



**BSc in Computer Science**  
 ( See Sheet2 for a list of acronyms of courses )

Areas and topics	Courses	Core Courses (Modules, Subjects)																Elective Courses							Total								
		MA1	MA2	IPR	PL	OOP	ALT	DS	PS	SCC	IM	DSA	CG	SWD	DB	OS	COA	CN	HCI	AI	IT	MA3	MMS	IS		CM	NPP	IP	WD	SWE	CV		
PM1. Market mechanism										3																						3	
PM2. Public sector and tax system										2																						2	
PM3. Consumer behaviour								5		2																						7	
PM4. Production, expenses and income of a firm										2																						2	
PM5. Price-forming of manufacturing factors										2																						2	
PM6. Economic cycle										2																						2	
PM7. Company information systems										2														2								4	
PM8. Marketing systems										3																						3	
PM9. Investment and crediting systems										2																						2	
PM10. Finance and accountancy systems										2																						2	
<b>SP. Social &amp; Professional Issues</b>																																	
SP1. History of computing			2						3																								5
SP2. Social context of computing									5																								5
SP3. Methods and tools of analysis								4	3																								7
SP4. Professional and ethical responsibilities									4																								4
SP5. Risks and liabilities of computer-based systems									4																								4
SP6. Intellectual property.									3					3																			6
SP7. Privacy and civil liberties								4	2					2																			8
SP8. Computer crime									4																								4
<b>AC. Algorithms &amp; Complexity</b>																																	
AC1. Basic algorithmic analysis											4																						4
AC2. Algorithmic strategies											3																						3
AC3. Basic computability theory											4																						4
AC4. Fundamental computing algorithms											4																						4
AC5. Automata theory						4																											4
AC6. Algorithms for compression and decompression																							3							3			6
AC7. Genetic algorithms																				4													4
AC8. The complexity classes P and NP											4																						4
<b>CG. Computer graphics</b>																																	
CG1. Fundamental techniques in graphics											4																						4
CG2. Graphic systems											4																						4
CG3. Geometric modelling											7																						7
CG4. Basic rendering											6																						6
CG5. Advanced rendering																							5							5		10	
CG6. Computer animation											5												3									8	
CG7. Visualization											4																3		3		5	12	
CG8. Virtual reality																							3				3					6	

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CG9. Image processing																													5	5	
CG10. Computer vision																				4									5	9	
<b><u>SE. Software Engineering</u></b>																															
SE1. Life cycle of a software product													5																	5	
SE2. Software requirements and specifications												4																		4	
SE3. Software testing and validation												4																		4	
SE4. Software evolution												4																		4	
SE5. Software documenting												4																		4	
SE6. Software tools and environments												5															5		10		
SE7. Using APIs												6															4		10		
SE8. Component-based computing				4	3																									7	
SE9. Specialised system development																											4		4		
SE10. Software project management										3		5															2		10		
<b><u>PL. Programming Languages &amp; Methodologies</u></b>																															
PL1. Overview of programming languages				3																										3	
PL2. Object-oriented programming					6																									6	
PL3. Abstract data types and classes					4																									4	
PL4. Inheritance and abstract classes					6																									6	
PL5. Advanced non-linear structures					4	2																								6	
PL6. Event-driven programming				5	4																									9	
PL7. Database query languages													6													4			10		
PL8. Logic programming																									5					5	
PL9. Functional programming																									5					5	
PL10. Language translation systems						6																								6	
PL11. Programming language semantics						5																								5	
PL12. Programming language design						6																								6	
<b><u>DB. Databases &amp; Information Systems</u></b>																															
DB1. Data modelling														8																8	
DB2. Architecture of DBMS														4																4	
DB3. Relational database design														7																7	
DB4. Object-oriented databases														8																8	
DB5. Data mining														4												2				6	
DB6. Transaction processing														3											2		1			6	
DB7. Life cycle of information systems development																									4					4	
DB8. Object-oriented analysis and design																									4				5	9	
DB9. Multimedia information systems																								3	2					5	
DB10. Information storage and retrieval																								2						2	



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CS5. Data security and integrity																							2	4										6	
<b>HC. Human-Computer Interaction</b>																																			
HC1. Foundation of human-computer interaction																			4															4	
HC2. Building a simple graphical user interface																		2																	2
HC3. Human-centered software evaluation													4					3																7	
HC4. Human-centered software development												4						3																7	
HC5. Graphical user interface design																		6			2						2							10	
HC6. Graphical user interface programming																		6			2													8	
HC7. Human-computer interaction aspects of multimedia systems																		6			4					2	2							14	
HC8. Human-computer interaction aspects of communication																										2	2							4	
<b>AI. Artificial Intelligence</b>																																			
AI1. Fundamental issues in artificial intelligence																			6															6	
AI2. Knowledge representation and reasoning																			5						6									11	
AI3. Search and constraint satisfaction																			5					4				2						11	
AI4. Architecture of an intelligent system																			5															5	
AI5. Artificial intelligence planning systems																			5															5	
AI6. Decision support systems																						3												3	
AI7. Natural language processing						4													4															8	
AI8. Machine learning and neural networks																			5															5	
AI9. Intelligent tutoring environments																			2															2	
<b>IT. Internet Technologies</b>																																			
IT1. Hypertext and hypermedia																					5							4						9	
IT2. Hypermedia authoring systems																				6		4					4							14	
IT3. Programming languages for web-based software development																										3								3	
IT4. Client-server technology																	3			6						2								11	
IT5. Technology for developing distributed applications																				7														7	
IT6. Building web applications for E-Commerce																											3							3	
IT7. Building web applications for E-Publishing																											3							3	
IT8. Building web applications for E-Learning																											3							3	
<b>Total hours</b>		30	30	30	30	30	30	25	25	25	30	30	45	45	30	45	30	30	45	30	25	25	25	20	20	25	20	20	25						