B.Sc. Computer Science

Exemplary plan of studies

To be completed: 150 CP in the compulsory area (23 compulsory modules) as well as 30 CP (usually 5 modules out of 41) from the compulsory elective area (12 CP must come from the subject area of general computer science).

1st Semester (Winter)

Module	Course	SHPW	Examination	CP	Total CP	
INF-BSc-P01.1	L Introduction to Theoretical Computer Science I	2	written or oral exam	4	6	30
INF-BSc-P01.2	E Introduction to Theoretical Computer Science I	2		2		
INF-BSc-P02.1	L Programming I	2	written exam	4	6	
INF-BSc-P02.2	E Programming I	2		2		
INF-BSc-P03.1	L Human-Computer-Interaction	2	written exam	4	6	
INF-BSc-P03.2	E Human-Computer-Interaction	2		2		
INF-BSc-P04.1	Lecture Series: Computer Science and Society	2	course exercises	3	3	
INF-BSc-P05.1	English for Computer Science	2	performance record	3	3	
INF-BSc-P06.1	E Foundations of Mathematics (FIDS)	1	written exam	2		
INF-BSc-P06.2	E Foundations of Mathematics (FIDS)	1	course exercises	1	6	
INF-BSc-P06.3	L Linear Algebra I (FIDS)	1	written exam	2		
INF-BSc-P06.4	E Linear Algebra I (FIDS)	1	course exercises	1		

2nd Semester (Summer)

Module	Course	SHPW	Examination	CP	Total CP	
INF-BSc-P07.1	L Programming II	2	written exam	4	6	30
INF-BSc-P07.2	E Programming II	2		2		
INF-BSc-P08.1	L Algorithms and Data Structures	2	written exam	4	6	
INF-BSc-P08.2	E Algorithms and Data Structures	2		2		
INF-BSc-P09.1	L Databases I	2	written or oral exam	4	6	
INF-BSc-P09.1	E Databases I	2		2		
INF-BSc-P10.1	L Computer Architecture	2	written or oral exam	4	6	
INF-BSc-P10.2	E Computer Architecture	2		2		
DAT-B-PROB.1	L Data Science 1 (Probability)	2	written exam	4	6	
DAT-B-PROB.2	E Data Science 1 (Probability)	2		2		

SHPW = semester hours per week | **CP** = credit points
L = lecture | **E** = exercise | **S** = seminar | **Pr** = practicum
■ **elective module**

3rd Semester (Winter)

Module	Course	SHPW	Examination	CP	Total CP
INF-BSc-P11.1	L Software Engineering	2	written exam	4	6
INF-BSc-P11.2	E Software Engineering	2		2	
INF-BSc-P12.1	L Operating Systems	2	written exam	4	6
INF-BSc-P12.2	E Operating Systems	2		2	
INF-BSc-P13.1	L Foundations of IT-Security	2	written exam	4	6
INF-BSc-P13.2	E Foundations of IT-Security	2		2	
INF-BSc-P14.1	L Linear Algebra II	1	written exam	2	6
INF-BSc-P14.2	E Linear Algebra II	1	course exercises	1	
INF-BSc-P14.3	L Calculus I	1	written exam	2	
INF-BSc-P14.4	E Calculus I	1	course exercises	1	
DAT-B-DE.1	L Data Engineering	2	written or oral exam	3	6
DAT-B-DE.2	E Data Engineering	2		3	

Total CP: 30

4th Semester (Summer)

Module	Course	SHPW	Examination	CP	Total CP
INF-BSc-P15.1	Pr Software Project	8	Project	8	10
INF-BSc-P15.2	S Software Project	2		2	
INF-BSc-P16.1	L Calculus II	1	written exam	2	6
INF-BSc-P16.2	E Calculus II	2	course exercises	1	
INF-BSc-P16.3	L Numerical Analysis	2	written exam	2	
INF-BSc-P16.4	E Numerical Analysis	2	course exercises	1	
DAT-B-ML.1	L Machine Learning	4	written exam	5	10
DAT-B-ML.2	E Machine Learning	4		5	
INF-BSc-GEN	Elective Studies		depends on course		

Total CP: 30

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■ **elective module**

5th Semester (Winter)

Module	Course	SHPW	Examination	CP	Total CP	
INF-BSc-P17.1	L Digital Image Processing I	2	written exam	4	6	30
INF-BSc-P17.2	E Digital Image Processing I	2		2		
INF-BSc-P18.1	L Computer Networks and Distributed Systems	2	written exam	4	6	
INF-BSc-P18.2	E Computer Networks and Distributed Systems	2		2		
INF-BSc-P19.1	S Lecture Seminar	2	paper and talk	6	6	
INF-BSc-P20.1	S Scientific Writing	2		2	2	
INF-BSc-GEN	Elective Studies	depends on course				
INF-HIB-M01.1	L Foundations of symbolic Artificial Intelligence	2	written exam	4	6	
INF-HIB-M01.2	E Foundations of symbolic Artificial Intelligence	2		2		

6th Fachsemester (Summer)

Module	Course	SHPW	Examination	CP	Total CP	
INF-BSc-P20.MP	Bachelor's Thesis	0	Bachelor's Thesis	12	12	30
INF-BSc-WP02.1	L Introduction to Cryptography	2	written exam	4	6	
INF-BSc-WP02.2	E Introduction to Cryptography	2		2		
INF-BSc-WP08.1	L Databases II	2	written or oral exam	4	6	
INF-BSc-WP08.2	E Databases II	2		2		
WI-BSc-AWI-M04.1	L Information Systems Architecture	2	written exam	4	6	
WI-BSc-AWI-M04.2	E Information Systems Architecture	2		2		

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■ **elective module**