UNIVERSITATEA
LUCIAN BLAGA
—DIN SIBIU—

COURSE SYLLABUS

Academic year 2024 - 2025

1. Programme Information

1.1. Higher education institution	Lucian Blaga University of Sibiu
1.2. Faculty	Faculty of Engineering
1.3. Department	Department of Computer Science and Electrical and Electronics Engineering
1.4. Field of study	Computer Science and Information Technology
1.5. Level of study[1]	Master
1.6. Programme of study/qualification	Embedded Systems

2. Course Information

2.1. Name of course	Research Activities		Code	ES.401.ZO	
2.2. Course coordinator	Prof. Remus BRAD, PhD				
2.3. Seminar/laboratory coordinator					
2.4. Year of study[2]	2	2.5. Semester[3]	4	2.6. Evaluation form[4]	A/R
2.7. Course type[5]	O	2.8. The formative category of the course[6]			Z

3. Estimated Total Time

3.1. Course Extension within the Curriculum – Number of Hours per Week					
3.1.a. Lecture	3.1.b. Seminar	3.1.c. Laboratory	3.1.d. Project	3.1.e. Other	Total
				14	**14**

3.2. Course Extension within the Curriculum – Total Number of Hours within the Curriculum					
3.2.a. Lecture	3.2.b. Seminar	3.2.c. Laboratory	3.2.d. Project	3.2.e. Other	Total[7]
				196	**196**

Time Distribution for Individual Study[8]	Hours
Learning by using course materials, references and personal notes	20
Additional learning by using library facilities, electronic databases and on-site information	24
Preparing seminars / laboratories, homework, portfolios and essays	140
Tutorial activities[9]	50
Exams[10]	20

3.3. Total Individual Study Hours[11] (*NOSI$_{sem}$*)	254
3.4. Total Hours in the Curriculum (*NOAD$_{sem}$*)	196
3.5. Total Hours per Semester[12] (*NOAD$_{sem}$ + NOSI$_{sem}$*)	450
3.6. No. of Hours / ECTS	25
3.7. Number of credits[13]	18

4. Prerequisites (if needed)

4.1. Courses that must be successfully completed first (from the curriculum)[14]	Basic knowledge of programming plus domain knowledge to enable the development of a dissertation.
4.2. Competencies	Bibliographic research skills and of software application development.

5. Conditions (where applicable)

5.1. For course/lectures[15]	Board, video projector, flipchart, specific teaching materials, online platforms
5.2. For practical activities (lab/sem/pr/app) [16]	Computing technology, software packages, online platforms

6. Specific competencies acquired[17]

		Number of credits assigned to the discipline[18]	18	Credits distribution by competencies[19]
6.1. Professional competencies	PC1	approve engineering design		4
	PC2	perform project management		4
	PC3	operate open source software		4
	PC4	disseminate results to the scientific community		0
	PC5	perform scientific research		0
	PC6	evaluate research activities		4
6.2. Transversal competencies	TC1	apply knowledge of science, technology and engineering		0
	TC2	show initiative		2

7. Course objectives (resulted from developed competencies)

7.1. Main course objective	• Research and development of hardware and software technologies in the field of advanced computing systems • Identify the main sources of information. • To accommodate master students with the practical requirements of the field of computer science. Preparing them to deal with the real challenges of the day-to-day work of their employees. • Forming habits of concepts, methods and developing skills to use computer algorithms to address a variety of problems for specific topic;
7.2. Specific course objectives	• Identify roles and responsibilities in a large specialized team and applying effective relationship and work techniques within the team.

8. Content

8.2.d. Practical activities		Teaching methods	Hours
PAA 1	Considerations about scientific research. Learning to Learn.	Expunere, discuţii libere	24
PAA 2	Analyzing Research Guides for Students. Methods and Methodology in Research.	Expunere, discuţii libere	24
PAA 3	Research Paper Outline. How To Prepare a Presentation.	Expunere, discuţii libere	24
PAA 4	The stages of developing grant applications: creating consortium based on expertize of participants, geographic area, in a	Expunere, discuţii libere	24

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	complementary way.		
PAA 5	Dissemination stages and ethical issues. Where, what and how to publish.	Expunere, discuţii libere	24
PAA 6	Constructively criticizing research. Criteria for selecting journals.	Expunere, discuţii libere	24
PAA 7	Why PhDs are important to. Applying for PhD.	Expunere, discuţii libere	24
		Total practical activities hours:	168

9. Bibliography

9.1. Recommended Bibliography	The bibliography is based on the chosen theme and approach.
9.2. Additional Bibliography	

10. Conjunction of the discipline's content with the expectations of the epistemic community, professional associations and significant employers of the specific study program[20]

Students will acquire research skills and synthesis abilities preparing them for the transition to a new stage of doctoral admission.
It is carried out through regular discussions in a formal and informal setting with the representatives of the profile companies.

