

College:

Southeastern Community College

Signature Program:

Manufacturing Technician / Technology

CPPL Certificate in Lean Operations (CLO)

Course Quality Standards:

SCC – Manufacturing Technician – Technology XXBU XBULM SDOEA06
SCC – Manufacturing Technician – Technology XXBU XBULM SDOEE10
SCC – Manufacturing Technician – Technology XXBU XBULM SDOEE02
SCC – Manufacturing Technician – Technology XXBU XBULM BROEA07
SCC – Manufacturing Technician – Technology XXBU XBULM SDOEH01
SCC – Manufacturing Technician – Technology XXBU XBUOS BROEH05
SCC – Manufacturing Technician – Technology XXBU XBULM BROEA06
SCC – Manufacturing Technician – Technology XXBU XBUBA SDOEH02
SCC – Manufacturing Technician – Technology XXBU XBUOS BROEH02
SCC – Manufacturing Technician – Technology XXBU XBUOS SDOEH20
SCC – Manufacturing Technician – Technology XXBU XBUOS BROEH04
SCC – Manufacturing Technician – Technology XXBU XBUOS SDOEL0
SCC – Manufacturing Technician – Technology XXBU XBUCS SDOEL0
SCC – Manufacturing Technician – Technology XXBU XBUCS SDOEL0

COURSE TITLE: Lean 101: Principles of Lean Manufacturing

COURSE NUMBER: XXBU-XBULM-SDOEA06

CONTACT HOURS: 4 LECTURE: 4 LAB: 4 OTHER:

COURSE DESCRIPTION:

At this workshop participants will learn the basic principles of Lean Manufacturing and how to apply them. Using a combination of hands-on simulation and classroom learning participants will apply Lean Manufacturing tools and concepts to identify wastes that exist within manufacturing organizations and use lean tools companies can eliminate these wastes. Such as standardized work, visual controls, batch-size reduction, pull systems, and more. Financial feedback after each of the 4 rounds shows the impact that implementing lean principles has on a company's bottom line.

PREREQUISITES: None COREQUISITES: None

QUALITY STANDARDS

Upon successfully completing this course, students should be able to:

- 1. Relate the history of manufacturing and the advent of lean manufacturing
 - 1.1. Compare and contrast traditional manufacturing and lean manufacturing
- 2. Understand that lean manufacturing is market driven
 - 2.1. Define lean
 - 2.2. Differentiate between value added & non-value added activities
- 3. Identify and describe wastes as categorized in lean manufacturing
- 4. Identify the lean tools and principles integral to continuous improvement
- 5. Apply lean tools and principles in a simulated plant environment
 - 5.1. 5 S
 - 5.2. Visual controls
 - 5.3. Plant layout
 - 5.4. Standard work
 - 5.5. Batch size reduction
 - 5.6. Teams
 - 5.7. Point of use storage (POUS)
 - 5.8. Quality at the source
 - 5.9. Quick changeover (SMED)
 - 5.10. Pull / Kanban
 - 5.11. Cellular flow

- 5.12. Total productive maintenance (TPM)
- 6. Calculate Takt time
- 7. Apply line balancing
- 8. Apply basic financial metrics to the performance of a simulated plant environment
- 9. Identify barriers to implementation and factors for success
- 10. Develop a fundamental understanding of what a value stream map will provide

ASSESSMENT - Lean 101: Principles of Lean Manufacturing

Standard	Exam	Paper	Presentation	Large Group Discussion	Demonstration	Observation	Simulation	Other
Relate the history of manufacturing and the advent of lean manufacturing				X				
2. Understand that lean manufacturing is market driven				X		X	X	
3. Identify and describe wastes as categorized in lean manufacturing				X		X	X	X
4. Identify the lean tools and principles integral to continuous improvement			X	X		X	X	X
5. Apply lean tools and principles in a simulated plant environment							X	
6. Calculate Takt time			X			X	X	
7. Apply line balancing			X				X	
8. Apply basic financial metrics to the performance of a simulated plant environment							X	
9. Identify barriers to implementation and factors for success			X					X
10. Develop a fundamental understanding of what a value stream map will provide			Х					

