

# **Multidisciplinary Student Project Lab, F212 Parkview**

## ***Vision***

A highly visible multidisciplinary laboratory where visitors to the College of Engineering and Applied Sciences will be able to see first hand student design teams in action; where students, working as teams, are engaged with their College, in their profession, and with future employers in student-centered design and research activities.

## ***Mission***

The Multidisciplinary Student Project Lab supports student teams to design, build, assemble, test, and disseminate innovative solutions, thus preparing students for job readiness, life-long problem solving, and leadership in the global community.

## ***Functions***

The Multidisciplinary Student Project Lab will

1. Display student-initiated designs and projects.
2. Provide students with multidisciplinary project opportunities never before possible.
3. Provide students with opportunities to gain appreciation for design functionality and improve technical skills.
4. Support students to broaden their technical knowledge through hands-on activities.
5. Support students to broaden their team and project management skills through engagement in interdisciplinary or multidisciplinary design projects.
6. Support course-related and senior capstone design projects; projects from the Engineering Design Center for Service-Learning; ENGR 101, ECE 123, and student engineering societies; and student-initiated projects.
7. Enable students to build and assemble models and small prototypes; build and test electrical circuits and devices; set up and perform mechanical and electronic tests; and perform small sheet metal fabrication.

## ***Access Policy***

Student teams will apply for access to the Multidisciplinary Student Project Lab by submitting a proposal to the Director of the Multidisciplinary Student Project Lab. The proposal will:

1. Describe the project, including a title and the types of fabrication that will be performed.
2. Identify the faculty advisor and sponsor.
3. State the length of the project and provide a project timeline showing major activities.
4. Identify any chemicals or solvents that will be used, and provide a material safety data sheet (MSDS).
5. Identify the design team manager. The design team manager will be responsible for –
  - a) Access to and cleanliness of the area
  - b) Missing or damaged tools and equipment.

When all the necessary information about the project has been provided, review of a project proposal will be completed by the Director of the Multidisciplinary Student Project Lab or a designee within two working days of proposal submission.

Upon approval of the project proposal, students must demonstrate safety awareness prior to obtaining an I.D. card that will allow them access to the Lab. The I.D. card will state the lab access expiration date.

Each approved project will have a designated work area (bench) assigned to the team. The team will be required to place by the work bench an 8x11 poster describing the project, faculty advisor, and sponsor.

There will be a sign-in sheet for all users of the Lab, and students must sign in and sign out each time they use the Lab. Students must have the I.D. card in their possession to enter the Lab and must carry the I.D. card with them when working in the Lab.

One-day access will be granted to students to work in the Interdisciplinary Student Project laboratory on the date requested by completing the “Day Pass” form and obtaining the signature of a supervising faculty. Students can only work in the Interdisciplinary Student Project Laboratory when there is a room monitor on duty. The student must follow the laboratory procedures, exercise safe work habits, and accept responsibility for tools used, lost and/or damaged. The student also must follow the sign-in/sign-out procedure and other specific restrictions of the laboratory personnel and sign the Liability Waiver and Release Form. The supervising faculty must accept responsibility for the student while in the Interdisciplinary Student Project laboratory. Furthermore, the faculty must not let students in the Interdisciplinary Student Project Laboratory when there is not a room monitor present.

In the shorter term, the Multidisciplinary Student Project Lab will be open only during supervised hours by the Lab TA (~20 hours per week) or when the supervising faculty is present, as arranged with the supervising faculty.

In the longer term, the Multidisciplinary Student Project Lab will have open (supervised) hours on Tuesday to Saturday from noon to 9 p.m. Hours outside of this time frame should be accessible only to those with proper authorization to enter the facility. This will require the installation of a card reader system on the hall door to monitor who is going into and coming out of the facility and to limit access to those individuals who have been designated to work in the Lab.

### ***Safety Concerns***

A student will be granted an I.D. card for the Multidisciplinary Student Project Lab if he/she demonstrates safety awareness through

- a) Successful completion of ME 220 or IME 150, *or*
- b) Successful completion of online laboratory safety quizzes.  
<http://www.tvgreen.com/Forms/safetest.htm>

In addition, the general shop safety rules described in Appendix I and below must be followed at all times when working in the Multidisciplinary Student Project Lab. If a student violates any of the rules, he/she will be given a warning. If he/she violates any of the rules a second time, revocation of the I.D. card may occur.

No student will be allowed to work alone in the Multidisciplinary Student Project Lab. For safety reasons, students must always work with a design team partner in the Lab. Students found violating this rule will have their I.D. card access revoked immediately.

Safety glasses or goggles must be worn at all times while in the Multidisciplinary Student Project Lab. There will be no exceptions. Students who wear prescription glasses must wear additional eye protection.

The wearing of arm bands, gloves, loose-fitting clothes, watches, rings, sweaters, or dangling neck ties when working or running machines will be strictly prohibited because they can catch on moving machinery.

Cleanliness of the workspace contributes to overall safety of the lab. Each student will be responsible for cleaning up the work area immediately after each usage. Students will be given a warning when they do not clean up the work area. A second violation will result in the I.D. access card being revoked.

Students with I.D. card access to the Multidisciplinary Student Project Lab must not invite other students without the proper permission into the Lab. Students found violating this rule will have their I.D. card access revoked immediately.

