

Electronics: ENGN/PHYS 208 (winter 2019)

[Last updated: 13 Mar 2019]

This schedule is a good 3rd order approximation, but subject to change

Date	Topic	Design Project Timeline/Due Dates
WEEK 1		
07-Jan	“Hellos!”, syllabus review, electronics overview, project idea incubator	
09-Jan	Digital Logic Gates (NOT, AND, OR, XOR, NOR)/Keypad Combo	
WEEK 2		
14-Jan	Digital Memory Devices (Flip-flops, latches); Pull-up/down resistors. Lab time/intro to digital electronics	Individual Project Proposals due beginning of class
16-Jan	Cracking Digital Safe Codes; D-latch and Memory Registers	Review approved projects and rank them (matching process)
WEEK 3		
21-Jan	<i>No class - MLK Jr. Day (Monday class meets Friday, Jan 25)</i>	
23-Jan	Random Access Memory (RAM)	Project Topic and Team Selection
25-Jan	Binary number systems and computer arithmetic	
WEEK 4		
28-Jan	Project Workshop Day: Selecting MCU/dev board: tradeoffs and limitations (Arduino; Teensy; Feather; ESP32; RasPi; Particle; etc.)	
30-Jan	Project Workshop Day: Team Meetings	Team Design Document I: Problem Statement and System Overview. Due 12pm
WEEK 5		
04-Feb	MOSFETs and Flash Memory Fundamentals	
06-Feb	MCU’s inside: the heap, stack, Flash and Ram;	Team Design Document II: Final Bill of Materials. Due 5pm
WEEK 6		
11-Feb	MCU peripherals: AD/DA converters, Digital Input/Outputs	

13-Feb	MUC peripherals: SPI and I2C communication protocols – connecting to sensors	
		FEB BREAK
18 – 22 Feb	<i>No class – Washington Break</i>	
		WEEK 7
25-Feb	Team Project Time	
27-Feb	Team Project Time	
		WEEK 8
04-Mar	I2C communication protocol	Midterm Exam Out Mar 06; Due Monday Mar 11
06-Mar	Team Project Time	
		WEEK 9
11-Mar	SPI and UART communication protocols	
13-Mar	Class Project Presentations/Status Update & Design Review	
		WEEK 10
18-Mar	FIFO buffers	
20-Mar	Individual Team Meetings/Team Project Time	
		WEEK 11
25-Mar	Team Project Time	
27-Mar	Team Project Time	
		WEEK 12
01-Apr	Team Project Time	
03-Apr	Final Project Presentations (open to the public)	Final Report Draft all sections: due 5pm
		Finals Week
Apr 06-12		Final written reports due noon, Apr 09