



Kellogg College
Course Cover Sheet

M-CAM Training Area:

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

Program(s): Kellogg Advanced Manufacturing Assembly (KAMA)

Course: TRIN 60T Lockout/Tagout

Course Description: Participants attending this course will learn the definition of lockout/tagout and learn how to identify when LOTO is required.

Date Created: 4/14/14

Faculty Developer(s)/Instructional Designers(s): N/A

Employer/Industry Partner: Denso, TRMI, II Stanley

College Contact: Levi Good

Phone: 269-565-2828

Email: GoodL@kellogg.edu

Additional Information/Comments:

Supporting instructional materials:

Lockout Tagout pre-test and post-test answer keys, pre and post-tests

LOTO Paperwork

This workforce solution was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.

The eight community colleges and MCAM is an equal opportunity employer/program provider. Auxiliary aids and services are available upon request to individuals with disabilities. TTY users please call 1-877-878-8464 or visit www.michigan.gov/mdcr."

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Lockout/Tagout

Course Number:	TRIN 60T
Credits:	.12
Semester:	Spring 2017 - KAMA
Start and End Dates:	February 1, 2017
Meeting Times/Dates:	12:30 p.m. – 2:30 p.m.
Location of Course:	Regional Manufacturing Technology Center (RMTC) 405 Hill Brady Road Battle Creek, MI 49037
Instructor:	Duane Hagen
KCC Staff Email Address:	duane@hagenenterprisesllc.com
Instructor Phone Number:	Lisa Larson, Program Coordinator: 269-660-5360
Instructor Office & Mailbox Location:	RMTC
Course Description:	Participants attending this course will learn the definition of lockout/tagout and learn how to identify when LOTO is required.
Prerequisites:	None
Textbook(s):	None
Learner Supplies:	Instructor will provide supplies
General Education:	N/A; this course is not a General Education course.
Occupational Program or Accreditation Standards:	N/A



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Course Competencies:

1. Define lockout/tagout (LOTO)
2. Identify when LOTO is required
3. Describe the difference between authorized employees and affected employees
4. Demonstrate common lockout procedures
5. Explain what to do when there is a lock on the equipment
6. Explain what the tags mean

Mode of Instruction:

This course will incorporate lecture, class discussion, demonstrations and written assignments. Videos and hands-on learning activities may also be used to support the lecture.



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Assignments:

Competency	Assignment	Description	Possible Points
1-6	Pre-assessment	Each student will be given a pre-course assessment to measure baseline knowledge in each of the competency areas	5
1	Participation	Students will define lockout/tag out (LOTO)	5
2	Participation	Students will identify when LOTO is required	5
3	Participation	Students will describe the difference between authorized employees and affected employees	5
4	Participation	Students will demonstrate common lockout procedures	5
5	Participation	Students will explain what to do when there is a lock on the equipment	5
6	Participation	Students will explain what the tags means	5
1-6	Final Assessment	Students will take a final assessments on lockout/tag out procedures	10

Make-up Work, Late Assignments, and Retakes: Make-up work, late assignments, and retests may be available and/or accommodated at the discretion of the instructor and granted on a case-by-case determination. It is the expectation that students complete and turn-in assigned work on-time and in accordance with the course syllabus and instructor guidelines. Retakes on quizzes, tests, exams, or any other related course assessments are not common practice, and may only be granted as the result of extreme circumstances, as determined by the instructor.

Grade Determination:

Competency	Assignment	Points Possible	Weight
	Pre-Assessment	5	5%
	Participation/Attendance	30	80%
	Final Exam	10	15%
	TOTAL POINTS POSSIBLE →	45	100%



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Grading Information: In this course, you will earn a pass (P) or no-pass (N) grade.

Grading Chart:

Grade	Explanation	Credit Awarded
P	Earned 70% or more of the total possible points	Yes
N	Earned less than 70% of total possible points	No

- A “P” indicates you have passed the course and academic credit is earned for the course. This is equivalent to a “C” grade or better
- To earn a “P” grade, you must earn at least 70% of the total possible points for available for the course
- An “N” indicates that you have not passed the course and no academic credit is earned
- You should be aware that an “N” grade on your academic record may jeopardize your ability to obtain federal financial aid or your ability to transfer, since many colleges and universities consider this grade a failure.

Instructor Course Policies:

Students are expected to be present and engaged in class discussions and activities. If the instructor believes a student is not meeting course or program expectations, then the instructor will reach out to a Career Coach for intervention strategies. Any lack of participation during class time will result in a decrease in the potential points for that day.