PREPARED BY: Susan Dunek DATE: September 17, 2015

DATE REVISED:

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COURSE TITLE: 5S Workspace Organization

COURSE NUMBER: XXBU-XBULM-SDOEE10

CONTACT HOURS: 8 LECTURE: 4 LAB: 4 OTHER:

COURSE DESCRIPTION:

At this workshop participants will learn the basic principles to identify the difference between workplace appearance and functionality and utilize 5S concepts and tools to create a visual workplace. 5S principles and practices will be applied in a project format requiring the use of Visual Controls to make nonstandard conditions obvious. Rules to organize the work space and improve work flow and implement cross-functional auditing teams for sustainability will be explored.

PREREQUISITES: None

COREQUISITES: None

QUALITY STANDARDS

Upon successfully completing this course, students should be able to:

- 1. Use 5S as a lean tool that helps organize work areas for improved functionality and productivity
- 1.1. Differentiate between value added and non-value added activates
- 2. Define the elements of 5S as a systematic approach to organizing
- 2.1. Sort
- 2.2. Set
- 2.3. Shine
- 2.4. Standardize
- 2.5. Sustain
- 3. Identify and describe wastes as categorized in lean manufacturing or continuous process improvement
- 4. Employ 5S audit processes to:
- 4.1. Assess the current state
- 4.2. Create an Action Register
- 4.3. Create a 5S tracking sheet
- 5. Apply ergonomic principles to placement within primary, secondary, tertiary and outer zones
- 6. Explore techniques for organizing electronic files
- 7. Identify applications for Visual Management, including:
- 7.1. Lines, limit lines & color coding

- 7.2. Kanban & navigation
- 7.3. Signals & displays
- 8. Implement and present a 5S project through Sort, Set & Shine
- 9. Make actionable recommendations for Standardize & Sustain

ASSESSMENT - 5S Workspace Organization

Standards	Exam	Paper	Presentation	Large Group Discussion	Observation	Simulation	Other
1. Use 5S as a lean tool that helps organize work areas for improved functionality and productivity			X	X			X
2. Define the elements of 5S as a systematic approach to organizing				X	X		
3. Identify and describe wastes as categorized in lean manufacturing or continuous process improvement			X	X	X		X
4. Employ 5S audit processes		X	X	X	X		X
5. Apply ergonomic principles to placement within primary, secondary, tertiary and outer zones			X	X		X	X
6. Explore techniques for organizing electronic files				х	Х		
7. Identify applications for Visual Management			X	X		X	X
8. Implement and present a 5S project through Sort, Set & Shine			X			Х	X
9. Make actionable recommendations for Standardize & Sustain			Х				X

PREPARED BY: Susan Dunek DATE: September 17, 2015

DATE REVISED:

OTHER:

COURSE TITLE: Lean Mapping Tools

COURSE NUMBER: XXBU-XBULM-SDOEE02

CONTACT HOURS: 8 LECTURE: 8 LAB: 0

COURSE DESCRIPTION:

At this workshop participants will learn the methods and applications of process mapping and value stream mapping (VSM). Learners will be expected to understand the mapping processes and iconographies used, as well as demonstrate interpretation of information on the maps. Basic map creation and interpretation is required.

