



Specification Document

Facility Policies for Students

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Abstract:

This document sets down policies for the use of office space and rooms 327, 330C, 50 and 50N for all students in the Power and Energy Systems Area. It includes the use of bench space and computers, including personal computers.

Document Revision History

Issue	Date	Comments
000	08/05/2003	Initial release for review.
001	08/08/2003	Released with updates.
002	09/08/2005	Updated for new services, etc.

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1. Office Space

1.1 Room Privileges

Office space is provided, as much as possible, for graduate assistants working in the power group and for funded fellows and visitors. Office use and access must comply with university regulations.

If you have an issue with your office, please see Prof. Krein or Prof. Overbye. Typically, all available office spaces are full. If you find someone to trade with you, that may be possible.

Each office is equipped with a telephone, although not all have access to outside long distance service. If your work requires you to make a long distance call and your phone is not set up for this service, please arrange to use one of the phones in room 335.

General office supplies in small amounts can be obtained in room 335. In addition, there is a fax machine (333-1162) and copy machine. Before or after business hours, the copier in room 50 can be used.

For security reasons, offices should be locked when empty. There have been incidents of theft from offices left unattended, even for a few minutes.

1.2 Computers

The department provides a group of computers for students through our facility in room 327. In addition, students may bring their own computers in and connect them to the network, subject to the following conditions:

- You must keep your computer updated. There have been a few cases of computers being hacked into weeks after Microsoft published a patch for Windows.
- You must have virus protection software installed and kept updated. This is available at no charge. See <http://www.cites.uiuc.edu> for details.
- You must register your computer in advance with the system administrator. Currently, services are provided through the department. Contact help@ece.uiuc.edu or go to <http://www.ece.uiuc.edu/help> to enter a help ticket.
- The use of computers connected to the university network is subject to usage limits and policies. See <http://www.cites.uiuc.edu> for more information.
- Some software is available for installation on personal computers. If you do so, your usage must comply with our site licenses.

1.3 Sharing Office Space

All of our graduate student offices are shared spaces, at least two to a room. This brings with it the usual interpersonal issues. To help things go smoothly:

- Cooking is not permitted in offices. If you bring food in from elsewhere, please avoid bringing in food products with strong odors or leaving garbage that could spoil. Our offices have janitorial services weekly.
- Confine your activities to your desk. Do not spill out into the rest of the office. Students should negotiate use of bookcases and file cabinets in their offices.



- Please avoid loud music. It is preferred to use head phones.
- Use a conference room when, as a teaching assistant, you are having discussions with large groups of students. Similarly, be courteous in relocating when working with other students on research or classes.



2. Policies for the Computer Lab, Room 327

2.1 Users

The computer lab, room 327, is intended for use by graduate students in the Power and Energy Systems Area. In addition, faculty, staff, undergraduate employees and certain undergraduate researchers associated with PES are allowed users. The system administrator maintains groups of login IDs that are allowed to login to the computers in 327. If you have problems logging in and believe you should be allowed to, please enter a help ticket at <http://www.ece.uiuc.edu/help> or contact Jim Hurst or Josh Potts in the offices in the northwest corner of the third floor of Everitt.

2.2 Typical Uses

The computers in 327 are to be used for research and instructional purposes. Please limit your personal use of these machines. These computers often have software installed that is unavailable otherwise. Due to licensing restrictions, some software can only be installed on university-owned computers.

It is expected that students will use these computers for class work. They are intended primarily for thesis writing, paper writing, and research computing (simulations, etc.). Try to work out any conflicts of access with deadlines in mind.

In general, it is a violation of our software licensing to use these computers for anything commercial.

Room 327 is also available for use as student conference space and interactive space when this can be done without disrupting other work. We maintain the facility in part to encourage group interaction.

Do NOT lock the computers unless absolutely necessary. The only reason they should be locked is if you have a simulation or other computational task running unattended. In this case, leave a note with sufficient details, including your contact information. Failure to do so may result in someone forcibly logging you out. Additionally, please log out when you leave, even if only for a few minutes.

