



Starting half an hour after the end of general events on EDay, the ECE department will be offering three **free** short courses to the general public. All three courses will run at the same time, from 1:30PM to approximately 2:30PM, although additional hands-on time may be given after the course.

You should **sign-up in-person during EDay** by stopping by the Virtual Exhibit Index in the 1st floor entry to Anderson Hall. Any last-minute changes, such as room assignments, also will be posted on the Virtual Exhibit Index.

### **Introduction to Linux - Dr. Bill Dieter, 453F (lecture) 577 (hands-on) Anderson Hall**

Linux is appearing more frequently in the news. You may be wondering what all the talk is about. This short course will introduce participants to the Linux operating system and Unix in general. We will start with some points of basic Unix philosophy then move on to more pragmatic issues, like how to do things that are normally done under windows and how to do some things that are difficult under windows. Finally we will discuss some interesting ways to use Linux to "recycle" old machines for new purposes.

1. What is Linux?
  1. Unix
  2. Linus Torvalds (and others)
  3. GNU project
  4. Cost vs. freedom
2. Unix Philosophy vs. Big App. Philosophy
  1. small, simple, composable tools vs. monolithic apps
  2. multi-user, multi-system vs. single-user, single-system
  3. all the world is a file
3. GUI Linux (Gnome/KDE, OpenOffice, Gimp)
4. Recycling old PCs
  1. Low resource requirements means old machines are still useful
  2. Home automation with X10
  3. Home network services (DSL/Cable firewall/router, DHCP server)
  4. Experimentation (homebrew control with the parallel port)
5. Hands-on session (participants get to play with systems)

### **Building Circuit Boards - Dr. Janet Lump, 465 Anderson Hall**

Printed circuit boards are found in most consumer electronics such as toys, cell phones, VCRs, and PCs. The basic steps to making the boards include etching the copper wire pattern, drilling holes, placing the right component in the right spot, and soldering the components to the copper wires. In this short course, we will show the types of components used to build common circuits, demonstrate the process steps to make a printed circuit board, and teach participants to solder using a hand soldering iron. Depending on the class size, you may be able to complete a small working circuit to take home.

1. Discussion of electrical circuit schematics and physical layout designs.
2. Show and Tell of circuit components.
3. Demonstration of printed circuit board preparation.
4. Demonstration of placing components according to the schematic and layout.
5. Soldering lesson.
6. Presentation of certificates.

### **Introduction to Digital Photography - Dr. Hank Dietz, 112 Raymond**

You might have noticed that digital cameras are starting to outsell those using film. In this short course, we will explain the basics of how digital cameras work, explain a little bit about how using them is different from using film cameras, and overview what you do with digital pictures after they're taken. The short course will end with a short hands-on period in which attendees will be able to use a digital camera.

1. Why digital: film cost, review & playback, permanence
2. Exposure: shutter speed, f/stop, film speed
3. Photographic Effects: focal length, depth-of-field, flash
4. Image capture: sensors, storage media, resolution, quality settings, color balance
5. "Digital darkroom" techniques: corrections, cropping, printing, advanced/specialized (e.g., panorama stitching)
6. Non-traditional uses: images for the WWW, image archiving, the camera as a presentation device, visual note-taking
7. Quiz for the certificate....
8. Hands-on: attendees will be able to use a digital camera to capture a photo, manipulate it, and output it