

Schoolcraft College

Course Cover Sheet



M-CAM Training Area:

CNC/Machining Multi-Skilled Mechatronics Production Operation Welding/Fabrications

Program(s): Basics of Welding Fabrications and Safety for Industry

Course: CESB 6290 - Basics of Welding Fabrications and Safety for Industry

Course Description: This course is designed to enhance the technical knowledge of welding to a code using a welding procedure specification. The participants will receive instruction, extensive hands-on lab training, and industry-recognized credentials. Participants will learn how to interpret a welding procedure specification and determine if a weldment meets the acceptable criteria of the American Welding Society D1.1 code. Weldment troubleshooting, discontinuities, and weld/welding symbols will be emphasized.

Date Created: May 24, 2016

Faculty Developer(s)/Instructional Designers(s): Coley McLean, Tammy Thomson, Sandra Miller

Employer/Industry Partner: Merit Technology and E & E Manufacturing

College Contact: Tammy Thomson

Phone: 734-462-4349

Email: tthomson@schoolcraft.edu

Additional Information/Comments:

As part of our TAACCCT grant and in guidance with our employer partners, Merit Technology and E & E Manufacturing, the Welding Boot Camp course was created. The course included the American Welding Society credential along with the OSHA certification to add national credentials to the training.

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Course Proposal Form

Syllabus Prepared By:	Coley McLean
Preparation Date:	1/26/2016
Biography: <ul style="list-style-type: none"> Please provide information on your background as it relates to the course you are proposing. 	<p>Coley McLean</p> <p>Coley McLean is a Certified Welding Inspector (CWI) and Certified Welding Educator (since 2006.) She is also an OSHA authorized construction and general industry trainer, as well as an NCCER welding and core curriculum instructor.</p> <p>In addition to being a full-time faculty member at Schoolcraft College, McLean has extensive experience in the development of welding procedure specifications and procedure qualification to codes and standards.</p>
Suggested Course Title:	Basics of Welding Fabrication & Safety for Industry
Prerequisite/Required Skills:	none
Total Course Hours:	40
Maximum Enrollment:	15
Type of Supplies:	Welding jacket, Leather boots, welding gloves, safety glasses,
Supply Fee: \$	
Course Highlights: <ul style="list-style-type: none"> Please provide a course description. If there is copy that should not be changed, please indicate. 	<p>This course is designed to enhance the technical knowledge of welding to a code using a welding procedure specification. The participants will receive instruction, extensive hands-on lab training, and industry-recognized credentials.</p> <p>Participants will learn how to interpret a welding procedure specification and determine if a weldment meets the acceptable criteria of the American Welding Society D1.1 code. Weldment troubleshooting, discontinuities, and weld/welding symbols will be emphasized.</p>
Type of Classroom Layout:	Lecture, lab, and certification
Required Equipment:	SC welding lab
Textbooks:	Required: ____ Optional ____ Handout Materials_X
Book, Title, Author,	N/A

Publisher:	
Comments:	Several handouts will be used throughout the course.
Target Audience:	This course is designed for: Participants wishing to acquire basic knowledge of welding and safety in the workplace.
Marketing Suggestions: Professional associations, scientific publications, etc.	Students have the opportunity to earn an AWS D1.1 certification.
Competencies: <ul style="list-style-type: none"> • Please use numbers to list competencies and period at the end of the competencies. • Competencies must relate to the course description and outline. • Example: <ol style="list-style-type: none"> 1. Demonstrate the basic functions of a computer. 2. Identify the uses of a computer. 	After course completion, the successful participant will be able to: <ol style="list-style-type: none"> 1. Recognize safety and hazards within the workplace and welding equipment. 2. Understand and interpret a welding procedure specification. 3. Perform arc welds in and out of positions following a welding procedure specification. 4. Recognize weld discontinuities and interpretation to a code. 5. Understand weld and welding symbols on a print. 6. Perform a weld certification performance test.
Learning Activities: <ul style="list-style-type: none"> • Please use numbers to list activities with a period at the end. • Activities must complement the course. • Example: <ol style="list-style-type: none"> 1. Lecture. 2. Hands-on application. 	The course will have the following distinct activities: <ol style="list-style-type: none"> 1. Lecture. <ol style="list-style-type: none"> a. Welding safety and setup b. welding symbols, discontinuities, and welding procedures. 2. Application. <ol style="list-style-type: none"> a. Welding performance. b. Power Industrial vehicle performance objective. 3. Question and answer. <ol style="list-style-type: none"> a. Welding symbol test
Method of Evaluation: <ul style="list-style-type: none"> • Please use numbers to list methods with a period at the end. • Example: <ol style="list-style-type: none"> 1. Pre/post tests. 2. Learning assessment. 	In addition to attendance and participation, the following criteria may be used: Participants must pass visual and destructive testing in order to pass AWS D1.1 certification test.

