

Lansing Community College

Course Cover Sheet



M-CAM Training Area:

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

Program(s): GM MIG Welding with Certification

Course: GM MIG Welding with Certification

Course Description:

MIG Welding Training with Certification consists of 32 hours of MIG Welding instruction and four hours of welding certification for General Motors-LGR employees. This competency-based class provides technical understanding and application of gas metal arc welding and flux cored arc welding plus certification testing.

Delivery method is face-to-face.

Date Created: January, 2016.

Employer/Industry Partner: General Motors and various manufacturing companies in Mid-Michigan.

Faculty Developer(s)/Instructional Designers(s): Jill Doederlein/Ann Lapo

College Contact: Jill Doederlein

Phone: 517.483.9665

Email: doederj@lcc.edu

Additional Information/Comments: Developed to provide focused certification/credentials opportunities for workers in MIG welding.

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GM MIG Welding with Certification (Lansing Community College)

Program: GM MIG Welding with Certification

Syllabus

DESCRIPTION:

MIG Welding Training with Certification consists of 32 hours of MIG Welding instruction and four hours of welding certification for General Motors-LGR employees. This competency-based class provides technical understanding and application of gas metal arc welding and flux cored arc welding plus certification testing.

TOTAL TIME REQUIREMENT for the course is 36 hours.

PREREQUISITES: Reading Level 4.

OBJECTIVES:

After completing this course, the student should be able to:

- Demonstrate safety procedures used in Gas Metal Arc Welding (GMAW) and Flux Cored Arc Welding (FCAW).
- Demonstrate the proper use of different types of equipment and equipment adjustments used in GMAW, including Power Source, flow meter, MIG gun and wire feeder.
- Select and explain proper gasses used for different metals.
- Define the major metal transfers that are used: short circuit, spray, globular, and pulsed.
- Explain the consumable wire classification system for solid wire and cored wire.
- Demonstrate the proper set-up procedures for amperage, effects of voltage, gas flow, etc. for both solid and cored wire.
- Explain different weld defects and their causes associated with MIG welding.
- Interpret welds.
- Measure welds and identify expectations of code.
- Demonstrate manual skill in all positions on different thicknesses and types of metals, including mild steel, aluminum, and stainless steel.
- Pass with 80% proficiency, 15 welds of the General Motors MIG Weld Repair Test for Welding Certification. Evaluation will be based on three criteria.
 - Visual Examination of weld quality
 - Peel Test
 - Etch Test

MATERIALS:

Alro Steel:

- 2 sheets of 48"x96"x11 gauge Hot rolled mild steel
- 2 sheets of 48"x96" x 11 gauge galvanized steel
- 3 sheets of 48"x96"x16 gauge galvanized steel
- 3 sheets of 48"x96"x20 gauge galvanized steel

Air Gas:

- 3 cylinders of 75/25 Shielding Gas

Grainger

- Safety glasses

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GM MIG Welding with Certification (Lansing Community College)

Program: GM MIG Welding with Certification

Syllabus

GRADING POLICY:

- Satisfactory completion of training (at least 75%) recommended. Required competencies must be met for certification.

College Grading Standards	Percent
4.0 Excellent	91-100%
3.5	86-90%
3.0 Good	81-85%
2.5	76-80%
2.0 Satisfactory	71-75%
1.5	66-70%
1.0	60-65%
0.0	0-59%

ACCEPTABLE USE POLICY:

Computer Resources

Use of College-owned computer resources is a privilege extended by the College to students, employees, and other authorized users as a tool to promote the mission of the College. All users agree to be bound by the terms and conditions of the LCC Acceptable Use Policy at the time they complete an account application form. Copies of the LCC Acceptable Use Policy are available at the Library Circulation Desk and may also be accessed on the World Wide Web. The URL is http://www.lcc.edu/policy/policies_1.aspx#ACCEPTABLE_USE_POLICY

Transfer Potential

For transferability information, please consult the Transfer Equivalency Information located at the LCC website at <http://www.lcc.edu/transfer>. For additional transferability information, contact the LCC Academic Advising Center, (517) 483-1904.

The MACRAO Transfer Agreement simplifies the transfer of students from one Michigan institution to another. The most current MACRAO Transfer Agreement information can be found at http://www.lcc.edu/transfer/macrao_agreement.aspx.

