

UNLV ME 425/625 – Robotics 1 – Fall 2018 (last updated 07/16/18)

Week	Topic	
Week 1 08/27/18	Lecture	No Class; Please view course web site
Week 2 09/03/18	UNLV Holiday – Labor Day	
Week 3 09/10/18	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 09/17/18	Lecture Lab Programming	Simple Machines II: Cams, Springs and Linkages LEGO cams, springs and linkages LEGO NXC: ultrasonic and infrared sensors
Week 5 09/24/18	Lecture Lab	Simple Machines III: Ratchets, Drives and Gearing LEGO ratchets, drives and gearing ML-CAD (or Solidworks)
Week 6 10/01/18	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 10/08/18	Due: Lecture Programming	Automata Presentation; Hardcopy Report Due Motor Theory LEGO NXC: Timers; Data Acquisition (Motor OL Step Response)
Week 8 10/15/18		Part 1 Closed-book (60-min): Fill-in-the-blanks, essays, etc Part 2 Open-book (90-min): Hands-on LEGO construction
Week 9 10/22/18	Lecture Lab	Robot Sensing: ADC: binary, voltage dividers LEGO touch sensor; ohmmeter; potentiometer, voltmeter
Week 10 10/29/18	Lecture Lab	Robot Actuation: ADC: operational amplifiers LEGO temperature sensing; DAC power supply; aliasing
Week 11 11/05/17	Lecture Lab	Robot Communications: I2C LEGO PCF8574 LEDs, DIPs
Week 12 11/12/18	UNLV Holiday – Veterans Day	
Week 13 11/19/18	Lecture Lab	Robot Interfacing: H-Bridges Relays and Transistors

Week 14 11/26/18	Project: Teams Work on NXT H-Bridge Project
Week 15 12/03/18	Study Week Begins
Week 16 12/10/18	Finals Begin