CSCE 274 - Robotic Applications and Design

- **Credit Hours:** 3 hours
- **Contact Hours:** 3 lecture hours
- **Instructor:** Dr. Rekleitis
- **Required Textbooks:** Maja J. Mataric, *The Robotics Primer,* The MIT Press, 2007.
- **Bulletin Description:** Design and control of robots. Interactions between robots, sensing, actuation, and computation.
- **Prerequisites:** CSCE 146
- **Required Course** in CE
- **Course 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 Outcomes addressed by course**

Program	Student Outcomes Addressed
Computer Engineering	1, 2, 6
Computer Information Systems	N/A
Computer Science	N/A

- **Topics covered**
  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)