## 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