Lansing Community College



**Course Cover Sheet** 

M-CAM Training Area: □CNC/Machining ⊠Multi-Skilled Mechatronics □Production Operation □Welding/Fabrications

Program(s): Intro to Mechatronics Block 1-3

Course: Safety

#### **Course Description:**

This course covers OSHA regulations, safety rules related to the use of cranes, hoists, and rigging equipment.

Delivery method is hybrid, open entry/open exit.

Date Created: September, 2015.

**Employer/Industry Partner:** Magna/DexSys, Lansing, Michigan and various manufacturing companies in Mid-Michigan.

Faculty Developer(s)/Instructional Designers(s): Mike Taylor, Nathan Webb/Ann Lapo

College Contact: Jill Doederlein

Phone: 517.483.9665

Email: doederj@lcc.edu

Additional Information/Comments: Due to the increased need to offer a flexible delivery format to meet the needs of students'/workers' busy schedules, LCC partnered with AMTEC (Automotive Manufacturing Technical Education Collaborative) led by Kentucky Community Technical College to offer open entry open exit modular courses in a hybrid format (lessons online and hands-on labs with an instructor on campus). LCC instructors added content based on the needs of local industry.

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#### **DESCRIPTION:**

This course covers OSHA regulations, safety rules related to the use of cranes, hoists, and rigging equipment.

**TOTAL TIME REQUIREMENT** for the course is approximately 40 hours.

PREREQUISITES: Reading Level 4. Writing Level 4. Math Level 5.

#### **OBJECTIVES:** (for a complete list of objectives, see each module)

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

- Describe OSHA and proper hazard recognition and reporting.
- Describe proper use of personal protective equipment (PPE).
- Describe proper fire safety in the workplace.
- Describe proper electrical safety in the workplace.
- Use a ladder and walk a walkway safely.
- Identify proper machine guarding.
- Describe hoist and crane safety.
- Identify basic types of hoists and cranes.
- Explain hoist, trolley and bridge motions.
- Describe communication when using hoists and cranes.
- Explain lifting weights, calculating or verifying listed weights.
- Describe inspection.
- Describe safety practices in rigging.
- Describe center of gravity and proper balancing of a load.
- Calculate Load Weights.
- Describe functions and types of slings.
- Describe types of hitches.
- Describe rigging attachments.
- Describe rigging equipment maintenance.

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#### **109** Safety consists of three modules:

**1091** – Basic OSHA Safety (1 lessons to read on your own, 1 lab to do at LCC with an instructor) Basic OSHA Safety introduces students to OSHA and the OSHA regulations that apply to the automotive manufacturing industry.

**1092** – Hoists and Cranes (5 lessons, no labs) Introduces the basic concepts and safety rules and issues related to the use of overhead cranes and hoists.

**1093** – Rigging Awareness and Fundamentals (14 lessons, 7 labs) Introduces the basic concepts and safety rules and issues related to the use of rigging equipment, attachment components, calculating sling angle stresses, and safe lifting and turning loads.

**Hands-on Lab Guidelines:** Plan on 30 minutes up to 2 hours for each lab you attend. See the "Time Requirements" recommendation on each Student Guide.

#### **MATERIALS:**

#### Online portion of the class:

**Software:** Internet access, Web browser, word-processing software, Adobe Reader, up-to-date virus protection for the online portion of this course.

• Go to elearning.autoworkforce.org – modules 1091, 1092, 1093 to access the lessons, labs specifications and assessments for this course.

### Hands-on labs portion of the class:

• Tools and equipment specified in the Resources section—per module — for each hands-on lab.

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#### **GRADING POLICY:**

- Successful completion of all Labs (at least 80% recommended). Rubrics provided in AMTEC online specify how grading is determined.
- Successful completion of each module's post-assessment (at least 80% recommended).

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 <a href="http://www.lcc.edu/policy/policies\_1.aspx#ACCEPTABLE\_USE\_POLICY">http://www.lcc.edu/policy/policies\_1.aspx#ACCEPTABLE\_USE\_POLICY</a>

### **Transfer Potential**

continued availability, or ownership.