PREREQUISITES: None - Lean 101 recommended

COREQUISITES: None

QUALITY STANDARDS

Upon successfully completing this course, students should be able to:

- 1. Distinguish between map types and the select the appropriate mapping technique
 - 1.1. Identify a process map and how it is used
 - 1.2. Identify a value stream map and how it is used
- 2. Define the essential lean terms and concepts necessary for creating a map.
 - 2.1. Differentiate between value added and non-value added activates
 - 2.2. Identify and describe wastes as categorized in lean manufacturing or continuous process improvement
 - 2.3. Understand the principle of flow for both material and information
- 3. Create and evaluate a process map
 - 3.1. Discuss evaluation of the Current State process map
 - 3.2. Discuss creation of the Future & Ideal State process maps
 - 3.3. Assess a current state process map
 - 3.4. Identify tools to implement identified improvements
- 4. Create and evaluate a value stream map (VSM)
 - 4.1. Discuss evaluation of the Current State VSM map
 - 4.2. Discuss creation of the Future & Ideal State VSM maps
 - 4.3. Assess a current state VSM
 - 4.4. Identify tools to implement identified improvements
- 5. Compare and contrast the uses for each type of map

ASSESSMENT – Lean Mapping Tools

Standards	Exam	Paper	Presentation	Large Group Discussion	Demonstration	Observation	Simulation	Other
1. Distinguish between map types and the select the appropriate mapping technique				X	Х			÷
2. Define the essential lean terms and concepts necessary for creating a map.				X				
3. Create and evaluate a current state process map			Х		X		X	X
4. Create and evaluate a value stream map (VSM)			X		X		X	X
5. Compare and contrast the uses for each type of map				Х		X	X	

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COURSE TITLE: Rapid Improvement Kaizen

COURSE NUMBER: XXBU-XBULM-BROEA07

CONTACT HOURS: 8

LECTURE: 6

LAB: 2

OTHER:

COURSE DESCRIPTION:

Kaizen: The philosophy of continuous improvement. Learn the elements of rapid improvement, such as: making changes in the workplace, selecting and using cross-functional teams, conducting successful Kaizen events, and creating an effective support structure.

PREREQUISITES: None – Lean 101 recommended

COREQUISITES: None

QUALITY STANDARDS

Upon successfully completing this course, students should be able to:

- 1. Define the essential responsibilities of the kaizen team roles
 - 1.1. Upper management
 - 1.2. Value stream management
 - 1.3. Cell leaders & members
- 2. Differentiate between value added and non-value added activates
- 3. Identify ways in which kaizen targets can be determined
- 4. Define the PDCA Cycle
- 5. Define the sequential planning elements of a kaizen event
 - 5.1. Assemble team, set goals, define roles
 - 5.2. Research data
 - 5.3. Logistics, expectations and training
 - 5.4. Apply PDCA
- 6. Identify the elements required for Report Out and define their purpose
- 7. Demonstrate the use of kaizen tools
 - 7.1. Time observation form
 - 7.2. Cycle time/ Takt time bar chart
 - 7.3. Standard work
 - 7.4. Event newspaper
- 8. Compare and contrast the characteristics of a kaizen culture to traditional manufacturing or business environments

ASSESSMENT – Rapid Improvement Kaizen

Standards	Exam	Paper	Presentation	Large Group Discussion	Demonstration	Observation	Simulation	Other
1. Define the essential				X				X
responsibilities of the								
Kaizen team roles								
2. Differentiate between				X				X
value added and non-value								
added activates								
3. Identify ways in which							X	
Kaizen targets can be								
determined								
4. Define the PDCA Cycle								X
5. Define the sequential				X			X	
planning elements of a								1
Kaizen event								
6. Identify the elements				X			X	
required for Report Out and								
define their purpose								
7. Demonstrate the use of				X	X	510 B. C.	X	X
Kaizen tools								
8. Compare and contrast				X				
the characteristics of a								
kaizen culture to traditional								
manufacturing or business								
environments								

PREPARED BY: Susan Dunek DATE: October 1, 2015 DATE REVISED:

COURSE TITLE: Leading LEAN Transformation

COURSE NUMBER: XXBU-XBULM-SDOEH01

CONTACT HOURS: 4 LECTURE:

OTHER:

COURSE DESCRIPTION:

Learn to lead and manage the culture change. Translate vision into reality. Prioritize actions through policy deployment. Learn to introduce new products more smoothly and in less time.

