Computer Science and Mathematics

This option is available for students who wish to take advantage of the close connections between Computer Science and Mathematics.

Major Requirements

Major: Computer Science & Mathematics

Degree Type: B.A. or B.S.
Minimum Degree Credits to Graduate: 120

General Education Requirements for Baccalaureate Degree

- A list of approved general education courses is available here (http://bulletin.ndsu.edu/past-bulletin-archive/2017-18/academic-policies/undergraduate-policies/general-education/#genedcoursestext) .
- General education courses may be used to satisfy requirements for both general education and the major, minor, and program emphases, where applicable. Students should carefully review the major, minor, and program emphases requirements for minimum grade restrictions, should they apply.

Code	Title	Credits
Communication (C)		12
ENGL 110	College Composition I	
ENGL 120	College Composition II	
COMM 110	Fundamentals of Public Speaking	
Upper Division Writing [†]		
Quantitative Reasoning (R) [†]		3
Science and Technology (S) [†]		10
Humanities and Fine Arts (A) [†]		6
Social and Behavioral Sciences (B) [†]		6
Wellness (W) [†]		2
Cultural Diversity (D) [*†]		
Global Perspectives (G) [*†]		
Total Credits		39

[*]   May be satisfied by completing courses in another General Education category.

[†]   May be satisfied with courses required in the major. Review major requirements to determine if a specific upper division writing course is required.

College Requirements

Code	Title	Credits
Bachelor of Arts (BA) Degree – An additional 12 credits Humanities and Social Sciences and proficiency at the second year level in a modern foreign language. [*]		12
Bachelor of Science (BS) Degree – An additional 6 credits in Humanities or Social Sciences [*]		6

[*]   Humanities and Social Sciences may be fulfilled by any course having the following prefix: ADHM, ANTH, ARCH, ART, CJ, CLAS, COMM, ECON, ENGL, FREN, GEOG, GERM, HDFS, HIST, LA, LANG, MUSC, PHIL, POLS, PSYC, RELS, SOC, SPAN, THEA, WGS, or any course from the approved list of general education courses in humanities and social sciences (general education categories A and B). These credits must come from outside the department of the student's major.

Major Requirements

A grade of 'C' or better is required in MATH & CSCI prefix courses used toward the major.

Code	Title	Credits
Mathematics Major Requirements		
MATH 129	Basic Linear Algebra	3
MATH 165	Calculus I (May satisfy general education category R)	4
MATH 166	Calculus II	4
MATH 265	Calculus III	4

MATH 266	Introduction to Differential Equations	3
MATH 270	Introduction to Abstract Mathematics	3
MATH 329	Intermediate Linear Algebra	3
MATH 420	Abstract Algebra I	3
Choose 6 credits of 300-400 level Math courses (we recommend two of the following):		6
MATH 421	Abstract Algebra II	
MATH 430	Graph Theory	
MATH 436	Combinatorics	
MATH 488	Numerical Analysis I	
MATH 491	Seminar	2
Computer Science Major Requirements		
CSCI 160	Computer Science I	4
CSCI 161	Computer Science II	4
CSCI 189	Skills for Academic Success [1]	1
CSCI 213	Modern Software Development	3
CSCI 313	Software Development for Games	3
CSCI 336	Theoretical Computer Science	3
CSCI 366	Database Systems	3
CSCI 372	Comparative Programming Languages	3
CSCI 374	Computer Organization and Architechure	3
CSCI 445	Software Projects Capstone	3
CSCI 467	Algorithm Analysis	3
CSCI 489	Social Implications of Computers	3
Related Required Courses		
STAT 367	Probability	3
STAT 368	Statistics	3
Select one from the following:		3
CSCI 418	Simulation Models	
CSCI 453	Linear Programming and Network Flows	
Any 400 level Mathematics Course not used to satisfy a requirement above		
Total Credits		80

[1]   CSCI 189 is only required for first-time, first-year students--A first-time, first-year student is defined as a student who has not yet completed a college course as a college student. Students that are not first-time, first-year students that either transfer into the university or change their major are not required to take CSCI 189.

Program Notes

- Except for courses offered only as pass/fail grading, no course may be taken Pass/Fail.