2.3 Software

If you have problems with a particular software package that you believe should be on a particular machine, please follow these steps:

1. Verify that the package you want to use is supposed to be on that machine. Certain packages are on every machine, but certain others are only on a few machines due to less frequent use.
2. Document the problem by entering a help ticket at <http://www.ece.uiuc.edu/help>.
3. Find another machine that will work for that day to get your work finished.
4. Check the next business day to see if the situation has been resolved. If it hasn't, please contact Jonathan Kimball for assistance.



Doing this will make the computing environment better for everyone. Software installation is complex enough to be virtually untestable, so the only way to know about every problem is if users tell the system administrator. As of September 2005, the primary system administrator is Jim Hurst. He is generally quick to resolve any problems he knows about, and welcomes student feedback.

Software installation is to be carried out by the system administrator. If there is specific software that you need for your research and it is not available, please contact Jonathan Kimball to determine suitable arrangements.

Some software has limited licenses available. Please be courteous in closing applications when you are not using them so that others can use the license.

2.4 Printers

There are multiple printers in the lab. The large one, “HP Color LaserJet 8550-PS”, should ONLY be used for its particular capabilities. It is a high-performance color printer that can use 11x17 paper. It is also expensive to operate. For general-purpose monochrome printing, use “HP LaserJet 5”. It is faster and less expensive.

2.5 Room Restrictions

Please do not bring food or drinks into room 327, as we hope to keep the room neat and clean for the benefit of those working there. It is preferred that the door be kept closed to avoid tempting unauthorized users and to maintain security.



3. Policies for Room 50 Everitt Lab

3.1 Use of Computing Resources

The computers and printer in room 50 are intended for class use only. (The copier is owned by the group and can be used for research activities as well.) “Class use” includes explicit labs (ECE431 and ECE469), senior design projects with prior approval (ECE445), and special projects (ENG491) when sponsored by the Power and Energy Systems Area. It also includes development of class demonstrations and equipment for any class sponsored by the power group.

The computer in the northwest corner, near the printer, is primarily for seminars and lab management. It should be used only by authorized persons.

3.2 Use of Lab Benches and Other Equipment

As with the computers, the lab benches are intended for class use only. The bench nearest the main door is primarily used for development of the instruction lab assignments by the TAs assigned to the classes. The remaining benches must remain clear while class is in session, for use by students taking ECE431 or ECE469.

With prior approval, the benches may be used by ECE445 students, or by project students doing special projects sponsored by the power group. In this case, all projects must be clear prior to each scheduled lab session so that benches are ready for instructional use. There are lockers in the hallway adjacent to the clean room that can be used for project storage. Project work should be conducted during specified times, and should avoid lectures, seminars, and other class functions.

3.3 Summer Use

During the summer, the lab can be used with prior approval by ECE445 students. Summer is also a time to prepare for fall’s ECE469 course or spring’s ECE431. Sometimes, benches are used for research. When doing so, please follow these guidelines:

- Keep the lab tidy. Technicians from the Electronics Shop need access to repair, install, and calibrate equipment prior to the fall semester.
- Vacate all lab benches at least two weeks prior to the first day of classes for the fall semester.
- Use room 50 only when rooms 50N and 330C are full or do not have particular equipment that you need.

3.4 Equipment and Components

The equipment and components in room 50 are intended for class use. The curve tracer and copier are shared with research activities. If you need components for research use, please look in 50N or go to ECE Stores.



4. Policies for Rooms 50N and 330C Everitt Lab

4.1 Access

Rooms 50N and 330C are available to the same set of students and staff that are allowed to use room 327. They are not intended for use by undergraduate students unless they are employed by PES. During projects (ENG491), it sometimes becomes difficult to maintain this separation. As much as possible, when something is needed from the research labs, a graduate student, faculty member, or staff member should get it, rather than an undergraduate student.

