UNLV ME 425/625 – Robotics 1 – Fall 2019 (last updated 08/08/19)

Week	Topic	
Week 1 08/26/19	Lecture	Introduction
Week 2 09/02/19	**Labor Day**	
Week 3 09/09/19	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 09/16/19	Lecture Lab Programming	Simple Machines II: Cams, Springs and Linkages LEGO cams, springs and linkages LEGO NXC: ultrasonic and infrared sensors
Week 5 09/23/19	Lecture Lab	Simple Machines III: Ratchets, Drives and Gearing LEGO ratchets, drives and gearing ML-CAD (or Solidworks)
Week 6 09/30/19	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 10/07/19	Due: Lecture Programming	**Automata Presentation; Hardcopy Report Due** Motor Theory LEGO NXC: Timers; Data Acquisition (Motor OL Step Response)
Week 8 10/14/19		**Midterm** Part 1 Closed-book (60-min): Fill-in-the-blanks, essays, etc Part 2 Open-book (90-min): Hands-on LEGO construction
Week 9 10/21/19	Lecture Lab	**Robot Sensing**: ADC: binary, voltage dividers LEGO touch sensor; ohmmeter; potentiometer, voltmeter
Week 10 10/28/19	Lecture Lab	**Robot Actuation**: ADC: operational amplifiers LEGO temperature sensing; DAC power supply; aliasing
Week 11 11/04/19	Lecture Lab	**Robot Communications**: I2C LEGO PCF8574 LEDs, DIPs
Week 12 11/11/19	**Veterans Day – UNLV Holiday**	

Week 13 11/18/19	Lecture Lab	**Robot Interfacing**: H-Bridges Relays and Transistors
Week 14 11/25/19	Project:	**Teams Work on NXT H-Bridge Project**
Week 15 12/02/19		**Project Due** **Study Week Begins**
Week 16 12/09/19		**Finals Begin**