



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	Master
1.6. Programme of study/qualification	Embedded Systems

2. Course Information

2.1. Name of course	Preparing the Disertation Thesis	Code	ES.403.ZO
2.2. Course coordinator			
2.3. Seminar/laboratory coordinator	Prof. Arpad GELLERT, PhD		
2.4. Year of study	2	2.5. Semester	4
		2.6. Evaluation form	A/R
2.7. Course type	O	2.8. The formative category of the course	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
				6	6
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
				84	84
Time Distribution for Individual Study					Hours
Learning by using course materials, references and personal notes					14
Additional learning by using library facilities, electronic databases and on-site information					14
Preparing seminars / laboratories, homework, portfolios and essays					28
Tutorial activities					6
Exams					4
3.3. Total Individual Study Hours ($NOSI_{sem}$)					66
3.4. Total Hours in the Curriculum ($NOAD_{sem}$)					84
3.5. Total Hours per Semester ($NOAD_{sem} + NOSI_{sem}$)					150
3.6. No. of Hours / ECTS					25
3.7. Number of credits					6

4. Prerequisites (if needed)

4.1. Courses that must be successfully completed first (from the curriculum)	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	Board, video projector, flipchart, specific teaching materials, online platforms
5.2. For practical activities (lab/sem/pr/app)	Computing technology, software packages, online platforms

6. Specific competencies acquired

Number of credits assigned to the discipline			6	Credits distribution by competencies
6.1. Professional competencies	PC4	Disseminate results to the scientific community		0,5
	PC5	Perform scientific research		1
	PC6	Evaluate research activities		0,5
	PC7	Interact professionally in research and professional environments		0,5
	PC12	Promote the transfer of knowledge		1
6.2. Transversal competencies	PC15	Apply statistical analysis techniques		1
	TC1	Apply knowledge of science, technology and engineering		0,5
	TC2	Show initiative		0,5
	TC3	Assume responsibility		0,5

7. Course objectives (resulted from developed competencies)

7.1. Main course objective	<ul style="list-style-type: none"> Identify the main sources of information. Critical analysis of theoretical models, ideas and approaches established. Forming habits of concepts, methods and developing skills to use computer algorithms to address such a variety of problems for specific dissertation topic;
7.2. Specific course objectives	<p>The aim of this topic is to help students to dedicate their time and effort for realizing their master dissertation/thesis based on previously acquired knowledge from various domain such as distributed artificial intelligence, intelligent software agents, parallelism, multicore architectures, embedded, ubiquitous computers, adaptive systems, grid computing, evolutionary computing, etc. This discipline intends to develop skills and innovation for preparation of studies, articles and technical reports, to prepare elite specialists in computer science and engineering (especially in hardware-software interface area) required for the research and development activities carried out at both academic and industrial. Most young performers will be motivated to sustain a career in research, both in public and in R&D departments of companies. Some dissertations could represent technical reports from (inter)national research grants / activities, especially in European Computing Systems, obtained by the institutional research programs with leading universities in the country and abroad. The outstanding results of the master students' research activity will be reflected by disseminating their research dissertation (work) in mainstream publications (conferences / journals).</p>

8. Content

8.2.d. Other practical activities		Teaching methods	Hours
Act.1	The choice of topic / area of research. Contacting the teacher coordinator. Design research and development plan for the	Exposition, Discussion	6

	dissertation work. Linking dissertation topic with the student's training program, with the competence area of the supervisor and with master specific studies.		
Act.2	Presentation and discussion of research plan (drawing the sketch paper). Documentation to achieve the dissertation thesis. Dissertation must demonstrate advanced scientific knowledge of topic, must contain elements of originality in developing or ground settlement, and ways of scientific validation.	Exposition, Discussion	20
Act.3	Structure of dissertation: a) Introduction (the master student motivates the approached topic and justify how the theme fits the specific problems of master specialization); b) Critical analysis of the current status of the topic addressed (based on the author's personal interpretation of the information in the literature); c) Student's contribution to solving some aspects of the issues involved in the dissertation thesis theme (it presents the author's own achievements: experimental research, new theoretical development, processes and design methodologies, computer products, new interpretations of original data from the literature, etc); d) Conclusions and Further Work (it presents the main conclusions drawn based on studies and researches conducted in the draft of the dissertation thesis and emphasizes personal contributions, the applicability and usefulness and how they contribute to the development of knowledge in the topic); e) References.	Exposition, Discussion	22
Act.4	Devise a visual representation of dissertation, a Wall-chart (a calendar, pinned up for all the family to see), Gantt chart, etc.	Exposition, Discussion	10
Act.5	Preparation work. Establish methodology for the dissertation topic.	Exposition, Discussion	24
Act.6	Implementation of algorithms and methods in code. Hypothesis testing.	Exposition, Discussion	15
Act.7	Complete documentation (report) research. Emphasizing the practical side of research work undertaken in the dissertation. Brief presentation of theoretical concepts practice devoted exclusively to research carried out.	Exposition, Discussion	15
Total other practical activity hours			112

9. Bibliography

9.1. Recommended Bibliography	1. 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

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.
11.4a Exam / Colloquy	• Theoretical and practical	Tests during the semester:	15%	100%	CPE



	knowledge acquired (quantity, correctness, accuracy)	Homework:	15%		
		Other activities:	0%		
		Final evaluation:	70%		
11.5 Minimum performance standard The final assessment will include written work consisting of (partial) grid tests and problems. <ul style="list-style-type: none">• 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: 12.09.2024

Department Acceptance Date: 16.09.2024

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