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GRADUATE ORIENTATION / GTA WORKSHOP

Tuesday, August 24, 2010

ECE GRADUATE STUDENT ORIENTATION – DOW Bldg., Room 641

8:40 a.m. MS Degree Programs – Warren Perger
**MS students only**

9:00 a.m. Welcome to the ECE Department (MS & PHD students) – Dan Fuhrmann

9:05 a.m. MS and PHD Student Introductions – by individuals

9:15 a.m. General Requirements - Warren Perger
Department Requirements
ECE Grad program website:
http://www.mtu.edu/ece/graduate/advising/

9:45 a.m. Laboratory Use and Policies – Chuck Sannes
Safety Information – Mark Sloat

10:30 a.m. Computer Orientation – Thomas Gemignani

11:00 a.m. Miscellaneous Issues – Glen Archer and Dennis Wiitanen
(keys, parking, etc.)

11:30 a.m. PHD Degree Programs – Warren Perger
** PHD students only ** MS students dismissed

ECE GTA WORKSHOP – EERC Room 122 – Glen Archer & Dennis Wiitanen

1:00 p.m. Introductions/Attendance

1:10 p.m. Becoming a GTA
The SPEAK Test
CTL&FD Programs for GTAs
Social Security/Payroll

1:20 p.m. Being a great GTA
Interacting with Students
The Course Coordinator
Class/Laboratory Preparation
Grading Procedures
Teaching Hints
Equipment and Responsibilities

2:00 p.m. Fall Semester Assignments
The Lab Offering
Completing a Course Schedule
Completing the Request Form
Assignments
KEY ECE DEPARTMENT FACULTY AND STAFF:

Dr. Daniel R. Fuhrmann – Department Chair  
Office: 118 EERC  
Final word on policies and financial support, primary person involved in selecting GTAs

Dr. Dennis Wiitanen – Professor  
Office: 234 EERC  
Office assignments, grading assignments, keys and building access

Dr. Warren Perger – Graduate Director  
Office: 819 EERC  
General guidance, admissions and qualifying exams

Glen Archer – GTA Coordinator  
Office: 626 EERC  
Coordinates all core labs and supervises GTAs  
Assigns GTA Teaching Schedules

Your Advisor – Key person who will most often chair your thesis committee and give you specific guidance on courses.

Chuck Sannes – Lab Supervisor  
Mark Sloat – Research Associate, Safety Officer  
Office: 727 EERC  
Lab equipment repairs, materials, etc.

Javier Fernandez – Director of User Support, Computer Systems, 620 DOW  
User Support Managers-  
Thomas Gemignani 209 Dillman  
Robert Greenhoe 118 MEEM  
Computer Accounts, system problems, etc.

Lisa Rouleau – Office Manager  
Office: 117 EERC

Gina Dunstan – Staff Assistant  
Office: 121 EERC  
Graduate program, financial matters, student payroll & enrolled data

Michele Kamppinen – Secretary  
Office: 121 EERC  
GTA supplies, duplicating (copies), faxes.
GETTING STARTED

Listed below are several items to assist you in your orientation at MTU and the ECE Department. Some require your personal attention; others are informational only.

INTERNATIONAL PROGRAMS & SERVICES OFFICE (IPS)
Foreign National Students only: Report to IPS, Administration Building 131. Verification of Visa and immigration documents.

HOUSING INFORMATION
Can be found here: http://www.housing.mtu.edu/

EMPLOYMENT INFORMATION
Can be found here: http://www.career.mtu.edu/students/jobresources.php

APPLY FOR SOCIAL SECURITY NUMBER (SS#)
Social Security Administration – 902 Razorback Drive, Suite 3, Houghton; Phone: 482-9656. If you do not have a United States SS# and did not yet complete an application, you must report to the above address to apply for one. You will need your Visa and I-20 form with you for identification purposes. Please request a receipt confirming the SS# application, and return it to Gina, EERC 121, if you are a supported student. (This is done during university-wide orientation).

DETERMINING YOUR FIRST SEMESTER COURSE SCHEDULE
"Your first semester schedule should be determined in consultation with your advisor. If you do not have an advisor, you may choose courses by consulting the graduate course catalog (http://www.ece.mtu.edu/pages/graduate/courses.html) in your area of interest. Note that you should choose courses which will apply for the degree you are seeking by consulting the Graduate Student Orientation page (http://www.ece.mtu.edu/pages/graduate/Graduate-Oriention-sp2010v2.pdf) for details of degree course requirements. For example, if you are planning on an MS Plan D, then taking an EE course at the 3000-level would not count towards your degree. A typical schedule has one or more graduate or senior level courses in the interest area of the student, the seminar course in the appropriate area of interest (if you are taking the MS Plan A, for example), and an out-of-department math or computer science course."

