Kellogg Community College

Course Cover Sheet

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

Program(s): Industrial Electricity and Electronics

Course: INEL 95070 Servo Robotic Assembly

Course Description: In this module, the student will start up, adjust, operate and program Servo Robotic Assembly Mechatronics System.

Date Created: November 2016

Faculty Developer(s)/Instructional Designers(s): Mark Knaack and Kevin Barnes

Employer/Industry Partner: Employers on Advisory Committee

College Contact: Tom Longman

> **Phone: 269-965-4137**

> **Email: LongmanT@kellogg.edu**

Additional Information/Comments:

New curriculum was created to support the new mechatronics equipment. Input was gathered from industry partners who attended Advisory meetings.

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SYLLABUS

Module Name: INEL 95 070 Mechatronics-Servo Robotic Assembly
Credit Hours: .21
Contact Hours: 5
Instructor: Kevin Barnes; barnesk@kellogg.edu

GUIDELINES FOR SUCCESS

Read the module Course Description and complete the Learning Activities. When there is a good understanding of the material, proceed to the Assessment Activities. See the instructor at any time for assistance.

COURSE DESCRIPTION

In this module, the student will start up, adjust, operate and program Servo Robotic Assembly Mechatronics System.

MODULE COMPETENCIES

1. Operate a Servo Robotic Assembly Station
2. Adjust a Parts Feeder with Escapement
3. Adjust an Automatic Screw Feeder
4. Adjust a Pneumatic Parts Shuttle

LEARNING ACTIVITIES

1. **COMPLETE:** Go to www.learnamatrol.com and complete INEL 150 070 online activities (located in "Custom" folder) including the self-review for:
   - **Segment 1 - Station Operation**
   - **Segment 2 - Component Adjustment**
2. **PERFORM:** Lab activities listed for:
   - **Segment 1 –**
     o Skill 1 - Operate a Servo Robotic Assembly Station
   - **Segment 2 –**
     o Skill 2 - Adjust a Parts Feeder with Escapement
     o Skill 3 - Adjust an Automatic Screw Feeder
     o Skill 4 - Adjust a Pneumatic Parts Shuttle
3. **ARRANGE:** to complete this module by completing the **Assessment Activities.**

ASSESSMENT ACTIVITIES

After completing the Learning Activities, see the instructor for the test.

GRADING INFORMATION

All modules at the RMTC are considered pass/fail. The student must achieve 90% or higher on all written Assessment Activities, and 100% or higher on all lab Assessment Activities in order to pass this module.

ACADEMIC INTEGRITY

The Kellogg Community College policy on Academic Integrity is spelled out in the student handbook. If it is suspected that the student is cheating, fabricating, facilitating academic dishonesty, or plagiarizing, there may be serious consequences. The incident will be documented and may be reported to the academic chair and/or program director for possible disciplinary actions up to and including course, program, or college expulsion.

AMERICANS WITH DISABILITIES ACT AND SECTION 504

Kellogg Community College does not discriminate in the admission or treatment of students on the basis of disability. KCC is committed to compliance with the American Disabilities Act and Section 504 of the Rehabilitation Act. See Student Handbook for information about student services.

INSTRUCTOR RIGHTS STATEMENT

Information contained in this syllabus was to the best knowledge of the instructor considered correct and complete when distributed for use at the beginning of the semester. However, this syllabus should not be considered a contract with Kellogg Community College and any student, nor between the instructor and any student. The instructor reserves the right, acting within the policies and procedures of Kellogg Community College, to make changes in the course content or instructional techniques without notice or obligation.

Subject Matter Expert (SME) Course Review Summary

College: Kellogg Community College

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

Degree Program Name: Industrial Electricity and Electronics

Title of Course: INEL 95070 Robotic Assembly

Subject Matter Expert (SME) Reviewer Information
Name: Robert C Hess
Title: Senior Instructional Designer/Trainer
Phone: 586-322-1033
Email: bob.hess@mhtechnologies.net
Organization/Affiliation: MH Technologies

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

Synopsis of Findings: This course is excellent! Good information, good layout, great tests to make sure the student is learning the material and understanding it fully.

Reviewers Signature _Raut C H_   Date: _1-31-17_

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:			

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:			

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:			

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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Robert Hess

Technical Instructor, Curriculum Developer and Technical Writer

Robert Hess is a proven trainer, and technical writer with more than 22 years of expertise analyzing needs, developing training programs, and creating procedures and documentation that reduce costs and maximize productivity.

- Project manage all phases of training lifecycle, using in-depth knowledge of process analysis.
- Expertise developing and implementing training programs that meet strategic business objectives.
- Skilled in training and documentation design strategies that drive productivity and reduce operating costs.
- Lead training teams and departments, including recruiting, hiring, train-the-trainer, and developing staff.
- Ability to prioritize and complete concurrent projects while meeting time and organizational goals.
- Excellent skills in all Microsoft Office Suite products.

Robert has developed training programs and provided customer price quotes. Led needs analysis meetings. Designed training courses, system manuals, student workbooks, PowerPoint presentations, safety training, software training, standard operating procedures, and training aids. Delivered on-site training programs. Tracked training results and provided evaluations / solutions.

Robert Hess has extensive experience in Press Room Technology. Installed and programmed, debugged, and provided customer support for destacking systems with Bond Robotics and DCT, Inc. Developed, designed, and delivered training agendas and class delivery for Destacking systems, press-to-press automation, and end-of-line delivery/racking systems. Pressroom experience includes standard (lift cage) blank removal, robotic blank removal, shuttle blank removal, electromagnetic and standard fanning systems, galvanized, stainless steel and aluminum blank delivery automation, blank washing systems, double blank detection units, centering stations, and press handling automation.

Robert's education and experience includes electrical design and engineering, mechanical design, advanced adult training procedures, cross-cultural training, industrial magnetic and stamping technology. Robert has 22 plus years in the automotive, military, and aerospace industry.