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Attendance:

1. KCC Required Statement:

Regular attendance is an essential part of the educational experience and a requirement for an adequate evaluation of each student's academic progress. Excessive absence is reported to the Academic Advising department. An Advisor will reach out to students to discuss options for success. Continued absenteeism may lead to administration action. Faculty are required to report to the Financial Aid office students who have never attended class. Federal aid may be reduced if a student does not begin attendance in all classes. This includes online courses. For more information, please visit: <http://www.kellogg.edu/wp-content/uploads/2016/08/Handbook-2016-2017.pdf>.

2. Department Specific Attendance Info:

Attendance will be taken into consideration when grades are being determined. Points are assigned for attendance in the Grade Determination chart and will count toward your final grade.

If a student has excessive absences, the instructor will notify a Career Coaches to develop an appropriate action plan to mitigate or eliminate barriers causing the excessive absences.

Drop/Add Procedures:

Drop/Add procedural information may be found at: <http://www.kellogg.edu/catalog>. The drop/add dates for every course may be found on the KCC web site at: www.kellogg.edu follow the schedule link.

Incomplete Grade and Additional Grading Policies:

For information regarding additional grading policies, please visit the KCC catalog at: <http://www.kellogg.edu/catalog>.

Disability Services:

While ensuring the academic integrity of its programs, Kellogg Community College is dedicated to providing the reasonable accommodations needed to ensure equal access to educational opportunities for individuals with verified disabilities. Disability services are provided to students who self-disclose a disability to the Support Services Department and provide appropriate documentation. Support Services may be reached at 269.965.4150 or supportservices@kellogg.edu.

Academic Integrity Policies:

Ethical conduct is the obligation of every member of the KCC community. Breaches of Academic integrity constitute serious breaches of ethical conduct. Academic integrity requires that all academic work be wholly the product of an identified individual or individuals. This policy



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demonstrates KCC's concern for academic integrity and guarantees a fair procedure for handling these concerns. Examples of unethical conduct include: cheating, fabrication, and plagiarism. For more information regarding KCC's Student Code of Conduct, please visit: <http://www.kellogg.edu/wp-content/uploads/2016/08/Handbook-2016-2017.pdf>.

Code of Conduct:

Kellogg Community College students are expected to model the skills and behaviors of working professionals. This includes exhibiting behaviors which support respect and courtesy in the class environment. For more information regarding KCC's Student Code of Conduct, please visit: <http://www.kellogg.edu/wp-content/uploads/2016/08/Handbook-2016-2017.pdf>.

Safe and Successful Campus Environment:

KCC is dedicated to providing a safe environment which is conducive to success for all students. When staff notice that a student is struggling emotionally, intellectually, or behaviorally with classroom expectations, they may notify the appropriate personnel on campus to intervene and provide assistance to that student. Academic assistance is available in The Bridge and through Academic Advising; personal counseling is also available in Support Services.

Students whose behavior suggests they are struggling may also be contacted by the KCC Director of Student Relations or by KCC Public Safety. If students have safety concerns about others' behavior in class or on campus, those students are encouraged to discuss their concerns with KCC Public Safety directly.

Academic Support Services:

Kellogg Community College is committed to your academic success. If for any reason a student is struggling with a class, speak to the Professor immediately. They are the best resource. Additional resources available include The Bridge (<http://www.kellogg.edu/services/the-bridge/>) and Support Services (<http://www.kellogg.edu/services/student-support-services/>).

Honors Contract Information:

Honors contracts are a way for students to turn any college-level KCC course into an honors course, giving them the flexibility to take ownership over learning. At the beginning of the semester, with instructor approval, a student may work with the instructor to develop a unique honors project beyond the course syllabus. Once the honors project is clearly defined and the student's project has been approved by the instructor, the student works independently on that project during the semester and may seek support from the instructor as needed; then, at the end of the semester, when the student successfully completes the honors project as outlined in the contract **and** earns at least a B+ in the course, the student will earn honors designation on their transcript. To download the honors contract and learn more about the Honors Program, please visit <http://www.kellogg.edu/academics/honors-program/>.



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Retain this Syllabus & Syllabus Disclaimer:

This syllabus is a record of learning outcomes associated with this course. Many institutions will require a copy of this syllabus to grant transfer credit. It is the student's responsibility to retain a copy for future use.

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 between 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 course content or instructional techniques without notice or obligation.

Use of Technology & Student Email Accounts:

The College has a variety of computer systems which are provided for the use of students and are to be used for education, research, academic development, and public service only. You are responsible for seeing that the computing facilities are used in an effective, efficient, ethical, and lawful manner. Computer systems, such as e-mail, are intended for college related activities only. Inappropriate messages and/or materials are not to be sent or stored. For more information, visit the KCC web page at: www.kellogg.edu.