REGISTRATION/SCHEDULING
You may register online on banweb.mtu.edu or register at the Office of Student Records and Registration, Administration Building, Room 110. Payment can be made online or at the Cashier’s Office, Administration Building. It is your responsibility to ensure continued enrollment.
TUITION PAYMENT
For supported students only: After scheduling courses, go to banweb to receive a copy of your schedule and a tuition billing. You may pay your bill online or at the Cashier’s Office, Administration Building. Computer fees and tuition for up to 10 credits will be paid by the department for fully supported students. You are responsible for the student voted fees (MUB Support Fee, MUB Expansion Fee, Student Activity Fee, SDC Support Fee, and Experience Tech Fee).

GTAs – IF YOU EXCEED 10 CREDITS, YOU WILL PAY THE EXTRA TUITION – REGISTRATION FOR ED5100 WILL ADD 2 CREDITS BUT YOU WILL NOT BE CHARGED FOR THEM.

STUDENT IDENTIFICATION (ID) CARD
ID cards are issued from the Tech Express Office, Memorial Union Building.

OFFICE ASSIGNMENTS
Office assignments are made by Dr. Wiitanen on a priority basis. PhD students and GTAs have the highest priority. Office assignments will be sent to all graduates by email. Keys to desks in graduate student offices may be obtained from Chuck Sannes or Mark Sloat in 727 EERC.

PAYROLL/PAYCHECKS
Please see Gina in 121 EERC to be set up on payroll. This should be done as soon as possible in order to avoid delayed pay checks. Pay checks are issued every two weeks. Direct deposit can be set up on banweb online under the Employee Self Service tab. Fellowship recipients are paid monthly.

KEYS AND AFTER-HOURS ACCESS
During the first week of the semester, Dr. Wiitanen will order office/lab keys as needed. IDEC after-hours access to the EERC building and computer labs will automatically be provided to all enrolled students. A key that opens all graduate student offices and the labs will be issued to each graduate student with an office. The “ECE Graduate Student Information” (pink) form must be completed and turned into Gina in 121 EERC to initiate the process. You will be notified by email in a few days when your key is ready to be picked up at Public Safety, located in the Widmaier House. You will need your MTU ID card to pick up your key.

VEHICLE REGISTRATION/PARKING
Vehicle registration and sign up for parking can be done on banweb online. Visit the website: http://www.mtu.edu/registrar/students/parking-vehicle/
In order to register for parking, you must have a vehicle registered with the University. Decals will be mailed to you.
WINTER PARKING RULES
During off-hours and weekends, all lots are open to you for parking. However, from November 1 to April 30, parking is NOT allowed in academic lots between 2:00 a.m. and 7:00 a.m.

MAIL SERVICES
You will have a mailbox in the ECE office, 121 EERC. Please check and empty your mailbox daily. Mail is usually distributed by 10:00 a.m. Outgoing mail may be brought to Room 121 EERC by 9:00 a.m. Mailboxes to collect student work are provided on the 7th floor. See Michele or Gina for a key.

DUPLICATING
Complete a “Copy Request” form when you need to have copying done (see Michele or Gina, 121 EERC, for complete instructions). Personal copies are 10 cents/page.

FAXING
The ECE department will allow you to send and receive faxes. Our fax number is (906) 487-2949. The fees are as follows: $1.50/page for an international fax and $.25/page for a domestic fax. There is a charge of $.15/page for all incoming faxes. The fax machine is located in the ECE office, 121 EERC.

GRADUATE SEMINARS
Graduate seminars are held on a weekly basis, generally by each interest area. However, seminars are also held for all areas jointly on topics of broad interest. All graduate students are expected to attend these seminars.

LABORATORY POLICIES
Chuck Sannes is responsible for equipment use and laboratory procedures. Please refer to his memo concerning laboratory policies or contact him in 727 EERC if you have any questions.

MISCELLANEOUS
Listed below are some miscellaneous rules, suggestions and guidelines. Some have strong penalties, so read them over carefully.

FOOD/DRINK
Eating or drinking is prohibited in all laboratories and computer areas. Violators will lose computer and lab use privileges.

PERSONAL HYGIENE
You will be sharing space with others, so bathe daily and change your clothes regularly.

WINDOWS/DOORS
There is a “No Open Window” policy in the ECE Department.
GRADUATE OFFICES
You may complement the MTU furniture in your office with your own, but do not move furniture from office to office without permission from Dr. Wiitanen. You may not live in your office. Do not prepare or store food in your office. If you are not on campus for a semester, inform Dr. Wiitanen that you will not be here and leave your office in a neat condition. Upon leaving MTU for other than a summer semester, you must completely clean out your office. Keep your office neat at all times. If you will not be enrolled for a summer semester, you must inform Dr. Wiitanen or you will lose your office.

SMOKING – Smoking is prohibited everywhere in the building.

