Parts Information

EEC 417 / 517 - Embedded Systems

Spring 2019

Each student must have or purchase the parts listed in kits A and B below. If you already have some of the components in the kits, you may purchase individual components at the prices listed. I do not recommend using a used 16F877 microcontroller. Kits A and B become the permanent property of the student. No returns will be accepted.

Kit C is loaned to the student and must be returned at the end of the semester.

Returning Kit C: Kit C must be returned on or before the last day of classes. Organize the parts into their correct compartments. You do not have to replace missing resistors or capacitors. If you do not return the kit by that date, you will be assigned an "Incomplete" for the course. If you withdraw from the course, you must return the kit immediately. If you withdraw and do not return the kit immediately, the Registrar will be notified that you have an unpaid bill with the university, and a hold will be placed on your transcript.

Make sure you choose only the kits or parts you need. All purchases are final – there is no provision for returning parts.

In order to purchase parts, download a copy of the Student Parts Purchase Form from the **Parts** folder on the course website. Fill out the form with the parts you want to buy, then determine the cost of the parts and pay that amount to the Cashier's Office to

Account Number: 0070-0010-0630-01.

You must have this number with you. The Cashier has no information about this number, which parts are used in the course, or the cost of parts. Give the form and the Cashier's receipt to the TA to receive your parts.

If you want to purchase Kit C, or any parts from Kit C during the semester, fill out the necessary part of the purchase form, pay the Cashier, and bring the receipt to the TA.

Note: A couple of the lab assignments require a serial communications port on the computer being used for the labs. The computers in the lab have USB to serial ports adapters. If you want to use your own computer, you can purchase (or borrow from someone) a USB to serial port adapter.

There are many of these available online and at various local retailers. If you decide to purchase one, make sure the driver software that comes with it is compatible with your operating system.

It is often helpful to bring a small screwdriver and needle-nose pliers to the lab to aid in building your circuits.

Kit A: Microprocessor Development Kit		
Item	**Part**	**Price**
1	PICkit 3 In-Circuit Debugger (Kit # PG164120)	39.00
2	PIC16F877-04/P (4 MHz) Microcontroller	8.00
3	6-pin male to male jumper cable (6")	4.00
4	AC/DC power supply (9 VDC, unregulated, 1 A)	10.00
5	DC Barrel Jack to Breadboard Adapter	2.00
	Total	**63.00**

Kit B: Equipment Kit		
Item	**Part**	**Price**
1	Breadboard (1280 tie points)	16.00
2	Wire (2 rolls @ $3.00 each)	6.00
3	Wire cutter/stripper	7.00
4	Multimeter	10.00
	Total	**39.00**

Kit C: Loaned Kit			
Item	**Part**	**Unit Price**	**Total Price**
1	Plano 3750 Utility Box	8.00	8.00
2	1N4003 diodes (5)	0.10	0.50
3	LM7805 voltage regulator	1.00	1.00
4	RS232 Transceiver Chip (Maxim MAX202)	4.00	4.00
5	SN74164, 8-Bit Serial Shift Register (DIP 14)	3.00	3.00
6	Crystal oscillator - 3.6864 MHz- 5.0V	3.00	3.00
7	LEDs, red(8)	0.30	2.40
8	LEDs, green (2)	0.50	1.00
9	LED 7-Segment, 2 digit, red, common anode display	4.00	4.00
10	1 k ohm potentiometer	2.00	2.00
11	10 k ohm resistors (7)	0.35	0.35
12	100 ohm resistors (4)	0.20	0.20
13	470 ohm resistors (5)	0.20	0.20
14	470 ohm array of 8 resistors (DIP 16)	1.00	1.00
15	3.3 k ohm resistors (4)	0.20	0.20
16	1 k ohm resistors (2)	0.05	0.10
17	47 uF capacitor	0.50	0.50
18	0.1 uF capacitors (6)	1.20	1.20
19	0.01 uF capacitor	0.10	0.10
20	9 volt battery snap	0.50	0.50
21	9-Pin Serial Cable (Female / Female)	5.00	5.00
22	Grayhill 96AB2 keypad	19.00	19.00
23	24LC01B EEPROM (Microchip)	0.50	0.50
24	5 Volt unipolar two-phase step motor	9.00	9.00
25	Darlington transistors (4)	6.00	6.00
26	Pushbutton switches (3)	1.50	1.50
27	Mini-hook Jumpers (2)	10.50	10.50
28	5-pin M/M header	1.00	1.00
	Complete Kit		**85.75**

Kit C: Loaned Kit :

Dimensions 14”L x 9.13”W x 2” H

You should have some means for transporting your circuit board and parts kit to and from school. If you try to transport your circuit board in your backpack, the wires or other components may get pulled out of the breadboard, and you will be spending extra time trying to get your circuit working again.

Shown below is the Sterilite Stack & Carry Tray Organizer purchased from Target. These are very useful, and many students purchase them or the equivalent. If you do purchase one, make sure Parts Kit C (dimensions above) can fit inside it.