

El Camino College

Machine Tool Technology 40 Machine Shop Calculations

Instructor – Mr. Griffin
January 23 – May 16, 2014
Thursdays 7:00 – 10:10 pm
Room 101 – Communications Building

Phone: (310) 660-3593 x4264 (email preferred)
Email: magriffin@elcamino.edu
Office Hours: Before Class and by Appointment
Web: SouthBayMachine.com/MachineMath.htm

Required Text and Materials

- Text “Technical Shop Mathematics” T. Achatz 3rd Edition
- Casio FX300MS Scientific Calculator
- 3-Ring Binder with Class Notes and Syllabus
- Text “Shop Reference for Students and Apprentices” C. McCauley 2nd Edition
- Blue or Black Ink Pen
- Internet Access

Catalog Description

Prerequisite – None Lecture – 3 Hours Units – 3 Letter grade or credit/no-credit option

This course covers the study of machine shop problems involving the solution and formulas related to screw threads, feeds and speeds, spur gears, simple and angular indexing. Geometric figures, angles, triangles, circles, arcs, trigonometric functions compound angles and oblique triangles will also be introduced.

Topics for Study

| | | | |
|------------------------------|-----------------------------|-----------------------------|-------------------|
| Fractions | Formulas & Cutting Speed | Indexing | Geometric Figures |
| Introduction to Trigonometry | Right Triangle Calculations | Trig Machine Applications | Gage Blocks |
| Cartesian Coordinate System | Oblique Triangles | Machining Compound Surfaces | GD&T Calculations |

Student Learning Outcome

Student provided with the relevant information will correctly calculate the Feed per Minute (IPM) for a high speed steel (HSS) end mill using correct feed per tooth (CL), rotations per minute and number of teeth.

Class Activities

| | |
|--------------------------------|---------------------------------|
| Sign-In / Taking of Attendance | Review of Previous Class |
| Grading of Homework | Quiz |
| Lecture New Material | Worksheets on New Material |
| Class Discussion | Sign-Out / Taking of Attendance |

*Class schedule, activities and topics for study will change based on the time and resources available.

Classroom Conduct

| | |
|---|--|
| Turn off cell phones – No cell phone use in the classroom. | Raise hand to speak during lectures. |
| Turn off laptops and all other electronics. | Sign-in and out on time. |
| Use only Blue or Black Ink on homework, quizzes and tests. | Save social communication for outside of class. |
| Work that is soiled or has excessive, obnoxious or irrelevant comments and/or markings will not be accepted for credit. | Keep a Course-Outline on-hand and in your binder. |
| | Meet or exceed El Camino College standards of conduct. |

Attendance

Attendance will be taken through a sign-in sheet that will be collected at the beginning and at the end of each class. Students absent during the first class meeting, or who miss the Taking-of-Attendance 5 (five) or more times during the semester may be dropped from the class by the instructor. Upon missing the 5th Taking-of-Attendance it is the student's responsibility to schedule a meeting with the instructor for the evaluation of overall classroom progression and the possibility of an exception to be made for continued enrollment in the class.

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Participation

Participation scores will be based on the student's classroom conduct, preparedness for class, willingness to follow direction, examination of your lecture notes and required materials and participation during class activities and discussion.

Homework and Assigned Readings

Assigned Reading and Homework for the following week will be announced in class and posted online at: <http://southbaymachine.com/MachineMath.htm> Homework is due at the beginning of class on the due date indicated. Late homework will not be accepted unless special arrangements are made with the instructor.

Tests and Quizzes

Test and Quiz material will come from Assigned Readings, Links and Lecture Subjects.

Extra Credit

Extra Credit projects worth 5% of the class grade will be made available to students who wish to take advantage of them.

Requirements and conditions of the extra credit assignments will be announced in class and posted online. These assignments will closely track the subject matter of the class at the time they are announced. Extra Credit projects need to meet all posted conditions and will not be accepted after the Due Date.

Evaluation/Grading Information

| | Percentage of Grade | Grading Scale |
|-------------------------------|---------------------|----------------|
| Class Participation & Conduct | 10% | 90% - 100% = A |
| Homework Assignments | 20% | 80% - 89% = B |
| Quizzes | 20% | 68% - 79% = C |
| Mid-Term Examination | 20% | 55% - 67% = D |
| Final Examination | 30% | Below 55% = F |
| Extra-Credit | 5% | |

Important Dates

| | |
|-------------|---|
| January 23 | First Day of Class |
| January 31 | Last Day to Drop Without Record |
| February 13 | Deadline to Apply for Graduation & Certificates |
| March 6 | Preliminary Grade Review |
| March 13 | Mid-Term Exam |
| March 15-21 | Spring Recess |
| April 18 | Last Day to Drop With a "W" |
| May 16 | Final Exam |

Disability

El Camino College adheres to all applicable Federal, State and Local laws, regulations and guidelines with respect to providing reasonable accommodations for students with temporary and permanent disabilities. If you have a disability that may adversely affect your work in this class, I encourage you to register with the Special Resource Center (SRC) and talk to me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. Note: For more information about the Special Resource Center, please call 310-660-3295 or visit (SRC) Room F-10.

Administrative Cards

Skills Assessment
Emergency Release
Classroom Conduct Agreement