	Content	Time (in hours)
<p>Course Outline:</p> <ul style="list-style-type: none"> • Please capitalize the first word of each division. • Use Roman numerals with periods; then capital letters with periods; then numbers with periods; and finally, lowercase letters with periods (if necessary.) • Use lowercase hour abbreviation and decimal time notation. • Example: <ul style="list-style-type: none"> I. Introduction. <ul style="list-style-type: none"> A. Self. B. Participants. 	<p>Course Outline:</p> <ul style="list-style-type: none"> • Introduction to the AWS D1.1 code acceptance criteria and discontinuities • Introduction to a welding procedure specification • Introduction to weld and welding symbols • Introduction to safety and health of welding • GMAW/FCAW equipment maintenance/troubleshooting • GMAW/FCAW manual welding • Qualification test set-up • Qualification test inspection and testing 	<p>2 hour</p> <p>1 hour</p> <p>4 hours</p> <p>1 hour</p> <p>2 hour</p> <p>25 hours</p> <p>5 hours</p>
<p>Total Must Match Course Hours Proposed.</p>	<p>Total # of Hours:</p>	<p>40</p>

DO YOU WANT TO HEAT UP YOUR CAREER PROSPECTS?



BASICS OF WELDING FABRICATION & SAFETY FOR INDUSTRY

- Company-Driven Training Program
- Nationally Recognized Certifications
- Personalized Career Preparation including mock interviews, resume writing, and job skill development

May 24 - June 24, 2016

Tuesday, Wednesday, Thursday 8 am - 12 pm
Friday 8 am - 5 pm

Successful completers will receive:

- 86 hours of industry-led training
- OSHA 30 credential
- Career Readiness Training
- Certificate of Completion from Schoolcraft College
- Tours of potential employer facilities
- Guaranteed interviews upon completion of the course
- American Welding Society (AWS) D1.1 credential

COST: \$1,445

Includes equipment (gloves, helmet, coat, safety glasses, tool bag, safety boots)

Job Opportunities in Metro Detroit:

- Full time positions available
- Starting pay \$10-15/hour
- Competitive Benefits Package: Medical, Dental, Life, Disability, 401(k)
- Bonus Incentives
- Potential for advancement and further education
- Consistent Scheduling
- Two Shifts
- Veteran friendly

FOR MORE INFORMATION, PLEASE CONTACT:

Sandy Miller | smiller@schoolcraft.edu | 734-462-4680 OR
Karen Maxton | kmaxton@schoolcraft.edu | 734-462-4787



BASICS OF WELDING FABRICATION & SAFETY FOR INDUSTRY CURRICULUM

WELDING

Introduction

AWS D1.1 code acceptance criteria and discontinuities
Welding procedure specification
Weld and welding symbols
Safety and health of welding

Gas Metal Arc Welding (GMAW)/ Flux Cord Arc Welding (FCAW)

Equipment maintenance/
troubleshooting
Manual welding

Qualification

Test set-up
Test inspection and testing

INDUSTRIAL SAFETY TRAINING-OSHA 30 CONSTRUCTION

Introduction to OSHA

Managing Safety and Health
OSHA Focus Four Hazards
Personal Protective and
Lifesaving Equipment
Health Hazards in Construction
Stairways and Ladders
Fire Protection and Prevention

Materials Handling, Storage, Use and Disposal

Tools- Hand and Power
Welding and Cutting
Scaffolds
Cranes, Derricks, Hoists
Elevators and Conveyors
Excavations

Concrete and Masonry Construction

Steel Erection
Safety and Health Program
Powered Industrial Vehicles
Ergonomics

CAREER READINESS

Campus Resources

Networking to Gain Employment

Financial Literacy

Resume Workshop

Interview Preparation

Workplace Habits for Success



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Subject Matter Expert (SME) Course Review Summary

College: Schoolcraft College

M-CAM Training Area: CNC/Machining Multi-Skilled/Mechatronics Production Operation Welding/Fabrication

Degree Program Name: Basics of Welding Fabrications and Safety for Industry

Title of Course: CESB 6290 Basics of Welding Fabrication & Safety for Industry

Subject Matter Expert (SME) Reviewer Information

Name: Christopher J. Olson

Title: Certified Welder/Owner

Phone: 248-240-4506

Email: 8530sgt@gmail.com

Organization/Affiliation: Exact Fabrication, LLC

Attach Resume or provide credentials (showing years of experience and work experience that is relevant to course content):

<http://www.exactfabrication.com/>

Synopsis of Findings: *MINOR QUESTIONS
LOOKS GOOD*

Reviewers Signature _____

Date: _____

2/1/17

**Michigan Coalition for Advanced Manufacturing
Subject Matter Expert Course Review**

1. Course Overview and Objectives	Exceptional	Satisfactory	Ineffective
The goals and purpose of the course is clearly stated.	X		
Prerequisites and/or any required competencies are clearly stated.	X		
Learning objectives are specific and well-defined.	X		
Learning objectives describe outcomes that are measurable.	X		
Outcomes align to occupational focus (industry skills and standards).	X		
Comments or recommendations: <i>TITLE STATES FABRICATION, ANY FAB TOOLS COVERED?</i>			
2. Material and Resources	Exceptional	Satisfactory	Ineffective
The instructional materials contribute to the achievement of the course learning objectives.	X		
The materials and resources meet/reflect current industry practices and standards.	X		
The instructional materials provide options for a variety of learning styles.		X	
Resources and materials are cited appropriately. If applicable, license information is provided.	X		
Comments or recommendations: <i>OPTIONS FOR LEARNING STYLES?</i>			
3. Learning Activities	Exceptional	Satisfactory	Ineffective
Provide opportunities for interaction and active learning.	X		
Help understand fundamental concepts, and build skills useful outside of the learning object.		X	
Activities are linked to current industry practices and standards.	X		
Comments or recommendations: <i>WHICH SKILLS OUTSIDE LEARNING OBJECT?</i>			