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Graduate Teaching Assistant (GTA) GUIDELINES

International students must pass the SPEAK test administered by the Center for Teaching, Learning and Faculty Development to be eligible for a GTA position. Contact Joan Logue jklogue@mtu.edu 487-2046, to set up an appointment.

All students must attend the GTA training program offered by the Center for Teaching, Learning and Faculty Development and the ECE Department’s GTA Workshop to be eligible for a GTA position. All GTAs must also complete ED5100 during their first year as a GTA.

See Gina in the ECE office, 121 EERC, for financial inquires.

See Michele in the ECE office, 121 EERC, for supplies.

A GTA must be enrolled for a minimum of 9 credits, except in summer when the minimum is 1 research credit or 1 course. All summer GTAs must be enrolled for at least 1 credit.

SUPPORT
Specifics of the new tuition policy include the following:

Instead of requiring PhD students to register for nine credits to be considered full time, PhD students who have completed their qualifying and dissertation proposal exams can move into “research-only mode.”

MS students will also be allowed to move into research-only mode after completing their required courses and credits.

This new policy will help faculty who are supporting graduate researchers on external
funding and will help self-supported students remain full-time and international students who must remain full-time for immigration purposes.

The minimum stipend changes include the following:

Stipends will increase to $5,975 for PhD students with an MS degree; to $6,239 for those who have passed their qualifying exams with or without an MS degree; and to $6,504 for those who have passed their proposal defense exams with or without an MS degree.

Minimum stipend rate for MS students is $5,146.

Minimum stipend rate for PhD students without an MS degree is $5,547.

The new continuous enrollment policy will allow students who need time off due to extenuating circumstances to register for the no-fee section of UN5951. Also, UN5952 has been eliminated, and students must enroll for at least one full credit per academic year to remain continuously enrolled. UN5953 continues for final semester enrollment and can also be used for continuous enrollment.

These changes were made to eliminate the fee for UN5951, standardize the required minimum enrollment and reduce the financial incentive for students to leave campus prior to completing their degrees.

To be considered a PhD candidate, a student must be enrolled in the PhD program and have either an earned MS degree or have passed the PhD qualifying exam. A GTA position also covers 9 credits of tuition.

The standard level of GTA support is 20 hours/week.

The standard GTA teaching assignment is four two-hour laboratory sections or equivalent.

Support for MS candidates will be limited to four semesters, excluding summers. GTA support will only be available to MS candidates for their first two calendar years in the program, independent of the number of semesters they have been supported.

Summer semester compensation is controlled by the graduate school.

CLASS OR LABORATORY PREPARATION
Meet periodically as specified by the professor(s) in charge to discuss
  Course Outline
  Lab Experiments
  Homework Assignments
  Examinations
Make-Up Procedures
Grading
Pre-Lab Procedures

Perform each assigned laboratory experiment yourself before the class meets. This will ensure your ability to answer any questions students may have concerning the lab. This step is critical to your success as GTA. Failure to perform this step will inevitably be detected by the students. They have an uncanny ability to detect when you are trying to bluff your way through the lab.

You must follow, as closely as possible, the prescribed program in each course.

Check all the lab equipment before the lab begins. After the lab is over, make sure all the equipment is accounted for and turned off. Either put each equipment item away neatly or restore it to its original position in the laboratory. The laboratory doors, cabinets, etc., should be locked at all times when the laboratory is not in use unless otherwise specified. Turn off all equipment at the end of each class period, including the computers. Shutting down the computers will refresh the configuration control software and get rid of any unauthorized student files before the next class period. This discourages cross talk between students that might be misunderstood as academic dishonesty.

Do not allow students to browse in the supply cabinets for components. Part of your preparation for the lab should be to locate the required components and make them available to the students. NEVER allow students to return components to the supply cabinet. With the exception of some high-value components, it costs more to sort the stuff they misplace than it does to just replace it.

LABORATORY PROCEDURE – for most lab courses – refer to [www.ece.mtu.edu/labs](http://www.ece.mtu.edu/labs) for policy and curriculum information

Safety and good lab practices should be constantly emphasized. Your course instructor will provide you with suggestions, which may include handing out “Safety Practices to be Observed in the Laboratories of the Department of Electrical & Computer Engineering”.

During the first lab meeting, the students should be informed of the grading policy. This is your first and best opportunity to set expectations. The professor in charge of the course will provide you with this policy. This must include a definition of and the penalty for cheating. Refer students to the Academic Honesty Link on the lab web site – show the video on the first day of class.

Any student repeating a course with a laboratory must repeat the laboratory as well as the recitation to pass the course.
No lab instructor should leave the lab unattended for long periods of time while experiments are being performed. If it is necessary to leave for more than five minutes, a qualified stand-in should be found.

You must maintain an accurate record of student attendance.