Student Code of Conduct and General Rules and Guidelines

LCC supports a positive educational environment that will benefit student success. In order to ensure this vision, the College has established the LCC Student Code of Conduct and the Student General Rules and Guidelines to ensure the protection of student rights and the health and safety of the College community, as well as to support the efficient operation of College programs. In addition, the College has established guidelines for the redress of grievances by individuals accused in such proceedings. A copy of the most current Code can be found on the College's website at http://www.lcc.edu/catalog/policies_procedures/studentrulesguidelines.aspx#code.

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Subject Matter Expert (SME) Course Review Summary

College: Lansing Community College

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

Degree Program Name: Welding

Title of Course: MIG Welding Training with Certification

Subject Matter Expert (SME) Reviewer Information

Name: Stephen Ross

Title: GM North American Labor Relations

Phone: 517-703-6946

Email: stephen.ross@gm.com

Organization/Affiliation: Technical Training

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

Synopsis of Findings:

A nice mix of hands on activity in addition to lecture threaded throughout the course.

Certification was crucial to the success of the course and the expertise of the instructors enhanced the learning.

Reviewers Signature Stephen M. Ross

Date: 8/24/17

**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: Great work teaching the class			
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: Outstanding			
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.			
Comments or recommendations:			

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

STEPHEN M. ROSS

12116 Coolidge Road
Goodrich, Michigan 48438
810.516.2719
Stephen.ross@gm.com

CAREER SUMMARY

A veteran manufacturing leader with 22+ years of broad-based experience at two General Motors automotive manufacturing plants in Michigan. Certified as a Quality Network (QN) Representative and to the apprentice level in Global Manufacturing Systems (GMS). Proven ability to train, motivate, resolve issues and manage quality and production teams. Adapt at developing and managing training programs and budgets in excess of \$5M. Proficiency in Communications gained as communication lead at Orion Assembly Plant for 11 years and through attainment of Bachelors degree in Communications / Television Production.

MAJOR ACCOMPLISHMENTS

- Developed Small Teams concept, including parameters of Small Teams work at the GM Vehicle Manufacturing Flint Assembly plant in 2008
 - Facilitated the UAW local negotiations at GM Flint Assembly which resulted in the *Memorandum of Understanding for Small Teams* (1/08); this ground-breaking document outlined how groups of 5-6 workers would work as a team to manage quality, productivity, absenteeism, and other work group issues
 - Trained 1,500 salaried and hourly (UAW) employees on the Small Teams concept (2008); developed all training materials, including PowerPoint presentation?
- Consistently achieved quality and reliability goals based on ratings by GM dealership personnel receiving new vehicles as the Care Line / Final Line Supervisor at the GM Orion Assembly Plant
- Designed and implemented an in-house video production studio at the GM Orion Assembly Plant while working as the audio / video communications coordinator in 2000 to 2003. Budget for studio development was \$150,000.00.
- Trained 3,000 employees at GM Vehicle Manufacturing Flint Assembly on GM's Sexual / Hostile Harassment Policy
- Managed \$3M - \$5M in training funds as the Joint Training Representative at GM Orion Assembly Plant from 1998 to 2005
 - Designed training for UAW team members, including skilled trades
 - Wrote \$2M training grant which was funded by the State of Michigan in December 2003
 - Developed and implemented an internal training plan for the Pontiac GG which saved \$900,000 annually by eliminating the need for an outside training vendor
 - Managed the UAW / GM Skill Center with a budget of \$300,000+ annually; collaborated with Lake Orion Community Schools to provide education and training programs

PROFESSIONAL EXPERIENCE

General Motors Corporation

Sr. Group Leader Production 9/08 – Present
GM Vehicle Manufacturing, Flint Assembly, Flint, MI

Final 1, Final 2, Final Re-Process, Trim 1, Trim 2, Trim 3

- Monitor and ensured Quality Produced Vehicles delivered to Customers

Labor Relations Representative 2007 – 2008

GM Vehicle Manufacturing, Flint Assembly, Flint, MI

- Monitored and ensured GM plant management's compliance with the National UAW / GM contract
- Trained 200+ salaried supervisors on new attendance policy for hourly workers (1/08); monitored implementation to assure adherence to National UAW / GM contract
- Investigated and resolved 10+ grievances per week filed by UAW members as one of three representatives assigned to manage labor relations issues involving 2,000 plant employees
- Initiated and managed employee probationary activities and terminations
- Monitored and audited non-scheduled overtime for union representatives met contractual obligations, but was not excessive
- Monitored and resolved plant safety and security issues; conducted daily Safety and Security Tours for employees and visitors.