Textbook Statement:

There are multiple choices for purchasing textbooks, including the Kellogg Community College bookstore (www.kellogg.edu - follow the on campus link to the bookstore). Please be advised that each student should fully investigate the refund policies of book retail stores, including the Kellogg Community College bookstore, PRIOR to purchasing a book for any course. When purchasing a book from the Kellogg Community College bookstore, students are encouraged not to break a textbook's binding, or open a book in shrink-wrap covering, prior to attending the first course session in order to verify that a correct book has been purchased. Students are advised to keep all receipts from book purchases.

Service Learning Option: Service learning is not an option for this course.

1. Why is it critical to lock machines out?
 - a. To protect anyone working on the machine
 - b. To stop the machine from moving unexpectedly
 - c. To prevent machine damage
 - d. All of the above
2. All electrical circuits should be brought to a zero-energy state before maintenance by _____ to prevent accidents.
 - a. Pushing Emergency stops
 - b. Using lockout procedures
 - c. Unplugging all machines
 - d. Deactivating the circuit breaker
3. Whose fault is it when you get hurt at work - 100% of the time?
 - a. The companies
 - b. OSHA
 - c. Yourself
 - d. Supervisors
4. Primary energies include –
 - a. electrical
 - b. pneumatic
 - c. hydraulic
 - d. all of the above
5. It is acceptable to remove another employee's lockout lock _____.
 - a. With your supervisor's permission
 - b. After attempting to contact the employee
 - c. When you have access to the key for the lockout
 - d. If the machine is necessary for production
6. Who is responsible for verifying the lockout is in effect?
 - a. operator
 - b. maintenance
 - c. supervision
 - d. Person working on the machine
7. How do you verify the lock-out is working?
 - a. Take the operators word for it
 - b. Try and cycle the machine
 - c. Use testing equipment to verify zero energy state
 - d. Put hand in and out really - really fast.

8. If there is more than one person working on a machine how many locks should be on the lock out?
 - a. one
 - b. one for each person
 - c. two
 - d. one for maintenance and one for the supervisor
9. Which of the following was designed to prevent employee injury caused from the unexpected start-up of machines or equipment, or the release of hazardous energy while servicing or maintenance is performed?
 - a. Lockout / Tagout Standard
 - b. OSHA Standard
 - c. Safety Standard
 - d. CFR Standard
10. Who may remove a LOTO device after maintenance or repairs are complete?
 - a. An operator
 - b. The person who secured the device
 - c. Anyone
 - d. The plant manager

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Lock Out Tag Out Procedures

Workforce Solutions Library Copy

Please return to instructor when finished with the class

Scenario:

John, a newly hired maintenance mechanic was adjusting a power press. But, he was not sure about his new employer's procedures, so he asked the operator who informed him that the previous mechanic never shut down the press for these types of adjustments.

John considered performing a lockout; but feeling pressure to get the job done quickly, he decided to make the adjustment without performing the procedures.

During a test cycle, John put his hand into the press, attempting to adjust a screw that tensioned the die. He sustained a severe crushing injury to his right thumb and index finger, resulting in the partial amputation of the right thumb and total amputation of the index finger.

Task

In you groups, review the scenario and using factsheets 1 – 12 on pages 5 - 16 and your own experience, answer the following questions. Choose a scribe to take notes during your discussion.

1. Could this accident have been prevented? If so, how?

2. Based on the scenario, the factsheets and your own experience, would you agree that lockout/tagout procedures are important for "authorized" and "affected" employees? Please explain.

Factsheet #1

Control of Hazardous Energy Sources (Lockout/Tagout)

The standard for the control of hazardous energy sources (lockout/tagout) covers servicing and maintenance of machines and equipment in which unexpected energizing or start-up of machines or equipment, or release of stored energy could cause injury to employees.

The rule generally requires that energy sources for equipment be turned off or disconnected and that the switch either be locked or labeled with a warning tag.

OSHA General Lockout/Tagout Requirements

The standard requires employers to do the following:
1. Develop an energy control program.
2. Use locks when equipment can be locked out.
3. Ensure that new or overhauled equipment can accommodate locks.
4. Employ additional means to ensure safety when tags rather than locks are used by implementing an effective tagout program.
5. Identify and implement specific procedures (in writing) for the control of hazardous energy; including preparation for shutdown, equipment isolation, lockout/tagout application, release of stored energy and verification of isolation.
6. Institute procedures for release of lockout/tagout, including machine inspection, notification and safe positioning of employees, and removal of the lockout/tagout device.
7. Obtain standardized locks and tags that indicate the identity of the employee using them and which are of sufficient quality and durability to ensure their effectiveness.
8. Require that each lockout/tagout device be removed by the employee who applied the device.
9. Conduct inspections of energy-control procedures annually.
10. Train employees in specific energy control procedures with training reminders as part of the annual inspections of the control procedures.
11. Adopt procedures to ensure safety when equipment must be tested during servicing, when outside contractors are working at the site, and when multiple lockout is needed for a crew servicing equipment, and when shifts or personnel change.

