

# MENG 189 – Robotics LLC

## Spring 2015

### Instructors:

Dr. David Grow (dgrow@nmt.edu)

Dr. Kevin Wedeward (wedeward@ee.nmt.edu)

Class Time: F 02:00pm-05:00pm (Cramer 114)

Office Hours: M/W 01:00pm-03:00pm (Weir 004)

Office Hours: M/W/F 10:00am-12:00pm (Workman 221)

### Reference Texts (none required)

- Programming Arduino (9780071784221)
- Arduino Workshop (9781593274481)

### Course Objectives

This course will give students direct experience with the basics of circuits, mechanical design, modeling, and programming. Students from computer science, electrical, and mechanical engineering work in trans-disciplinary teams. Lab exercises build towards disaster-response themed robotics competition.

### Grade Rubric

- Mid-semester competition performance (**20%**)
- End-of-semester competition performance (**20%**)
- Project video (**10%**)
- Class participation (**25%**)
- In-class assignments (**25%**)

### Tentative Schedule

The final competition will tentatively occur during class time on May 1st. For a list of what each weeks lab/lecture will cover, see:

<http://www.ee.nmt.edu/wedeward/MENG189L/FA14/schedule.php>

### Specific Learning Objectives

Big picture: Engineering students will demonstrate the following attributes by the time they graduate.

- a) an ability to apply knowledge of mathematics (including multivariable calculus, differential equations, linear algebra and statistics), science (including chemistry and in-depth calculus-based physics), and engineering
- b) an ability to design, document, and conduct experiments, as well as to analyze and interpret data
- c) an ability to design and realize a thermal or mechanical system, component, or process to meet stated objectives
- d) an ability to function on multi-disciplinary teams
- e) an ability to identify, formulate, and solve engineering problems
- f) an understanding of professional and ethical responsibility
- g) an ability to communicate effectively
- h) the broad education necessary to understand the impact of engineering solutions in a global and societal context
- i) a recognition of the need for, and an ability to engage in life-long learning
- j) a knowledge of contemporary (within the profession) issues

k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.

**Disclaimer**

The instructor will make every effort to follow the syllabus. However, in case of unforeseen circumstances, the instructors reserve the right to make changes to the syllabus. Students will be notified in a timely manner of any syllabus changes.

**Academic Integrity**

Integrity is recognized as a core value in Tech’s mission statement and academic dishonesty will not be tolerated. This includes cheating on exams or homework, inappropriate collaboration on homework, use of a solution manual, alteration of graded assignments, lying, and facilitating academic dishonesty. Attending class, reading the text, and beginning assignments well before their due date will improve your mastery of the material and will reduce the pressure to take unethical shortcuts.

**Emergency Response**

To help make our emergency response as effective as possible, please set phones on "vibrate" during class. If you have not already done so, please register for the Emergency Notification System at the link below. This ensures that an emergency notification would still be evident. *To report an emergency situation, please call Campus Police at 575.835.5434.*

<http://www.nmt.edu/cat-campus-police/4002-emergency-notification-system>

**Reasonable Accommodations**

New Mexico Tech is committed to protecting the rights of individuals with disabilities. Qualified individuals who require reasonable accommodations are invited to make their needs known to the Office of Counseling and Disability Services (OCDS) as soon as possible. To schedule an appointment, please call 835-6619.

**Counseling Services**

New Mexico Tech offers mental health and substance abuse counseling through the Office of Counseling and Disability Services. The confidential services are provided free of charge by licensed professionals. To schedule an appointment, please call 835-6619.