COMPUTER SCIENCE, MINOR (BEHREND)

Requirements for a minor may be completed at any campus location offering the specified courses for the minor. Students may not change from a campus that offers their major to a campus that does not offer their major for the purpose of completing a minor.

Program Description

The computer science minor at Behrend establishes a strong conceptual framework in computer science for students in other majors, so they can apply computer science methods and techniques to their primary field of study. The minor begins with the second level course in computer programming (CMPSC 122), the choice of a course in Object-Oriented Web based programming or design (CMPSC 221 or SWENG 311), a course in discrete math for computer science (CMPSC 360), and a course in Data Structures and Algorithms (CMPSC 465). These twelve credits are followed with an additional six credits of 400-level work in computer science (CMPSC).

Computing has become a critical aspect of most disciplines. This minor provides students with the opportunity to develop computing expertise which can then be applied to their field of study, thus enhancing job placement opportunities after graduation or better preparing the student to pursue graduate work in computing intensive sub-disciplines of their major. The emphasis is on building a conceptual framework which will allow the student to continue to learn new computing techniques beyond graduation in this rapidly evolving discipline.

What is Computer Science?

Computer science is the study of computational methods, including their principles and foundations, their efficient implementation, their analyses, and their practical application in wide-ranging areas. It includes the foundations of software development, computational problem solving, the principles of system software, and the fundamental principles and limits of computing. It is much more than just programming. It includes the mathematical foundations that support analyzing, evaluating, and proving the correctness of computational solutions. It includes specializations such as artificial intelligence, machine learning, cybersecurity, data mining, high-performance computing, computer networks, computer graphics, computer vision, quantum computing, and others. It is continually evolving with the development of new and faster forms of computation and with the identification of new problems that require computational solutions.

You Might Like This Program If...

- You want to add computing expertise to your major degree program.
- You envision a career in a computing-intensive subfield of your major degree program.

Program Requirements

Requirement	Credits
Requirements for the Minor	18

Requirements for the Minor

A grade of C or better is required for all courses in the minor, as specified by Senate Policy 59-10 (https://senate.psu.edu/policies-and-rules-for-undergraduate-students/59-00-minors-and-certificates/#59-10).

In addition, at least six credits of the minor must be unique from the prescribed courses required by a student's major(s).

Code	Title	Credits
Prescribed Courses		
Prescribed Courses: Require a grade of C or better		
CMPSC 122	Intermediate Programming [1]	3
CMPSC 360	Discrete Mathematics for Computer Science	3
CMPSC 465	Data Structures and Algorithms	3
Additional Courses		
Additional Courses: Require a grade of C or better		
Select one of the following:		3
CMPSC 221	Object Oriented Programming with Web-Based Applications	
CMPSC 312	Computer Organization and Architecture	
SWENG 311	Object-Oriented Software Design and Construction	
Supporting Courses and Related Areas		
Supporting Courses and Related Areas: Require a grade of C or better		
Select 6 credits of 400-level (below 490) CMPSC courses		6

[1] CMPSC 121 and MATH 140 are prerequisites for CMPSC 122.

Academic Advising

The objectives of the university's academic advising program are to help advisees identify and achieve their academic goals, to promote their intellectual discovery, and to encourage students to take advantage of both in-and out-of class educational opportunities in order that they become self-directed learners and decision makers.

Both advisers and advisees share responsibility for making the advising relationship succeed. By encouraging their advisees to become engaged in their education, to meet their educational goals, and to develop the habit of learning, advisers assume a significant educational role. The advisee's unit of enrollment will provide each advisee with a primary academic adviser, the information needed to plan the chosen program of study, and referrals to other specialized resources.

READ SENATE POLICY 32-00: ADVISING POLICY (https://senate.psu.edu/policies-and-rules-for-undergraduate-students/32-00-advising-policy/)

Erie

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Career Paths

The minor in Computer Science can be pursued by students in most Penn State Behrend degree programs. Penn State Behrend has a comprehensive support system to help you identify and achieve your

goals for college and beyond. Meet with your academic adviser often and take advantage of the services offered by the Academic and Career Planning Center beginning in your first semester.

Careers

All employers and industry sectors value computing and data-science skills; a minor in Computer Science may set you apart from fellow job-seekers in fields as varied as biology, chemistry, mathematics, physics, science, accounting, economics, business economics, and marketing.

MORE INFORMATION ABOUT POTENTIAL CAREER OPTIONS FOR GRADUATES WITH A MINOR IN COMPUTER SCIENCE (http://behrend.psu.edu/school-of-engineering/academic-programs/computer-science/curriculum/computer-science-minor/)

Opportunities for Graduate Studies

Adding a specialized minor such as Computer Science to a broader engineering major or to a natural sciences or business degree demonstrates to graduate programs your commitment to interdisciplinary thinking and greatly expands your opportunities for graduate study.

MORE INFORMATION ABOUT OPPORTUNITIES FOR GRADUATE STUDIES (http://behrend.psu.edu/school-of-engineering/academic-programs/computer-science/curriculum/computer-science-minor/)

Contact

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