SAN JOSE STATE UNIVERSITY
Department of Aviation and Technology

Tech 046: Machine Operation and Management
Fall 2016

Course Syllabus

Semester and Year: Fall, 2016
Course Sections: 2 & 11
Class days & Times: Lab Mon. 3:00-5:45
Lecture Mon. 1:00 -2:45
Class Locations: IS 121 & 122
Instructor: D. Muntz
Office Room: IS 130
Office Hours: MON. NOON TO 1:00 (and by Arrangement)
Office phone (408) 924-4372
E-mail Address: douglas.muntz@sjsu.edu
Web Address: http://www.sjsu.edu/people/douglas.muntz

Course Catalog Description
Manual machining processes including turning, milling, drilling, grinding, and sawing machines. Manual and computer-aided part programming. Management of machining environment including processes, tooling, instruments, equipment, personnel, safety. (Lecture 2 hours, lab 3 hours) 3 units.
A short quiz could be given at the start of each class (10 points) (don’t be late)

Prerequisite
Tech 20 or equivalent

Purpose of Course
The purpose of this course is to develop fundamental skills needed for advanced study in manufacturing technology machine tool processes and management. To this end, areas of study will include: measurement, layout and inspection, bench work, metal-cutting saws and processes, drilling machines and processes, turning machines and processes, milling machines and processes, abrasive machining safety, computer-numerical control, and related management.
Required Textbooks & Materials
3) Safety Glasses
5) Small hard back 3 ring binder with 60 sheets of blank printer paper
6) One set of precision dial or digital calipers
7) Two shop rags

References


Machinery Handbook & Current journal and magazine technical articles.


Outline of Course Content and Unit Objectives

| Dailey quiz | 10 x 7 = 60 points* |
| Lathe Project | 50 |
| Mill Project | 25 |
| Final Project | 100 |
| Lab Clean-up/Activities | 25 |
| Lab safety | 40 |
| **Total** | **300** |

Total/300 points for final LAB Grade
*Lowest score will be dropped

Lecture class and grade will depend on class participation and:

Two Formal Exams during the semester: A midterm test (50 points) and a comprehensive final (100) points. The materials to be included in these tests will be announced by the instructor.

Three outside “reading synopsis” assignments TBA 15 points each

Total 195 points
Lecture Objectives (Units and reading assignments):

Part I: Measurement, Inspection and General shop Management  
Reading Assignment: Kibbe et al pp.87-191

Part II: Bench work, shop safety, Layout, Tool Management.  
Reading Assignment: Kibbe et al pp. 6-85;235-299

Part III: Turning Machines, Processes and Management  
Reading assignment: Kibbe et al pp.383-506

Part IV: Milling Machines  
Reading Assignments: Kibbe et al pp.511-584

Part V: Other machines: Metal cutting saws, Drilling Machines, Grinding and abrasive Machines  
Reading Assignments: Kibbe et al pp. 301-381 and pp.585- 658

Main study areas:

Communication

Work holding

Measurement

Layout

Separating

Joining

Conditioning

Material selection
## TECH 046 SCHEDULE OF COURSE SEMESTER LAB ACTIVITIES

<table>
<thead>
<tr>
<th>WEEK OF</th>
<th>TOPICS TO BE DISCUSSED</th>
<th>Shop Managers</th>
<th>DUE</th>
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</thead>
<tbody>
<tr>
<td>AUG. 29</td>
<td>ORIENTATION</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sept. 12</td>
<td>GENERAL SAFETY</td>
<td></td>
<td></td>
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<tr>
<td>SEPT. 19</td>
<td>TOOL BIT Grinding</td>
<td></td>
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<tr>
<td>SEP. 26</td>
<td>LATHE INTRO</td>
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<tr>
<td>OCT. 3</td>
<td>cancel</td>
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<tr>
<td>OCT. 10</td>
<td>LEAD CONTAINER</td>
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<tr>
<td>OCT 17</td>
<td>MILL SAMPLE DEMO</td>
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<tr>
<td>OCT. 24</td>
<td>MILL SAMPLE reading synopsis</td>
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<tr>
<td>OCT. 31</td>
<td>HAMMER HANDLE DEMO</td>
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<tr>
<td>NOV. 7</td>
<td>HAMMER HEAD DEMO</td>
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<tr>
<td>NOV. 14</td>
<td>LAB WORK HAMMER</td>
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<td>NOV. 21</td>
<td>LAB WORK HAMMER</td>
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<tr>
<td>NOV. 28</td>
<td>LAB WORK HAMMER</td>
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<tr>
<td>DEC. 5</td>
<td>ALL PROCESSES reading synopsis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DEC. 12</td>
<td>ALL PROCESSES</td>
<td>Turn in final project</td>
<td>Everything</td>
</tr>
</tbody>
</table>

Final Tuesday Dec 20
12:15
Above subject to changes