El Paso Community College
Syllabus
Part II
Official Course Description

SUBJECT AREA	**Welding**
COURSE RUBRIC AND NUMBER	**METL 1305**
COURSE TITLE	**Welding Metallurgy I**
COURSE CREDIT HOURS	**3 2 4** **Credits Lec Lab**

I. Course Description

Provides a study of metallurgy and its application related to welding including studies of metal characteristics, testing, and effects of alloying and heat treating, and basic properties. Emphasizes conducting tests and metallographic techniques. **(2:4). Lab fee.**

II. Course Objectives

a. Fundamental in welding process and manufacture of steel.
b. Mechanical Properties of the metal.
c. Study the Non-Ferrous (aluminum) and Ferrous such as steel (low, medium and high carbon), alloys steel and iron, materials.
d. Formation of the Fusion Zone in the welding process.
e. Understand the weld defects such as loss of strength, embrittlement, cracking, porosity, inclusions and solute segregation in the weld joint, and how to prevent them by selecting the proper welding processes, procedure and materials.
f. Construct and interpret binary phase diagram of Fe-C content.
g. Understand the microstructures typically present in carbon-steel welds and the surrounding material, and understand the influence of these microstructures on the mechanical properties of the joint.
h. Understand the different heat treatments associated with welding.
i. Metallurgical aspects of destructive and non-destructive weld tests.
j. Conduct microscopic investigations.

III. THECB Learning Outcomes (WECM)

1. Define the basic mechanical properties of metals.
2. Describe the effect of carbon content and alloying.
3. Identify the effects caused by welding.
4. Conduct various metal property tests.

IV. Evaluation

The knowledge and skills stated in the objective must be demonstrated by the students in the form of tests and assignments in order to complete the course. Test (50%) and lab assignments (50%) will be averaged, letter grades will be arranged as follows:

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 (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.