For transferability information, please consult the Transfer Equivalency Information located at the LCC website at <u>http://www.lcc.edu/transfer</u>. 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 <a href="http://www.lcc.edu/transfer/macrao\_agreement.aspx">http://www.lcc.edu/transfer/macrao\_agreement.aspx</a>.

### 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 <a href="http://www.lcc.edu/catalog/policies">http://www.lcc.edu/catalog/policies</a> 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:			
Title of Course: Mechatronics Safety			
Subject Matter Expert (SME) Reviewer Information			
Name: Robert C. Hess			
Title: Senior Instructional Designer/Trainer			
Phone: 566-322-1033			
Email: bob.hess@mhtechnologies.net			
Organization/Affiliation: MH Technologies			
Synopsis of Findings:			
1. Lab 3 has a photo all alone on a page, move to previous page if possible.			
2. Lab 4 has a blank page.			
4. Lab 7 has a blank page.			

Reviewers Signature \_\_\_\_\_\_\_ Robert C. Hess

Date: <u>3/8/10</u>



# 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.		Х	
Prerequisites and/or any required competencies are clearly stated.		Х	
Learning objectives are specific and well-defined.		Х	
Learning objectives describe outcomes that are measurable.		Х	
Outcomes align to occupational focus (industry skills and standards).		Х	
Comments or recommendations:			
2. Material and Resources	Exceptional	Satisfactory	Ineffective
The instructional materials contribute to the achievement of the course learning objectives.		х	
The materials and resources meet/reflect current industry practices and standards.		х	
The instructional materials provide options for a variety of learning styles.		Х	
Resources and materials are cited appropriately. If applicable, license information is provided.		Х	
Comments or recommendations:			
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.		Х	
Activities are linked to current industry practices and standards.		X	

Comments or recommendations:			
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:		1	
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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# **Robert C. Hess**

47737 Remer Ave. Shelby Twp., MI 48317 586-322-1033 bob.hess@mhtechnologies.net

# Qualifications

Dedicated, articulate, and enthusiastic with strong analytical and organizational abilities. Effective communication and interpersonal skills. Ability to work independently or as an integral part of a team to accomplish goals. Experience prioritizing and completing numerous concurrent responsibilities while meeting time and organizational goals. Sound professional attitude, strong work ethic and pride in personal performance.

### Experience

#### 2015 – Present M H Technologies LLC Senior Instructional Designer/Trainer

- Perform Needs Analysis and quote training programs
- Develop on-line training programs, system manuals, student workbooks, and job aids •
- Deliver on-site training programs

#### 2002 - 2015 **R.C.** Technologies

#### Business Owner – R.C. Technologies

- Research and quote training programs
- Development of training programs for Ford Motors, DaimlerChrysler, General Motors, Kuka Robotics, Fame Conveyor, Lamb Technicon, Delphi, Magna, and SPX
- Design training programs, system manuals, student workbooks, PowerPoint presentations, and job aids
- Deliver on-site training programs .
- Professional Industrial photography

#### 1995 - 2002DCT Inc.

# **Training Designer**

- Research and quote training programs •
- Design training programs, system manuals, student workbooks, and job aids
- Deliver on-site training programs •

#### 1990 - 1995**Bond Robotics Training Manager / Field Service Engineer**

- Managed Training Department •
- Research and quote training programs •
- Design operation and maintenance manuals plus training guides •
- Deliver all training programs
- Perform on-site electrical and mechanical customer support for installation, start-up, and debugging of pressroom automation

#### 1986 - 1990**Robotic Vision Systems, Inc. Sterling Heights** Field Service Engineer / Trainer

Research, installation, programming and training of 3D vision guided robotic welding and sealant systems for military, aerospace, and automotive industry

1977 - 1981 Education

Ferris State University

**Big Rapids**, MI

BSEE

# Shelby Twp. MI

Warren, MI

## Sterling Heights, MI

Sterling Heights, MI