

Angelina College
Technology and Workforce Division
MCHN 1438 BASIC MACHINE SHOP I
Instructional Syllabus

I. COURSE DESCRIPTION: *(as stated in the bulletin, including necessary pre-requisite courses, credit hours)*

Four hours credit. An introduction to machine shop theory, math and terminology, basic bench work, and part layout using a variety of common measuring tools. Application of basic operation of machine tools, such as handsaws, grinders, drill presses, lathes and mills with common hand tools. The student will identify machine parts and their functions; select layout tools and techniques; define machine shop terminology; perform basic machine setups; calculate common shop formulas; perform semi-precision and precision layout; execute grinding techniques; demonstrate basic machine operations; and apply proper measuring tools. Prerequisites or concurrent enrollment in: MATH 0310 and REDG 0310. Two lecture and four lab hours each week. Lab fee.

INTENDED AUDIENCE:

Entry Level

INSTRUCTOR

Name: Donnie Randall 936-414-7801

Office Location:

Office Hours:

Phone: 936-633-5246

E-mail Address: drandall@angelina.edu

II. INTENDED STUDENT OUTCOMES:

A. Core Competencies – (Basic Intellectual Competencies)

- 1. Reading:** Reading at the college level means the ability to analyze and interpret a variety of printed materials – books, articles, and documents. A core curriculum should offer students the opportunity to master both general methods of analyzing printed materials and specific methods for analyzing the subject matter of individual disciplines.
- 2. Writing:** Competency in writing is the ability to produce clear, correct, and coherent prose adapted to purpose, occasion, and audience. Although correct grammar, spelling, and punctuation are each a sine qua non in any composition, they do not automatically ensure that the composition itself makes sense or that the writer has much of anything to say. Students need to be familiar with the writing process including how to discover a topic and how to develop and organize it, how to phrase it effectively for their audience. These abilities can be acquired only through practice and reflection.
- 3. Speaking:** Competence in speaking is the ability to communicate orally in clear, coherent, and persuasive language appropriate to purpose, occasion, and audience. Developing this competency includes acquiring poise and developing control of the language through experience in making presentations to small groups, to large groups, and through the media.
- 4. Listening:** Listening at the college level means the ability to analyze and interpret various forms of spoken communication.
- 5. Critical Thinking:** Angelina College defines critical thinking as the dynamic process of questioning preconceptions and biases through the gathering and evaluation of data to reach new conclusions that consider realistic implications and consequences.
- 6. Computer Literacy:** Computer literacy at the college level means the ability to use computer-based technology in communicating, solving problems, and acquiring information. Core-educated students should have an understanding of the limits, problems, and possibilities associated with the use of technology, and should have the tools necessary to evaluate and learn new technologies as they become available. (*The Texas Higher Education Coordinating Board. ("Report of Subcommittee on Core Curriculum", March 1, 1989).*)

B. Exemplary Objectives – (Found in the Texas Higher Education Coordinating Board Document. Titled: CORE CURRICULUM: ASSUMPTIONS AND DEFINING CHARACTERISTICS Dated: April 1998)

Not applicable for courses in the Technology & Workforce Division.

- C. Course Objectives –** *(common to all sections)*
1. Apply basic operation of machine tools, such as handsaws, grinders, drill presses, lathes, and mills.
 2. Identify machine parts and their functions.
 3. Machine parts specified tolerances
- D. Course Objectives -** Not applicable for courses in the Technology & Workforce Division.

III. ASSESSMENT MEASURES OF STUDENT LEARNING OUTCOMES:

- A. Assessments for the Core Intellectual Competencies –**
1. Reading – Reading material will be measured by the student's demonstration of understanding and interpreting assigned reading material and written instructions.
 2. Writing – Writing will be measured by the student's ability to complete writing assignments.
 3. Speaking – Speaking will be measured by the student's completion of writing assignments.
 4. Listening – Listening will be measured by the student's ability to respond appropriately.
 5. Critical Thinking – Critical thinking will be measured by lab completions and test grades.
 6. Computer Literacy – Computer literacy will be measured by the student's successful completion of computer assignments and computer aided instructions.
- B. Assessments for the Exemplary Objectives Specific to the Course –**
Not applicable for courses in the Technology & Workforce Division.
- C. Assessments for Objectives Specific to the Course –**
1. Apply basic operation of machine tools, such as handsaws, grinders, drill presses, lathes, and mills.
 2. Identify machine parts and their functions.
 3. Machine parts specified tolerances
- D. Assessments for the Objectives of the Course as determined by the Instructor –**
Not applicable for courses in the Technology & Workforce Division.

