M-SAMC PROJECT BASED LEARNING: WELDING

CIMWD-102: Weld Joint Design and Preparation – *Material Cutting, Grinding, Fabrication*

CIMWD-102
Weld Joint Design and Preparation
(Material Cutting/Grinding/Fabrication)

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Textbook: Welding: Principles and Applications 7th Edition

Description: Explores the set-up and use of the Oxy/Fuel cutting torch, the Oxy/Fuel line cutter, Plasma Arc cutting, safety protocols, and proper use of power tools in the welding lab. Also explores how to assemble various weld joints. Laboratory activities.

Course Topics:

1. Manuel oxy/fuel cutting.
2. Plasma arc cutting.
3. Power tool safety and use.
4. Fabrication.
5. Oxy/fuel line cutter.

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Course Objectives:

1. Demonstrate proper set-up and use of an Oxy/Fuel cutting outfit.
2. Demonstrate proper set-up and use of an Oxy/Fuel line cutter.
3. Demonstrate proper set-up and use of a Plasma Arc Cutter.
4. Demonstrate proper safety and use of power tools.
5. *Demonstrate fillet and groove joint assembly.

The Welding Program here at Henry Ford College uses a system of learning called Competency-Based Education (CBE).
This competency-based welding program is centered on teaching specific job skills required in industry and mastery of these skills.

CBE is a very personalized teaching system that has the following characteristics:

- Ongoing Program
- Open entry- flexible schedule
- Credit granted for work completed
- Evaluation (grades) based on performance
- Fixed content in each course
- Variety of student levels served in each class
- Work at your own pace
- Live or taped lectures and demonstrations
- This competency-based program has several very important benefits for you:
- You will be given a list of the skills and knowledge needed to complete the program successfully.
- Your performance will not be compared to that of other students, but to a fixed standard, which has been set for the program.
- If you have already acquired certain skills required for this program, you may simply demonstrate them and focus your attention on new skills.
- You will be able to review learning materials several times in order to attain the skill or knowledge.

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- If you attain the skills easily, you may progress through the program faster. If you progress faster you can graduate in a shorter time frame.

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What's Required of You:

For this system to work, you will be expected to:

1. Assume the responsibility for your own learning. Your instructor will give you assistance, but the actual responsibility for learning rests with you, the student.
2. Utilize the materials provided for you. The program's resources have been carefully chosen and developed to help you learn.
3. Devote your energy to attaining the skills and knowledge required for your program.

The Instructor's Role:

The instructors in HFC's Welding Program work with students individually and guide them through the learning process with the help of many different learning resources. In CBE, instructors are often referred to as learning managers because they manage the activities in the program and facilitate the learning process. If you are having difficulty, you should go to your instructor with your problem. The instructor's goal is to find the most effective way to help you learn the tasks in the program.

How your grade is computed in this program:

If your class is a designated lecture module, your grade will be based off of an exit quiz. When a passing grade is complete, you will be able to move on to the next module.

If this class is a designated lab module, your grade will be based off of a grading matrix. You will evaluate your competencies along with the instructor.

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Criteria	Points	Information	Grade
Follow Safety Rules for Project	10		
Welding Machine was Set Correctly	10		
Followed Instructions Given	10		
Correct Assembly and Fit-up	10		
Visual Inspection of Weld	10		

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Grading Scale:
A+= 100-98
A = 97-93
A-= 92-90
B+= 89-87
B = 86-83
B-= 82-80
C+= 79-77
C = 76-73
C-= 72-70
D+= 69-67
D = 66-63
D-= 62-60
E = 59-below

Lectures and Demonstrations:

1. Oxy/Fuel Safety and Set-up
2. Plasma Cutting
3. Oxy/Fuel Line Burner
4. Grinders (bench and Hand)
5. Saw
6. Ironworker
7. Tacking