Factsheet #2

Hazardous Energy Can Kill

The following case were documented by the National Institute for Occupational Safety and Health (NIOSH) as part of an investigation of fatal incidents in which workers were exposed to hazardous energy.

Janitor Dies Trapped In Linen Dryer

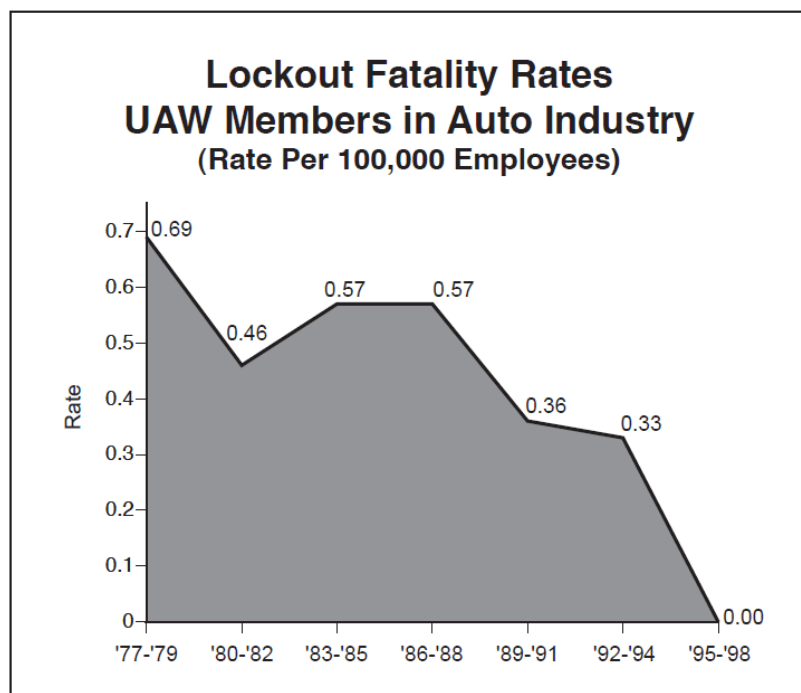
A 33-year-old janitorial worker died after he was trapped inside a linen dryer at a hospital laundry while cleaning plastic debris from the inside of the dryer drum. The cleaning task (which usually took 15 minutes to an hour) involved propping open the door to the dryer with a piece of wood and entering the 4-by 8-foot dryer drum. The melted debris was removed by scraping and chiseling it with screwdrivers and chisels. The dryer was part of an automated system that delivered wet laundry from the washer through an overhead conveyor to the dryer, where it dried during a 6-minute cycle with air temperatures of 217 to 230 degrees. The system control panel was equipped with an error light that activated if the dryer door was open, indicating that the dryer was out of service.

On the night of the incident, the worker propped the door open and entered the dryer drum without de-energizing or locking out the dryer. He began to clean the inside of the drum. Although the error light had been activated when the door was propped open, the signal was misinterpreted by a coworker, who restarted the system. When the system was restarted, the overhead conveyor delivered a 200-pound load of wet laundry to the dryer - knocking out the wooden door prop, trapping the worker inside, and automatically starting the drying cycle. The worker remained trapped inside until the cycle was completed and was discovered when the load was discharged from the dryer. He died thirty minutes later of severe burns and blunt head trauma. (*Mass. Dept. of Public Health, 1992*)

Factsheet #3

Proper Lockout/Tagout Procedures Save Lives

In 1997, the United Auto Workers (UAW) Health and Safety Department presented a statistical analysis to OSHA showing the effectiveness of UAW negotiated lockout programs in conjunction with the OSHA lockout standard. From 1989 to 1997, auto industry lockout-related fatalities declined approximately 20% each year. From 1994 to 1997 there were no lockout fatalities in the industry.



Source: UAW Health and Safety, *Statistics Prove UAW Negotiated Lockout Programs Successful*, September, 1997.

