Competencies Families	Specific Learning Outcomes (Computer Science Engineering)	
Family 1 *Scientific and Technical Tools*	**SLO1**	Gaining advanced knowledge of computing theories, methods, practices and scientific tools for engineering.
	SLO2	Applying computing engineering to analyze, solve and optimize complex problems in practical engineering fields.
	SLO3	Demonstrating advanced proficiency in software engineering methodologies, artificial intelligence, and data science techniques for designing and implementing innovative solutions in computer engineering contexts.
Family 2 *Technological Skills*	**SLO4**	Acquiring practical skills in relevant sub-areas of the field of computer science engineering at Master level.
	SLO5	Designing a research or project plan on the basis of a realistic problem description in the field of computer science and can contribute to its progress with original solutions.
	SLO6	Applying complex systems and software development and management principles, methodologies, techniques, and tools to innovatively and creatively analyze, design, implement and evaluate systems and applications at various complexity levels.
	SLO7	Selecting appropriate hardware, software, tools, and technologies to develop, integrate, test, configure and maintain secure computer engineering infrastructure, networks, systems, and applications that satisfy the users' needs while considering relevant risks and latest technological advances.
	SLO8	Solving complex real-world problems by integrating computer science methods, developing and using computer applications, and structured and data-driven approaches to decision making.
Family 3	**SLO9**	Developing the required soft and foreign language communicative as well as managerial skills.

Communication and Managerial Skills	**SLO10**	Communicating effectively to demonstrate the results, knowledge, skills, and advanced principles in a variety of professional contexts.
Family 4 *Self-development, Innovation and Projects*	**SLO11**	Collaborating effectively within teams to manage projects successfully, design, develop, and implement innovative solutions.
	SLO12	Working with autonomy as a responsible citizen, constructive decision-maker, and cooperative team member based on universal ethics and principles with the ability to develop entrepreneur and leadership skills and actively participating in serving the society.

Semester	Subject	Coefficient	ECTS	Total Workload	Lecture / Tutorials	Lab	Project / Self-directed Study	Private Study
1	**Methods / Skills Modules (8 ECTS)**							
	Engineering Mathematics	2	4	120	45	-	-	75
	Probability and Stochastic Processes	2	4	120	45	-	-	75
	Technical CORE Modules (16 ECTS)							
	Algorithms and Programming	2	4	120	30	30	-	60
	Computer Networks	2	4	120	40	20	-	60
	Operating Systems	2	4	120	30	15	-	75
	Electronic System Design	2	4	120	30	30	20	40
	Management, Leadership, and Academic Skills Modules (6 ECTS)							
	Engineering Professional Practice	1,5	3	90	30	-	-	60
	Advanced English for the University 1	1,5	3	90	30	-	-	60

Semester	Subject	Coefficient	ECTS	Total Workload	Lecture / Tutorials	Lab	Project / Self-directed Study	Private Study
2	**Methods / Skills Modules (8 ECTS)**							
	Advanced Mathematics for Engineers	2	4	120	25	20	15	60
	Students must complete 1 course by 3 of 4 ECTS from those listed below							
	Numerical Methods	2	4	120	40	20	-	60
	Optimization Techniques	2	4	120	25	20	-	75
	Discrete Mathematics	2	4	120	45	-	-	75
	Technical CORE Modules (16 ECTS)							
	Automata, Computability, and Complexity	2	4	120	45	-	-	75
	Databases and Web Services	1,5	3	90	20	25	20	25
	Students must complete 3 courses by 6 of 3 ECTS from those listed below							
	Secure and Dependable Systems	1,5	3	90	30	-	-	60
	Computer Systems Architecture	1,5	3	90	20	25	-	45

	Web Systems Engineering	1,5	3	90	15	30	-	45
	Object Oriented Design and Patterns	1,5	3	90	45	-	-	45
	Paradigms of Programming	1,5	3	90	25	20	-	45
	Linear Systems, Signals & Control	1,5	3	90	30	15	-	45
	Management, Leadership, and Academic Skills Modules (6 ECTS)							
	Entrepreneurship and Intrapreneurship	1,5	3	90	30	-	20	40
	Advanced English for the University 2	1,5	3	90	30	-	-	60

Semester	Subject	Coefficient	ECTS	Total Workload	Lecture / Tutorials	Lab	Project / Self-directed Study	Private Study
3	**Technical CORE Modules (20 ECTS)**							
	Mandatory Modules (16 ECTS)							
	Enterprise Software Engineering Development	2,25	4	120	20	25	-	75
	Software Architecture	2,25	4	120	30	15	-	75
	Artificial Intelligence Techniques	2,25	4	120	45	-	-	75
	Big Data	2,25	4	120	15	30	-	75
	Elective Modules (4 ECTS) *Students must complete 1 course by 5 of 4 ECTS from those listed below*							
	Software Quality Engineering	2	4	120	45	-	-	75
	Mobile Applications Development	2	4	120	15	30	-	75
	Advanced Databases	2	4	120	20	25	-	75
	Real Time Systems	2	4	120	40	20	20	40
	Network and Internet Technology and Design	2	4	120	30	15	-	75

