

UNLV ME 425/625 – Robotics 1 – Fall 2022 (last updated 08/25/22)

Week	Topic	
Week 1 08/29/22	Lecture	Introduction
	Lab	BrixCC setup, NXC programming, Studio
	Homework	NXC data types, if-then, loops, TextOut and FormatNum Studio: Casters
Week 2 09/05/22	Labor Day – UNLV Holiday	
Week 3 09/12/22	Lecture	Simple Machines I: Levers, Shafts and Cranks
	Lab	LEGO levers, shafts and cranks, Domabot
	Programming	NXC: strings, motors (OnFwd, Rotate), Buttons, and touch sensor
	Homework Additions	NXC: strings, strcount, strnum, etc Domabot touch sensor reaction Studio: Lift mechanisms; Grabbing things
Week 4 09/19/22	Lecture	Simple Machines II: Cams, Springs and Linkages
	Lab	LEGO cams, springs and linkages Ultrasonic Docking (no feedback)
	Programming	NXC: ultrasonic and infrared
	Homework Additions	NXC: Domabot ultrasonic docking (shortest time) Studio: Reciprocating motions
Week 5 09/26/22	Lecture	Simple Machines III: Ratchets, Drives and Gearing
	Lab	LEGO ratchets, drives and gearing PID ultrasonic docking (with feedback)
	Programming	NXC Timers
	Homework Additions	NXC: Domabot PID (shortest time) Studio: Gearing and drives
Week 6 10/03/22	Project 1 Relay Race: Introduction	
	Lecture/Lab	PID and Line Following
	Programming	NXC Files
	Homework Additions	NXC: Line Following (say in reverse direction) Studio: Ratchets
Week 7 10/10/22	Project 1 Relay Race: PDR and Practice (No Formal Class)	
Week 8 10/17/22	Project 1 Relay Race: Competition Day	

<p>Week 9 10/24/22</p>	<p>Midterm</p> <p>Part 1 Closed-book (60-min): Fill-in-the-blanks, essays, etc Part 2 Open-book (90-min): Hands-on LEGO construction</p>								
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<p>Week 13 11/21/22</p>	<p>Project 2 Something – Introduction</p> <p>Some ideas:</p> <ul style="list-style-type: none"> - Tube Push, Photovore, Braitenberg Vehicles, Wall-Following 								
<p>Week 14 11/28/22</p>	<p>Project 2 Something – PDR and Practice</p>								
<p>Week 15 12/05/22</p>	<p>Study Week Begins</p> <p>Project 2 Something – Competition Day</p>								
<p>Week 16 12/12/22</p>	<p>Finals Begin</p> <p>Project Due</p>								