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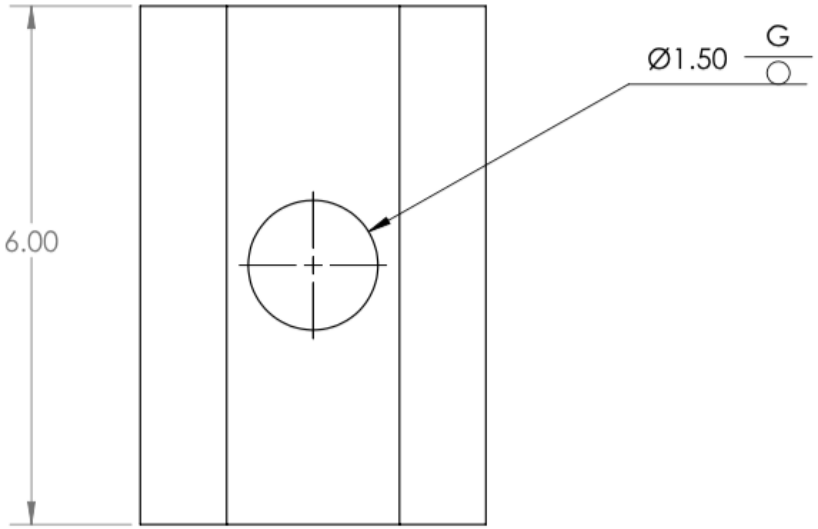
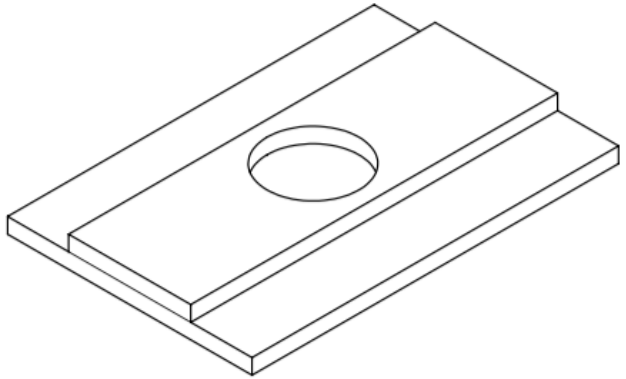
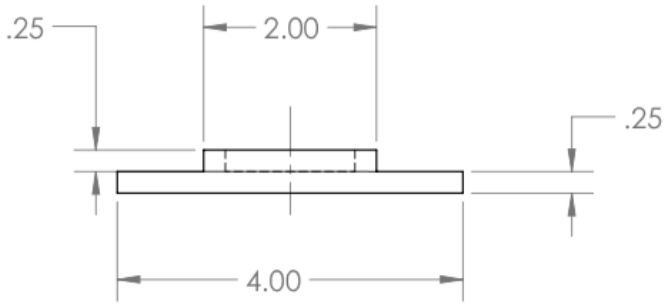
Projects:

1. Plug Weld Project
2. Beveled Edge Joint
3. X Block Project
4. V Groove Project
5. Inside Corner with Gusset
6. 1/8” Lap
7. 1/8” Tee
8. 1/4” Lap
9. 1/4” Tee







NOTE: (OFC) PROCESS
TACK WITH GMAW
PLUG WELD SHAW 7018 3/32
CUT IN HALF WITH H. BANDSAW

UNLESS OTHERWISE SPECIFIED:			NAME	DATE	
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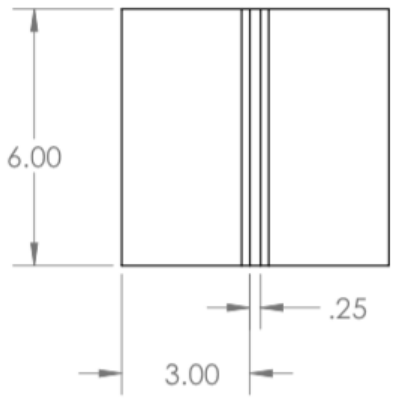

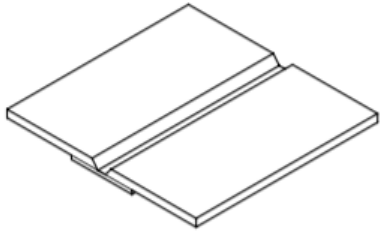

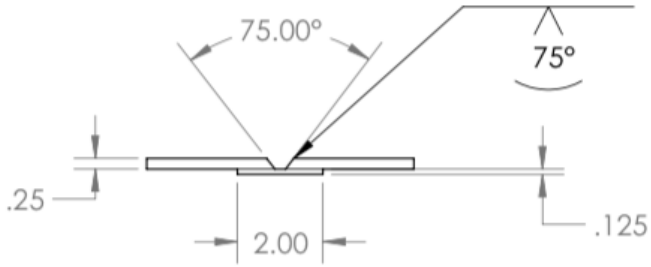

NOTE: OFC LINE BURNER
37 1/2° BEVEL CUT
1/8 BACKER WITH PAC PROCESS
TACK WITH GMAW
GROVE WELD-7018 3/32 80A

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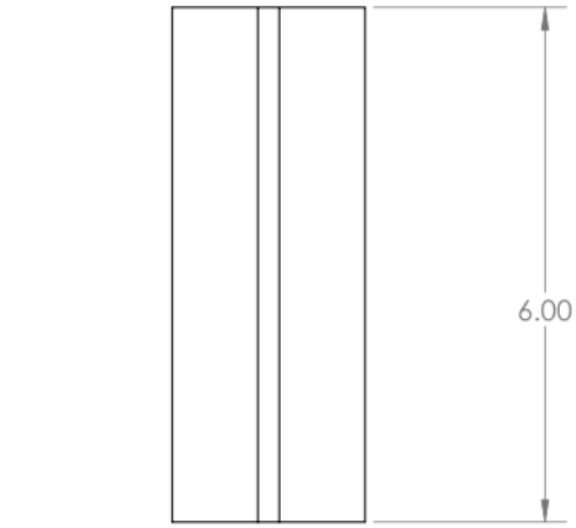