In general, it is against policy to use University resources for anything commercial, including laboratory facilities in rooms 50N and 330C.

4.2 Computing Resources

The computers in the research labs are typically handed down from room 327 and are intended to be used as part of an experiment. For example, some computers have GPIB cards or I/O cards to control an experiment. One computer is attached to a PIC programmer.

Naturally, the computers get used for other things, such as web surfing or reading email. Please confine these activities to class and research use, and minimize personal use.

Many of the computers have PSpice, Capture, and Layout installed. Often, it is more convenient to perform a simulation next to your experiment or to layout a circuit board with access to all the components. This is fine. However, if you have extensive simulations to perform, or if you are unhappy with the speed of the computer while running layout, please move to room 327. The computers there are newer and faster.

The printer in 50N is somewhat slow. It is intended for moderate printing requirements, such as datasheets, schematics, etc. used in your research. If you want to print out your thesis, please use one of the printers in 327 (see section 2).

The computer near the door in 50N, next to the printer, is intended as a master GPIB control. It has a GPIB card in it and is hooked to the lab GPIB bus, and has LabVIEW installed. Therefore, it is often used in experiments elsewhere in the room. As much as possible, make sure that this computer can be freed up for such an experiment by being prepared to move elsewhere.

When you leave for more than an hour, please log off the computers. When you leave at all, please save your work. If it is necessary to leave the computer running something while you are gone, please leave a note. Do not lock the computer unless there is a compelling reason related to an experiment in progress.

4.3 Lab Benches

Typically, each bench will be occupied by a single grad student, and a grad student will occupy no more than one bench. Two public benches are available (one in each lab), plus one bench for undergrad use in 50N and one bench affiliated with the dynamometer.



Neatness is essential. It is common for a student to work on something for a day or two, and then disappear for a week to several months. However, we often have unscheduled visits by alumni or industry representatives, and hope to maintain a presentable facility. Before you leave each day, make sure that your bench is relatively organized. If you have something special on your bench that you are not using, make sure it is clearly separated from your experiment. Examples include current probes and differential probes. Otherwise, you risk having someone take a probe that is still being used. In addition, make sure your experiment is not a safety hazard—keep it confined to the bench, with reasonably neat wiring.

If you are not going to use your bench for an extended period of time, such as for a semester, please make that clear to Jonathan Kimball so that it can be reassigned. This is especially important for the two machine benches, the bench with the precision dynamometer, and the bench with the integrated large inverter. However, as our group grows, the demand for even a generic lab bench is increasing.

Jonathan Kimball maintains a Visio document with bench assignments, which will also be posted in paper form on the wall near the door to 50. This will assist everybody in keeping track of who is doing what and who to contact if there is a problem.

4.4 Notebooks

Students doing research should maintain a formal laboratory notebook for their work. In some cases, such as long-term tests without direct supervision, it is advisable to keep the notebook at the lab bench. Then if a problem arises when you are not available, a notation can be made in your notebook.

4.5 Equipment

Make an effort to use equipment that is appropriate for your experiment. For example, some of the equipment is addressable over GPIB, some isn't. If you don't plan to use the GPIB interface, consider using one of the other models. Remember also that we have several boxes full of fixed power supplies (typically +5V and/or $\pm 15V$ or $\pm 12V$). Avoid using a laboratory-grade adjustable supply when a low-power fixed supply can perform the tasks.

Some of our equipment is in high demand, such as the newer Agilent function generators. The natural inclination is to get one and sit on it, "just in case." The better approach is to keep track of who is using what you need, and contact them whenever you need to borrow it.

On your lab bench, try to make it clear what equipment is being used and what equipment is available for other researchers.

Turn everything off at the end of the day. If you are running an overnight experiment, leave a note.