The specified experiments for course are not to be changed, nor should any parts be omitted without the consent of the professor in charge. Of course, suggestions for improvements are always welcome.

Short weekly quizzes (perhaps 10 minutes long) may be given on the previous weeks experiments. These quizzes, along with a lab final (if given), should enter into establishing the final lab grade. Check with the Professor in charge of the course.

It is quite important to inform students the following week if their lab report was not turned in or if they are delinquent in any other way. Provide timely feedback on student progress.

Do not sign any cards to add, change sections, etc., for any student. Refer them to the ECE Advising office, 131 EERC.

Announce that any student enrolled in your lab, who is still enrolled in the course after the last day to drop without charge, will be billed for the lab even if they drop the course.

Inform your students that eating and/or drinking is prohibited in all laboratories and computer area.

GRADING PROCEDURES

The grading procedure for each laboratory is determined by the faculty coordinator for the course. Grades, in general, should include performance in the lab, hand-in material from work done at home, attendance, short tests and possibly a lab final examination. The faculty coordinator will provide you with additional guidance.

The final lab grades are due on or before the time the final course exam is given. Always be prepared to justify the grades you give. All grades are maintained electronically using “Blackboard”. The professor in charge of the course will enable you to access the courses grade book. For TAs assigned to stand-alone labs such as EE2303, EE2304, EE3305, EE3306, and others, you will appear as the instructor of record and will be responsible for submitting final grades. You will assign grades in consultation with the lab coordinator. Do not depart the local area until all of your grades are properly recorded in the course grade book and all final grades are submitted electronically.

Students should turn in their work in the laboratory, and all graded reports and other materials should be returned to the student in the same way. Laboratory reports are to be returned to the students in the next week. It is your responsibility to grade reports promptly. If, for some reason, students cannot turn in materials in the lab, tell them to
use your mailbox on the 7th floor. See one of the department secretaries in 121 EERC to be assigned to a 7th floor mailbox. Note: this is different from your mailbox in the front office. **DO NOT ASK THE SECRETARIES TO HAND MATERIALS TO THE STUDENTS, AND DO NOT PILE THINGS IN THE HALLS.**

Laboratory grades may NOT be posted outside your door. Do not post grades or leave piles of graded work for students to browse through. Refer to FERPA: http://www.mtu.edu/registrar/faculty-staff/ferpa/

Keep a record of student attendance. You must verify that students attending your lab are enrolled in your section. Occasionally students may request to work in your section to make up work from other sections, you may allow this.

**TEACHING HINTS**

Treat the students with respect. Be polite to them. Avoid sarcasm. Don’t lapse into a vernacular or obscene language or profanity. You have an obligation to teach the students the proper mode of expression. Be precise, concise, and technically correct in your speech and demand the same of the students.

You are in a position of power, so avoid any appearance of abusing that power. Do not ask any of your students for a date. Do not accept offers for dates from your students. Avoid even the perception of unfair treatment in the classroom.

Respect the lab equipment you use and make sure the student treats the equipment with respect.

If you do not understand the theory of what you are teaching, you should seek faculty guidance. **You should never go to class unprepared and uncertain of the theory** upon which that class is based. You should strive to keep well ahead of the class.

Never try to bluff the students. If you don’t know the answer, say so. But get the answer before you see the students again and make it a point to bring up the subject.

If a lab experiment that students are doing does not work properly, do not imply that it doesn’t matter. Impress upon the students the need for careful analysis, laboratory skill and troubleshooting technique.

Continuously practice and preach safety. Do not tolerate unsafe practice.

**OTHER RESPONSIBILITIES**

GTAs MUST be on campus beginning with the first week of the semester except for the fall, when they need to be here for the week prior to the start of the semester. **You are expected to remain on campus until your last lab section meets and all of your grades are turned in.** Do not submit your final grades electronically without consulting the lab coordinator.
All GTAs are expected to meet their classes suitably dressed, well groomed, and on time.

No laboratories are to be canceled, except by the professor in charge of the course. If you know in advance that you are unable to meet your laboratory, you must find a substitute and inform the professor in charge of the course. In an emergency, notify the ECE office that you are unable to meet your laboratory.

All GTAs are expected to check their mailbox and email at least once a day.

You are requested to reserve at least four hours a week for consultation with students having difficulties. The times selected for consultation should be announced to each section at the first class meeting and also posted on your office door.

Be sure to clearly specify all due dates for lab reports, etc., and also specify the penalty for late or missing material. This should be done well in advance of the due date.

All GTAs should ascertain the location of power sources, circuit breakers, fuses, fire extinguishers, fire call boxes, pertaining to the safe and efficient operation of the lab prior to the lab meeting. You won’t have time to do this in an emergency so take care of it before the first lab period.
Electrical & Computer Engineering Department
Lab Policies & Procedures for GTAs/GRAs

The following policies and procedures for the Electrical & Computer Engineering Department must be observed.