LAB:

PREREQUISITES: None

COREQUISITES: None

QUALITY STANDARDS

- 1. Learn to lead and manage the culture change.
- 2. Translate vision into reality.
- 3. Prioritize actions through policy deployment, while learning to introduce new products smoothly and in less time.

ASSESSMENT - Leading LEAN Transformation

Standards	Exam	Paper	Presentation	Large Group Discussion	Demonstration	Observation	Simulation	Other
1. Learn to lead and manage				X			X	
the culture change.								
2. Translate vision into				X				X
reality.								
3. Prioritize actions through				X			X	X
policy deployment, while								
learning to introduce new								
products smoothly and in				я				
less time.								

PREPARED BY: Susan Dunek DATE: September 17, 2015

DATE REVISED:

COURSE TITLE: Working Together

COURSE NUMBER: XXBU-XBUOS-BROEH05

CONTACT HOURS: 4 LECTURE: LAB: OTHER:

COURSE DESCRIPTION:

This course will deliver strategies and skills to establish team member roles and responsibilities, identify misunderstandings in conflict, cooperate and negotiate for results.

PREREQUISITES: None

COREQUISITES: None

QUALITY STANDARDS

- 1. Learn what to expect as a team forms and develops
- 2. Learn techniques to facilitate a group through a task
- 3. Examine ways to prevent & resolve disagreements and conflicts
- 4. To apply strategies for building group consensus
- 5. Become keener observers of group process

ASSESSMENT - Working Together

Standards	Exam	Paper	Presentation	Large Group Discussion	Demonstration	Observation	Simulation	Other
1. Learn what to expect as a				X				
team forms and develops								
2. Learn techniques to				Х			x	
facilitate a group through a								
task								
3. Examine ways to prevent &				х			Х	
resolve disagreements and				I.				
conflicts								
4. To apply strategies for				х	Х		x	
building group consensus								
5. Become keener observers				Х		X		
of group process								

PREPARED BY: Susan Dunek DATE: September 17, 2015

DATE REVISED:

COURSE TITLE: Enhancing Performance

COURSE NUMBER: XXBU-XBULM-BROEA06

CONTACT HOURS: 4 LECTURE: LAB: OTHER:

COURSE DESCRIPTION:

Understand your behavioral tendencies and how it affects others. During this class, participants will learn to adapt behavior and develop strategies for working together, how to accomplish tasks by improving relationships with others, and understand and appreciate individual behavioral differences.

PREREQUISITES: None

COREQUISITES: None

QUALITY STANDARDS

- 1. Understand your behavioral tendencies and develop an understanding of how your behavior affects others.
- 2. Understand, respect, appreciate, and value individual differences.
- 3. Develop strategies for working together to increase productivity.
- 4. Enhance your effectiveness in accomplishing tasks by improving your relationships with others.

ASSESSMENT - Enhancing Performance

Standards	Exam	Paper	Presentation	Large Group Discussion	Demonstration	Observation	Simulation	Other
1. Understand your behavioral								х
tendencies and develop an								
understanding of how your								
behavior affects others.								
2. Understand, respect,				Х				х
appreciate, and value								
individual differences.								
3. Develop strategies for				Х				Х
working together to increase								
productivity.								
4. Enhance your effectiveness				Х				х
in accomplishing tasks by								
improving your relationships								
with others.								

PREPARED BY: Susan Dunek DATE: September 17, 2015

DATE REVISED:

COURSE QUALITY STANDARDS

COURSE TITLE: Mixing 4 Generations in the Workplace

COURSE NUMBER: XXBU-XBUBA-SDOEH02

CONTACT HOURS: 4

LECTURE: 4

LAB: 0

OTHER:

COURSE DESCRIPTION:

In today's business environment, with a vast range of ages and background experiences at play, you are more likely to be managing, coaching and leading people who are nothing at all like you. This class will provide participants with the understanding and tools necessary to effectively coach, manage and retain each generation at work.

