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	ADVANCED COMPUTING SYSTEMS

2. Course Information

2.1. Name of course	Preparing the Disertation Thesis			Code	ACS.403.ZO
2.2. Course coordinator	Prof. Adrian FLOREA, PhD				
2.3. Seminar/laboratory coordinator	Prof. dr. ing. Adrian FLOREA				
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
				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[7]
				84	**84**

Time Distribution for Individual Study[8]	**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[9]	6
Exams[10]	4

3.3. Total Individual Study Hours[11] *(NOSI$_{sem}$)*	**66**
3.4. Total Hours in the Curriculum *(NOAD$_{sem}$)*	**84**
3.5. Total Hours per Semester[12] *(NOAD$_{sem}$ + NOSI$_{sem}$)*	**150**
3.6. No. of Hours / ECTS	**25**
3.7. Number of credits[13]	**6**

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]		6	Credits distribution by competencies[19]
6.1. Professional competencies	PC2	analyses test data	1
	PC7	conceives product design	1
	PC10	carries out research activities at interdisciplinary level	1
	PC11	develop data processing applications	0.5
	PC16	performs analytical mathematical calculations	1
	PC17	uses dedicated software for data analysis	1
6.2. Transversal competencies	TC3	takes responsibility	0.5

7. Course objectives (resulted from developed competencies)

7.1. Main course objective	• 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	• 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). Prepare students also to know how to tackle the safety and ethical issues occurred during the developing the thesis.

8. Content

8.2.d. Alte activităţi practice	**Metode de predare**	**Nr. ore**

PAA 1	The choice of topic / area of research. Contacting the teacher coordinator. Design research and development plan for the dissertation work. Linking dissertation topic with the student's training program, with the competence area of the supervisor and with master specific studies.	Expunere, discuţii libere	6
PAA 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.	Expunere, discuţii libere	20
PAA 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.	Expunere, discuţii libere	18
PAA 4	Devise a visual representation of dissertation, a Wall-chart (a calendar, pinned up for all the family to see), Gantt chart, etc.	Expunere, discuţii libere	10
PAA 5	Preparation work. Establish methodology for the dissertation topic.	Expunere, discuţii libere	10
PAA 6	Implementation of algorithms and methods in code. Hypothesis testing.	Expunere, discuţii libere	10
PAA 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.	Expunere, discuţii libere	10
		Total ore alte activităţi practice	84

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[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 topic chosen for dissertation. • Constant interest to acquire discipline. • Partial fulfilment (50%) of homework, essays and tests given during the semester.					

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: 10.09.2024
Department Acceptance Date: 16.09.2024

	Academic Rank, Title, First Name, Last Name	**Signature**
Course Teacher	Prof. Adrian FLOREA, PhD	
Study Program Coordinator	Prof. Adrian FLOREA, 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*