# Raritan Valley Community College Course Outline

# WTTC-108 - Basic Welding

#### I. Basic Course Information

A. Course Number and Title: WTTC-108 Basic Welding

B. New or Modified Course: Modified

C. Date of Proposal: Fall 2010

D. Sponsoring Departments: Business and Public Service Department

E. Semester Credit Hours: 3

F. Weekly Contact Hours: 5 Lecture: 2

Laboratory: 3

G. Prerequisite: None

H. Laboratory Fees: Yes

I. Name and Telephone Number or Email Address of Department Chair: Ellen J. Lindemann, (908) 526-1200 x8878

### **II. Catalog Description**

This course is designed to combine classroom theory and hands on shop experience. Students will practice oxyacetylene cutting, brazing, electric arc, MIG, and TIG welding techniques which are used in industrial, automotive, truck and construction settings. Selections of electrodes, safety procedures, welding terms, and American Welding Society (AWS) welding symbols will be covered. Students will be required to purchase safety equipment.

### **III. Statement of Course Need**

Automotive technicians are vital to our mobile and transport-dependent community. Basic welding and cutting knowledge and skills are integral elements for the education of well-trained technicians.

### IV. Place of Course in College Curriculum

A. Free elective

- B. This course meets a program requirement for A.A.S. Automotive Technology,
- C. Course transferability; for New Jersey schools go to the NJ Transfer website, <a href="https://www.njtransfer.org">www.njtransfer.org</a>. For all other colleges and universities go to their individual sites.

#### V. Outline of Course Content

- A. Safety Rules
- B. Safety Procedures
- C. Protective Equipment
- D. Oxygen-Acetylene Welding
- E. Shielded Metal Arc Welding
- F. Gas Metal Arc Welding (GMAW MIG)
- G. Gas Tungsten Arc Welding (GTAW<TIG)
- H. Plasma Cutting
- I. Welding Terminology

## VI. Educational Goals and Learning Outcomes

### A. Educational Goals

Students will:

- 1. identify appropriate welding techniques to solve welding problems (G.E.- RVCC 1; NJ 3)
- 2. apply quantitative reasoning to welding issues (G.E. RVCC 7; NJ 2)
- 3. discuss with others issues involving welding (G.E.- RVCC 2; NJ 1)

#### **B.** Learning Outcomes

Students will be able to:

- 1. write safety rules and procedures
- 2. explain the use of electric panel controls, fire extinguishers and fire blanket.
- 3. explain how to safely handle and store gas cylinders.
- 4. select appropriate welding equipment.
- 5. explain the use of welding equipment.
- 6. produce welds in flat, horizontal and vertical positions.
- 7. produce a proper weld on steel, copper and cast iron.
- 8. apply safety precautions during vehicle repair.

## VII. Modes of Teaching and Learning

- A. lectures
- B. demonstrations
- C. laboratory work
- D. instructional videos/DVDs

## VIII. Papers, Examinations, and other Assessment Instruments

- A. laboratory performance
- B. examinations

## **IX. Grade Determinants**

- A. lab performance
- B. examinations
- C. class participation

#### X. Text and Materials

Suggested Text: Welding: Principles and Applications, latest edition, Larry F. Jeffus, Thomson Publishers.

Please note: The course outline is intended only as a guide to course content and resources. Do not purchase textbooks based on this outline. The RVCC Bookstore is the sole resource for the most up-to-date information about textbooks.

#### XI. Resources

- A. reference books
- B. welding stations
- C. safety equipment
- D. welding, brazing and cutting equipment
- E. instructional videos/DVDs
- F. welding shop facility in Bridgewater