Factsheet #4

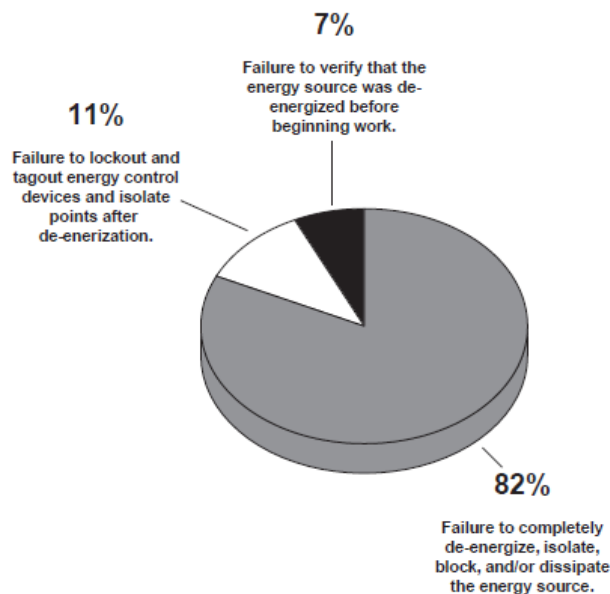
Factors That Lead to Hazardous Energy Fatalities

Between 1982 and 1997, NIOSH investigated 1,281 fatal workplace incidents. Of these, 152 involved installation, maintenance, service or repair tasks on or near machines, equipment, processes or systems.

Review of these 152 incidents suggests that three related factors contributed to these fatalities:

- Failure to completely de-energize, isolate, block, and/or dissipate the energy source.
- Failure to lockout and tagout energy control devices and isolation points after de-energization.
- Failure to verify that the energy source was de-energized before beginning work.

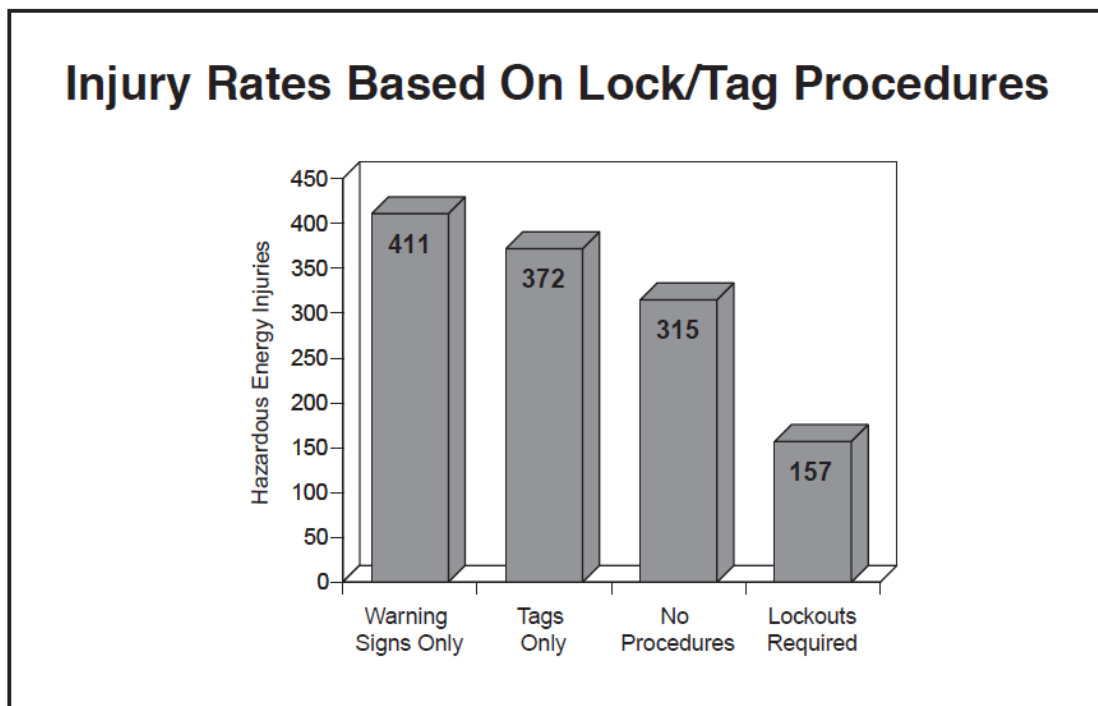
Factors That Contribute To Hazardous Energy Fatalities



Factsheet #5

Tags Without Locks Can Be Dangerous

A study by the National Institute of Occupational Safety and Health (NIOSH) showed that tags or warning signs alone, without locks, actually increased the rate of injury. In the chart below, injury rates for different warning procedures are compared.*



Because of the problems associated with using tags, OSHA has determined that lockout is a more reliable means of de-energizing equipment than tagout. It should always be the preferred method used by employees.