1. Safety first:
   Observe the policies and procedures in the ECE Dept. General Safety Information handout. Have a copy available to reference and if there are any questions contact the lab support staff in EERC-727
   ➢ GTAs – Make sure that the students are properly instructed and observe all safety procedures relevant to your lab.
   ➢ GRAs – Follow all safety procedures relevant to your lab and research.

2. Cleanliness:
   The labs must be kept neat and clean, even research labs. This has been a major problem in the past and will be enforced with the support of the Department Chair. We give tours to many prospective students, faculty, and their families, along with dignitaries and potential donors. Clean labs are important not only for appearance, but also for safety and efficient operation.
   ➢ GTAs – Make sure that the students have cleaned-up their work area before they leave. Test leads are to be returned to their proper location on the lead racks. The coaxial leads with the grabber ends should be hung with the grabber ends facing up to keep them off of the floor, so they don’t get stepped on or run-over by a chair wheel. If any equipment was moved it should be neatly returned to the proper location. Finally ensure that the benches are free of any papers, gum wrappers, parts, or other items that do not belong.

3. Security:
   Make sure that all the lab doors are locked when you leave. Some doors have closers on them some don’t. Do not assume that the door is fully closed and locked, double check to be sure. Be alert for unknown people wandering through the halls, or trying to enter the labs at night or on the weekends. We have had major thefts in the past that may have been prevented by an alert grad student. If there is a problem call Public Safety 487-2216.

4. Chemicals:
   All chemicals must be properly labeled, stored and a MSDS sheet must be available in the lab. Any chemicals you use must be properly disposed of before you graduate or leave the department. This will be charged to your (your advisor’s) account. See the ECE Department Safety Information document for further details or contact the lab support staff.
5. Food/Drink
   Food or drink spills can lead to costly repair or replacement of lab equipment. Drinks such as Coca Cola can be corrosive to equipment and circuit boards, even water can cause a significant amount of damage.
   - GTAs - Absolutely no food or drink are allowed in the undergraduate teaching labs or computer labs.
   - GRAs – Some advisors will allow food and drink in their research labs, however do not have it around the equipment.

6. Parts:
   - GTAs – Parts cabinets are located in the teaching labs. These cabinets are stocked with common parts necessary for the lab experiments. You are to give the students the parts that they need, DO NOT allow the students to take parts from the cabinet by themselves. Always double check the part or have the students verify they have the correct part, sometimes the wrong parts get put into the drawers. Do not put small, inexpensive parts (resistors, small capacitors, small diodes, ...), or parts that are bad or suspect back into the drawer. Throw them away; it isn’t worth contaminating the stock with the incorrect or bad parts. Switches, known good ICs, and any other know good parts should be returned to the cabinet. You are responsible for notifying the lab support staff when parts are getting low (before there are none left), and we will replenish the stock.
   - GRAs – We have some parts in stock, which we can supply to you as long as we have an account number to charge. Think ahead, very little can be bought locally and ordering parts takes time (and next day delivery gets expensive). You should place orders under $50 yourself and get reimbursed. If you have an order over $50 and wish to order parts though us, we have departmental parts requisition forms in the office (EERC-727). Again plan ahead and try not to place many small orders, shipping costs add up. Orders with a single item >$2500 or a total order >$4000 must be placed by a University purchase requisition. See Chuck for details.

7. Tools:
   - GTAs – All students should have their own lab tool kit which they receive in EE2303. If you need a tool kit, see the lab support staff to sign one out for the term. At the end of the term either return the tool kit or notify us that you will be using it for the next term.
   - GRAs – The shop has tools that you can use in the shop or can be checked out. DO NOT remove any tools from the shop without permission from the staff.

8. Equipment:
   - Defective Equipment
     - GTAs – Red-tag any defective equipment, include a description of the problem. Tags can be found in/on the instructor’s desk/table. Put tagged equipment on the instructor’s desk/table and inform the lab support staff. The equipment will not get fixed if we don’t know about it.
     - GRAs – Notify the lab support staff of equipment that needs repair.
Borrowing Equipment
Do not remove equipment from the teaching labs without permission. ANY equipment removed from a lab must be logged on the sign-out sheet on the door. If equipment needs to taken out of the building an equipment loan form must be filled out and approved by the lab support staff.

Purchasing Equipment
Equipment that is <$2500/item and <$4000 total may be ordered by filling out a departmental part requisition form, you must have an account number to be billed and the account manager must sign the form. Other equipment orders will require a University purchase requisition to be filled out. See Chuck for details.

9. Reference books:
Most companies have component and equipment data sheets on-line and many have application notes and technical papers on-line. We have a good supply of reference and data books in the shop (EERC-727). You are welcome to use these books, however if you want to take them out of the shop they must be signed-out.

