CSCE 274 - Robotic Applications and Design
Credit Hours: 3 hours
Contact Hours: 3 lecture hours
Instructor: Drs. O’Kane and Rekleitis

Bulletin Description: Design and control of robots. Interactions between robots, sensing, actuation, and computation.
Prerequisites: CSCE 146

Required Course in CE, CIS, and CS programs
Learning Outcomes: Students will be able to:
1. Describe the components of modern robot systems.
2. Apply robotic control architectures.
3. Implement autonomous navigation and planning on mobile robot platforms.

Student (Program) Outcomes addressed by course (Detailed mappings of these course outcomes to the Student Outcomes of the programs are in the detailed syllabus and the Assessment plan.)

<table>
<thead>
<tr>
<th>Student Program Outcomes</th>
<th>SOs supported</th>
<th>SOs Moderately supported</th>
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</thead>
<tbody>
<tr>
<td>Computer Engineering</td>
<td>a, b, c, e</td>
<td>j, k</td>
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<tr>
<td>Computer Information Systems</td>
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<tr>
<td>Computer Science</td>
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Topics covered and approximate weight:
1. History (2 hours)
2. Control architectures (10 hours)
3. Sensing (8 hours)
4. Robot motion (5 hours)
5. Robot programming (4 hours)
6. Uncertainty (5 hours)
7. Multi-robot systems (2 hours)
8. Biomemetic robots (2 hours)
9. Reviews and Exams (4 hours)