NVCC COLLEGE-WIDE COURSE CONTENT SUMMARY

WEL 145 - WELDING METALLURGY (3 CR.)

COURSE 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. Lecture 3 hours per week.

GENERAL COURSE PURPOSE

WEL 145 is designed to give a comprehensive picture of the principle arc welding processes so that selection can be made from a knowledge of the advantages and limitations of each process.

COURSE OBJECTIVES

Upon completion of the course the student will be able to:

A. explain the purpose and use of material control and fabrication control under the major codes
B. understand the weldability of specific alloys
C. examine changes in microstructure produced by the process
D. identify defects, probability, prevention, and testing

MAJOR TOPICS TO BE INCLUDED

A. Basic types of metals and respective codes governing welding
B. Elements, compounds, and mixtures of metals
C. Thermal effects upon the microstructure and physical characteristics of metals
D. Weldability and procedure for welding of quench and tempered steels
E. Heat treatment of welded metals