

Week		Monday Lecture Active Learning Exercises with Project Teams	Individual Laboratory Exercises	Individual Homework Exercises	Project	Project Deliverables
1	Introduction, Arduino: Digital I/O, LED	Active Learning	LED blink	LED blink	Project 1: Arduino Sound and Light Display	Deliverable 1
2	Arduino: If/else, Button, Switch, Piezospeaker	Active Learning	Button, Speaker	4 Button Piano		Deliverable 2
3	Arduino: Analog input, Serial communication, Photoresistor, Potentiometer, Temperature Sensor	Labor Day	Analog Input	Night Light		Deliverable 3
4	Arduino: Loops, Arrays, Ultrasound Distance Sensor, Mean Calculation	Active Learning	Distance Sensor	Mean Distance	Project 2: Arduino Useful Device (Sensor & Motor)	Report
5	Arduino: Analog Output, RGB LED, Functions	Exam 1	RGB LED	Proximity Light		Deliverable 1
6	Arduino: Servomotor, LCD, Functions, Flowcharts	Active Learning	Servomotor, LCD	Stopwatch		Deliverable 2
7	Arduino: Functions with Arrays and Gearmotors	Active Learning	Gear Motors	Hypnodisk		Deliverable 3
8	Arduino: Review	Active Learning	Serial Communication	Data Collection		Report
9	Matlab: Basics, Plotting, Importing Data from Arduino	Exam 2	Retirement Analysis	EMG Data Analysis	Project 3: Matlab and Arduino Hypothesis-Driven Research	Deliverable 1
10	Matlab: Loops, Arrays, Mean, Standard Deviation, Linear Regression	Active Learning	Mean, Standard Deviation, Sums	Linear Regression		Deliverable 2
11	Matlab: If/else, statistical tests (polyfit, linear regression, and ttest2)	Active Learning	Conditional Statements, ttest2	Statistics in Data Analysis		Deliverable 3
12	Matlab: Functions	Active Learning	Functions	Map Game		Deliverable 4
13	Matlab: Numerical Methods	Active Learning	Euler's Method for Diff. Equations	Tank Game		Thanksgiving
14	Matlab: Numerical Methods	Active Learning	Root Finding	Thermodynamics Eqn. Solving	Deliverable 5	
15	Wrap up, Review	Active Learning				Report
	Final Exam	Final				