**MFGT 80 – Introduction to Machine Shop**

**Syllabus**

**Fall 2015**

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| **Mr. Larry Paredes Sr.** | August 18, 2015 – December 17, 2015 |
| Phone: (559) 675-3477  e-mail:larry.paredes@scccd.edu | TTh 8:00 a.m. – 12:15 pm |
|  | Units 6.0 |

**Text: Hoffman, P. J., Precision Machining Technology, Delmar Cengage Learning 2nd Ed.**

**Workbook: Precision Machining Technology, workbook and projects manual 2nd Ed.**

**Other** **required** **materials:**

Pen, pencils, paper, notebook, safety glasses, and work gloves. Calculators will be necessary.

**Course Description:**

Basic shop practices, hand tools, measurement systems, material selection and testing, cutoff machines, basic lathe and milling machine operation and introduction to CNC turning and milling.

**Course Outcomes:**

A. Practice safe shop techniques in operating both hand tools and machinery.

B. Calculate common mathematical problems associated with part fabrication and machinery operation.

C. Differentiate between acceptable and non-acceptable tolerance limits and overall work quality.

**Other Course Objectives:**

In the process of completing this course, students will:

A. Select and properly use hand tools of the machine trade.

B. Perform precision measurement and layout needed in the machine trade.

C. Propose proper material for a prescribed project and calculate necessary cuts for the job.

D. Set up and perform basic machining operations on common machine shop equipment.

E. Identify potential hazards in machine operation and revise techniques to optimize safety.

F. Prepare accurate and correct calculations to set up machines for close tolerance work.

G. Illustrate work discipline through use of a time clock and progress on assigned task.

**Core Values:**

The core values are a set of principles, which guide in creating educational programs and environments at Madera Community College Center. They include communication, ethics, critical thinking, human diversity, inquiry and respect for learning, and interpersonal skills and teamwork. The goals, objectives, and activities in this course will introduce and reinforce these Core Values whenever appropriate.

**Class Room Expectation:**

In order to encourage participation and growth, students are expected to be respectful of each other’s time and needs by not monopolizing class time.  Questions unrelated to the subject at hand will be reserved for after class

Attendance is mandatory. Three tardies constitutes one absence. You are allowed only two absences in this class, after which you will be dropped from the course. In addition, if you are more than one hour late for class without prior notification, it will be considered an absence. You must be present on the day of quizzes. The only exception will be if I am notified in advance of an emergency, either by work phone or e-mail. If you are marked absent on the day of a quiz and I have not heard from you, you will not be able to make up the quiz and will be marked “0” as a score. I understand family crisis situations and job interviews happen and will allow for those exceptions, just recognize that the time away from class only harms your ability to learn.

**Topics:**

1. Shop safety
2. Hand tools
3. Shop math
4. Measurement
5. Layout
6. Grinding
7. Basic lathe work
8. Basic mill work
9. Drilling and reaming
10. Taps, Counter sinks, Counter bores

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| **Assignments**: |  | | **Points Possible** |
| Week #1 | Intro to Machining/Safety |  |  |
| Week #2 | Careers in Machining/Workplace skills |  |  |
| Week #3 | Measurement systems/ materials/safety | Lab 1 | **10** |
| Week #4 | Semi/precision measurements | Lab 2 | **10** |
| Week #5  **Quiz #1** | Quality assurance/metal composition | Lab 3  **Quiz** | **10**  **50** |
| Week #6 | Heat treatment of materials/Maintenance, lubrication, cutting fluids | Lab 4 | **10** |
| Week #7 | Job planning, bench work/ layout | Lab 5 | **10** |
| Week #8 | Hand Tools/ Saws and cutoff machines | Lab 6 | **10** |
| Week #9 | Offhand grinding/ drilling, tapping, reaming | Lab 7 | **10** |
| Week #10  **Quiz #2** | Intro to drill press/tools/tool holding | Lab 8  **Quiz** | **10**  **50** |
| Week #11 | Drill press operations/turning |  |  |
| Week #12 | Work holding/Tool holding for the lathe | Lab 9 | **10** |
| Week #13 | Lathe Threading/Taper turning |  |  |
| Week #14 | Intro to Vertical Machining/ Tools, tool holding | Lab 10 | **10** |
| Week #15 | Vertical milling machining operations | |  |
| Week #16  **Quiz #3** | Indexing/rotary table operations/grinding | | **50** |
| Week #17 | Grinding wheels/surface grinding/ CNC basics | |  |
| **Week #18** | **Final project-brass hammer** | | **100** |
|  | Time sheets/Job notes | | **50** |
|  | Participation Points | | **50** |
|  | Workbook assignments | | **50** |
|  | **Total points possible** | | **500** |