10. Keys:
The lab support staff has keys for the desks & cabinets in the labs and offices. If you need a key for one of these; write down the number on the lock and come to EERC-727 and we will sign a key out to you. Keys are to be returned when you no longer need them whether you move with-in the department or leave the department. Room keys and Master keys are handled by Public Safety, see Dr. Wiitanen if you need to obtain one of these keys.

11. Fabrication:
- Metal/Wood
  If you need metal/wood machining or fabrication, see Mark Kilpela in EERC-SB13. You will need a well documented drawing and an account number to be billed.
- Printed Circuit Board
  We can fabricate single and double sided circuit boards in the shop. If you are not familiar with the EAGLE CAD package and our fabrication requirements, we have “hand-outs” on circuit board layout and using the EAGLE CAD program. We will assist as needed. Once you design is complete a Circuit Board Requisition Form must be filled out and submitted to the lab support staff.

12. Software:
All software questions/problems should be directed to the helpdesk in Dillman-207 or eit-help@mtu.edu.

13. Windows:
There is a “No Open Window” policy in the department. We do not need rain or bats in the labs or frozen pipes in the winter. Yes, these have all happened several times in the past. Therefore do not attempt to open the windows.
14. ECE Lab Support Staff

- Chuck Sannes – Lab Supervisor – cesannes@mtu.edu - EERC 727 – 487-2134
- Mark Sloat – Research Associate – mesloat@mtu.edu – EERC 727 – 487-2134
- Mark Kilpela –Research Associate – mkilpela@mtu.edu – EERC SB13 – 487-2264
SAFETY FIRST     SAFETY FIRST
ECE DEPT. GENERAL SAFETY INFORMATION ORIENTATION AND BASIC SAFETY TRAINING

1. Emergency procedures:
   A. Emergency Phone:
      • Dial 911 from anywhere on campus (do not dial 8-911).
      • Red phones by elevators on most floors have a direct line to Public Safety.
      • You can also use the phones in the elevators if need be.
   B. Fire:
      • Evacuate area. Follow exit signs. Use stairways, do not use elevators. Rooms should have an evacuation plan affixed to the door. Meet by the big leaning pine tree between the Library and ECE Dept.
      • Fire alarms. Treat all fire alarms as the real thing and don’t assume it is a drill. Building must be evacuated and you must stay in a group outside the building so people can be accounted for. Everyone should meet by the big leaning pine tree in front of the ECE Department. If it is winter and cold, meet in the library lobby.
      • Report fire (emergency phones) if not already reported.
      • Fire extinguishers are located on the top of each floor’s stairway. (To be used by trained personnel).
   C. Accidents:
      • Major – Call ambulance. Go to emergency at Portage View Hospital (911 or 483-1000).
      • Minor – Use the Portage Health Center located at the North end (down hill side) of the SDC (483-1860).
      • Accident Report – An accident report needs to be filed for all accidents. See Mark Sloat in room 727 for forms. Fill out accident report form prior to receiving medical attention -unless the injury is severe. There are first aid kits in our shops in rooms 727 and SB12 for band-aids and other minor items. Also, most labs and the main office have a basic first aid kit. All injuries need to be reported, not to assign blame, but to correct the safety hazards.

2. Lab Safety:
   A. Lab coordinator:
      • All of our labs have a sign posted on the door with pertinent safety information, including the name and contact information of the person responsible for that particular lab.
   B. Two-person rule:
      • Two or more authorized people need to be present at all times if working in any undergraduate lab. No exceptions!
   C. Housekeeping:
      • Labs must be kept neat and aisle-ways unobstructed. Bring to the attention of the TA anything you observe that is unsafe. Nothing is to be stored in
aisle-ways or hallways so as to prevent egress from the building in an emergency. Nothing heavy is to be stored on top of cabinets.

D. Clothing:
- No Sandals or bare feet in any lab.
- No ties, gloves, loose clothing, or long hair around any rotating machinery.
- **No food or drink in any undergrad lab.**

E. Children:
- No child under the age of 12 is permitted in any lab. Anyone under the age of 16 must be supervised at all times.

3. Chemicals:

A. Labeling and storage:
- All Chemicals must be in original containers or in appropriate containers clearly marked with the original container information. No chemicals in mayonnaise jars, apple juice jugs, etc. All chemicals must be in appropriate containers and labeled with pertinent chemical information, **even water bottles need to be labeled.** If chemicals come in concentrate form and must be mixed with water, or other chemicals, the new container must be an appropriate container, labeled accordingly, along with the percentage of concentrate. All chemicals are to be kept in appropriate storage. No chemicals are to be left overnight on benches. All chemicals marked flammable are to be stored in a fire retardant or flammable safety cabinet. All corrosive chemicals are to be stored in an acid/corrosive safety cabinet.

