Raritan Valley Community College
Course Outline

WTTC-109 - Advanced Welding

I. Basic Course Information

A. Course Number and Title: WTTC-109 Advanced 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: WTTC-108 Basic Welding

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

Prerequisite: WTTC-108 Basic Welding The student will learn the following through hands-on experience and classroom theory: SMAWF1,2,3,4 and G1,2,3,4,5,6 setup and welding procedures on aluminum and stainless steel; how to select gasses for welding ferrous and nonferrous metals, welding dissimilar metals, welding hard surfacing, cast iron, cast steel and copper/copper alloys.

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. Advanced welding skills may be desired by those seeking to specialize in welding for the automotive, diesel, engineering or construction fields.

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, www.njtransfer.org. For all other colleges and universities go to their individual sites.

V. Outline of Course Content

A. Safety Rules and Procedures
B. Weld Joint Geometry and Welding Symbols
C. Welding Carbon and Low Alloy Steels
D. Procedures for Code Quality and Commercial Quality
E. Welding Stainless Steel
F. Welding Aluminum
G. Welding Copper and Alloys
H. Hard Surfacing
I. Welding Cast Iron and Cast Steel
J. Preheating and Post-heating
K. Air Arc Gouging

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 4)
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. apply appropriate safety procedures.
2. select the proper equipment for the materials being welded.
3. select the appropriate rod materials and sizes.
4. analyze polarity and amperage for air arc gouging.
5. analyze air and gas pressures.
6. produce cuts and welds meeting industry standards.

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. written examinations.

IX. Grade Determinants

A. lab performance
B. examinations
C. class participation

X. Text and Materials

Suggested Text: 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