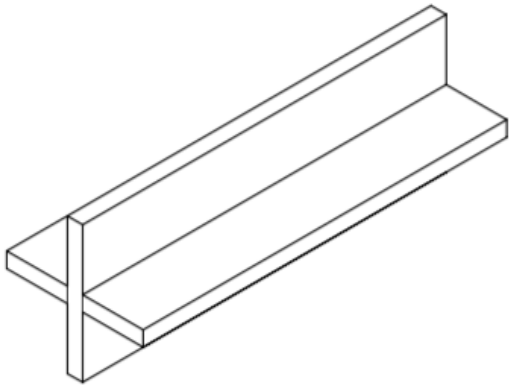

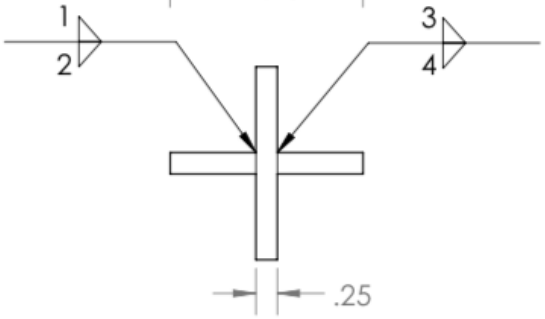

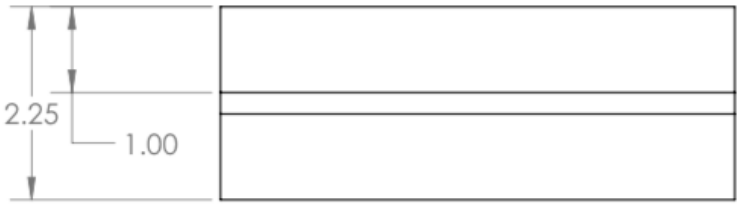

NOTE: OFC PROCESS
TACK WITH GMAW
WELD WITH SMAW
SIDE 1: 6013 1/8 9DA
SIDE 2: 7024 1/8 140A
SIDE 3: 6010 1/8 8DA
SIDE 4: 7018 1/8 120A

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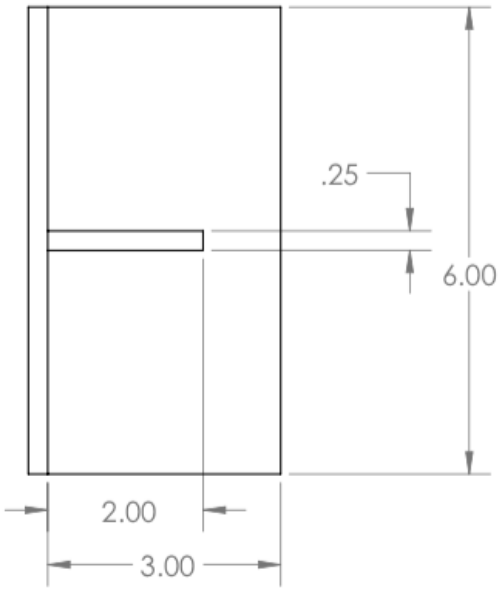