OSHA believes that, except for limited situations, the use of lockout devices will provide a more secure and more effective means of protecting employees from the unexpected release of hazardous energy or start-up of machines and equipment.

*The study reviewed workers' compensation claims filed in Ohio in 1983. The rate or ratio is based on a formula that divides the number of lockout injuries by the total number of employees, multiplied by 100,000. Source: OSHA 3120, *Control of Hazardous Energy (Lockout/Tagout)*, Revised 1997.

Factsheet #6

When Is a Lockout /Tagout Procedure Required?

OSHA requires a procedure if equipment can be started or stored energy released.

Examples of energy sources:

- **Electrical:** energized circuits still connected to the equipment.
- **Mechanical:** movements of gears, saw blades or conveyers.
- **Pneumatic:** control devices on conveyers.
- **Hydraulic:** loading and unloading platforms.
- **Chemical:** release of chemical from tanks, pipes or valves.
- **Thermal:** heat from steam-operated equipment.
- **Stored energy:** energy released from springs under tension or compression or from gravity itself (like an unsupported elevator).

Factsheet #7

The Elements of a Good Plan or Procedure

At each plant, the written plan or procedure will vary to fit the needs and practices at that plant.

There are eight elements required to be outlined in a written plan or procedure:

1. The purpose
2. Responsibility (i.e. authorized employee)
3. Preparation – steps to install locks and tags and notify supervisors and workers in the area
4. Return to service – steps to remove locks and tags and notify supervisor and workers in the area
5. Different procedures for different types of equipment
6. Group lock and tag procedures
7. What to do as the shift changes
8. Inspection system

Factsheet #8

Count to Six Before Starting to Work

1. Prepare for shutdown.

- a. Locate all the energy sources that need to be locked out: electrical, mechanical, hydraulic, pneumatic, thermal, etc.
- b. Notify all affected employees in the work area that the equipment is going to be locked or tagged out.

2. Shut down the equipment.

- a. Turn it off and disconnect all energy sources.

3. Isolate the equipment.

- a. Set the switch, valve, or other device(s) so that the equipment is isolated from its energy source(s).

4. Lockout or tagout.

- a. Apply the lock or tag. If the equipment has controls that can be locked out, tags may not be used unless the employer can demonstrate that tagout provides the same degree of protection that locks do.

5. Release all stored energy.

- a. Relieve pressure in pipes, steam, chemical, and gas.
- b. Release tension in springs.
- c. Bleed hydraulic lines.
- d. Block equipment that could move. Residual hydraulic pressure or gravity can move a machine.

6. Test for a zero-energy state.

- a. Try to turn equipment on. It shouldn't come on. If it does, start over. Repeat steps 1 through 5 until you are sure it can't be started.
- b. Be sure to turn off after testing.

Factsheet #9

Four Steps for Removing Locks and Tags

1. Inspect the equipment.

Has the equipment been reassembled correctly after servicing or maintenance?

2. Check the work area.

Make sure that no tools or equipment have been left behind. Make sure that all workers are in a safe location.

3. Tell someone.

Notify affected employees that the equipment is going to be turned on.

4. Remove the locks and tags.

They should be removed only by the workers who attached them.

Factsheet #10

Am I “Affected” or “Authorized”?

The OSHA standard classifies employees as “affected employees” and “authorized employees.” Each category has a different training requirement.

An **affected employee** is one whose job requires them to operate equipment that is subject to lockout/tagout or whose job requires work in areas where a lockout/tagout is used.

- Training for affected employees who operate equipment must include instructions on the purpose and use of the procedure of lockout/tagout.
- Affected employees who work in the area must be instructed in the procedure of lockout/tagout.

An **authorized employee** is one whose job requires them to physically lockout or tagout machinery/equipment in order to perform service or maintenance. Training for authorized employees shall include:

- Recognition of hazardous energy sources.
- Identification of the types and magnitude of energy sources in the workplace.
- Explanation of the method and means for isolation and control of hazardous energy.

