Semester	2	2.6 Type of assessment (E - exam, C - colloquium, V - verification)	V
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	15	of which:	Course	-	Seminars	-	Laboratory	-	Project	15
3.2 Number of hours per semester	90	of which:	Course	-	Seminars	-	Laboratory	-	Project	90
3.3 Individual study:										
(a) Manual, lecture material and notes, bibliography										
(b) Supplementary study in the library, online and in the field										
(c) Preparation for seminars/laboratory works, homework, reports, portfolios, essays										
(d) Tutoring										
(e) Exams and tests										
(f) Other activities:										10

3.4 Total hours of individual study (suma (3.3(a)…3.3(f)))	10
3.5 Total hours per semester (3.2+3.4)	100
3.6 Number of credit points	4

4. Pre-requisites (where appropriate)

4.1 Curriculum	N/A
4.2 Competence	N/A

5. Requirements (where appropriate)

5.1. For the course	N/A
5.2. For the applications	N/A

6. Specific competence

6.1 Professional competences	**C2** Designing hardware, software and communication components (2 credits) **C2.3** Construction of hardware and software components of computing systems using design methods, languages, algorithms, data structures, protocols and technologies **C2.4** Metric based evaluation of functional and non-functional characteristics of computing systems **C2.5** Implementation of hardware, software and communication components

	C3 Problems solving using specific Computer Science and Computer Engineering tools (2 credits) **C3.3** Applying solution patterns using specific engineering tools and mehods **C3.4** Comparatively and experimentaly evaluation of the alternative solutions for performance optimization **C3.5** Developing and implementing informatic solutions for concrete problems **C5** Designing, managing the lifetime cycle, integrating and ensuring the integrity of hardware, software and communication systems (2 credits) **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
6.2 Cross competences	**CT1 -** Honorable, responsible, ethical behavior in the spirit of the law to ensure the reputation of the profession **CT2** Identifying, describing and conducting processes in the projects management field, assuming different roles inside the team and clearly and concisely describing, verbally or in writing, in Romanian and in an international language, the results from the activity field. (2 credits)

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

7.1 General objective	Application of fundamental and applied knowledge gained in the projects development within a specialized company or research team (theme set by the project manager)
7.2 Specific objectives	Acquaintance and student involvement in every development stage of a hardware / software / communication project and connected aspects of design activities: - Design, implementation, testing and validation of the project - Preparation of documentations, technical reports - Team work and communication skills - Project management activities

8. Contents

8.1 Lectures	Hours	Teaching methods	Notes
-			
Bibliography			
-			

8.2 Applications – Seminars/Laboratory/Project	Hours	Teaching methods	Notes
• analysis of the product • preparation of the project specifications • implementation and deployment of the hardware or software system • product testing and validation • product documenting		N/A	
Bibliography			
For the project development, the draft bibliography is the one recommended by the project leader from the company or by the research team at which the implementation is performed and the one resulted in the documenting phase.			

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

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

This discipline provides education and training of the students at the workplace site, with benefits for both sides. Students are familiarized with the working and professional requirements needed to work in a company, and companies have the opportunity to shape students to facilitate their employment after graduation (to reduce training expenses / training). Also it aims to increase cohesion between academia and employment in a priority area in terms of national and European level in order to improve the skills of employees and to prepare and maintain them in the

labor market in a particularly dynamic and competitive domain (mainly existing competition with Eastern European countries and Asia - India and China).

10. Evaluation

Activity type	Assessment criteria	Assessment methods	Weight in the final grade
Course	N/A	N/A	N/A
Project	Attendance (min 100 h), activity, tutor assessment	Oral colloquy. In the case that the face to face examination is not possible, the colloquy will be organized using specific e-learning platforms (MS Teams, Moodle)	100%
Minimum standard of performance: Development of a hardware / software / communication engineering project.			

Date of filling in:	**Titulari**	**Titlu Prenume NUME**	**Semnătura**
	Course	Assoc.prof.dr.eng. Tiberiu Marita	
	Applications	_	

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