

UNLV ME 425/625 – Robotics 1 – Fall 2017 (last updated 08/21/17)

Week	Topic	
Week 1 08/28/17	Lecture	No Class; Please view course web site
Week 2 09/04/17	UNLV Holiday – Labor Day	
Week 3 09/11/17	Lecture Lab Programming	Simple Machines I: Levers, Shafts and Cranks LEGO levers, shafts and cranks LEGO NXC: hello world, motors and touch sensor
Week 4 09/18/17	Lecture Lab Programming	Simple Machines II: Cams, Springs and Linkages LEGO cams, springs and linkages LEGO NXC: ultrasonic and infrared sensors
Week 5 09/25/17	(Travel tentative: IROS 2017 Conference)	
	Lecture Lab	Simple Machines III: Ratchets, Drives and Gearing LEGO ratchets, drives and gearing ML-CAD (or Solidworks)
Week 6 10/02/17	Lecture/Lab Programming Project	Putting it all together: Automata Examples (The Gymnast) Email: Team's proposed Project LEGO NXC: File handling Teams Work on Automata Project
Week 7 10/09/17	Due: Lecture Programming	Automata Presentation; Hardcopy Report Due Motor Theory LEGO NXC: Timers; Data Acquisition (Motor OL Step Response)
Week 8 10/16/17	Mid-Term (Travel World Knowledge Forum)	
	Part 1 Closed-book (60-min): Fill-in-the-blanks, essays, etc Part 2 Open-book (90-min): Hands-on LEGO construction	
Week 9 10/23/17	Lecture Lab	Robot Sensing: ADC: binary, voltage dividers LEGO touch sensor; ohmmeter; potentiometer, voltmeter
Week 10 10/30/17	Lecture Lab	Robot Actuation: ADC: operational amplifiers LEGO temperature sensing; DAC power supply; aliasing
Week 11 11/06/17	Lecture Lab	Robot Communications: I2C LEGO PCF8574 LEDs, DIPs
Week 12 11/13/17	Lecture Lab	Robot Interfacing: H-Bridges Relays and Transistors

Week 13 11/20/17	Project: Teams Work on NXT H-Bridge Project
Week 14 11/27/17	To be Determined
Week 15 12/04/17	Study Week Begins
Week 16 12/11/17	Finals Begin