Factsheet #11

Hardware Requirements for Locks and Tags

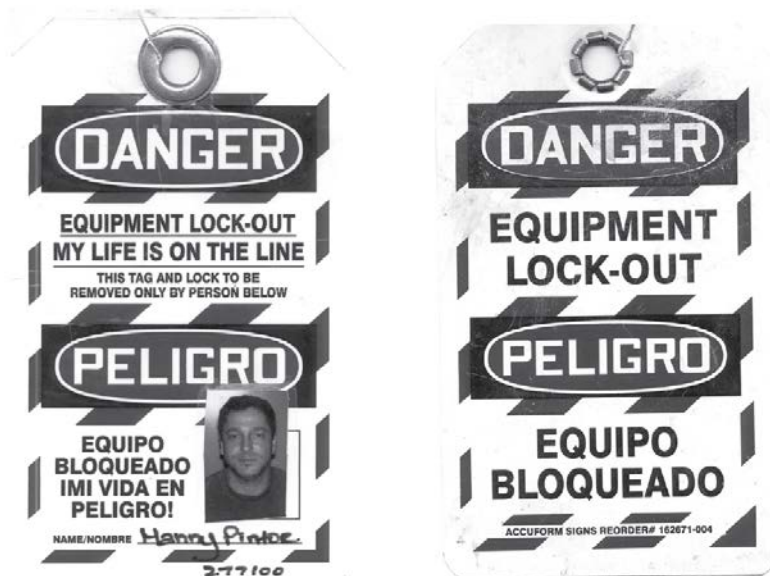
OSHA requires the following:

Lock Requirements

- They must be the same size, shape, color.
- They must have a place for the individual's name.
- They can be used only for the purpose of lockout.
- They must be durable.

Tag Requirements

- They must all have the same print and format.
- They must have a place for the individual's name.
- They must be weatherproof and durable.
- They require a warning.
- They must be used for lockout/tagout purposes only.
- They must be able to withstand a 50-pound pull without detaching.



Source: OSHA Standard 1910.147.

Factsheet #12

Safe Lockout/Tagout Procedures and OSHA's Process Safety Management Standard

OSHA's PSM standard requires companies to develop safe operating procedures for all process equipment, including safe lockout/tagout procedures.

All employees, including maintenance staff and contract employees, that work with or on process equipment must be trained on the company's lockout/tagout policy to ensure workers can complete jobs tasks in a safe manner.

During PSM inspections, OSHA may request to review documentation of safe operating procedures, including lockout/tagout policies and procedures. Inspectors will also observe the proper use of these procedures by employees *and contract employees* where applicable.*

*Source: OSHA Instruction CPL 2-2.45A CH-1, September 13, 1994, Directorate of Compliance Programs

Summary:

Hazardous Energy Sources – Safe Lockout/Tagout Procedures

1. The standard for the control of hazardous energy sources (lockout/ tagout) covers servicing and maintenance of machines and equipment in which the unexpected energizing or start-up of machines or equipment, or release of stored energy could cause injury to employees.
2. The United Auto Workers Union has demonstrated that effective lockout programs significantly reduce hazardous energy fatalities.
3. A NIOSH study identified poor procedures (e.g., failure to de-energize, isolate, block, and/or dissipate the energy source; failure to lockout and tagout energy control devices; and failure to verify that the energy source was de-energized before beginning work) as a major contributing factor in hazardous energy fatalities.
4. Because of the problems associated with using tags, OSHA has determined that lockout is a more reliable means of de-energizing equipment, and that it should be the preferred method used by employees.
5. OSHA requires a procedure if equipment can be started or stored energy released. At each plant, the written plan or procedure will vary to fit the needs and practices at that plant.
6. The four steps for removing locks and tags are:
 1. Inspect the equipment
 2. Check the work area
 3. Tell affected employees
 4. Remove the locks and tags
7. The OSHA standard classifies employees into two categories - affected employees (workers who operate equipment that is subject to lockout/ tagout) and authorized employees (workers who physically lockout or tagout equipment). Each category has a different training requirement.

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: Kellogg Advanced Manufacturing Assembly

Title of Course: TRIN 60T Lockout/Tagout

Subject Matter Expert (SME) Reviewer Information

Name: Mary Agostini

Title: Lean Six Sigma Master Blackbelt, Business Process Improvement Specialist

Phone: (419) 261-1490

Email: m-agostini@hotmail.com

Organization/Affiliation: A&W Continuous Improvement, LLC

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

Synopsis of Findings:

Course Competencies:

1. Define Lockout/tagout (LOTO)

- The current OSHA LOTO procedure and requirements are included in the instruction. The content provides real-world scenarios where participants are required to evaluate accidents and determine how appropriate LOTO would prevent such catastrophic events.

2. **Identify when LOTO is required**

- Participants learn when to apply LOTO procedures, and how they are appropriately used to prevent catastrophic events. Tools and techniques are taught at the current OSHA standard.

3. **Describe the difference between authorized employees and affected employees**

- This course teaches participants the difference between those employees authorized to initiate and complete a LOTO procedure, and those employees that are affected by the LOTO. This instruction is consistent with the US Department of Labor OSHA definitions.

4. **Demonstrate common lockout procedures**

- Procedures are written and demonstrated effectively

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5. Explain what to do when there is a lock on the equipment
 - Participants learn the appropriate action to take when equipment is locked out.
6. Explain what tags mean
 - Students learn what LOTO tags mean and how and when they are used.

