

# Computer Science and Mathematics Dual Major

## Major Requirements

Degree Type: B.A. or B.S.  
Minimum Credits Required: 120

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

## Major Requirements

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

Code	Title	Credits
<b>Mathematics Major Requirements</b>		
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
MATH 491	Seminar	2
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	

**Computer Science Major Requirements**

CSCI 160	Computer Science I	4
CSCI 161	Computer Science II	4
CSCI 213	Modern Software Development	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	3
CSCI 467	Algorithm Analysis	3
CSCI 489	Social Implications of Computers	3
Choose 3 credits of 300-400 level CSci courses (we recommend one of the following):		3
CSCI 455	Networking and Parallel Computation	
CSCI 474	Operating Systems Concepts	
or any course numbered 420-429		

**Related Required Courses**

STAT 367	Probability	3
STAT 368	Statistics	3

**Total Credits****79****Program Notes**

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