Each person will be responsible for returning all tools and equipment to the proper location.

Any accident or injury, or malfunction of instrument or equipment shall be reported to either the lab supervisor or faculty.

Users will remember that the Multidisciplinary Student Project Lab is a place for work, not horseplay. Any tricks or pranks can cause harm to all those working in the Lab. If a student violates this rule, he/she will be given a warning. If he/she violates this rule a second time, revocation of the I.D. card may occur.

### ***Staffing***

In the long term, the Multidisciplinary Student Project Lab should be staffed by an advanced undergraduate during the open (supervised) hours on Tuesday to Saturday from noon to 9 p.m. Hours outside of this time frame should be accessible only to those with proper authorization to enter the facility.

To provide staffing for the Multidisciplinary Student Project Lab, the College of Engineering and Applied Sciences will provide funding support for 45 hours per week of student assistant help. Although the schedule above calls for 45 hours per week, the first two weeks of the semester, as well as finals week could have dramatically reduced hours. Students will need to plan their

projects as such. University closure for holidays and semester breaks will result in lab closure or limited access hours.

In the short term (2004-05 and 2005-06), the Multidisciplinary Student Project Lab will be staffed for ~20 hours per week by a TA funded by a grant awarded to Drs. Andrew Kline and Edmund Tsang.

### ***Governing Board***

A Governing Board will advise the Director of the Multidisciplinary Student Project Lab, who will be the Associate Dean for Undergraduate Programs & Assessment. The members of the Governing Board are:

Dr. Richard Hathaway – MAE  
Dr. Frank Severance – ECE  
Dr. Andrew Kline – PCI  
Dr. Betsy Aller – IME  
Dr. Mark Kerstetter – CS  
Dr. Edmund Tsang – Dean’s Office, *ex officio*

The Governing Board will meet at least annually to review the policies and procedure of the Multidisciplinary Student Project Lab.

The Governing Board will also prepare an annual report to the Dean and the College Executive Committee on the activities and usage of the Multidisciplinary Student Project Lab.

## Appendix I

# GENERAL SHOP SAFETY RULES

1. Safety glasses, cover goggles, or face shields are required when in any shop area, whether working or not!!
2. Shoes must be worn in any shop area. No one **wearing sandals** will be allowed to enter any shop area. The minimum footwear must cover the entire foot.
3. Do not operate any item of equipment unless you are familiar with its operation and have been authorized to operate it. If you have any questions regarding the use of equipment, ask the area supervisor.
4. No work may be performed using power tools unless at least two people are in the shop area and can see each other.
5. Avoid excessive use of compressed air to blow dirt or chips from machinery to avoid scattering chips. Never use compressed air guns to clean clothing, hair, or aim at another person.
6. In case of injury, no matter how slight, report it to the shop supervisor. The campus emergency phone number is 9-911.
7. Do not attempt to remove foreign objects from the eye or body. Report to the Sindecuse Health Center (387-3287) for medical treatment. If chemicals get in the eye(s), wash eye(s) for 15 minutes in an open flow of water before proceeding for medical treatment. In severe cases, notify the Department of Public Safety at 387-5555.
8. Machines must be shut off when cleaning, repairing, or oiling.
9. Do not wear ties, loose clothing, jewelry, gloves, etc. around moving or rotating machinery. Long hair must be tied back or covered to keep it away from moving machinery. Hand protection in the form of suitable gloves should be used for handling hot objects, glass, or sharp-edged items.
10. Wear appropriate clothing for the job (i.e., do not wear short sleeve shirts or short pants when welding).
11. Do not work in the shop if tired, or in a hurry.
12. Never indulge in horseplay in the shop areas.
13. All machines must be operated with all required guards and shields in place.
14. A brush, hook, or special tool is preferred for removal of chips, shavings, etc. from the work area. Never use the hands.
15. Keep fingers clear of the point of operation of machines by using special tools or devices, such as, push sticks, hooks, pliers, etc. Never use a rag near moving machinery.
16. A hard hammer should not be used to strike a hardened tool or any machine part. Use a soft-faced hammer.
17. Practice cleanliness and orderliness in the shop areas.
18. Keep the floor around machines clean, dry, and free from trip hazards. Do not allow chips to accumulate.
19. Think through the entire job before starting.
20. Before starting a machine, always check it for correct setup and always check to see if machine is clear by operating it manually, if possible.
21. Do not drink alcoholic beverages before or during work in the machine shop area. Do not bring food/snacks into the shop.

22. Don't rush or take chances. Obey all safety rules.
23. If you have not worked with a particular material before, check the hazardous material safety data sheets (MSDS) book for any specific precautions to be taken while working with the material.
24. Follow all appropriate precautions when working with solvents, paints, adhesives, or other chemicals. Use appropriate protective equipment.
25. Safe procedures for most shop operations are described in the *Health and Safety Procedures Notebook* located by the safety cabinet.
26. Check the power cords and plugs on portable tools for damage or fray before using them.
27. Always store oily rags in an approved metal container.

*Source: Based on and modified from*

*[http://www.me.ucsb.edu/course\\_pages/course\\_pages\\_w03/me12s/shop\\_safety\\_guideline](http://www.me.ucsb.edu/course_pages/course_pages_w03/me12s/shop_safety_guideline)*