

Master of Science (M.Sc.) in Computer Sciences and Engineering						
AY 2021-2022						
Course Group	Total ECTS	Course Code	Course name	Course type	ECTS	Pre-requisite
Breadth 1 Theory and Algorithms		CS502	Computational Complexity	elective	6	no
		CS521	Modern Cryptography	elective	6	no
		CS524	Analysis of Numerical Algorithms	elective	6	no
		CS526	Advanced Algorithms and Data Structures	elective	6	no
Breadth 2 Architecture, Systems and Software		CS504	Advanced Software Engineering	elective	6	no
		CS506	Advanced Operating Systems	elective	6	no
		CS508	Advanced Database Management Systems	elective	6	no
		CS509	Advanced Computer Architecture	elective	6	no
		CS510	Data Communications and Computer Networks	elective	6	no
Breadth 3 Applications		CS511	Advanced Artificial Intelligence	elective	6	no
		CS512	Machine Learning in Medicine and Health	elective	6	no
		CS514	Advanced Computer Vision	elective	6	no
		CS515	Advanced Computer Graphics	elective	6	no
		CS516	User Interface Design, Implementation and Evaluation	elective	6	no
		CS517	Analysis and Design of Online Communities	elective	6	no
		CS519	Social Network Analysis	elective	6	no
		CS520	Advanced Internet Programming	elective	6	no
		CS525	Advanced Data Mining	elective	6	no
		CS530	High Dynamic Range Imaging (HDR)	elective	6	no
	CS540	Data Analytical Problem Solving	elective	6	no	
Master Graduation Project	12	CS580	Master Graduation Project	required	12	no
or						
Master Thesis	24	CS590	Master Thesis	required	24	
Total	60					
Graduate Studies: summary of conditions for successful completion of studies						
Category	ECTS	Note:				
Courses	36 or 48	Students are expected to: 1. Successfully complete courses, that total 48 ECTS (for Professional Master Program) or 36 ECTS credits (for Academic Master Program). 2. Write and defend the completed master's thesis, which totals 12 ECTS credits (for Professional Master program) or 24 ECTS credits (for Academic Master program). For both programs, students must successfully complete at least one course in two out of three different breadth' areas as defined in the table above. Students may select their coursework from the wider variety of courses offered at CSE PhD level. With previous approval decision from program coordinator, students may take a maximum of 12 ECTS credits (2 courses) from a pool of undergraduate courses (400 level) from other related programs from approval decision from the program coordinator (provided that the student did not take the same course in his/her undergraduate level). Students are also allowed to apply 12 ECTS (2 courses) from other related Master (500 level) or PhD programs (600 level), with the approval decision from the Program Coordinator.				
Master Graduation Project	12	If a student decides to write a Master Graduation Project, the student needs to take eight courses, (6 ECTS each). The Master Graduation Project is worth 12 ECTS and it is defended after all courses are successfully completed.				
Master Thesis	24	If a student decides to write Master Thesis, the student needs to take six courses, (6 ECTS each). The Master Thesis is worth 24 ECTS and it is defended after all courses are successfully completed.				
Total	60					
Last update: AUG 2021		rev. 0/21				