Computer Science Major (B.S.)

Major Requirements

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Degree Type: B.S.
Minimum Credits Required: 120
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University Degree Requirements

For complete details on these and other university degree requirements, refer to the Degree and Graduation Requirements (http://catalog.ndsu.edu/academic-policies/undergraduate-policies/degree-and-graduation/) section in the University Catalog.

1. Minimum of 120 semester credits (some programs may exceed this minimum).
2. Complete the University General Education requirements.
3. Minimum institutional GPA of 2.00 based on work taken at NDSU.
4. Minimum of 30 credits in resident at NDSU.
5. Minimum of 36 upper level credits (courses numbered 300 or higher).
6. Students with transfer credit must meet the NDSU 30 credits in residence (#4). Of these 30 credits in residence, a minimum of 15 credits must be in courses numbered 300 or above, and 15 credits must be in the student's declared major curricula.

University General Education Requirements

A list of university approved general education courses along with the administrative policies governing the requirement and the categories is available here (http://catalog.ndsu.edu/academic-policies/undergraduate-policies/general-education/).

Code	Title	Credits
Category C: Communication		**12**
Category R: Quantitative Reasoning		**3**
Category S: Science and Technology		**10**
Category A: Humanities and Fine Arts		**6**
Category B: Social and Behavioral Sciences		**6**
Category W: Wellness		**2**
Category D: Cultural Diversity		
Category G: Global Perspectives		
Category L: Digital Literacy		
Total Credits		**39**

Major Requirements

A Grade of 'C' or better is required for all CSCI prefix courses.

Code	Title	Credits
B.S. Computer Science Core Requirements		
CSCI 160	Computer Science I	4 or 6
or CSCI 227 & CSCI 228	Computing Fundamentals in Python I and Computing Fundamentals in Python II	
CSCI 161	Computer Science II	4
CSCI 213	Modern Software Development	3
CSCI 222	Discrete Mathematics	3
CSCI 313	Software Development with Frameworks	3
CSCI 336	Theoretical Computer Science	3
CSCI 366	Database Systems	3
CSCI 372	Comparative Programming Languages	3
CSCI 374	Computer Organization and Architecture	3
CSCI 445	Software Projects Capstone [1]	3
CSCI 455	Networking and Parallel Computation	3
CSCI 467	Algorithm Analysis	3
CSCI 474	Operating Systems Concepts	3

CSCI 489	Social Implications of Computers [1]	3
MATH 165	Calculus I (May satisfy general education category R)	4
MATH 166	Calculus II	4
STAT 367	Probability	3
STAT 368	Statistics	3 or 5
or STAT 330	Introductory Statistics	
& STAT 331	and Regression Analysis	
Track: Select one track from the four listed below		**12**
Total Credits		**70-74**

STANDARD TRACK

Code	Title	Credits
Select one of the following:		3
MATH 129	Basic Linear Algebra	
CSCI 277	Introduction to UNIX	
Computer Science Electives:		9
Select 3 didactic courses from any 300-400 level CSCI prefix courses that are not part of the core requirement.		
Total Credits		**12**

CYBERSECURITY TRACK

Code	Title	Credits
CSCI 277	Introduction to UNIX	3
Cybersecurity Electives:		9
CSCI 403	Defensive Network Security	
CSCI 404	Ethical Hacking	
CSCI 405		
CSCI 408	Malware Detection, Analysis and Threat Mechanisms	
CSCI 409	Cybersecurity Law and Policy	
CSCI 410	Computer Crime and Forensics	
CSCI 411	Secure Software Development	
CSCI 469	Network Security	
CSCI 473	Foundations of the Digital Enterprise	
Total Credits		**12**

DATA SCIENCE TRACK

Code	Title	Credits
MATH 129	Basic Linear Algebra	3
Data Science Electives:		9
CSCI 411	Secure Software Development	
CSCI 420	Introduction to Data Science in Python	
CSCI 422	Fundamentals of Data Engineering	
CSCI 425	Machine Learning	
CSCI 426	Introduction to Artificial Intelligence	
CSCI 428	Artificial Intelligence, Ethics, and the Environment	
CSCI 436	Intelligent Agents	
CSCI 450	Cloud Computing	
CSCI 479	Introduction to Data Mining	
Total Credits		**12**

SOFTWARE ENGINEERING TRACK

Code	Title	Credits
Select one of the following:		3
MATH 129	Basic Linear Algebra	
CSCI 277	Introduction to UNIX	
Software Engineering Electives:		9
CSCI 411	Secure Software Development	
CSCI 412	Mobile Software Engineering	
CSCI 413	Principles of Software Engineering	
CSCI 416	Software Architecture and Design	
CSCI 419	Software Testing and Debugging	
CSCI 422	Fundamentals of Data Engineering	
CSCI 450	Cloud Computing	
CSCI 473	Foundations of the Digital Enterprise	
CSCI 488	Human-Computer Interaction	
Total Credits		**12**

[1] Department Capstone: CSCI 445 Software Projects Capstone (typically taken during the last spring semester prior to degree completion) & CSCI 489 Social Implications of Computers (typically taken during the last fall semester prior to degree completion)