

## ENGF 293-501 -- Mondays & Wednesdays 9:00-10:15 in A125/A126

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**Instructor:** Annette Hatch

**Office:** A123

**Office Hours:** MW 8-9, W 10:30 – 11:30; W, Th 1:30-3:30 or by appointment.

**Email:** ahatch2@unm.edu

**Phone:** 925-8642

**COURSE DESCRIPTION:** **Introduction to Robotics** will introduce students to the broad topical areas relating to robotic design, history, mechanics, electronics, and computer programming through lecture, research, and hands-on experiences.

**COURSE MATERIALS:** Notebook, pencil, calculator, flash drive.

**GRADING SCALE** (Note: + and – are possible but only will be given if of benefit to the student.)

A	90 – 100%	CR	Credit	72 – 100%
B	80 – 89%	NC	No Credit	< 72%
C	70–79%			
D	60–69%			
F	< 59%			

**Attendance and Class Participation** **30%**

**Skill Competencies** **50%**

**Final Exam** **20%**

**IMPORTANT DATES** with respect to this class:

- **No Class:** Labor Day, September 4, 2017
- Last date to drop without a grade: Friday, September 8, 2017
- Fall Break: October 12 -15, 2017
- **No Class** Monday, November 6, 2017: Annette @ conference
- Thanksgiving Break: November 23-26, 2017
- **Final Exam: Wednesday, December 13, 2017 9:00-11:00 AM in A125**

**ATTENDANCE POLICY:** The student bears full responsibility for the material and procedural information covered in class. Attendance is part of the grade. If a student misses 3 classes in the first three weeks or 4 consecutive class periods or 6 total, the student may be dropped from the class.

**EXPECTATIONS:** Students are expected to conduct themselves in a polite, courteous, professional and collegial manner. Cell phones must be set on silent. Please step into the hall if you need to take a call during class.

**UNM EMAIL/BLACK BOARD LEARN ACCESS:** All UNM-Valencia students will need a UNM Net ID to access LoboWeb, LoboMail and Learn.

**COMPUTER LAB RESPONSIBILITY:** Please be advised that use of computer labs on UNM properties is governed by “Policy 2500: Acceptable Computer Use” which can be found at <http://policy.unm.edu/university-policies/2000/2500.html> . Food and drink are also prohibited in any computer lab on campus. Anyone violating these policies is subject to possible suspension and loss of computer lab privileges.

**SUPPORT SERVICES:** The Valencia Campus Library provides a quiet atmosphere for study and is an excellent resource for supplementary materials. Audiotapes and videotapes are available for student use through the library. The new Learning Commons (925-8907) and STEM Center (925-8515) offer math & science tutoring at no cost to the student. The Writing Center can provide free help with all written assignments. (For Writing Center appointments email gillikin@unm.edu or call 925-8513.) Students who miss tutoring appointments may be denied future appointments.

**DISABILITY STATEMENT:** If you have a documented disability, the Equal Access Services office will provide me with a letter outlining your accommodations. I will then discuss the available accommodations with you to determine the best learning environment. If you feel that you need accommodations, but have not documented your disability,

please contact Jeanne Lujan, the coordinator for Equal Access Services at 925-8910 or [jmlujan@unm.edu](mailto:jmlujan@unm.edu).

**TITLE IX:** In an effort to meet obligations under Title IX, UNM faculty, Teaching Assistants, and Graduate Assistants are considered “responsible employees” by the Department of Education (see pg 15 - <http://www2.ed.gov/about/offices/list/ocr/docs/qa-201404-title-ix.pdf> ). This designation requires that any report of gender discrimination which includes sexual harassment, sexual misconduct and sexual violence made to a faculty member, TA, or GA must be reported to the Title IX Coordinator at the Office of Equal Opportunity ([oeo.unm.edu](http://oeo.unm.edu)). For more information on the campus policy regarding sexual misconduct, see: <https://policy.unm.edu/university-policies/2000/2740.html>

**UNM’s Policy on Academic Honesty:** Each student is expected to maintain the highest standards of honesty and integrity in academic and professional matters. The University reserves the right to take disciplinary action, including dismissal, against any student who is found responsible for academic dishonesty. Any student who has been judged to have engaged in academic dishonesty in course work may receive a reduced or failing grade for the work in question and/or for the course. Academic dishonesty includes, but is not limited to, dishonesty in quizzes, tests or assignments, claiming credit for work not done or done by others; hindering the academic work of other students; and misrepresenting academic or professional qualifications within or outside the University.

Week	Dates	Topics (Subject to Change)
1	8/21 & 23	Intro to Robots in Popular Culture/Industry; Bread Boarding
2	8/28 & 30	Programming Basics; Motors and Servos
3	9/6	NO Class Monday 9/4: Labor Day; Vehicle Construction
4	9/11 & 13	Touch Sensors
5	9/18 & 20	IR Sensors: Wall
6	9/25 & 27	IR Sensors: Line Following
7	10/2 & 4	Light Sensors
8	10/9 & 11	Legs
9	10/16 & 18	Other Sensors
10	10/23 & 25	Other Sensors
11	10/30 & 11/1	Spatial Coordinates
12	11/8	NO Class Monday 11/6: Annette Conference; Gears, Linkages, and Degrees of Freedom
13	11/13 & 15	Robotic Arms
14	11/20 & 22	Robotic Arms
15	11/27 & 29	Robotic Arms
16	12/4 & 6	Robotic Hands
	12/13	<b>Final Exam: Wednesday, December 13, 2017 9:00-11:00 AM in A125</b>

#### STANDARDS OF LEARNING:

Upon the successful completion of Introduction to Robotics students will

1. Have an understanding of robotic history, application and design
2. Have an understanding of electrical and mechanical components comprising the class robots
3. Be able to do mathematical calculations and write short computer programs to allow the class robots to accomplish specified feats.