There is a refrigerator available for keeping perishable lab supplies, such as adhesives. It has an ice maker for use in water-cooled experiments. You may keep food in this refrigerator on a transient basis (a day or two), so long as it does not interfere with the intended use.

4.6 Components

As of this writing, our component organization is still in some disarray, but is improving. The long-term goal is that we will have several sets of drawers organized this way:

- A set of standard resistors, 5%, 1/4W through 1W
- A set of standard ICs used in many different experiments (PWM chips, 555's, op amps)



- A set of common diodes, common MOSFETs, common BJTs
- A set of common capacitors of various types (ceramic, monolithic, electrolytic, tantalum)
- Corresponding sets of drawers with special components used in a few experiments

The intention is that the last set will be allowed to dwindle, while the common, standard components are stocked. The list of standard components will be posted at [\\Ece-powernts2\ece power design archives\Common Parts\Stocked.htm](http://\Ece-powernts2\ece power design archives\Common Parts\Stocked.htm). If you notice that one of the drawers is getting low, either replenish it or contact Jonathan Kimball.

While you are working on a project, keep anything atypical at your bench. When the project is complete (e.g., after you deposit your thesis or have a paper accepted), put the atypical parts in the special component section. Periodically, the special components will be reorganized and consolidated. For example, if chips have been in the drawer more than about two years, they should probably be either used or discarded. Please keep this in mind when you are ordering parts.

4.7 Tools

Each bench has a toolbox. The student assigned to the bench is responsible for ensuring that the toolbox contains the designated tools at all times. The tool list is:

Red-handle wire strippers	Flat screwdriver (small)
Yellow-handle wire strippers	Philips screwdriver (small)
Diagonal cutters	IC puller
Needlenose pliers	Tuning tool (“tweaker”)

All other tools should be returned to the tool bench when you are finished using them.

If you would like to use the student shop in the machine shop, they provide cutting bits for the lathe but not for any other equipment. Being expensive and delicate, our cutting tools (good drill bits, end mills, etc.) are kept in a separate tool box. Ask Jonathan Kimball or Rob Balog.

In the storage area near the machine shop (room 50G), there are two red roll-around tool cases, containing mostly wrenches but also some miscellaneous tools. These are property of our group. Be sure to look in these tool boxes before buying something new. Use your best judgment in either returning the tool to where it came from or putting it in the 50N tool bench.

4.8 Power

In 50N, there is a main panel similar to the main panel in 50, with corresponding power distribution panels around the room. Use as necessary, and be sure to turn things off when you are finished for the day. It is very important not to use this power on a continuous basis. We intend to keep it set up for emergency interruption.

There are several 115V building-power circuits around the room, but probably not enough for everything we have in the lab now. Use some caution when setting up experiments that require a lot of power and/or equipment. The outlets are labeled according to which circuit they are on. Try to spread the load, keeping in mind everything else going on. As necessary, use the 115V outlets on the power distribution panels. If you have recurring problems with breakers tripping, with no obvious solution, contact Jonathan Kimball to work something out.

Room 330C has only 115V circuits. Work in this lab should only focus on low-power applications.



4.9 EMI

In the lab, we work with a wide range of operating current, voltage, and frequency. In the past, there have been experiments that influenced each other. Please be aware of the potential problem. In most cases, problems have been traced to improper grounding practice, so careful attention to grounds is essential.

When working at one or more of the extremes (such as a high-current mains-voltage PWM drive), do everything necessary to get your experiment to work first, and then go the next step to contain the fields to your bench. The usual solution is to put it in a box. In the early phases of your experiment, try to determine if this is necessary by asking around the lab to see if other circuits' behavior changes when you enable your converter. Remember also that power wires can be antennae and may need shielding.

4.10 Security

Room 50N is intended to be accessible by key only. The double doors to the main hallway should be kept closed, and the transom over the door should be closed securely when the room is not occupied. The single door into the clean room hallway should normally be kept locked to avoid access to others who are able to enter the clean room hallway.