This course provides an effective overview of lockout/tagout and how it is used.

Reviewers Signature

Mary Agostino

Date:

1/30/17

**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: According to the course syllabus, "Participants attending this course will learn the definition of lockout/tagout and learn to identify when LOTO is required." Pre-assessments are given prior to instruction to evaluate participants' level of expertise. A comprehensive exam is given to ensure participants have grasped the critical components of a lockout/tagout event, know when to apply the technique, and how to use the tools required for effective LOTO.			
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: This course utilizes classroom lecture, class discussion, demonstrations, and written assignments to provide participants with an effective learning experience. Supporting materials include videos and hands-on exercises to show and demonstrate real-world scenarios. This reviewer has no way of knowing whether course content requires citation, as the content is commonly known in manufacturing safety environments. Current OSHA lockout/tagout requirements are included in the course materials.			
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: Participants are given case studies where real world scenarios are presented, and they are asked to evaluate for root causes and corrective action.			

**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: The course instructor captures number of points versus possible points, by individual competency. Points are then weighted by pre-assessment, course participation and attendance, and the final exam.			
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: This course is up to date with US DOL OSHA standards and guidelines for LOTO.			

This workforce solution was funded by a grant awarded by the U.S. Department of Labor's Employment and Training Administration. The solution was created by the grantee and does not necessarily reflect the official position of the U.S. Department of Labor. The Department of Labor makes no guarantees, warranties, or assurances of any kind, express or implied, with respect to such information, including any information on linked sites and including, but not limited to, accuracy of the information or its completeness, timeliness, usefulness, adequacy, continued availability, or ownership.

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Michigan Coalition for Advanced Manufacturing Subject Matter Expert Course Review

877-878-8464 or visit www.michigan.gov/mdcr.”

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MARY M AGOSTINI

EXECUTIVE MANAGEMENT

- Strategic Planning and Deployment
- Operations Assessment and Improvement
- Quality Improvement
- Safety Performance Improvement
- Product and Process Innovation

PROFESSIONAL PROFILE

Certified Lean Six Sigma Master Black Belt with over 25 years of experience in process and product innovation, process efficiency improvement, quality improvement, and training and mentoring. A proven track record in multiple industry settings, including manufacturing, health care and higher education.

CORE COMPETENCIES

- Project management
- Development of Metrics and tracking systems
- Project prioritization and assignment
- Lean Six Sigma program management
- Root cause analysis
- Solutions development
- Project benefit estimation and tracking
- Strategic alignment
- Resource management
- Change management
- Team leadership
- Analytics
- Process and product design

EXPERIENCE

PARTNER & FACUTLY, STRATEGY DEPLOYMENT INSTITUTE

August, 2016 to Date

Providing training and guidance for multiple industry settings on effective strategy execution.

PRESIDENT, A&W CONTINUOUS IMPROVEMENT, LLC

June, 2013 to Date

Providing consulting services in manufacturing, healthcare, higher education and government. Implementation of process and performance improvement techniques.

DIRECTOR, PATIENT FLOW AND LOGISTICS, CATHOLIC HEALTH PARTNERS

January 2012 to September 2013

Implemented strategy execution across multiple hospitals, resulting in over \$30M increase in business performance.

LEAN SIX SIGMA MASTER BLACK BELT, MERCY HEALTH PARTNERS

March 2007 to January 2012

Implemented effective strategy deployment in the Northern Region, resulting in improved business performance, safety performance, and quality performance across the board.

LEAN SIX SIGMA MASTER BLACK BELT, JOHNS MANVILLE CORPORATION

July 1995 to March 2004

Operations consolidation resulting in \$23M return. Quality and Safety performance improvement and monitoring.

EDUCATION

UNIVERSITY OF TOLEDO, 2013

BS Interdisciplinary Studies, Business Minor – graduated Magna Cum Laude

BOWLING GREEN STATE UNIVERSITY

Mechanical Engineering – 3.96 GPA

OWENS COMMUNITY COLLEGE

Statistical Engineering Technology – 3.9 GPA

COMMUNICATION

Key Note Speaker, NW Ohio Lean Consortium, 2014

Speaker, NW Ohio Lean Consortium, 2013

Speaker, VHA Lean Healthcare Conference, San Diego, 2013

LEADERSHIP

Chair of Algansee Citizens Committee for Reformed Zoning

Chair of the Properties & Performance Committee, TAPPI

REFERENCES

SAMANTHA PLATZKE

CFO, Care Logistics

Contact information provided upon request

KIM BORDENKERCHER

CEO, Henry County Hospital

Contact information provided upon request