**Time sheets/ job notes:** are to be turned in each week to assist the student in developing the skills necessary for proper time management and job documentation.

**Participation points:** are based on the overall student’s participation in the class. Tardiness, leaving early without notifying instructor, and shop cleanliness are factors that will affect the amount of points given.

**Homework:** Assignments will be given throughout the course. The instructor will inform the student when it needs to be turned in for grading.

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| **Grading Scale**  Grading criteria for this class is as follows: |  |  |
|  | 450 – 500 points | = A |
|  | 400 – 449 points | = B |
|  | 350 – 399 points | = C |
|  | 300 – 349 points | = D |
|  | 299 points or less | = F |

**College Policies**

**Cheating and Plagiarism:** "Cheating is the actual or attempted practice of fraudulent or deceptive acts for the purpose of improving one's grade or obtaining course credit; such acts also include assisting another student to do so. Typically, such acts occur in relation to examinations. However, it is the intent of this definition that the term 'cheating' not be limited to examination situations only, but that it includes any and all actions by a student that are intended to gain an unearned academic advantage by fraudulent or deceptive means.

Plagiarism is a specific form of cheating which consists of the misuse of the published and/or unpublished works of others by misrepresenting the material (i.e., their intellectual property) so used as one's own work." Penalties for cheating and plagiarism range from a 0 or F on a particular assignment, through an F for the course, to expulsion from the College. For more information on the College policy regarding cheating and plagiarism, refer to the Catalog (Legal Notices on Cheating and Plagiarism) (Policies and Regulations). Any use of someone’s material, even if it is paraphrased, must be properly cited or it is considered plagiarism.

**Disruptive Classroom Behavior:** "The classroom is a special environment in which students and faculty come together to promote learning and growth. It is essential to this learning environment that respect for the rights of others seeking to learn, respect for the professionalism of the instructor, and the general goals of academic freedom are maintained. … Differences of viewpoints or concerns should be expressed in terms which are supportive of the learning process, creating an environment in which students and faculty may learn to reason with clarity and compassion, to share of themselves without losing their identities, and to develop and understanding of the community in which they live . . . Student conduct which disrupts the learning process will not be tolerated and may lead to disciplinary action and/or removal from class and or the College".

**Special Need(s) Students:** “Students with special need(s) should confer with the instructor on the first day of the class in order to discuss how the instructor might assist the student with his/her particular needs. The instructor will contact the Counseling Center to see how they can assist the student with the disability. Upon identifying themselves to the instructor, the student will be informed that the College DSPS is also available to assist students with disabilities receive reasonable accommodation for learning and evaluation.

*If you have special needs as addressed by the Americans with Disabilities (ADA) Act including alternate media requests, please notify your course instructor immediately. Reasonable efforts will be made to accommodate your special needs.*

* **Food is not allowed during class time. Please wait until break. You may have something to drink during class. Please be careful not to spill or make any messes, as this privilege can be revoked at any time.**
* **Please be sure cell phones are turned to vibrate. The use of cell phones in this class is extremely discouraged. Please wait until break to use your cell phones. Texting during class is absolutely not allowed and will not be tolerated.**
* **iPods, MP3 players or any other music or media devices are not allowed in the classroom. Leave them in your backpacks until break, and then they must be used outside of the classroom.**
* **An environment of mutual respect is expected and appreciated.**
* **Please do not wear sunglasses in the classroom or shop. It is disrespectful to students & the instructor.**