

**STATE UNIVERSITY OF NEW YORK
COLLEGE OF TECHNOLOGY
CANTON, NEW YORK**



MASTER SYLLABUS

AUTO104 – BASIC WELDING

Created by: Dennis Tuper

**Canino School of Engineering Technology
Automotive Technology
Fall/2018**

- A. **TITLE:** BASIC WELDING
- B. **COURSE NUMBER:** AUTO104
- C. **CREDIT HOURS:** (Hours of Lecture, Laboratory, Recitation, Tutorial, Activity)

Credit Hours: 2
 # Lecture Hours: 1 per week
 # Lab Hours: 2 per week
 Other: per week

Course Length: 15 Weeks

D. **WRITING INTENSIVE COURSE:** NO

E. **GER CATEGORY:** NONE

F. **SEMESTER(S) OFFERED:** SPRING and FALL

G. **COURSE DESCRIPTION:**

This course includes all basic processes and procedures in joining and cutting ferrous and non-ferrous metals found in automotive/industrial applications using the latest tools and equipment. Focus will include safety, proper techniques, and quality control. Students receive equal number of lecture and lab sessions.

H. **PRE-REQUISITES/CO-REQUISITES:**

- a. Pre-requisite(s): NONE
- b. Co-requisite(s): NONE

I. **STUDENT LEARNING OUTCOMES:**

Course Student Learning Outcome (SLO)	Program Student Learning Outcome (PSLO)	ISLO	Subsets
Demonstrate the proper set-up and shut down procedures required for using an Oxy-fuel torch welding apparatus.	AL04	5	
Successfully weld two pieces of 14-16ga steel together in the flat position using the GMAW process.	AL04	5	
Successfully weld two pieces of 1/4" plate steel together in the flat position using the SMAW process.	AL04	5	

Successfully cut 3/16" - 3/8" plate steel using an Oxy-fuel torch cutting apparatus.	AL04	5	
Safely cut 14-16ga steel using a plasma cutter.	AL04	5	

KEY	Institutional Student Learning Outcomes (ISLO1-5)	Automotive Learning Outcomes (ALO1-4)
ISLO #	ISLO & Subsets	
1	Communication Skills Oral [O], Written [W]	Diagnose and repair all automotive systems
2	Critical Thinking Critical Analysis [CA], inquiry & Analysis [IA], Problem Solving [PS]	Demonstrate the ability to find all related system diagnostic/repair information within auto service publications.
3	Foundational Skills Information Management [IM], Quantitative Lit/Reasoning [QTR]	Utilize the 8 point service procedures to diagnose and solve problems.
4	Social Responsibility Ethical Reasoning [ER], Global Learning [GL], Intercultural Knowledge [IK], Teamwork [T]	Demonstrate safety procedures while conducting automotive service activities.
5	Industry, Professional, Discipline Specific Knowledge and Skills.	

J. % APPLIED LEARNING COMPONENT: YES

- 1] CLASSROOM/LAB
- 2] SERVICE LEARNING

K. % TEXTS:

WELDING FUNDAMENTALS !
BOWDITCH, BOWDITCH, BOWDITCH !
4th EDITION ISBN# 978-1605252568 !
GOODHEART-WILCOX APRIL, 2010

L. % REFERENCES:

M. % EQUIPMENT:

- 1] HEAVY LEATHER WELDING GLOVES !
- 2] LEATHER FOOTWEAR !
- 3] LONG PANTS (NO EXPOSED SKIN) !
- 4] SAFETY GLASSES !
- 5] FACILITY WELDING LAB AS EQUIPED !

N. % GRADING METHOD: A-F

O. % SUGGESTED MEASUREMENT CRITERIA/METHODS:

- 1] Homework Assignments and Quizzes !
- 2] End of Topic (OXY-FUEL, SMAW, GMAW) Exams !
- 3] Final Exam !
- 4] Participation !

P. DETAILED COURSE OUTLINE:

- 1] Syllabus, general discussion regarding expectations
- 2] Discuss Oxy-fuel safety and set-up procedures and American Welding Society
- 3] Discuss homework, hand out set-up and shut-down procedures and discuss
- 4] Discuss homework, discuss broken bolt and pipe plug removal procedures using torches
- 5] Oxy-fuel Hourly Exam
- 6] Discuss homework and hourly exam, start SMAW procedures
- 7] Discuss travel/work angles, 5 essentials of a good bead, DCRP vs DCSP vs A/C current
- 8] Discuss homework, major weld bead components, and electrode classification
- 9] SMAW Hourly Exam
- 10] Discuss homework and hourly exam, start GMAW procedures
- 11] Discuss homework, cover highlighted areas in text.
- 12] Discuss FCAW vs GMAW and related procedures
- 13] GMAW Hourly Exam
- 14] Discuss last hourly exam and review for final exam
- 15] Final Exam

Q. LABORATORY OUTLINE: YES

- Wk. 1-5]** Oxy-Fuel Systems and Procedures
- Wk. 6-9]** SMAW Systems and Procedures
- Wk. 10-14]** GMAW Systems and Procedures