

**CS 5310/6310 & ECE 5650/6650 & ME  
5220/6220**

**Introduction to Robotics**

# Course Information

Instructor: [John Hollerbach](#)  
Office hours: 12:30-1:30 MWF (MEB 2178)  
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Teaching Assistant: [Emma Pinegar](#), T 11am-1pm, H 2-4pm MEK 2447

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Classes: MEK 3550, MWF 2:00-2:50pm  
Course web page: <https://pubweb.eng.utah.edu/~cs5310>

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This course is cross-listed between CS and ME. It is the entry level course for the [robotics track](#), and is a prerequisite for most of the more advanced robotics courses.

## Prerequisites

CS 1000 or ME EN 1010; MATH 2270; PHYS 2210. Knowledge of Matlab is required. Students not having a Matlab background can consult course notes from CS 1000 (from Jim De St. Germain or the instructor), linked on the main page. A more advanced option is [ME 5250/6250](#) Programming for Engineers, which is highly recommended.

## Content

In this course we will examine the kinematics, statics, and dynamics of robot manipulators; see the [schedule](#) for more details. Besides lectures, there will be laboratory exercises involving two different robot systems: [Baxter](#) and [KUKA KR Agiles](#) robots.

## Readings, Lectures, and Office Hours

Course notes will be provided. All materials will be accessible through the course web page.

## Grading

The grade will be based on homework assignments (50%), projects (15%), and exams (35%). There is no extra-credit opportunity or makeup opportunity, so don't ask. There are plenty of assignments and exams to improve lagging grades.

Programming assignments using Matlab will be a regular part of the homework and term project. There are 4 labs that use the Baxter robots in the Large Robotics Lab. On the dates the labs are listed on the schedule, students will sign up for one-hour time slots via a provided Google Docs link. Please form groups of 4 students, all grads or undergrads per

group. There are 2 robots, and 2 groups per time slot. Lab and homework assignments will be submitted via Gradescope. Exams will be in person and open book. If you can't be in person for the labs or exams, don't take this course.

Homework will be due in one week at midnight. You will be required to use a document scanner, such as Adobe Scan for Androids. The resolution is much sharper than taking a picture, and the resulting pdf file size is 1/100th. Late homework will lose 10% per business day up to 2 business days late; thereafter, a grade of 0 will be assigned. If an assignment is due on Friday, the weekend counts as one day late. Appeals to assignment grades must be made within one week.

*If you are uncertain about homework questions it is your responsibility to contact the instructor or TA for clarification. Misinterpretation of assignments will not be accepted as an excuse.*

Graduate students will be given extra lectures, readings, assignments, and exam questions. Grading is done by scaling to the highest score, then using equally-spaced decrements for subsequent letter grades. E.g., if the highest grade is 90/100 and the decrement is (typically) 4, then 87-90 is an A, 83-86 is an A-, etc. A missed assignment such as a homework will cost you 1 grade.

## Student code

You are encouraged to discuss techniques and issues with other students; however, all solutions turned in must be your own work. Any common work turned in, whether given or received, will result in a failing grade for the course. Programming assignments are checked using Moss for potential copying.

[College of Engineering Guidelines and Policies](#)