MEC 225: Fundamentals Of Machining Practices  
Spring 2016

Instructors:
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Sections and Times:  
L01: 11:30am - 1:30pm, Thursday  
L02: 10:00 am - 12:00 pm, Tuesday  
L04: 1:30 pm - 3:30 pm, Monday  
L05: 2:00 pm - 4:00 pm, Wednesday  
L06: 8:00 am - 10:00am, Friday

Location: Old Engineering Room 009 / Student Machine Shop

Required Materials and Textbook: All required materials will be supplied by the Instructor.

Course Description:

“Hands-on experience in the fundamentals of machining including metrology tools and devices, saw, sheet metal working, drilling, reaming, tapping, turning, boring, milling, welding, and rapid prototyping. This course has an associated fee. Please see www.stonybrook.edu/coursefees for more information.

Pre- or Co-requisite: MEC 203  
Prerequisite: MEC major or Permission of Instructor”

Attendance Policy:

A student who has missed time amounting to 20% of the course will be dropped from the class. This amounts to 3 classes during the Spring semester. There will be no make ups available for missed class time.

Behavior Policy:

The Instructor reserves all rights and privileges to dismiss the student from the classroom at any time for any reason. Grounds for dismissal include, but are not limited to, failure to follow the Instructor’s instructions, disrespect for lab equipment, and unruly behavior. A dismissal of this kind will result in a grade of zero for that day’s work. There will be no make ups available for class time or assignments missed due to this policy.

EOS 029 Machine Shop Safety Course:
EOS 029 is an online safety course offered through blackboard that a student must pass before they can work in the student machine shop. The student must read through all included materials, pass the quiz, and print the My Grades page; signing and submitting it as proof of course completion. Additionally, the student must sign and submit the last page of the Machine Shop Safety Agreement.

**Enrolling and Completing EOS029:**

All users of the machine shop are expected to take the Environmental Health and Safety Machine Shop Safety Course. The course takes approximately 15 minutes.

*To access the course through blackboard:*

1. Log into Blackboard.
2. Click on “Courses”.
3. Under Course Catalog click “Environmental Health and Safety”.
4. Mouse over “eos029machineshopsafety”.
5. Click grey arrow that appears.
6. Click “Enroll”.
7. Click “Submit”.
8. Click “Ok.”
9. Click through all items on left side in order, starting with “Announcements”. Follow all directions.
10. Print Copy of Final Grade.
11. Print Copy of “Machine Shop Safety Rules and Agreement”.
12. Sign both documents and return to instructor or shop manager.
**Grading:**

- Attendance: 20%
- Safety: 10%
- Housekeeping: 10%
- Shop Performance: 30%
- Term Projects: 30%

**Course Learning Objectives:**

1. Understand and develop the habit of following all safety rules.
2. Use and read calipers and gages for dimensional accuracy.
3. Ability to appropriately select hand tools such as hacksaw, files, scribers, hand drills, reamers, etc.
4. Ability to perform basic operation of a vertical milling machine.
5. Ability to perform basic operation of an engine lathe.
6. Ability to use a bandsaw and drill press.
7. Ability to perform basic operation of a welder.
8. Ability to use a sheet metal shear and brake.

**Lecture/Lab Schedule:**

Week 1: Introduction to Course, Overview of Safety Practices and Housekeeping, Shop Tour
Week 2: Metrology, Blueprint Reading, Job Planning, and Layout
Week 3: Hand Tools, Fasteners, Cutting Tools, Auxiliary Equipment
Week 4: Introduction to Lathe
Week 5: Lathe Practice Session
Week 6: Introduction to Mill
Week 7: Mill Practice Session
Week 8: *Spring Break*
Week 9: Sheet Metal/Welding
Week 10: Open Lab
Week 11: Open Lab
Week 13: Finishing Processes and Assembly
Week 14: Quiz, Collection of Projects
**Cell phone and electronic device policy:** Cellular phones or other communication devices are not permitted in lectures or labs, and are especially prohibited from exams. If you are found to be in possession of such a device during an exam, you will be ejected from the exam and will receive a grade of zero. Audio or video recording or photography during lectures is strictly prohibited, and anyone found in violation will be ejected from the course with a failing grade. Students may not use personal electronic devices during lectures, exams, or lab sessions – this includes but is not limited to cell phones, laptop computers, cameras, music devices, etc.\(^1\)

**DISABILITY SUPPORT SERVICES (DSS) STATEMENT:** If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Disability Support Services, ECC (Educational Communications Center) Building, room 128, (631) 632-6748. They will determine with you what accommodations are necessary and appropriate. All information and documentation is confidential. Students requiring emergency evacuation are encouraged to discuss their needs with their professors and Disability Support Services. For procedures and information, go to the following web site: www.stonybrook.edu/dss

**ACADEMIC INTEGRITY STATEMENT:**
Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty are required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Technology & Management, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty, please refer to the academic judiciary website at http://www.stonybrook.edu/uaa/academicjudiciary/

**CRITICAL INCIDENT MANAGEMENT:**
Stony Brook University expects students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of Judicial Affairs any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures.

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\(^1\)Noah D. Machtay, Ph.D., P.E., Department of Mechanical Engineering, Stony Brook University