El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA	**Advanced Technology Industrial Manufacturing**
COURSE RUBRIC AND NUMBER	**INMT 1305**
COURSE TITLE	**Introduction to Industrial Maintenance**
COURSE CREDIT HOURS	**3 2 : 4** **Credits Lec Lab**

I. Catalog Description

Provides basic mechanical skills and repair techniques common to most fields of industrial maintenance. Includes topics on precision measuring instruments and general safety rules common in industry, including lock-out/tag-out. **(2:4). Lab fee.**

II. Course Objectives

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

A. Unit I. General Knowledge
1. Demonstrate safety principles in the workplace, including lock-out/tag-out and hazardous materials handling.
2. Utilize general tools such as hand tools, measuring devices, and power tools.
3. Analyze industrial print reading principles to mechanical drawings, electrical drawings, and symbols.

B. Unit II. Mechanical Knowledge
1. Identify mechanical power transmission parts such as belts, chains, gears, and gearboxes.
2. Describe and apply lubrication methods.
3. Identify and troubleshoot pumps and compressors such as hydraulic pumps and air compressors.
4. Describe the fundamentals of fluid power and piping systems.

C. Unit III. Electrical Knowledge
1. Describe electrical fundamentals such as Ohm's law, power, and engineering notation.
2. Utilize test equipment, including digital multimeter, clamp-on ammeter, megohmmeter, and oscilloscope.
3. Identify basic resistive electrical circuits in series, parallel, and series-parallel.
4. Analyze wiring methods such as conductor selection and color code.
5. Analyze transformers.
6. Identify electrical machinery, including DC generators and DC motors, alternators, and three-phase and single-phase motors.
7. Identify input/output devices such as pushbuttons, switches, relays, and motor starters.

8. Identify industrial electronic devices such as variable speed drives and programmable logic controllers.

D. Unit IV. Welding Knowledge
1. Analyze gas welding fundamentals such as safety, setup, and shutdown procedures; puddling and running a bead; types of flames; welds and joints; and welding positions.
2. Analyze arc welding fundamentals such as safety, components, striking the arc, running a bead, types of welds and joints, and common problems.

E. Unit V. Preventive Maintenance
1. Develop and implement preventive maintenance.
2. Perform mechanical PM on such things as bearings, seals, belts, chains, gearboxes, and couplings.
3. Perform electrical PM, including general requirements and inspections records.

III. THECB Learning Outcomes (WECM)

Upon successful completion of this course, students will:

1. Identify various types of fasteners common to industrial maintenance.
2. Utilize various hand and power tools.
3. Utilize precision measuring instruments.
4. Demonstrate proper lock-out/tag-out procedures.

IV. Evaluation

A. Attendance

Students must attend class every day.

B. Quizzes

This course will contain various quizzes. The instructor will determine the section(s) included in every quiz.

C. Exams

This course will contain two exams. There will be a midterm exam and a final exam.

D. Final Grade

The final grade report will be based on the percentage of the total points earned.

90-100	A
80-89	B
70-79	C
60-69	D
0-59	F

Students should be able to compute their grade average anytime during the course. Missed assignments and make-up tests will be given at the discretion of the instructor.

V. Disability Statement (Americans 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.