Machine Tool Production: ENGR 261

Catalog Description: The theory and operation of machine tools and precision measuring instruments. Laboratory assignments will involve material removal processes. 2hrs lect; 2hrs lab

Prerequisites: None


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Learning Objectives with relationship to ABET outcomes for ENGR 261

<table>
<thead>
<tr>
<th>Students will be able to:</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
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<tr>
<td>Identify and use hand tools and layout instruments</td>
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<td>Accurately measure with micrometers, calipers, and other</td>
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<td>precision measuring instruments</td>
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<td>Identify the parts of the following machines and perform</td>
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<td>typical processes on them - engine lathe, vertical and</td>
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<td>horizontal mill, band saw, drill press</td>
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<td>Explain cutting tool geometry, materials, and applications</td>
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<td>Identify size designations and parts of threaded fasteners</td>
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<td>Calculate feeds and speeds</td>
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<td>Safely operate hand and power machine tools</td>
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<td>Prepare machined part production planning</td>
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<td>Contribute to and assist in a mass production project to be</td>
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ABET Learning Outcomes: An engineering technology program must demonstrate that graduates have:

A. an appropriate mastery of the knowledge, techniques, skills and modern tools of their disciplines,
B. an ability to apply current knowledge and adapt to emerging applications of mathematics, science, engineering and technology,
C. an ability to conduct, analyze and interpret experiments and apply experimental results to improve processes,
D. an ability to apply creativity in the design of systems, components or processes appropriate to program objectives,
E. an ability to function effectively on team,
F. an ability to identify, analyze and solve technical problems,
G. an ability to communicate effectively,
H. a recognition of the need for, and an ability to engage in lifelong learning,
I. an ability to understand professional, ethical and social responsibilities,
J. a respect for diversity and a knowledge of contemporary professional, societal and global issues, and
K. a commitment to quality, timeliness, and continuous improvement.
Grading: 90-100% = A  80-89% = B  70-79% = C  60-69% = D  59% & below = F

Attendance Policy:
Class and Lab attendance is required. If a student is absent for any reason, it is his/her responsibility to gain an understanding of the missed information or experience. It is the student’s responsibility to contact the instructor upon their first return to class after an absence. Scheduled lab activities CANNOT be made up at alternate times.

Exam/Quiz Policy:
Exams and Quizzes will be administered during the semester. Exam times will be announced in advance. Scheduled Quizzes and Unannounced (Pop) quizzes will also be administered as the instructor determines the need. No make-up exams or quizzes of any kind will be given unless written notification of an absence is given to the instructor prior to the exam or quiz and documentation is provided by your doctor or University Health Services upon return to class. A grade of “0” will be recorded for a missed exam or quiz.

Late Assignment Policy:
Assignments are considered late if they are not turned in when requested by the instructor. Unless a student notifies the instructor (in writing) of his/her intent to be absent prior to the due date of an assignment, the assignment will be considered late. For each school day (not class period), an assignment is turned in late it will be penalized by the loss of 10% (plus errors or mistakes). Assignments more than 3 school days late will NOT be graded.

Lab Cleanup Policy:
Each student is responsible for keeping the laboratory clean. This includes but is not limited to returning tools and machining supplies to their proper locations after use, cleaning chips from the machines, and sweeping the floor. Any student who does not assist in keeping the lab clean and organized will be penalized up to 25% on lab assignment grades.

Special Course Costs:
$20.00 will be collected to replace materials and tools used by students.

Safety Glasses:
Each student will be required to obtain and wear approved safety glasses at all times while in the Metals/CNC lab. Students will not be permitted in the lab without approved safety glasses.

NOTE: This syllabus is subject to change with verbal notification.

In accordance with University policy and the Americans with Disabilities Act (ADA), accommodations in the area of test or note-taking may be made for any student who notifies the instructor of the need for an accommodation. It is imperative that you take the initiative to bring such needs to my attention, as I am legally not permitted to inquire about the particular needs of students. Furthermore, I would like also to request that students who may require special assistance in emergency evacuation (ie., fire, tornado, etc.) contact me as to the most appropriate procedures to follow in such an emergency.