

Schoolcraft College

Course Cover Sheet



M-CAM Training Area:

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

Program(s): CNC Operator Boot Camp

Course: CESB 6278 - OSHA 30 for General Industry

Course Description: The Occupational Safety and Health Administration (OSHA) Outreach Training Program for General Industry teaches general industry workers about their rights, employer responsibilities, and how to file a complaint as well as how to identify, abate, avoid and prevent job related hazards. Training emphasizes hazard identification, avoidance, control and prevention. Instructional time must be a minimum of 30 hours.

Date Created: May 4, 2015

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

Employer/Industry Partner: Loc Performance

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 industry partner, Loc Performance, the OSHA 111 for General Industry course was created. The students earn the OSHA 30 credential to assure their awareness of hazards in the workplace and know their rights to a safe work environment.

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**CONTINUING EDUCATION & PROFESSIONAL DEVELOPMENT
CLASS PROPOSAL FORM**

By submitting this completed form, you agree that in order to maintain an ethical and impartial learning environment, you will not promote any specific product, service, or source in the classroom, nor solicit contact information from the students.

Proposal Prepared By:			
Biography: Please provide information on your background as it relates to the class you are proposing. Please also provide a résumé.			
Suggested Class Title:			
Prerequisite/Skills Required:			
Total Class Hours:			
Maximum Enrollment:			
Type of Supplies:			
Supply Fee: \$			
Class Highlights (We will use this to create a class description. If there is copy that should <i>not</i> be changed, please indicate.)			
Type of Classroom & Equipment Required			
Textbook(s):	Required <input type="checkbox"/>	Optional <input type="checkbox"/>	Handout Material <input type="checkbox"/>
Book Title, Author, Publisher			
Comments:			

TARGET AUDIENCE: This class is designed for whom?

COMPETITION: Where else is this class or a similar class being offered?

MARKETING SUGGESTIONS: Professional associations, specific publications etc.

COMPETENCIES: (These competencies must be related to class outline.)

Use numbers to list objectives & periods at the end of the objectives.

Example: *1. Demonstrate the basic functions of a computer.*

A successful student should be able to do the following at the end of this class:

LEARNING ACTIVITIES:

Use numbers to list activities & periods at the end of the activities. Example: *1. Lecture.*

The class will have the following distinct activities:

METHODS OF EVALUATION:

Use numbers to list evaluation methods & periods at the end of evaluation methods.

Example: *1. Class assignments.*

In addition to attendance and participation the following criteria may be used:

continued on next page

CLASS OUTLINE (Please indicate projected time devoted to each content area.)

Capitalize the first word of each division. Use Roman numerals with periods, then capital letters with periods, numbers with periods, and finally lowercase letters with periods if necessary. Please use lowercase hour abbreviation and decimal time notation.

ARE YOU MECHANICALLY INCLINED?

ARE YOU LOOKING TO BEGIN A NEW CAREER NOW?



11 WEEK CNC OPERATOR TRAINING COURSE

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

LEVEL I COURSE: \$1,250

May 4 - May 21, 2015

Monday - Thursday 7 am - 3 pm (1/2 hr. lunch)

Successful completers of Level I will receive:

- 90 hours of industry-led training
- Certificate of Completion from Schoolcraft College
- Option to test into Level II CNC Operator
- Tour and "meet-n-greet" with Loc Performance

OSHA 30: \$450

May 8 - June 12, 2015

Fridays 1 pm - 6 pm

Successful completers of OSHA 30 will receive:

- OSHA 30 credential

LEVEL II COURSE: \$1,800

May 27 - June 30, 2015

Monday - Thursday 7 am - 3 pm (1/2 hr. lunch)

Friday, June 26, 2015 7 am - 3 pm

Successful completers of Level II will receive:

- 130 additional hours of industry-led training
- Certificate of Completion from Schoolcraft College
- NIMS LEVEL 1 Certification Exams: Measurement, Materials & Safety; Job Planning, Benchwork & Layout
- Job interview with Loc Performance

WHAT IS A CNC OPERATOR?

