

International University of Sarajevo, Faculty of Engineering and Natural Sciences (FENS)						
Doctor of Philosophy (Ph.D.) in Computer Sciences and Engineering						
AY 2025-2026						
Course group	ECTS total	Course code	Course name	Course type	ECTS	
Required courses	12	ENS666	Advanced Research Methodologies and Design	Required	12	
Breadth area 1: Theory and Algorithms	36	CS602	Cryptography and Network Security	Elective	6	
		CS603	Advanced Machine Learning	Elective	6	
		CS606	Advanced Algorithms	Elective	6	
		CS612	Nonlinear System Identification	Elective	6	
		CS613	Computational Techniques for Genomics	Elective	6	
		CS614	Algorithms	Elective	6	
Breadth area 2: Architecture, Systems, and Software		CS615	Compilers	Elective	6	
		CS616	Advanced Topics in Operating Systems	Elective	6	
		CS617	Advanced Topics in Software Engineering	Elective	6	
		CS618	Advanced Topics in Parallel Computing	Elective	6	
		CS619	Advanced Topics in Database Systems	Elective	6	
		CS620	Advanced Topics in Computer Architecture	Elective	6	
		CS621	Advanced Topics in Computer Networks	Elective	6	
		CS601	Advanced Computer Vision	Elective	6	
Breadth area 3: Applications		CS604	Data Mining	Elective	6	
		CS605	Wavelet and Applications	Elective	6	
		CS607	Fuzzy Logic with Applications	Elective	6	
		CS608	Social and Information Network Analysis	Elective	6	
		CS609	Neural Networks	Elective	6	
		CS610	Scientists	Elective	6	
		CS611	Support Vector Machines	Elective	6	
		CS622	Advanced Methods in Artificial Intelligence	Elective	6	
		CS623	Advanced Pattern Recognition	Elective	6	
		CS624	Intelligent Robotics Systems	Elective	6	
		CS625	Information Retrieval and Web Search	Elective	6	
		CS626	Advanced Computer Graphics	Elective	6	
		CS627	Multimedia Software Systems	Elective	6	
		CS628	Advanced Social Network Analysis	Elective	6	
		CS629	Advanced Computer and Network Security	Elective	6	
CS630		Advanced Topics in Internet Programming	Elective	6		
CS631		Bioinformatics for Microbiome	Elective	6		
General Course			CS600	Quantitative Methods of Scientific Research	Elective	6
PhD Thesis		120	CS790	PhD Thesis		120

Graduate Studies: summary of conditions for successful completion of studies

Category	ECTS	Important Notes
Courses	48	<p>Students are expected to:</p> <ol style="list-style-type: none"> 1. Complete successfully courses that total 48 ECTS. 2. Complete scientific activities that total 12 ECTS. 3. Write and defend the doctoral dissertation, which totals 120 ECTS. <p>PhD students are required to complete 48 ECTS credits of coursework. They must complete at least one course in two out of three breadth areas, as defined in the course table above. At most 12 ECTS of coursework credits (corresponding to 2 courses) may be applied from Master-level CSE courses, with approval of the Program Coordinator, provided that the student has not previously taken those courses at the master level. Students are also allowed to apply 6 ECTS (1 course) from other related PhD programs, with approval of the Program Coordinator.</p> <p><i>*No more than 50% of coursework ECTS may be taken with the same professor across all graduate-level studies.</i></p>
Scientific Activity (Research Seminar)	12	<p>12 ECTS credits intended for the scientific activities can be obtained by any of the following means:</p> <ul style="list-style-type: none"> • 6 ECTS – scientific paper published in the IEEE/ACM conference proceedings • 12 ECTS – scientific paper published/accepted in the journal listed in the Science Citation Index Expanded database <p>In above mentioned scientific papers, the student must be counted as the first author.</p>
Qualification Exam	0	<p>The qualification exam is a non-credit exam, and the prerequisites to take it are:</p> <ul style="list-style-type: none"> • Completion of course-related ECTS in accordance with the program curriculum; • Mentor and Doctoral Qualification Exam Committee appointment.
PhD Thesis	120	<p>The doctoral dissertation is worth 120 ECTS and must be registered for a minimum of four semesters (30 ECTS per semester), with successful completion of the Qualification Exam as a prerequisite.</p> <p>Before scheduling the defence of the PhD thesis, third-cycle students are obliged to publish (or at least have their paper accepted) their main findings from a doctoral dissertation in a journal listed in the Science Citation Index Expanded database or in the IEEE/ACM conference proceedings where the rate of acceptance of papers in the last two years (the last two conferences) was below 35%.</p> <p>Detailed procedures for writing and defence of the thesis are prescribed in the Study Rules of the Third Study Cycle at IUS.</p>
Total	180	

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Last update: 21/02/2025

SENATE DECISION: IUS-SENAT-11-461/2025; February 13, 2025