

SYLLABUS

DIVISION: Business and Engineering Technology

REVISED: MAY / 2013

CURRICULA IN WHICH COURSE IS TAUGHT: DCC Program of Study

COURSE NUMBER AND TITLE: WEL 145 Welding METALLURHY

CREDIT HOURS: 3 HOURS/WK LEC: 1 HOURS/WK LAB: 3 LEC/LAB COMB: 4

I. **CATALOG DESCRIPTION:** Studies steel classifications, heat treatment procedures, properties of ferrous and non-ferrous metals. Discusses techniques and practices of testing welded joints and destructive/nondestructive, visual magnetic and fluorescent testing.

II. **RELATIONSHIP OF THE COURSE TO CURRICULA OBJECTIVES:**

This course teaches the students the fundamentals of blacksmithing and forging , heating and bending and the physical and mechanical properties of metal.

III. **REQUIRED BACKGROUND/PREREQUISITIES:**

WEL 120 FUNDAMENTALS

IV. **COURSE CONTENT:**

WELDING ORIENTATION (FIRST CLASS ONLY)
OXYFUEL PROCESSES
HEAT TREATING
QUENCHING METHODS
METAL STRESS
HARDENING AND TEMPERING OF STEEL
PHYSICAL AND MECHANICAL PROPERTIES OF METAL
WORKABILITY OF METAL
VISUAL INSPECTION

V. **THE FOLLOWING GENERAL EDUCATION OBJECTIVES WILL BE ADDRESSED IN THIS COURSE**

X Communication

X Information Literacy

X Critical Thinking

X Personal Development

X Cultural and Social Understanding

X Quantitative Reasoning

VI. LEARNER OUTCOMES

VII. EVALUATION

Learner outcome	Evaluation method
DEMONSTRATE SAFETY PRACTICES ASSEMBLY AND USE OF OXYFUEL EQUIPMENT HEAT TREAT METAL IDENTIFY AND USE DIFFERENT QUENCHING METHODS IDENTIFY METAL STRESS HARDEN AND TEMPER STEEL CHANGE AND SHAPE METAL/ FORGING INSPECT METAL DEFECTS INDICATE THE TEMPERATURE AND WORKABILITY OF METAL	Lab exercises Written test Hands on lab exam