Quality Administrator. 2005 – 8/07

GM Orion Assembly Plant, Quality and Reliability Dept., Orion Twp., MI

- Monitored overall vehicle quality throughout plant
- Implemented a formal problem solving process and the Quality Network 7 Pillars of Problem Solving methodology; improved overall production quality improvements.

Care Line / Final Line Group Leader 2004 – 2005

GM Orion Assembly Plant, Quality and Reliability Dept., Orion Twp., MI

- Managed 25 UAW team members on the Final Line where initial inspections were performed as vehicles came off the assembly line and on the Care Line where the final inspection was performed prior to shipment to dealers
- Consistently achieved quality and reliability goals in excess of 85%

Customer Satisfaction Representative 2002 – 2005

GM Orion Assembly Plant, Quality and Reliability Dept., Orion Twp., MI

- Visited dealerships to troubleshoot quality issues on a vehicle-by-vehicle basis
- Managed company car program for salaried executives; arranged for and tracked routine maintenance
- Managed Show Car program

Torque Monitors Group Leader 1998 – 2003

GM Orion Assembly Plant, Quality and Reliability Dept., Orion Twp., MI

- Implemented program to set and monitor torque requirements for critical fasteners; supervised adherence to requirements
- Conducted torque audits to ensure compliance with GM corporate standards and Federal Torque laws and regulations

Coordinator Audio / Video Communications 1987 – 1998

GM Orion Assembly Plant, Communications Dept., Orion Twp., MI

- Designed and implemented an in-house video production studio
 - Produced and directed satellite broadcasts
 - Engineered and maintained all studio equipment
 - Developed content for, produced and directed daily internal closed circuit television broadcasts
 - Produced and edited video tapes
 - Produced and directed Buick Open highlight films for Buick Marketing
- Managed all internal communications; assisted in editing daily plant newsletter distributed to 5,000 salaried and hourly workers

- Coordinated major plant events such as 1 million Car Celebration, Family Days , Car Shows.
- Served as official plant photographer

Mutable Technology, Flint, MI 1986
Assigned to: GM Vehicle Manufacturing, Flint Product Team, Flint, MI
Sr. Television Producer/Public Affairs

Ferris State University, Big Rapids, MI 1985
Executive Television Producer / Instructor

- Taught workshops on fundamentals of Communications / Television

EDUCATION

Bachelor of Science in Communications / Television Production 1984
Ferris State University, Big Rapids, MI

Communications Internship: GM Service Parts Operations Warehouse, Swartz Creek, MI, 1984

Highlights of professional development presented by General Motors Corp.:

- T3 Standardized Work, 1/05; T3 Problem Solving, 2/02
- Facilitator Training, 3/00
- ISO-9002 Element Training, 12/98
- Project Management Training, 11/98
- Situation Leadership II Training, 9/98

CERTIFICATIONS

- Apprentice Level Certification, Global Manufacturing Systems (GMS), General Motors Corp., Flint, MI, 4/04
- Quality Network (QN) Representative Certification, General Motors Corp., Flint, MI, 1/04

APPOINTMENTS

- Joint Programs Representative, GM Orion Assembly Plant, Orion Twp., MI, 1998 - 2005
 - Quality Network Management Representative
 - Human Resources Representative
 - Joint Activities Representative
 - Joint Training Representative
- Employee Vehicle Assistance Representative, GM Vehicle Manufacturing, Flint Assembly, Flint, MI, 2000 - 2006?; worked with employees to address quality issues relative to GM vehicle purchases
- Quality Network Planned Maintenance Phase 3 Certification Team member.

COMPUTER

- Microsoft Word, Excel, PowerPoint **PROFICIENCY**
- Internet and electronic mail