COMPUTER SCIENCE, LIBERAL ARTS EMPHASIS, MINOR

Liberal Arts (Code 170-401)

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>CS 145</td>
<td>Programming for New Programmers</td>
<td>4</td>
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<tr>
<td>or CS 148</td>
<td>Programming for Experienced Programmers</td>
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<tr>
<td>CS 245</td>
<td>Advanced Programming and Data Structures</td>
<td>4</td>
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<tr>
<td>CS 252</td>
<td>Computer Systems</td>
<td>4</td>
</tr>
<tr>
<td>CS 260</td>
<td>Database Systems</td>
<td>4</td>
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</tbody>
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Nine credits selected from:
- CS 268  Web Systems
- CS 335  Algorithms
- CS 370  Computer Security
- CS 376  Cryptography and Network Security
- CS 388  UNIX Systems Programming
- CS 399  Independent Study - Juniors
- CS 420  Artificial Intelligence
- CS 425  Machine Learning
- CS 426  Deep Learning
- CS 436  Mobile Software Development
- CS 450  Theory of Computation
- CS 455  Computer Graphics
- CS 462  Computer Networks
- CS 491  Special Topics
- CS 498  Computer Science Internship

or other courses designated by the department and not already included in the minor.

Program Learning Outcomes

Students completing this program will be expected to meet the following learning outcomes:

- Analyze a problem, identify and define the computing requirements appropriate to its solution and demonstrate comprehension of the tradeoffs involved in design choices.
- Apply and use concepts from computer architecture and operating systems in computing system design, implementation and performance analysis.
- Use and evaluate a wide variety of modern tools and languages used in the practical construction of computing systems.