

**The College at Brockport, State University of New York
Department of Computer Science**

Advanced Computing Track of the Computer Science Major

Program Requirements

Prerequisites

The first course in the program is CSC 203 (Fundamentals of Computer Science I). The prerequisites for this course are CSC 120 (Introduction to Computer Science) and MTH 122 (Pre-calculus), or equivalents by permission of the instructor. The prerequisites for the mathematics courses are MTH 201 (Calculus I) and MTH 281 (Discrete Mathematics I). Students not having these prerequisite courses should plan on one or two preparatory semesters in which to take them.

MTH 122 Pre-calculus	3 credits
MTH 201 Calculus I	4 credits
MTH 281 Discrete Mathematics I	3 credits
CSC 120 Introduction to Computer Science	3 credits

Requirements

For a major in Computer Science with the Advanced Computing (AC) Track, a student must complete the following 68 credits of computer science, mathematics, and science courses with an average grade of “C” or better in core and elective courses. In addition, the grade for each of CSC 203, CSC 205, CSC 209, CSC 303, and CSC 311 must be “C” or better. Other restrictions apply; see "Restrictions on Credits in the Major," below.

(a) Core courses (37 credits)

CSC 203 Fundamentals of Computer Science I	4 credits
CSC 205 Fundamentals of Computer Science II	4 credits
CSC 209 UNIX Tools	1 credit
CSC 303 Digital Logic and Computer Design	3 credits
CSC 311 Computer Organization and Software Interface	4 credits
CSC 401 Programming Languages	3 credits
CSC 406 Algorithms and Data Structures	3 credits
CSC 411 Computer Architecture	3 credits
CSC 412 Operating Systems	3 credits
CSC 427 Software Systems Engineering	3 credits
CSC 483 Theory of Computation	3 credits
CSC 486 Junior/Senior Seminar	3 credits

(b) Elective courses (9 credits)

Three courses from the list of CSC courses numbered 400-489, Selected under advisement. See notes below.	9 credits
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(c) Mathematics co-requisites (10 credits)

MTH 202 Calculus II	4 credits
MTH 346 Probability and Statistics I	3 credits
MTH 481 Discrete Mathematics II	3 credits

(d) Science co-requisites (12 credits)

Three laboratory science courses from the following list: BIO 201, BIO 202, CHM 205, CHM 206, ENV 202, ENV 303, ESC 211, ESC 311, PHS 235, PHS 240	12 credits
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Total	68 credits
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Restrictions on Credits in the Major – AC Track

1. The student must take at least 15 credits in mathematics courses. These credits must be from MTH courses that are allowed as part of MTH major, except MTH 405, 412, 420, 492, and 499.
2. The student must take at least 30 credits in mathematics and science courses combined. These credits must be from MTH/Science courses allowed as part of MTH, BIO, CHM, ENV, ESC, or PHS majors.
3. At least 18 of the credits used to satisfy the core or elective requirements in the major must be earned at Brockport.
4. Credits (1-4) for at most one course can be earned by "departmental credit by examination."

Electives Available

CSC 419 Computer Networks	3 credits
CSC 421 Computer and Network Security	3 credits
CSC 422 Relational Database Design	3 credits
CSC 423 Web Application Development	3 credits
CSC 429 Object-Oriented Software Development	3 credits
CSC 434 Artificial Intelligence	3 credits
CSC 444 Introduction to Parallel Computing	3 credits