IV. INSTRUCTIONAL PROCEDURES:

A. Methodologies common to all sections

- A. Time Allocation: 96 hours
1. Lecture – 2 hours per week
 2. Lab – 4 hours per week
- B. Instructional Aids:
1. Videos and VCR may be used.
 2. Worksheets
 3. Computer
 4. Blueprints

B. Methodologies determined by the instructor

Not applicable for courses in the Technology & Workforce Division.

V. COURSE REQUIREMENTS AND POLICIES:

A. Required Textbooks, Materials and Equipment –

- A. Text: Technology of Machine Tools, also Workbook by same title. , by Krar
- B. Supplies
1. Notebook - (loose-leaf or spiral)
 2. Calculator
 3. Pencils
 4. Machinist Basic Tool set to include: 4r steel ruler, edge finder, 6" dial Caliper, 0-1" outside micrometer, feeler gage, thread pitch gage, radius gage and center gage.

B. Assignments – *(Appropriate due dates, schedules, deadlines)*

- A. Machine Shop Safety
- B. Finding missing measurements on prints, by using math.
- C. Precision measuring tools (scales, dial calipers, micrometers, and height gauges)
- D. Basic Machine Tools, such as band saws, mills, lathes, grinders, drill presses, and basic hand-

tools.

E. Semi-precision and precision layout, shop terminology.

See attachment.

C. Course Policies – (This course conforms to the policies of Angelina College as stated in the Angelina College Handbook.)

Academic Assistance – If you have a disability (as cited in Section 504 of the Rehabilitation Act of 1973 or Title II of the Americans with Disabilities Act of 1990) that may affect your participation in this class, you should see Sellestine Hunt Associate Dean of Student Services, Student Center, Room 200. At a post-secondary institution, you must self-identify as a person with a disability; Ms. Hunt will assist you with the necessary information to do so. To report any complaints of discrimination related to disability, you should contact Mr. Steve Hudman, Dean of Student Affairs, in Student Center, Room 101, [\(936\) 633-5292](tel:9366335292) or by email shudman@angelina.edu.

Attendance – See Angelina College Bulletin.

Additional Specific Requirements for this Course –

A. Students are encouraged to be in class before the starting time out of courtesy to others, but also to ensure that they will not miss any part of the lecture, announcements or be late for a test or a quiz.

B. Attendance: Students are required to attend all class meetings. Responsibility for work missed because of absent/tardy or other reasons is placed upon the student. Excessive absences are cause for the student to be dropped from the course. (Excessive absences are defined as three or more consecutive absences or four or more cumulative absences from regularly scheduled class meetings.)

C. Make-Up Work. Students who miss class meetings are responsible for turning in assigned work, missed test or missed quiz before the beginning of the next class meeting that the student attends. Failure to do so will result in a grade penalty of 20 points.

D. Late Assignments: All assignments must be turned in on or before the due dates given in the weekly lesson plan of the syllabus. Ten points will be deducted for each day late.

E. Instructor Conferences: all students are encouraged to take time to meet individually with the instructor with any problem that the student may have. (Office hours are posted on the instructors office door.) When a problem arises concerning the course, meet with the instructor as soon as possible.

VI. COURSE CONTENT:

A. Content/ Topics - (as required by the individual Instructor)

This course covers the information needed by the student to develop the basic skill and techniques to perform basic precision measurements, layout and use machinist hand tools. It trains the student to perform operations on the basic machines used in industry today. It also covers metals from iron ore to steel, hardness and difficulty in machining.

B. Additional Content

A. The project operation plan shall be counted as written test and will be graded.

B. The oral project operation plant presentation by the student will be considered as classroom participation.

VII. EVALUATION AND GRADING:

A. Grading Criteria

The following evaluation activities will be averaged to produce the course final grade.

1. Test/Exams
2. Unit Test - (workbook)
3. Project Grade
4. Class Participation
5. Final Test

B. Determination of Grade

The final grade will be awarded on the basis of;

1. 90-100 - A
2. 80- 89 - B
3. 70- 79 - C
4. 60- 69 - D
5. Below 60-F

VIII. SYLLABUS MODIFICATION:

The instructor may modify the provisions of the syllabus to meet individual class needs by informing the class in advance as to the changes being made.