The CNC Operator operates computer numerical control (CNC) machines to perform machine functions such as boring, turning, facing, and threading parts of metallic work pieces such as castings, forgings and bar stock.

LOC PERFORMANCE CNC OPERATORS:

- Full Time Positions Available
- Starting Pay \$10-12/hour
- Competitive Benefits Package: Medical, Dental, Life, Disability, 401(k)
- Bonus Incentives
- Potential for Advancement and Further Education
- Consistent Scheduling
- Two Shifts: Monday—Friday: 6 am-6 pm or 6 pm-6 am (additional flexibility may be available); voluntary weekends
- Veteran Friendly



CNC OPERATOR COURSE CURRICULUM

OSHA 30 begins in Level I, but ends in Level II

Blueprint Reading, GD&T

Shop Math

Fractions to decimal conversion
Metric to English conversion
Feed and speed formulae, Depth of cut, Drill point calculations
Threading, Tap drill size using formula

Perform basic machine tool operations

Power up, upload G&M code programs
Set and load tools into magazine
Simulate programs, first piece run and inspection

Identify CNC Mill Tools used for CNC machining

Helix, Number of flutes
Solid Carbide and Indexable inserts
High Speed Tools
TiC, TiN, and Al₂O₃ coatings and the effect on CNC machining
Coolants and use of the refractometer

Identify CNC Lathe Tools used for CNC machining

ANSI & ISO tool holders and inserts
Setting Lathe tooling offsets
Setting Home position
Soft Skills training

Inspect basic components

Use inspection tools such as micrometers, dial calipers, gage blocks and gage pins
Bore gages and inside micrometers

Develop CNC 2 and 3 axis Mill G&M code programs

Face, profile, chamfer, engrave, drill and tap
Employ Cutter Diameter Compensation
Employ peck drilling

Develop CNC 2-axis Lathe G&M code programs

OD tuning and facing and the use of parting tools

Setup and define work offsets and tool length offsets

Debug and edit G&M code programs on the shop floor

XYZ adjustments as necessary
Feed and speed adjustments as necessary
Inspect and replace tooling as required

Setup machines for production runs

Load work holding vices
Indicate vices and straight edges square
Pick up dowel pins and round parts using an indicator

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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: CNC Operator Boot Camp

Title of Course: CESB 6278 OSHA 30 General Industry

Subject Matter Expert (SME) Reviewer Information

Name: William Andrew McGibbon

Title: Journeyman Pipefitter

Phone: 734-368-6315

Email: pipefittinpro@yahoo.com

Organization/Affiliation:

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

See ATTACHED RESUME

Requirements of A JOURNEYMAN Pipe fitter: Follow OSHA STANDARDS / Regulations
Participation in OSHA inspections

Synopsis of Findings:

10 hour CHOSEN Elective topics WERE IDEAL FOR the student population.
Electives included Lockout/Tag out, Machine Guarding, Welding, Ergonomics, Fall Protection & Power Industrial will provide students with knowledge of workspace Hazards and how to prevent possible injury or harm and/or property damage in their future careers.

Reviewers Signature

William McGibbon

Date:

1-31-17

**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.	✓		
Prerequisites and/or any required competencies are clearly stated.	✓		
Learning objectives are specific and well-defined.	✓		
Learning objectives describe outcomes that are measurable.	✓		
Outcomes align to occupational focus (industry skills and standards).	✓		
Comments or recommendations: <i>Assessments included Credentials</i>			
2. Material and Resources	Exceptional	Satisfactory	Ineffective
The instructional materials contribute to the achievement of the course learning objectives.	✓		
The materials and resources meet/reflect current industry practices and standards.	✓		
The instructional materials provide options for a variety of learning styles.	✓		
Resources and materials are cited appropriately. If applicable, license information is provided.	✓		
Comments or recommendations: <i>OSHA SLIDES UPDATED TO REFLECT CURRENT TIME</i>			
3. Learning Activities	Exceptional	Satisfactory	Ineffective
Provide opportunities for interaction and active learning.	✓		
Help understand fundamental concepts, and build skills useful outside of the learning object.	✓		
Activities are linked to current industry practices and standards.	✓		
Comments or recommendations: <i>INCLUDED OSHA group Activities AND ASSESSMENTS</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.	✓		
Measure stated learning objectives and link to industry standards.	✓		
Align with course activities and resources.	✓		
Include specific criteria for evaluation of student work and participation.	✓		
Comments and recommendations: <i>EXAMS / ASSESSMENTS USED</i>			
5. Equipment/Technology	Exceptional	Satisfactory	Ineffective
Meets industry standards and needs.	✓		
Supports the course learning objectives.	✓		
Provides students with easy access to the technologies required in the course/module.	✓		
Comments and recommendations: <i>USE OF ONLINE RESOURCES AND E LEARNING WERE USED</i>			

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William Andrew McGibbon (Andy)

11312 Shadow Woods Lane Whitmore Lake, MI 48189

734-368-6315

pipefittinpro@yahoo.com

SUMMARY OF QUALIFICATIONS

- AWS QC 1 for 15 years
- UA Certified welder for 15 years
- State of Michigan Journeyman licensed plumber for 9 years

PROFESSIONAL EXPERIENCE

Ua Local 190

Journeyman Pipefitter

Responsible for assembling and installing pipe systems, pipe supports, and hydraulic and pneumatic equipment. Installs pipe for steam, hot water, heating, cooling, lubricating, and industrial production and processing systems.

John E. Green

Welding Inspector QA/QC

Verified weld mapping and tracking, coordinated NDE inspections, Performed weld inspections, field verified construction packages, witnessed hydro testing, performed and coordinated reinstatement inspection walk downs with third party QA and Marathon Operations personnel for the 2012 West plant turnaround.

W.J. O'Neil

Welding inspector QA/QC

Verified weld mapping and tracking, verified NDE requirements were completed, completed QVD's for grouting, rotating and static equipment, witnessed hydro tests, walked over 1,000 re-instatement packages and performed visual weld inspections for the new 2 drum coker at the Marathon Greenfield K141 site.

Washtenaw Community College

Instructor

Part time welding and fabrication instructor, lead students in many different classes in all aspects of the welding field, developed course curriculum for plasma shape cutting class, taught all welding classes GMAW, GTAW, SMAW, and fabrication classes. Instruct students in operation of Shears, saws, hand tools, punches, roll formers, and benders.

Norfolk Southern Railroad

Welding Inspector Specialist QC

Maintained welding records and certifications for 20 freight car repairmen, instructed new apprentices in proper welding techniques, witnessed weld tests, performed guided bend tests for qualification. Welded and repaired rail freight cars and locomotives.

VAR Controls

Welding shop supervisor QC

Directed day to day operations of a small welding shop, designed and built jigs to increase weld production, verified quality of finished products, designed and built prototype units for specialized customers.

United States Navy

Aviation Electronics Technician

Performed trouble shooting and repair on communications, navigation, weapons, and secure datalink systems on the SH60-B platform. Westpack deployment for operations in support of the Gulf War. Command advanced in rank for outstanding performance of duties. Led the line division at HSL-37 to first ever commendation for excellence.

EDUCATION

Journeyman pipefitter – Local 190 training center Ann Arbor, MI

Welding inspector specialist – Norfolk Southern Welding School Altoona, PA

Freight car mechanic – Norfolk Southern Training Center McDonough, GA

Avionics technician – United States Navy Electronics Training Command Millington, TN

Certified welder – Washtenaw Community College Ann Arbor, MI