11. Evaluation

Activity Type	11.1 Evaluation Criteria	11.2 Evaluation Methods		11.3 Percentage in the Final Grade	Obs.[21]
11.4a Exam / Colloquy	• Theoretical and practical knowledge acquired (quantity, correctness, accuracy)	Tests during the semester[22]:	15%	100%	CPE
		Homework:	15%		
		Other activities[23]:	0%		
		Final evaluation:	70%		

11.5 Minimum performance standard[24] The final assessment will include written work consisting of (partial) grid tests and problems. • Knowledge, understanding and explaining the basics of evolutionary computing. • Constant interest to acquire discipline. • Partial fulfilment (50%) of homework, essays and tests given during the semester.	CPE

The Course Syllabus will encompass components adapted to persons with special educational needs (SEN – people with disabilities and people with high potential), depending on their type and degree, at the level of all curricular elements (skills, objectives, contents, teaching methods, alternative assessment), in order to ensure fair opportunities in the academic training of all students, paying close attention to individual learning needs.
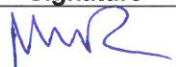
Filling Date: 09.09.2024
Department Acceptance Date: 16.09.2024

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	Academic Rank, Title, First Name, Last Name	Signature
Course Teacher	prof. Remus BRAD, PhD	
Study Program Coordinator	Prof. Arpad GELLERT, PhD	
Head of Department	Assoc. Prof. Radu George CREȚULESCU, PhD	
Dean	Prof. Maria VINȚAN, PhD	

[1] Bachelor / Master

[2] 1-4 for bachelor, 1-2 for master

[3] 1-8 for bachelor, 1-3 for master

[4] Exam, colloquium or VP A/R - from the curriculum

[5] Course type: R = Compulsory course; E = Elective course; O = Optional course

[6] Formative category: S = Specialty; F = Fundamental; C = Complementary; I = Fully assisted; P = Partially assisted; N = Unassisted

[7] Equal to 14 weeks x number of hours from point 3.1 (similar to 3.2.a.b.c.)

[8] The following lines refer to individual study; the total is completed at point 3.37.

[9] Between 7 and 14 hours

[10] Between 2 and 6 hours

[11] The sum of the values from the previous lines, which refer to individual study.

[12] The sum (3.5.) between the number of hours of direct teaching activity (NOAD) and the number of hours of individual study (NOSI) must be equal to the number of credits assigned to the discipline (point 3.7) x no. hours per credit (3.6.)

[13] The credit number is computed according to the following formula, being rounded to whole neighbouring values (either by subtraction or addition

$$No.\,credits = \frac{NOCpSpD \times C_C + NOApSpD \times C_A}{TOCpSdP \times C_C + TOApSdP \times C_A} \times 30\ credits$$

Where:

- NOCpSpD = Number of lecture hours / week / discipline for which the credits are calculated
- NOApSpD = Number of application hours (sem./lab./pro.) / week / discipline for which the credits are calculated
- TOCpSdP = Total number of course hours / week in the Curriculum
- TOApSdP = Total number of application hours (sem./lab./pro.) / week in the Curriculum
- C_C/C_A = Course coefficients / applications calculated according to the table

Coefficients	Course	Applications (S/L/P)
Bachelor	2	1
Master	2,5	1,5
Bachelor - foreign language	2,5	1,25

[14] The courses that should have been previously completed or equivalent will be mentioned

[15] Board, video projector, flipchart, specific teaching materials, online platforms, etc.

[16] Computing technology, software packages, experimental stands, online platforms, etc.

[17] Competences from the Grids related to the description of the study program, adapted to the specifics of the discipline

[18] From the curriculum

[19] The credits allocated to the course are distributed across professional and transversal competences according to the specifics of the discipline

[20] The relationship with other disciplines, the usefulness of the discipline on the labour market

[21] CPE – Conditions Exam Participation; nCPE – Does Not Condition Exam Participation; CEF - Conditions Final Evaluation; N/A – not applicable

[22] The number of tests and the weeks in which they will be taken will be specified

[23] Scientific circles, professional competitions, etc.

[24] The minimum performance standard in the competence grid of the study program is customized to the specifics of the discipline, if applicable

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