

El Paso Community College

Syllabus

Part II

Official Course Description

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| SUBJECT AREA | <u>Machining Technology</u> |
| COURSE RUBRIC AND NUMBER | <u>MCHN 1305</u> |
| COURSE TITLE | <u>Metals and Heat Treatment</u> |
| COURSE CREDIT HOURS | <u>3 3 : 0</u> Credits Lec Lab |

I. Catalog Description

Instructs students going into the workforce as manual machinists, tool designers, or heat treat operators. Includes topics on safety, properties of metals and heat treatment of metals. **(2:2). Lab Fee.**

II. Course Objectives

Upon satisfactory completion of this course, the student will be able to:

- A. Identify ferrous and non-ferrous metals.
- B. Perform heat-treating operations.
- C. Prepare part for non-destructive testing.
- D. Identify parts and operate hardness tester.
- E. Describe properties of tool steel.
- F. Identify steel numbering system.
- G. Describe metallurgical terms.
- H. Utilize chart to convert hardness reading.
- I. Read technical manuals for operations and maintenance.
- J. Utilize heat-treating oven.
- K. Utilize tool and die microscopes.
- L. Wear asbestos gloves and tongues for heat treating.

III. THECB Learning Outcomes (WECM)

1. Identify chemical, mechanical, and physical properties of materials.
2. Determine the hardness and strength of ferrous and nonferrous metals.
3. Use heat treat procedures to change the properties of the metal.

IV. Evaluation

A. Pre-Assessment

Students may request pre-assessment for the purpose of challenging this course. Any exam given for this purpose will contain a written exam as well as a laboratory exam.

B. Challenge Exam

Students who wish to challenge the course should contact the Testing Center and Division Deans. Challenges must be accomplished before the census cut-off date. Students who previously have received a "W" or a letter grade for the course are not eligible to challenge the course. Student must score a minimum of 85% in order to successfully challenge the course.

C. Post-Assessment

1. The instructor will maintain a continuous record of each student's progress on an institutionally approved grade sheet or computerized substitute. All instructors must keep records in such a way that information would be clear to a second party having to check grade computation in special cases. An explanatory legend should be provided on the grade sheet.
2. The final project will count at least 30% (percent) of the course grade. This part of the grade should reflect evaluation of the various metallurgy assignments. It is up to the individual instructor to decide how much he/she will weigh these measuring steps, but under no circumstances should the instructor base the entire grade solely on the completed final product.
3. Assignments, exams, and metallurgy projects will count for 70% (percent) of the course grade.
4. The instructor is required to schedule an appropriate activity for the final exam period. The completed exams and projects should be sufficient to demonstrate mastery of course content. The following are some suggested uses of the final exam period:
 - a. Students can take a previous exam and review major sections.
 - b. Students can view an appropriate audio-visual presentation.
 - c. Students can meet with the instructor to review their course work.

D. Remediation

1. Students needing assistance with assignments should contact the instructor.
2. Make-up work and retakes of quizzes may be provided at the instructor's discretion.

E. Grading Criteria: The following grading criteria will be utilized.

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|-------------------|-----|
| Course Activities | 30% |
| Exam #1 | 10% |
| Exam #2 | 10% |
| Course Projects | 20% |
| Final Project | 30% |

F. Grading Scale

| | | |
|-----------------------|---|---|
| 90 – 100 | = | A |
| 80 - 89 | = | B |
| 70 – 79 | = | C |
| 60 – 69 | = | D |
| 0-59 | = | F |
| Incomplete | = | I |
| Withdrew or Withdrawn | = | W |

V. Disability Statement (American with/Disabilities Act [ADA])

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

VI. 6 Drop Rule

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult

with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.