Minnesota State College Southeast

BIKE 1050: AL-FE-SS-TI Welding for Bikes

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 2

Lab Hours/Week: 1

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

The primary focus is on joining advanced bicycle materials utilizing the Gas Tungsten Arc Welding (GTAW) process including materials like CrMo steels, high strength aluminum alloys, stainless steel and titanium. The course will enhance your knowledge of current thinking in arc welding safety, processes, instruction, concepts, equipment & consumables, and improve your welding skills as they pertain to bicycle fabrication.)Prerequisite: BIKE1010) (3 credits: 2 lecture/1 lab)

B. COURSE EFFECTIVE DATES: 02/27/2018 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. GTAW Steel
2. GTAW Aluminum
3. GTAW Stainless Steel
4. GTAW Titanium
5. Fixturing for Weldments

D. LEARNING OUTCOMES (General)

1. Follow shop safety practices
2. Maintain a clean and safe work area
3. Inspect GTAW welding equipment
4. Preparing base welding materials
5. Proper weldment fixturing
6. Identification of filler rod and diameter
7. Select proper current, polarity, and amperage
8. Perform weld beads in the flat, horizontal, and vertical positions on carbon steel
9. Perform welds on tee, lap, corner, butt, and structural joints in the flat, horizontal, and vertical positions on carbon steel
10. Perform weld beads in the flat, horizontal, and vertical positions on stainless steel
11. Perform welds on tee, lap, butt, corner, and structural joints in the flat, horizontal, and vertical positions on stainless steel
12. Perform weld beads in the flat, horizontal, and vertical positions on aluminum
13. Perform welds on tee, lap, butt, corner, and structural joints in the flat, horizontal, and vertical positions on aluminum
14. Become familiar with glovebox welding, and material preparation for titanium weldments
15. Identify weld discontinuities and suggest corrective measures
16. Interpret weld symbols
17. Complete and understand assigned course book work

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted