

MSc in Computr Engineering

Areas and topics	Courses	Core Courses (Modules, Subjects)													Elective Courses						Total	
		HPA	ADC	DADS	AqCN	MC	DS	AIT	MMS	HACSD	TTD	LEA	MS	RMT	MA	AIS	HCI	DSP	TC	BN		A R T S
AMA. Advanced Mathematics for CE																						
	AMA1. Vector algebra														2							2
	AMA2. Computing sums														2						1	3
	AMA4. Scalar and vector potentials														2							2
	AMA5. Orthogonal curvilinear coordinates														3			2				5
	AMA6. Partial differential equations														3						1	4
	AMA7. Recursive relations														2							2
	AMA8. Deriving functions														2							2
	AMA9. Numerical methods											2			3							5
	AMA10. Research Operations														4							4
	AMA11. Statistical models				1					2	2				4				2	2	2	15
	AMA12. Discrete probability theory														3							3
	AMA13. Queuing theory				1	1				2	2				3				2		2	13
	AMA14. Asymptotic methods														3							3
	AMA15. Combinatorial methods									2					3							5
	AMA16. Random variable generation					1						1			3							5
	AMA17. Markov models	2			1	2						2			3							10
ACSD Advanced Computer Systems Development																						
	ACSD1. Technological design (TCAD)			4																		4
	ACSD2. Formal methods in computer systems design			3																		3
	ACSD3. Verification, simulation and emulation techniques			4																		4
	ACSD4. Prototyping of computer systems			4																		4
	ACSD5. Modern information technologies in CAD, CAD/CAM/CAE			4																		4
	ACSD6. Artificial intelligence and knowledge-based CAD			3																		3
	ACSD7. Project management tools			2																		2
	ACSD8. Groupware Technology			2																		2
	ACSD9. New microelectronic technologies and packaging		4																			4
	ACSD10. System (VLSI) issues in complexity		3																			3
	ACSD11. Low power issues in system design		2																			2
	ACSD12. Heat dissipation in VLSI		2																			2
	ACSD13. Intellectual property-based design		3							4												7
	ACSD14. System-on-a-Chip Design		4															2				6

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RTP5. Fault-tolerance in real-time systems																					3	3	
RTP6. Design and analysis of computer systems for real-time applications																						4	4
RTP7. Performance evaluation																						3	3
RTP8. Parallel algorithms																						3	3
DS. Distributed systems																							
DS1. Fundamentals of distributed systems						2																2	
DS2. Distributed systems communications						3																3	
DS3. Protocols						2																2	
DS4. Asynchronous message socket interchanging						2																2	
DS5. Remote procedure calling						2																2	
DS5. Java RMI architecture.						2																2	
DS6. Virtual machine communications						2																2	
DS7. DCOM architecture						2																2	
DS8. CORBA architecture						2																2	
DS9. Distributed resource management						2																2	
DS10. Distributed system security and reliability						3																3	
MS Modeling and Simulation																							
MS1. Complex dynamic system															3							3	
MS2. Structure, system state, behavior															3							3	
MS3. Modeling methods and algorithms															3							3	
MS4. Simulation and animation methods															2							2	
MS4. Constraints: model and simulation															2							2	
MS5. Testing the model adequacy															3							3	
MS6. Simulation and animation methods															3							3	
MS7. Validation of simulation models				2											3							5	
MS8. Simulation environments															3							3	
MS9. Intelligent modeling and simulation systems															3							3	
MS10. Virtual reality										4					3		4					11	
MS11. Discrete system simulation				2											3							5	
AIS Adaptive Intelligent Systems																							

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HACSD3. Team working and team management									3		2											5
HACSD4. Groupware and computer system design									3													3
HACSD5. Aspects of collaboration and communication									3		2					3						8
HACSD6. Basic characteristics of media								2														2
HACSD7. ADC and DAC								3														3
HACSD8. Multimedia periphery								3														3
HACSD9. Multimedia processing								2														2
HACSD10. Multimedia applications developing								3														3
HACSD11. Storage and compression of multimedia applications								3														3
HACSD12. Multimedia flows and synchronizing.								3														3
HACSD13. Multimedia software engineering								2														2
HACSD14. HCI aspects of multimedia systems								1	3							4						8
GOT. General Organization Theory																						
GOT1. Hierarchical and flow models of organization																					2	2
GOT2. Organizational work groups																					2	2
GOT3. Organizational span. Single user. Work group. Team. Enterprise. Global																					2	2
GOT4. Software sales, licensing and agency																					2	2
GOT5. Contract and privacy law																					4	4
GOT6. Ethics and protection of intellectual propetry rights																					4	4
GOT7. CE society and ethics																					4	4
Total hours		45	30	30	45	30	30	30	30	30	30	30	45	30	45	30	30	30	30	30	30	

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Type	Acronym	Course (Module, Subject) Name
Core	HPA	High Performance Architectures
	ADC	Advanced Digital Circuits and Design
	DADS	Design Automation of Digital Systems
	AdCN	Advanced Computer Networks
	MC	Mobile Computing
	DS	Distributed systems
	AIT	Advanced Internet Technologies
	MMS	Multimedia Systems
	HACSD	Human Aspects in Computer Systems Design
	TTD	Testing and Testable Design
	LEA	Legal and Ethical Aspects
	MS	Modeling and Simulation
	RMT	Research and Master' Thesis
Elective	MA	Mathematics
	AIS	Adaptive Intelligent Systems
	HCI	Human-Computer Interaction
	DSP	Digital Signal Processing
	TC	Telecommunication
	BN	Broadband Networks
	ARTS	Advanced Real-Time Systems