**Michigan Coalition for Advanced Manufacturing
Subject Matter Expert Course Review**

4. Assessment Tools/Criteria for Evaluation	Exceptional	Satisfactory	Ineffective
The course evaluation criteria/course grading policy is stated clearly on syllabus.		X	
Measure stated learning objectives and link to industry standards.	X		
Align with course activities and resources.	X		
Include specific criteria for evaluation of student work and participation.	X		
Comments and recommendations: <i>DID NOT SEE GRADING RUBRIC</i>			
5. Equipment/Technology	Exceptional	Satisfactory	Ineffective
Meets industry standards and needs.	X		
Supports the course learning objectives.	X		
Provides students with easy access to the technologies required in the course/module.	X		
Comments and recommendations:			

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SUMMARY

LOOKING TO FURTHER ADVANCE MY TEACHING CAREER WITHIN THE WELDING/MANUFACTURING INDUSTRY. I OFFER ENTHUSIASM, INDUSTRY EXPERIENCE, GOOD COMMUNICATION SKILLS AND DETERMINATION. I WOULD LIKE TO FIND A TEAM-ORIENTED SCHOOL THAT IS EAGER TO WORK TOGETHER, POSITIVELY, TOWARD THE FUTURE.

EDUCATION AND TRAINING

5/2010 – Lincoln Electric School of Welding

- Certificate of Advanced Sub-Arc Welding

5/2008 – Washtenaw Community College

- Associate Degree in Applied Science: Welding and Fabrication Technology
- Certificate of Welding Technology
- Advanced Certificate of Welding Technology

4/2005 – United States Marine Corp – Sergeant

- Certificates earned in the following fields:
 - Weapons Handling Instructor
 - Nuclear Biological Chemical Warfare Supervisor
 - Diesel Mechanics/Engine troubleshooting

9/1997 – Oakland Technical Center

- 1 year welding experience/education

WORK EXPERIENCE

6/2014 – Present

UBE Machinery Inc. – Machine Builder

- Manufacture Injection Molding Presses and Die Cast Extrusion Machines
- Responsible for 6G pipe welding for hydraulic pressures exceeding 2800 p.s.i.
- Proficient with hydraulic and machine operations
- Daily interpretation of welding, hydraulic, and layout blueprints

7/2013 – 6/2014

Filter Technology LLC – Shop Foreman

- Supervise daily operations of shop floor
- Perform all technical welding of pipe and structural designs
- Experience with pneumatic tubing, filtration system designs, plumbing and mechanical operations

2/2011 – 12/2014

Washtenaw Community College – Part Time Instructor - Welding and Fabrication

- Instruct Blueprint Reading for Welders and Welding/Fabrication classes
- Teach students proper safety rules in accordance with college regulations
- Teach students proper welding techniques in all processes offered
- Assess students learning by verbal questions and visual exam of welds and blueprints

7/2007 – 7/2013

Rosedale Products Inc. - Certified Welding/Technician

- Responsible for ASME code fabrication of high pressure/low pressure filtration
- Ability to interpret/execute fabrication blueprints in accordance to ASME section VIII and IX and AWS standards/specifications
- Regularly proficient in F.C.A.W. / G.T.A.W. / O.A.W. / O.F.C / S.M.A.W. / S.A.W.

8/2009 – PRESENT

Fabrication Services – Owner/Operator

- Responsible for conducting successful marketing strategies for product sales
- Manufacturer of steel/aluminum products
- Blueprint/layout development and analysis performed
- Certified Welding services performed

4/2006 – 7/2007

Turbo Spray Midwest – Fabrication Dept.

- Fabrication of Industrial Spray Robotic Systems
- Executed technical welding/fabrication in accordance to specific blueprints
- Basic usage with AUTO CAD program

11/1998 – 4/2005

United States Marine Corp – Sergeant

- Organized and executed over 100 successful convoys in Afghanistan
- Properly instructed and trained 23 combat-ready Marines for 6 years
- Organized training schedules/curriculum for proper execution
- Performed 100% of welding modification while serving with 3rd MRB
- Supervised shop maintenance procedures for mechanical overhaul of military vehicles
- Properly instructed and trained U.S. Marines with the M16A2 service rifle and M9mm pistol.

Professional Welding Licenses

- American Welding Society** – 6G Stainless pipe / 3G Aluminum G.T.A.W.
- ASME (via Rosedale Products)** – 6G Carbon/Stainless pipe G.T.A.W.
 - 6G Carbon/Stainless pipe F.C.A.W.
 - 1G Sub-Arc Welding