

Bachelor of Computer Science

Obligatory courses

Code	Subject	Credits	Winter	Summer
NMAI054	Mathematical Analysis I	5	2/2 C+Ex	—
NMAI055	Mathematical Analysis II	5	—	2/2 C+Ex
NMAI057	Linear Algebra I	5	2/2 C+Ex	—
NMAI058	Linear Algebra II	5	—	2/2 C+Ex
NMAI062	Algebra I	6	2/2 C+Ex	—
NDMI002	Discrete Mathematics	5	2/2 C+Ex	—
NDMI011	Combinatorics and Graphs I	5	—	2/2 C+Ex
NOPT048	Optimization methods	6	—	2/2 C+Ex
NMAI059	Probability and Statistics	6	2/2 C+Ex	—
NAIL062	Propositional and Predicate Logic	6	2/2 C+Ex	—
NTIN071	Automata and Grammars	6	—	2/2 C+Ex
NTIN060	Algorithms and Data Structures I	5	—	2/2 C+Ex
NTIN061	Algorithms and Data Structures II	6	2/2 C+Ex	—
NPRG030	Programming I	6	3/2 C	—
NPRG031	Programming II	5	—	2/2 C+Ex
NPRG005	Non-procedural Programming	6	—	2/2 C+Ex
NSWI120	Principles of Computers	3	2/0 Ex	—
NSWI141	Introduction to networking	2	1/0 Ex	—
NSWI095	Introduction to UNIX	5	—	2/2 C+Ex
NDBI025	Database Systems	6	—	2/2 C+Ex
NPRG045	Individual Software Project	4	—	0/1 C
NSZZ031	Bachelor Thesis	6	—	0/4 C

List of elective courses - set 1

The student needs to obtain at least 6 credits for courses from this set.

Code	Subject	Credits	Winter	Summer
NPRG041	Programming in C++	6	2/2 C+Ex	—
NPRG013	Java	6	2/2 C+Ex	—
NPRG035	C# Language and .NET Framework	6	2/2 C+Ex	—

List of elective courses - set 2

The student needs to obtain at least 34 credits for courses from this set.

Code	Subject	Credits	Winter	Summer
NMAI056	Mathematical Analysis III	6	2/2 C+Ex	—
NDMI012	Combinatorics and Graph Theory II	6	2/2 C+Ex	—
NMAI063	Algebra II	3	—	2/0 Ex
NDMI009	Combinatorial and Computational Geometry I	6	2/2 C+Ex	—

Bachelor of Computer Science

NDMI084	Approximation and randomized algorithms	5	2/1 C+Ex	—
NOPT046	Fundamentals of Continuous Optimization	6	—	2/2 C+Ex
NMAI042	Numerical Mathematics	6	—	2/2 C+Ex
NAIL063	Set Theory	3	—	2/0 Ex
NPFL063	Introduction to General Linguistics	5	2/1 C+Ex	—
NPFL012	Introduction to Computer Linguistics	3	2/0 Ex	—
NPRG051	C++ Advanced Programming	6	—	2/2 C+Ex
NPRG021	Advanced programming for Java platform	3	—	0/2 C
NPRG038	Advanced .NET Programming I	6	—	2/2 C+Ex
NSWI090	Computer Networks I	3	2/0 Ex	—
NSWI143	Computer Architecture	3	—	2/0 Ex
NDBI007	Data Organisation and Processing I	4	2/1 C+Ex	—
NDBI026	Database Applications	4	1/2 MC	—
NSWI098	Compiler Principles	4	2/1 C+Ex	—
NPGR003	Computer Graphics I	6	2/2 C+Ex	—
NPGR004	Computer Graphics II	5	—	2/1 C+Ex
NPGR020	Geometry for Computer Graphics	3	2/0 Ex	—
NPGR002	Digital Image Processing	5	3/0 Ex	—
NPRG036	XML Technologies	6	—	2/2 C+Ex
NSWI089	Information Security I	3	2/0 Ex	—
NSWI015	Programming in Unix	5	2/1 C+Ex	—
NSWI036	Programming for Windows - I	3	2/0 Ex	—
NSWI099	Windows Systems Administration *	6	2/2 C+Ex	—
NSWI106	Unix Administration	6	2/2 C+Ex	—
NSWI045	TCP/IP Protocol Suite	3	—	2/0 Ex
NSWE002	Introduction to dependable systems	1	1/0 C	—
NPRG003	Programming Methodology and Philosophy of Programming Languages	3	—	2/0 Ex

Recommended course of study

The recommended course of study contains all obligatory courses, some elective courses and some optional courses. The student needs to choose other courses him/herself. The obligatory courses are printed in boldface, the elective courses are printed upright and the optional courses in italics.

First year

Code	Subject	Credits	Winter	Summer
NMAI054	Mathematical Analysis I	5	2/2 C+Ex	—
NMAI057	Linear Algebra I	5	2/2 C+Ex	—
NDMI002	Discrete Mathematics	5	2/2 C+Ex	—
NPRG030	Programming I	6	3/2 C	—

NSWI120	Principles of Computers	3	2/0 Ex	—
NSWI141	Introduction to networking	2	1/0 Ex	—
NMAI069	<i>Mathematical skills</i> ¹	2	0/2 C	—
NMAI055	Mathematical Analysis II	5	—	2/2 C+Ex
NMAI058	Linear Algebra II	5	—	2/2 C+Ex
NDMI011	Combinatorics and Graphs I	5	—	2/2 C+Ex
NPRG031	Programming II	5	—	2/2 C+Ex
NTIN060	Algorithms and Data Structures I	5	—	2/2 C+Ex
NSWI095	Introduction to UNIX	5	—	2/2 C+Ex

¹The course NMAI069 Mathematical skills is highly recommended to students who want to master basic mathematical skills used in mathematical courses. The use of logical thinking is heavily emphasized.

Second year

Code	Subject	Credits	Winter	Summer
NTIN061	Algorithms and Data Structures II	6	2/2 C+Ex	—
NAIL062	Propositional and Predicate Logic	6	2/2 C+Ex	—
NMAI059	Probability and Statistics	6	2/2 C+Ex	—
	Elective courses from Set 1	6	2/2 C+Ex	—
NMAI056	Mathematical Analysis III	6	2/2 C+Ex	—
NOPT048	Optimization methods	6	—	2/2 C+Ex
NPRG005	Non-procedural Programming	6	—	2/2 C+Ex
NTIN071	Automata and Grammars	6	—	2/2 C+Ex
NDBI025	Database Systems	6	—	2/2 C+Ex
NPRG045	Individual Software Project	4	—	0/1 C
	Elective courses from Set 2			
	<i>Optional courses</i>			

Third year

Code	Subject	Credits	Winter	Summer
NMAI062	Algebra I	6	2/2 C+Ex	—
NMAI063	Algebra II	3	—	2/0 Ex
NSZZ031	Bachelor Thesis	6	—	0/4 C
	Elective courses from Set 2			
	<i>Optional courses</i>			
