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 scientists design and build software: from small web applications to operating systems and from stand-alone applications for desktop use to integrated systems found in places like the International Space Station. The study of computer science offers an educational foundation in not only system programming, database management, and data visualization, but also the unique and evolving fields of computer game development and network security. A minor degree program can establish a strong conceptual framework for applying computer science methods and techniques to a primary field of study.

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

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Requirements for the Minor</td>
<td>18</td>
</tr>
</tbody>
</table>

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 (http://senate.psu.edu/policies-and-rules-for-undergraduate-students/59-00-minors-and-certificates/#59-10).

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CMPSC 122</td>
<td>Intermediate Programming ¹</td>
<td>3</td>
</tr>
<tr>
<td>CMPSC 360</td>
<td>Discrete Mathematics for Computer Science</td>
<td>3</td>
</tr>
<tr>
<td>CMPSC 465</td>
<td>Data Structures and Algorithms</td>
<td>3</td>
</tr>
</tbody>
</table>

Additional Courses

<table>
<thead>
<tr>
<th>Additional Courses: Require a grade of C or better</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select one of the following:</td>
</tr>
<tr>
<td>CMPSC 221 Object Oriented Programming with Web-Based Applications</td>
</tr>
<tr>
<td>CMPSC 312 Computer Organization and Architecture</td>
</tr>
<tr>
<td>SWENG 311 Object-Oriented Software Design and Construction</td>
</tr>
</tbody>
</table>

Supporting Courses and Related Areas

<table>
<thead>
<tr>
<th>Supporting Courses and Related Areas: Require a grade of C or better</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select 6 credits of 400-level (below 490) CMPSC courses</td>
</tr>
</tbody>
</table>

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 need to plan the chosen program of study, and referrals to other specialized resources.

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

Erie

Meng Su
Associate Professor of Computer Science and Software Engineering
170 Burke
Erie, PA 16563
814-898-6261
mus11@psu.edu

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 (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 (http://behrend.psu.edu/school-of-engineering/academic-programs/computer-science/curriculum/computer-science-minor)

Contact
Erie
SCHOOL OF ENGINEERING
242 Jack Burke Research and Economic Development Center
5101 Jordan Road
Erie, PA 16563
814-898-6153
engineering@psu.edu

http://behrend.psu.edu/school-of-engineering