PREREQUISITES:

COREQUISITES:

QUALITY STANDARDS

- 1. Define the four generations and their workplace characteristics
- 2. Identify the common drivers and value systems of each generation and how those drivers affect motivation and behavior in the workplace
- 3. Describe how each generation defines success and understand how the differences affect communication and relationships in the workplace
- 4. Determine your employees generational bias and how your approach may need to change when coaching, managing and retaining employees of different generations
- 5. Appreciate and gain respect for what is important to each generation

ASSESSMENT - Mixing 4 Generations in the Workplace

Standards	Exam	Paper	Presentation	Large Group Discussion	Demonstration	Observation	Simulation	Other
1. Define the four generations and their workplace characteristics				Х				х
2. Identify the common drivers and value systems of each generation and how those drivers affect motivation and behavior in the workplace				x	X			X
3. Describe how each generation defines success and understand how the differences affect communication and relationships in the workplace				X		X		x
4. Determine your employees generational bias and how your approach may need to change when coaching, managing and retaining employees of different generations				x				х
5. Appreciate and gain respect for what is important to each generation				х				х

PREPARED BY: Susan Dunek DATE: September 17, 2015

DATE REVISED:

COURSE TITLE: Problem Solving for Teams

COURSE NUMBER: XXBU-XBUOS-BROEH02

CONTACT HOURS: 4 LECTURE: LAB: OTHER:

COURSE DESCRIPTION:

Participants will explore strategies and skills to define the problem, foster creative solutions, identify participant qualifications for a given problem and apply problem solving techniques.

PREREQUISITES:

COREQUISITES:

QUALITY STANDARDS

- 1. Define the problem
- 2. Foster creative solutions
- 3. Select problem solving techniques

ASSESSMENT – Problem Solving for Teams

Standards	Exam	Paper	Presentation	Large Group Discussion	Demonstration	Observation	Simulation	Other
1. Define the problem					X		X	
2. Foster creative solutions				X	X		X	
3. Select problem solving techniques					X		X	X

PREPARED BY: Susan Dunek DATE: September 17, 2015

DATE REVISED:

COURSE TITLE: Introduction to A3 Problem Solving

COURSE NUMBER: XXBU-XBUOS-SDOEH20

CONTACT HOURS: 4 LECTURE:

LAB:

OTHER:

COURSE DESCRIPTION:

Learn the power of A3 reporting to address the root causes of problems in an everyday work environment. This introductory course prepares you to contribute to the A3 process, dramatically increasing the probability of success. Leading companies, such as Toyota, use this proven and structured problem-solving approach.

PREREQUISITES:

COREQUISITES:

QUALITY STANDARDS

Upon successfully completing this course, students should be able to:

- 1. Learn the power of A3 reporting to address the root cause of problems in every day work
- 2. Be prepared to contribute to the A3 process, dramatically increasing the probability of success

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ASSESSMENT - Introduction to A3 Problem Solving

Standards	Exam	Paper	Presentation	Large Group Discussion	Demonstration	Observation	Simulation	Other
1. Learn the power of A3 reporting to address the root cause of problems in every day work				X	X		X	X
2. Be prepared to contribute to the A3 process, dramatically increasing the probability of success				X	X		X	Х

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COURSE TITLE: Understanding Personal Listening Approaches

COURSE NUMBER: XXBU-XBUOS-BROEH04

CONTACT HOURS: 4

LECTURE:

LAB:

OTHER:

COURSE DESCRIPTION:

Learn to listen and hear what is really being said; motivate others to give you the information you need. Increase positive information flow to enhance productivity and performance. Strengthen staff trust and morale.