	Management, Leadership, and Academic Skills Modules (8 ECTS)							
	Developing, Funding and Commercialising Technology	2	4	120	60	-	-	60
	Academic English for Postgraduates (Engineering)	2	4	120	45	-	-	75
	Projects and Internships (2 ECTS)							
	Junior Internship	-	2	-	-	-	60	-

Semester	Subject	Coefficient	ECTS	Total Workload	Lecture / Tutorials	Lab	Project / Self-directed Study	Private Study
4	**Technical CORE Modules (24 ECTS)**							
	Mandatory Modules (16 ECTS)							
	Machine Learning	2	4	120	45	-	-	75
	Web Science & Engineering	2	4	120	30	-	-	90
	Clouds, Grids and Virtualisation	2	4	120	30	15	15	60
	Distributed Systems	2	4	120	30	15	-	75
	Mandatory Elective Modules (4 ECTS) *Students must complete 1 course by 5 of 4 ECTS from those listed below*							
	Service Oriented Design	2	4	120	30	-	30	60
	Data Analytics	2	4	120	45	-	-	75
	Data Mining Techniques	2	4	120	25	20	-	75
	Green Software Engineering	2	4	120	15	15	30	60
	Data Warehousing and Business Intelligence	2	4	120	30	15	-	75

	Elective Modules (4 ECTS) *Students must complete 1 course by 4 of 5 ECTS from those listed below*							
	Software Reuse and Component-Based Software Engineering	2	4	120	20	25	-	75
	Model-Driven Engineering	2	4	120	15	15	30	60
	Cyber Security	2	4	120	30	15	-	75
	Wireless IoT and Local Area Networks	2	4	120	30	15	-	75
	Data Acquisition and Sensor Networks	2	4	120	15	30	-	75
	Management, Leadership, and Academic Skills Modules (6 ECTS)							
	IT Project Management	1,5	3	90	30	15	15	30
	Research, Planning and Communication	1,5	3	90	30	-	-	60

Semester	Subject	Coefficient	ECTS	Total Workload	Lecture / Tutorials	Lab	Project / Self-directed Study	Private Study
5	**Technical CORE Modules (16 ECTS)**							
	Mandatory Modules 1 (8 ECTS)							
	Neural Networks and Deep Learning	2,5	4	120	30	15	-	75
	Software Testing	2,5	4	120	30	15	25	50
	Mandatory Elective Modules 1 (4 ECTS) *Students must complete 1 course by 5 of 4 ECTS from those listed below*							
	Computer Vision and Pattern Recognition	2,5	4	120	30	15	30	45
	Multi-Agent Systems	2,5	4	120	45	-	-	75
	User Experience (UX) Design and Management	2,5	4	120	20	25	-	75
	DevOps	2,5	4	120	30	15	15	60
	Audit and Security	2,5	4	120	20	20	20	60
	Elective Modules (4 ECTS) *Students must complete 1 course by 5 of 4 ECTS from those listed below*							
	Intelligent Architectures	2	4	120	20	10	30	60
	Blockchain Engineering	2	4	120	30	-	30	60

	Quantum Informatics	2	4	120	25	20	-	75
	Network Security	2	4	120	30	15	-	75
	Cyber Data Analytics	2	4	120	30	15	-	75
	Management, Leadership, and Academic Skills Modules (6 ECTS)							
	Mandatory Modules 2 (3 ECTS)							
	Legal and Ethical Aspects of Computer Science	1,5	3	90	45	-	-	45
	Mandatory Elective Modules 2 (3 ECTS) *Students must complete 1 course by 4 of 3 ECTS from those listed below*							
	Agile Leadership and Strategic Management	1,5	3	90	30	-	20	40
	Strategic Management of Technology and Innovation	1,5	3	90	30	-	20	40
	Transformational Change Management	1,5	3	90	30	-	20	40
	Organizational Behavior	1,5	3	90	30	-	20	40
	Projects and Internships (8 ECTS)							
	Mandatory Modules 3 (3 ECTS)							
	Senior Internship	-	3	90	-	-	90	-

	Mandatory Elective Modules 3 (5 ECTS) *Students must complete 1 course by 4 of 5 ECTS from those listed below*							
	Literature Survey	2,5	5	150	-	-	150	-
	Research Project Computer Science	2,5	5	150	-	-	150	-
	Joint Interdisciplinary Project (JIP)	2,5	5	150	-	-	150	-
	Interdisciplinary Advanced AI Project	2,5	5	150	-	-	150	-

Semester	Subject	Coefficient	ECTS	Total Workload	Lecture / Tutorials	Lab	Project / Self-directed Study	Private Study
6	**Projects and Internships (30 ECTS)**							
	Final Graduate Project	-	30	900	-	-	900	-