B. Safety glasses:
- Safety glasses must be worn when working with chemicals and while soldering. Chemical safety goggles (splash resistant) must be worn when working with splash eye hazards.

C. MSDS:
- Each chemical in each room must have a MSDS (material safety data sheet) filed in the folder mounted on the door to that particular room. This includes all chemicals and liquids from common alcohol and cleaning solutions to the more dangerous chemicals. The professor in charge of the lab or research area is responsible to have the MSDS on file. The MSDS can be obtained from Chemical Stores or downloaded from the Web. Look under the Chemical Company’s web site and links to MSDS or go to one of the links on the ECE Department’s safety web page. It is your responsibility to review information about the chemical you’ll be working with from the MSDS.

D. Disposal:
- All chemicals must be properly disposed of before leaving the Department. See the Department safety liaison (Mark Sloat) in room 727 if you have questions.

E. Spills:
- For minor chemical spills of a non-toxic nature see Chuck or Mark in room 727 for absorbent pads. For major toxic or flammable liquid spills, evacuate the area and call emergency 911. Warn others not to enter the area.
4. Electrical safety:

A. Lethal Voltage and Current:

- As little as 50 volts ac can kill under the right conditions. Generally anything above 25ma is considered dangerous since it can potentially cause the heart to go into ventricular fibrillation, which can happen in as little time as ¼ second. Currents in the range of 70ma to 300ma are potentially fatal without immediate first aid. With currents through the body of greater than 25ma you may not be able to “let go”. You can use ohms law (E=IR) to calculate body current. Dry skin has a resistance from 100k to 600k ohms. With wet skin the resistance drops to around 1k ohm. With an open skin cut, the resistance drops between 100 and 500 ohms. Thus, one needs to be extremely careful with higher voltages. **120VAC can Kill!**

B. Electrical components:

- Electrical components can also be a cause of serious injury. A resistor that is operated over its wattage rating can burn causing a fire, or explode causing an arc and flying debris. Capacitors can “blow up” causing the end cap to shoot out with enough force to damage one’s eye. This will happen if a polarized or electrolytic capacitor is hooked up in the wrong polarity or connected to a voltage above its rating. Suddenly opening an inductive circuit can cause a large voltage spike, usually for a very short period of time, but may cause the heart to go into fibrillation, depending on conditions. Make sure you understand electrical components before using them.

- Batteries (mainly 12vdc car type batteries) can explode due to escaping hydrogen gas, which is very explosive. When a car battery explodes one is usually very seriously hurt. Never produce a spark around a battery. It is easy to drop a wrench or screwdriver across the battery terminals, so use extreme care with tools around batteries. Always keep a cap or protective cover over the positive battery terminal. Work in well-vented areas and wear safety glasses and gloves. Always have a neutralizing agent, such as baking soda, available. If jumping a car battery make the last connection to a ground point well away from the battery. C and D cells can also explode especially the rechargeable Ni-Cad and Lithium Ion batteries. Always charge Lithium Ion batteries in a charger specifically designed for them!

- Electrical cords – don’t daisy chain electrical strips or cords to make a longer extension cord. All extension cords need to be one cord only and used on a temporary basis.

C. Tools and equipment:

- Always use double insulated tools. If tools are not double insulated, an internal short and improper grounding may cause the tool case to be electrically hot.

- Use ground fault interrupters around water.

- Do not attempt to work with higher voltages (440vac and above) unless properly trained. Approved and tested insulated gloves, rubber matt, and
safety glasses are necessary. Along with the electrical shock hazard, burns and damaging flashes can be a serious result of high voltage accidents.

5. **Soldering:**
   - Must have Safety glasses (splash resistant) and be done in accordance with your training. Care is to be taken not to burn benches, power cords, or anything else, including your fingers. Prolonged breathing of solder vapors is harmful. If a vent hood isn’t available use a fan to blow the vapors away.

6. **Rotating machines:**
   - All rotating machines must have safety guards in place.
   - No long hair, ties, gloves or other loose clothing around rotating machines.

7. **Other electrical equipment:**
   - Always operate equipment in accordance with the operating manuals and observe safety cautions. Under no circumstances are you to remove protective covers or cases. If there are internal equipment malfunctions do not attempt to fix it yourself. Contact a TA or Electrical Maintenance.
   - **Lasers:** Special training is required before using any laser equipment. Special safety glasses along with other handling procedures need to be followed depending on the class and type of laser. Special training and procedures are to be given by the professor or TA in charge of the particular laser lab and detailed in the lab procedure...