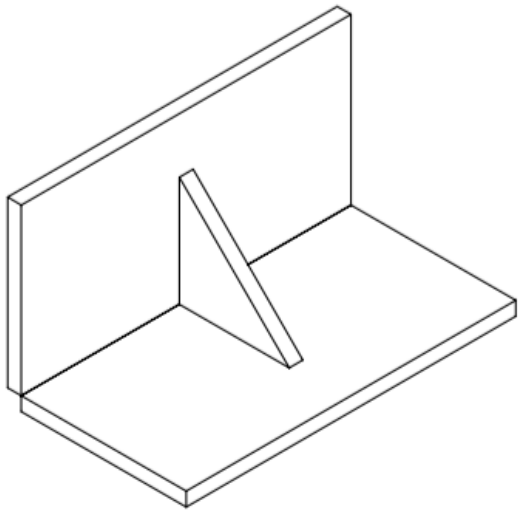

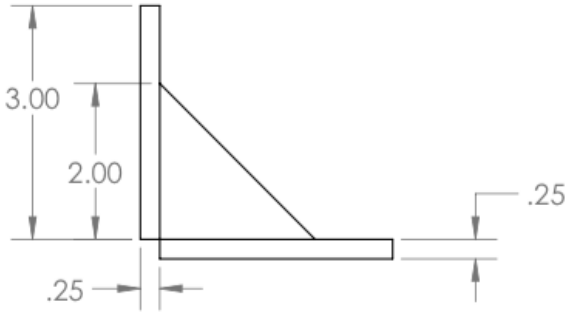

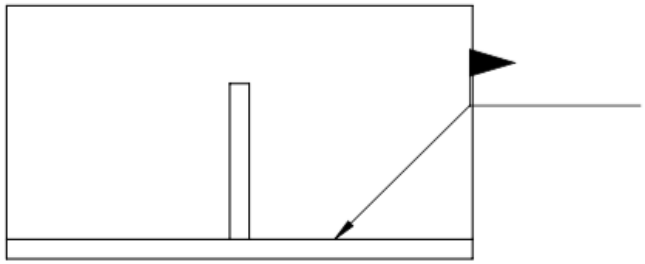

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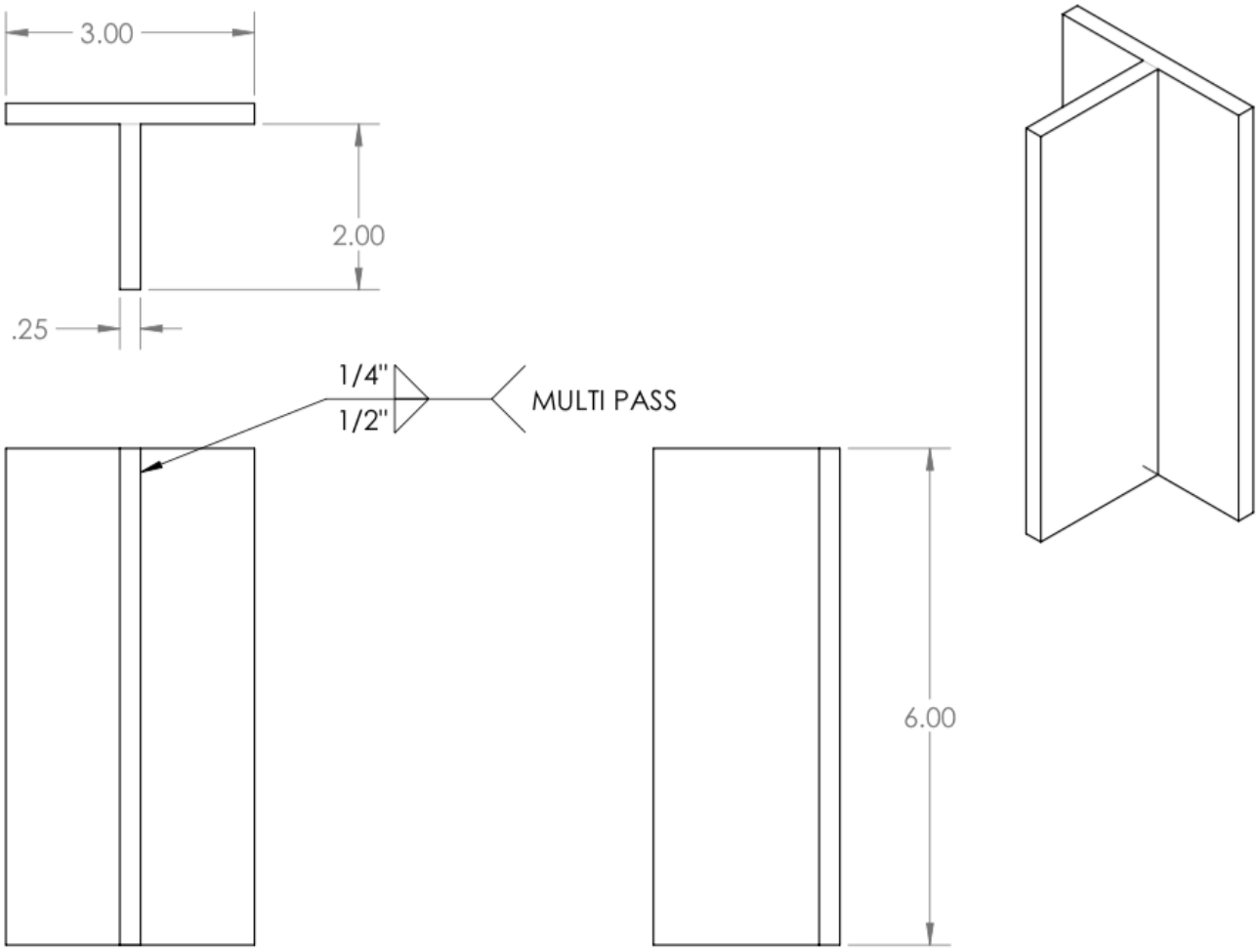

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DO NOT SCALE DRAWING					

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