PREREQUISITES: None

COREQUISITES: None

QUALITY STANDARDS

- 1. Understand the importance of effective listening skills
- 2. Determine which "communication killers" are hampering our listening effectiveness
- 3. Describe the five different Listening Approaches, including the focus, motivation, and behavioral indicators of each approach
- 4. Identify our natural Listening Approach
- 5. Identify appropriate uses of each of the five listening Approaches
- 6. Review and practice techniques that will enhance our listening skills and improve our communications with others

ASSESSMENT - Understanding Personal Listening Approaches

Standards	Exam	Paper	Presentation	Large Group Discussion	Demonstration	Observation	Simulation	Other
Understand the importance of effective listening skills							х	х
2. Determine which "communication killers" are hampering our listening effectiveness				X				
3. Describe the five different Listening Approaches, including the focus, motivation, and behavioral indicators of each approach				x				х
4. Identify our natural Listening Approach				х				Х
5. Identify appropriate uses of each of the five listening Approaches				Х				Х
6. Review and practice techniques that will enhance our listening skills and improve our communications with others				x			х	х

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COURSE TITLE: Professionalizing Email

COURSE NUMBER: XXBU-XBUCS-SDOEL0

CONTACT HOURS: 4 LECTURE: LAB: OTHER:

COURSE DESCRIPTION:

Participants will learn how to write effective messages and use email accessories; when to use email, writing an email message, email features and security, email effectiveness, "netiquette" styles, composing in-line correspondence and effective writing habits.

PREREQUISITES: None

COREQUISITES: None

QUALITY STANDARDS

- 1. Maintain your credibility
- 2. Project a professional image
- 3. Save time for yourself and readers

ASSESSMENT – Professionalizing Email

Standards	Exam	Paper	Presentation	Large Group Discussion	Demonstration	Observation	Simulation	Other
1. Maintain your				Х	Х			X
credibility								
2. Project a professional				Х	х			х
image								
3. Save time for yourself and				х	х			х
readers								

PREPARED BY: Susan Dunek DATE: September 17, 2015

DATE REVISED:

COURSE QUALITY STANDARDS

COURSE TITLE:

Implementation Presentation - Certificate in Lean Operations

COURSE NUMBER:

XXBU XBULM SDOES10

CONTACT HOURS: varies

LECTURE: 0 LAB: 0 OTHER: 84

COURSE DESCRIPTION:

Presentation of Implementation Activity for Certificate in Lean Operations (CLO):

- 1. Participants will share finding from an 84 hour implementation project in the presence of other lean or continuous improvement practitioners.
- 2. Submit Planning Sheet, presentation and any artifacts identified on the approved Planning Sheet

PREREQUISITES: completion of Certificate in Lean Operations (CLO) course work **COREQUISITES:** approved Planning Sheet

QUALITY STANDARDS

Upon successfully completing this course, students will:

- 1. Apply lean tools, principles and methods to drive improvement
 - 1.1 Actively participates in a project with a process or process improvement that has a defined customer, material flow and/or information flow.
 - 1.1 Relates examples and facts related to lean tools, principles and concepts
 - 1.2 Presents results related to lean tools, principles and concepts
- 2. Create an Implementation Project Presentation using research, data, and reflection.
 - 2.1 Demonstrate understanding of an issue, topic, or process using research
 - 2.2 Demonstrate understanding of an issue, topic, or process using data.
 - 2.3 Demonstrate understanding of an issue, topic, or process through personal reflection.
- 3. Integrate the lean body of knowledge at the tactical level
 - 3.1 Demonstrates acceptable use of lean principles, concepts and methods.
 - 3.2 Implementation Project Presentation and supporting documents show tactical use of the lean body of knowledge at the local or value stream level.
 - 3.1 Applies principles and concepts locally, within a work group of the value stream. Candidate demonstrates basic use of lean principles, concepts and methods.
- 4. Implementation Project Presentation conveys a basic understanding of applications
- 5. Effectively communicates the purposes, procedures, and conclusions of the project to an audience of lean practitioners.

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ASSESSMENT

Standard	Exam	Paper	Presentati on	Project	Demonstra tion	Observation	Other Q&A & Reflection
1.			X	X			X
2.			X	X			X
3.			X	X			X
4.			X	X			X
5.			X			X	X

PREPARED BY: S Dunek DATE: 04_22_2015 DATE REVISED:

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