8. **Other safety information:**
   - **Wet floors:** Use caution, especially in winter, as floors are likely to have wet spots. No running in halls (MTU has had many wet floor related accidents).
   - **Storage:** Do not store anything within 18 inches of a sprinkler head. Use a ladder to reach high items. Don’t stand on swivel chairs.
   - **Lifting:** No heavy lifting, get help (improper lifting is one of the biggest causes of accidents at MTU).
   - Details on all safety policies are located on MTU’s Occupational and Safety’s web site. You can also download the various forms, such as accident report forms from their website. See the link from the ECE Department’s web site.
   - Questions can also be addressed by the department safety liaison Mark Sloat in room 727.

**General rule of thumb:** If you are performing a task and it doesn’t seem safe, ask a qualified person to inspect your set-up. Chances are, if what you are doing makes you feel uneasy – it’s probably not safe!

MS 7/10
COMPUTING CONTACTS

Engineering Information Technology (EIT)

Help Desk – 207 DILLMAN
487-1400  eit-help@mtu.edu

COMPUTING FACILITIES

Maxwell Lab – 134 EERC
• 16 Windows PCs
• 6 Walk up stations for email/printing
• Color Laser Printer

Fourier Lab - 722 EERC
• 24 Windows PCs
• B/W Laser Printer
• Color Laser Printer
• Scanner

Faraday Lab – 723 EERC
• 20 Windows PCs
• B/W Laser Printer

How do I get Computing Access?

• Your account and ID Card access are automatically enabled/disabled based on whether or not you are enrolled for the current semester.
• If you are not enrolled in the current semester and need access, your advisor will need to send a request to eit-help@mtu.edu to grant access.

Lab & Building Hours

• 24 Hour Access
• Your Tech Express Card gets you in the door provided you are registered for the term

Logging on to the Systems

• Userid
  ○ Your email address without the @mtu.edu
  ○ Domain to use is: MTU
• ISO Password
This was mailed to you from the University
It’s the password you use in Huskymail
• Domain to use is MTU

Changing Your Password

• Passwords can be changed from the following web:  http://www.login.mtu.edu

Email

• Accessing your email: http://email.mtu.edu
• Userid
• ISO Password
• Your Email Address userid@mtu.edu
• Configuration & Policy Information http://emailinfo.mtu.edu
• Spam filter settings http://myspam.mtu.edu

Wireless Access

Rovernet wireless access available.
• SB Floor partial coverage
• 1st Floor partial coverage
• 2nd Floor coverage
• 6th Floor coverage
• 7th Floor coverage
• 8th Floor coverage
See www.rovernet.mtu.edu or the EIT Help Desk for assistance, if needed

Remote Access

• IT/Telcom Customer Service Office
  o B12 EERC or 7-2000
  o Dorm Networking
• ECE Specific Remote Access Servers
  o Remote Login Host (ssh):login.ee.mtu.edu
  o SFTP Host:login.ee.mtu.edu
  o Windows Terminal Server wts.cecn.mtu.edu
Important Rules

• Your account is for your use only
• Do NOT install software on the PCs
• Be considerate of others
• Lab Behavior
• Disk Usage
• Printing
• NO food or drink in the labs

Getting Computer Help

• EIT Help Desk in DILLMAN 207
  • Monday through Friday, 7:30 a.m. - 7:30 p.m.
  • Saturday, Noon – 5:00 p.m.
  • Sunday, Noon – 9:00 p.m.
• Instructor for course related questions
• Other students
• Send email to eit-help@mtu.edu
<table>
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<tr>
<th>Name</th>
<th>Title</th>
<th>Office</th>
<th>Office Phone</th>
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<td>Co-Director, ECE</td>
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<td>Aulbach, Ashok K.</td>
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<td>Cicciolo, Christopher (Kit)</td>
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</tbody>
</table>

**Department Fax:** (609) 487-2949

**Computer Support (Help Desk):** Dillon 267, phone 7-1996, help-desk@mit.edu

**Learning Center:** Room 122

**Dept e-mails:** excep, ece, ecegrad, oucenggrad, ecegrad.

**Building Attendant:** Don Darcy - Room SB38, phone 7-2150.
Electrical and Computer Engineering

Graduate Student Information

Name ____________________________________________________________

Last First Middle initial

MTU “M” Number  M   ___  ___  ___  ___  ___  ___  ___  ___  ___  ___

E-mail address ____________________________________________________

Local phone number ______________________________________________

Local address ____________________________________________________

Street or PO Box __________________________ Apt # ________________

City State Zip

Gender ______ Native Country ________________________________________

Advisor ______________________ Area _____________________________ (Power, Computer, etc.)

Current Support ____________________ Supporting Dept. ______________

(PhD, RA, Fellowship, etc.)

Degree sought ____________________ Degree granting Dept. ____________

(MS, PhD)

Semester entered graduate program __________ Expected semester of graduation

(i.e., “Fall 2008”) (i.e., “Spring 2010”)

Do you have:

An MTU ID card? ______ An EERC key? ______

An office? ______ If yes, building and office number: ______________

Signature __________________________________________ Date _____________