

# Lab Policy for COS 436 / ELE 469

## INSTRUCTOR COPY

1) I have reviewed the list of lab kit components on the following pages and acknowledge that I am responsible for their care this semester. I will notify the instructor or a COS 436 / ELE 469 teaching assistant if I break or lose any of my lab kit components. I will take reasonable measures to replace any equipment that I lose or that I damage through negligence.

2) I have reviewed the lab policies and procedures on the following pages and agree to abide by them.

I acknowledge that significant infractions of these policies can result in the loss of one or more letter grades in the course.

Signed:

(Signature)

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(Printed Name)

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## STUDENT COPY

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(Printed Name)

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# COS 436 Lab Policies

## Space

Our labs will use the two right-most bays (F113 and F114). Only 24 students are permitted in each bay at a time. The Monday and Friday sections will use the right-most bay only. The Wednesday section will use the two right-most bays.

Please do not enter the other bays or touch equipment from other courses.

The “blackboard” at the end of the bay is **NOT a blackboard!** Don’t write on it. The words will not come off.

Please do not bring open food or drink containers into the bays.

## Time

You are welcome but not required to stay for your whole lab section. Please don’t go to other lab sections, though, because of constraints on space.

You have 24-hour access to the lab space, but we ask that you not crowd the space while other courses are in session. See the last page for the course schedule. You may work in F114 (the rightmost bay) at any time; we share F113 with another course.

## Clean-up

Please put the chairs back at the benches in an orderly fashion.

Please place all equipment back where you found it. If you don’t know where it goes, ask, or put it in the big plastic bin.

Please clear the benches from all wire, scraps, etc. and dispose of all trash properly.

Before leaving, check that all soldering irons and meters are turned off.

## Damaged Equipment

Please alert an instructor or TA immediately if you damage equipment or parts, if you come across equipment or parts that have already been damaged, or if you suspect that a part is not working.

Please **do not use the oscilloscopes** unless it is necessary for your project and you have received training in their operation.

## Safety and Skills

If something looks expensive or dangerous, it probably is. If it doesn’t look expensive or dangerous, it still might be. If it might be expensive or dangerous and you don’t know how to use it, don’t use it. Or ask for help from an instructor or TA.

## Shared Equipment

Some of the labs will require equipment not found in your project kits. This equipment will normally be stored in the first cabinet on the right in the rightmost bay. If you can't find what you're looking for, take a look in the plastic bin on the table near the bay entrance. If you find something lying around and you don't know where it goes, put it in the bin.

## Project Group Lab Kits

The following pages describe the contents of your parts kits. You are welcome to experiment with any of these components during lab or on your own time.

### 1. Breadboard

### 2. Battery holder:

You can power your arduino via USB, so this isn't necessary, but untethered can be nice.

### 3. Diagonal cutters:

Use for wire cutting

### 4. Wire stripper:

Use for stripping basic breadboarding wire when you get tired of the jumper wires.

### 5. Sparkfun Arduino Flex Kit

You can view all datasheets for this kit online (and even order your own, though not required!) at <https://www.sparkfun.com/products/11226>

- Arduino Uno R3 - Arduino UNO R3 USB board, fully assembled and tested.
- 6' USB A to B cable - USB provides power for up to 500mA (enough for most projects) and is ample length to connect to your desktop or laptop USB port.
- Miniature breadboard - ~~Excellent for making circuits and connections off the Arduino.~~ *Actually kind of stinks for making connections. Hence buying you bigger breadboards.*
- Male-to-Male jumper wires - These are high quality wires that allow you to connect the female headers on the Arduino to the components and breadboard.
- Flex Sensor - Originally designed for the Nintendo Power Glove, now you too can measure flex!
- SoftPot - Measure position along the softpot by looking at the change in resistance. It's like a touch sensitive volume slider.
- Photocell - A sensor to detect ambient light. Perfect for detecting when a drawer is opened or when night-time approaches.
- Thermistor - A sensor for detecting ambient temperature and temperature changes.
- Tri-Color LED - Because everyone loves a blinky. Use this LED to PWM mix any color you need.
- Basic LEDs - Light emitting diodes make great general indicators.
- Linear trim pot - Also known as a variable resistor, this is a device commonly used to control volume, contrast, and makes a great general user control input.
- Buzzer - Make wonderful, brain splitting noises, alarms, and possibly music!
- 12mm button - Because big buttons are easier to hit.
- 330 Ohm Resistors - 5 current limiting resistors for LEDs, and strong pull-up resistors.

- 10k Ohm Resistors - These make excellent pull-ups, pull-downs, and current limiters.

## 6. Sparkfun Beginner Parts Kit

See datasheets (and optionally buy your own) at <https://www.sparkfun.com/products/10003?>

- 1 - Parts Box
- 10 - 0.1uF cap
- 5 - 100uF cap
- 5 - 10uF cap
- 5 - 1uF cap
- 5 - 10nF cap
- 5 - 1nF cap
- 5 - 100pF cap
- 5 - 10pF cap
- 5 - 1N4148 Diode
- 5 - 1N4001 Diode
- 5 - 2N3906 PNP Transistor
- 5 - 2N3904 NPN Transistor
- 3 - 20 pin female header
- 3 - 20 pin male header
- 3 - Mini power switch
- 2 - Push buttons
- 1 - 10k trimpot
- 2 - LM358 OpAmp
- 2 - 3.3V regulator
- 2 - 5V regulator
- 1 - 555 Timer
- 1 - Green LED
- 1 - Yellow LED
- 1 - Red LED
- 1 - 7 segment Red LED
- 1 - mini Photocell

ELE Lab Space Usage Spring 2013  
A=AFTERNOON (1:30-4:20), N=NIGHT (7:30-10:20)

	F111	F112 ELE302 BENCHES 201-206 ELE208 BENCHES 207-212	F113	F114	F115
MONDAY		ELE208(A) Q5 ELE208(N) Q7 ELE302(A) Q7		COS436(A) Q25	ELE201(A) Q19  ELE201(N) Q18
TUESDAY	EGR194 Q14	ELE208(A) Q1  ELE208(N) Q7			ELE201(N) Q20
WEDNESDAY	EGR194(N) Q13	ELE208(A) Q7  ELE208(N) Q7	COS436(N) Q26	COS436(N) Q27	ELE201(A) Q5  ELE201(N) Q3
THURSDAY	EGR194(A) Q12  EGR194(N) Q13	ELE208(N) Q7  ELE302(A) Q1	ELE480(A) Q3  ELE480(N) Q12		
FRIDAY	EGR194(A) Q10	ELE208(A) Q4  ELE302(A) Q2		COS436(A) Q27	