Artificial Intelligence Graduate Certificate

The graduate certificate in Artificial Intelligence is a four-course (12 credit hour) program. It provides skills and training necessary to start and/or advance in the growing areas of AI, with a range of electives to focus more specifically in one’s desired direction of study. All students must take two required courses and two electives.

A minimum of three courses must be taken from UMSL. A maximum of two courses can be used from the 4000-level. Courses may be substituted with the permission of the certificate coordinator. For more information, students can contact the department chair or email info@arch.umsl.edu.

**Required Courses**

<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Hours</th>
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</thead>
<tbody>
<tr>
<td>CMP SCI 5130</td>
<td>Advanced Data Structures and Algorithms</td>
<td>3</td>
</tr>
<tr>
<td>CMP SCI 5300</td>
<td>Artificial Intelligence</td>
<td>3</td>
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</tbody>
</table>

**Elective Courses**

- CMP SCI 5320: Evolutionary Computation
- CMP SCI 5340: Machine Learning
- CMP SCI 5342: Data Mining
- CMP SCI 5370: Biological Data Science
- CMP SCI 5390: Deep Learning
- CMP SCI 5420: Digital Image Processing and Computer Vision
- CMP SCI 6320: Advances in Evolutionary Computation
- CMP SCI 6340: Genetic Programming

**Total Hours**: 12