

## COURSE DESCRIPTION

### 1. Program details

University	"Lucian Blaga" University of Sibiu
Faculty	Engineering Faculty
Department	Department of Computer Science and Electrical Engineering
Main field of study	Computer Science and Information Technology
Level of education	Master
Specialization	Advanced Computing Systems

### 2. Course details

Course title	Practică de cercetare / Research Activities			
Course code	Type of course	Year of study	Semester	Number of credits
mACS.205.SO	Facultativ	1	2	6
Evaluation type	Type of course (FD=fundamental discipline.; DD=domain discipline; SD=specialized discipline; CD=complementary discipline)			
Colocviu	A/R			
Course instructor				
Seminar/lab/project instructor				

### 3. Estimated time

Course duration in the curriculum – number of hours per week				
Lecture	Seminar	Lab	Project	Total
-	-	-	12	12
Course duration in the curriculum - Total of hours curriculum				
Lecture	Seminar	Lab	Project	Total ( <i>NOAD<sub>sem</sub></i> )
-	-	-	168	168

Distribution of hours for individual study		No. hours
Individual study using course handbooks, bibliography and notes		
Additional documentation in library and on specialized electronic platforms		
Preparing seminars / labs, homework, essays and portfolios		
Tutoring		
Exam preparation		
Total hours for individual study ( <i>NOSI<sub>sem</sub></i> )		
<b>Total hours per semester (<i>NOAD<sub>sem</sub> + NOSI<sub>sem</sub></i>)</b>		<b>168</b>

### 4. Prerequisites (if applicable)

Curriculum	Basic knowledge of programming plus domain knowledge to enable the development of a dissertation.
Competencies	Bibliographic research skills and of software application development.

### 5. Conditions (if applicable)

course materials	
sem/lab/project materials	Developing and supporting the planned work. Laboratory with computers usually of the company where is carrying the internship.

### 6. Specific competences acquired

Professional competence	<ul style="list-style-type: none"> <li>Developing skills for addressing complex real-world problems;</li> <li>Supply the background for advanced studies and research in the field;</li> <li>Understanding the ideas that underlie scientific research.</li> </ul> <p>Develop individual research skills and acquiring the ability to write and publish scientific papers.</p>
Transversal competences	<ul style="list-style-type: none"> <li>Professional approach and ethical conduct in scientific research.</li> <li>Developing team-work ability in order to perform some relatively complex applications.</li> <li>Collaborating with experts in other fields.</li> </ul>

### 7. Objectives (based on the specific grid for the accumulated competences)

General objective	<ul style="list-style-type: none"> <li>Research and development of hardware and software technologies in the field of advanced computing systems</li> <li>Identify the main sources of information.</li> <li>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.</li> <li>Forming habits of concepts, methods and developing skills to use computer algorithms to address a variety of problems for specific topic;</li> </ul>
Specific objectives	<ul style="list-style-type: none"> <li>Identify roles and responsibilities in a large specialized team and applying effective relationship and work techniques within the team.</li> </ul>

### 8. Contents

Course	No. hours
Course 1	
Course 2	
Course 3	
Course 4	
Course 5	
Course 6	
Course 7	
Course 8	
Course 9	
Course 10	
Course 11	
Course 12	
Course 13	
Course 14	

<b>Total course hours:</b>		-
<b>Project</b>		No. hours
Project 1	The choice of topic / area of research. Contacting the teacher coordinator. Design research and development plan for the work. Linking the topic with the student's training program, with the competence area of the supervisor and with master specific studies.	17
Project 2	Project Planning. Presentation and discussion of research plan.	24
Project 3	Stages of (methodology in) Research: Research question, Background, Formulate hypothesis, Design experiment, Test hypothesis by collecting data, Analyze results, Publish the research work and Dissemination.	31
Project 4	Analysis and documentation of project requirements. Documentation stages about state of the art. Finding the research niche.	24
Project 5	Making "use-case" and development analysis documents. Implementation.	31
Project 6	Collecting data, testing and debugging.	24
Project 7	Complete documentation (report) research emphasizing the practical side of research work undertaken. Brief presentation of theoretical concepts practice devoted exclusively to research carried out. Each student will deliver a technical report (TR), code and PowerPoint presentation (PPT) in which will present the solution proposed. Validation of TR by professor supervisor. Based on the TR it will be developed a scientific paper.	17
<b>Total lab hours:</b>		168

### Teaching methods

<ul style="list-style-type: none"> <li>Internet search, study in library, lectures, conversations, projects, exercises, individual study, homework assignments.</li> </ul>	Language of instruction	English
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### References

Recommended reading	1. The bibliography is based on the chosen theme and approach.
	2.
More references	3.
	4.

### 9. Linking course content with expectations of the epistemic community representatives, professional associations and employers' representatives in the field related to the program

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### 10. Evaluation

Type	Evaluation criteria	Evaluation methods	Percentage in final grade	Obs.*
Project	Final exam	Oral presentation	70%	RFE
	Homeworks / Technical Reports	Weekly checked	30%	RPE



**ULBS**

Universitatea "Lucian Blaga" din Sibiu

Ministerul Educației Naționale  
Universitatea "Lucian Blaga" din Sibiu  
Facultatea de Inginerie

Departamentul de Calculatoare și Inginerie Electrică

**Minimum standard of performance**

*The final assessment will consist in an oral presentation of chosen theme.*

- Partial fulfilment (50%) of homework and technical reports given during the semester and partially developed application.

(\*) REP – required for exam participation; nREP – not required for exam participation; RFE – required for final evaluation.

Date of completion: ...1/10/2019.

Date of approval in the Department:.....

	Position, title, first name, surname	Signature
Course instructor	Prof. dr. ing. Daniel VOLOVICI	
Head of department	Prof. dr. ing. Daniel VOLOVICI	