Introduction to Robotics (Fall 2012)

AE 482 / CS 443 / ECE 470 / IESE 421 / MechSE 445

Personnel

- **Instructor:** Tim Bretl, Office: CSL 148, Phone: 217-244-3126, Email: tbretl@illinois.edu
- **TA:** Aadeel Akhtar, Email: aakhta3@illinois.edu
- **TA:** Ricardo Toro, Email: torosant@illinois.edu

Time and Place

Tu/Thu 9:30AM-10:50PM, 218 Ceramics

Office Hours

- Prof. Bretl: M 1pm-2pm in CSL 148 and F 4pm-5pm in Talbot 321A
- Mr. Akhtar: W 2:00pm - 3:30pm, Th 11am-12:30pm in CSL 139
- Mr. Toro: M 3pm-3:50pm and 5pm-6pm, Tu 4:50 pm - 6:00 pm in Everitt 267

Required Texts

- Robot Modeling and Control (Spong, Hutchinson, and Vidyasagar, Wiley, 2009) — it will be available at the Illini Union Bookstore.
- ECE 470 Lab Manual — hard copies available for approximately $10 from Everitt 60

Homework

Please hand in homework at the beginning of class on the day that it is due.

- **HW1 (due Thursday, September 20)**: Solution
- **HW2 (due Tuesday, October 9)**: Solution
- **HW3 (due Thursday, November 1)**: hw3code.m, Solution
- **HW4 (due Tuesday, November 27)**: Solution
- **HW5 (due Tuesday, December 11)**: hw5code.m, Solution, hw5_soln.m
### Lab Schedule

<table>
<thead>
<tr>
<th>Week</th>
<th>Lab Schedule</th>
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<tbody>
<tr>
<td>Sept 4 - 6</td>
<td>Lab 1 - Intro. To Robotics Lab.</td>
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<td>Sept 11 - 13</td>
<td>Lab 2 - Intro Tower of Hanoi.</td>
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<td>Sept 18 - 20</td>
<td>Lab 2 - Demo.</td>
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<td>Sept 25 - 27</td>
<td>Lab 3 - Intro. Forward kinematics.</td>
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<td>Oct 2 - 4</td>
<td>Lab 3 - Demo.</td>
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<td><strong>Oct 9 - 11</strong></td>
<td><strong>Midterm week NO Labs.</strong></td>
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<tr>
<td>Oct 16 - 18</td>
<td>Lab 4 - Intro. Inverse Kinematics.</td>
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<td>Oct 23 - 25</td>
<td>Lab 4 - Cont.</td>
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<td>Oct 30 - Nov 1</td>
<td>Lab 4 - Demo.</td>
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<tr>
<td>Nov 6 - 8</td>
<td>Lab 5 - Intro. Image Processing.</td>
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<td>Nov 13 - 15</td>
<td>Lab 5 - Demo.</td>
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<td><strong>Nov 20 - 22</strong></td>
<td><strong>Thanksgiving week NO Labs.</strong></td>
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<tr>
<td>Nov 27 - 29</td>
<td>Lab 6 - Intro camera Calibration.</td>
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<tr>
<td>Dec 4 - 6</td>
<td>Lab 6 - Demo.</td>
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**Ricardo Toro**  
Tuesday - Thursday  
3:00 pm - 4:50 pm

**Aadeel Akhtar**  
Tuesday - Thursday  
1:00 pm - 2:50 pm

### Exams

- Midterm Exam *(7:00-10:00 PM on Wednesday, October 10, in Ceramics 218): [Solution]*
- Final at 8:00AM-11:00AM, Saturday, December 15, in Ceramics 218

### Grading

- 25% homework, 25% lab, 25% midterm, 25% final

### Homework Policy
Homework is due at the start of class. Late homework will be penalized 10% per calendar day. No homework will be accepted after graded homework is returned.

**Lab Attendance Policy**

Attendance during lab is strictly required, unless a written explanation is obtained from the emergency dean. You will not receive credit for a lab or demonstration that you do not attend.

**Website**

- [https://wiki.engr.illinois.edu/display/ECE470/](https://wiki.engr.illinois.edu/display/ECE470/)

**Child Pages (1)**

- Homework 2 - Forward Kinematics and Velocity Kinematics