

Lansing Community College

Course Cover Sheet



**M-CAM Training Area:**

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

**Program(s):** Welding Basics

**Course:** Manufacturing Exploratory Welding

**Course Description:**

Manufacturing Exploratory is a two-day, 16 hour, interactive training using the *DiSC*<sup>®</sup> personality assessment to encourage and improve team building and communication skills within the workplace, the Virtual Welder as an introduction to the exciting field of welding, and Fork Lift training resulting in the opportunity to earn a Fork Lift certification.

**Date Created:** May, 2016

**Employer/Industry Partner:**

**Faculty Developer(s)/Instructional Designers(s):** Emily Crockett/Scott Poe/Jill Doederlein/Ann Lapo

**College Contact:** Jill Doederlein

**Phone:** 517.483.9665

**Email:** doederj@lcc.edu

**Additional Information/Comments:** To serve as an orientation to welding using virtual welders.

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## Manufacturing Exploratory Welding (Lansing Community College)

### Program: Welding Basics

### Syllabus

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#### DESCRIPTION:

Manufacturing Exploratory is a two-day, 16 hour, interactive training using the *DiSC*® personality assessment to encourage and improve team building and communication skills within the workplace, the Virtual Welder as an introduction to the exciting field of welding, and Fork Lift training resulting in the opportunity to earn a Fork Lift certification.

**TOTAL TIME REQUIREMENT** for the course is 16 hours.

**PREREQUISITES:** Reading Level 4.

#### OBJECTIVES:

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

- Demonstrate how to use a Virtual Welder.
- Identify their *DiSC*® behavioral style.
- Demonstrate their behavioral strengths in order to improve work production, teamwork, and communication in the workplace.
- Demonstrate team building and communication skills through an interactive Team Build activity.
- Demonstrate the operation of a Fork Lift.
- Earn a Fork Lift Certification.

#### MATERIALS:

Team Building and Communication Skills:

- *DiSC*® Classic Paper Profiles
- Everything *DiSC*® Leader Guide for Facilitator use.
- *DiSC*® Cards
- Waterworks Team Build Leader Guide for Facilitator use.
- Waterworks Team Build Handouts and PowerPoint presentation.
- Waterworks Team Build Simulation

Introduction to Welding

- Virtual Welders
- Welding handouts

Fork Lift training

- 1 fork lift for up to 6 participants
- Fork lift materials—see specifics from Fork Lift training company.
- Cones for the fork lift training
- Pallets or crates for the fork lift training
- Safety glasses

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## Manufacturing Exploratory Welding (Lansing Community College)

### Program: Welding Basics

### Syllabus

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#### GRADING POLICY:

- Satisfactory completion of training (at least 75%) 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 [http://www.lcc.edu/policy/policies\\_1.aspx#ACCEPTABLE\\_USE\\_POLICY](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](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](http://www.lcc.edu/catalog/policies_procedures/studentrulesguidelines.aspx#code).

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## Manufacturing Exploratory Welding (Lansing Community College)

### Program: Welding Basics

#### Lesson Plan

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**TOTAL TIME REQUIREMENT** for the course is 8 hours.

This course is recommended to be offered in two, 4-hour sessions. One, 15-minute break is incorporated into each 4-hour session.

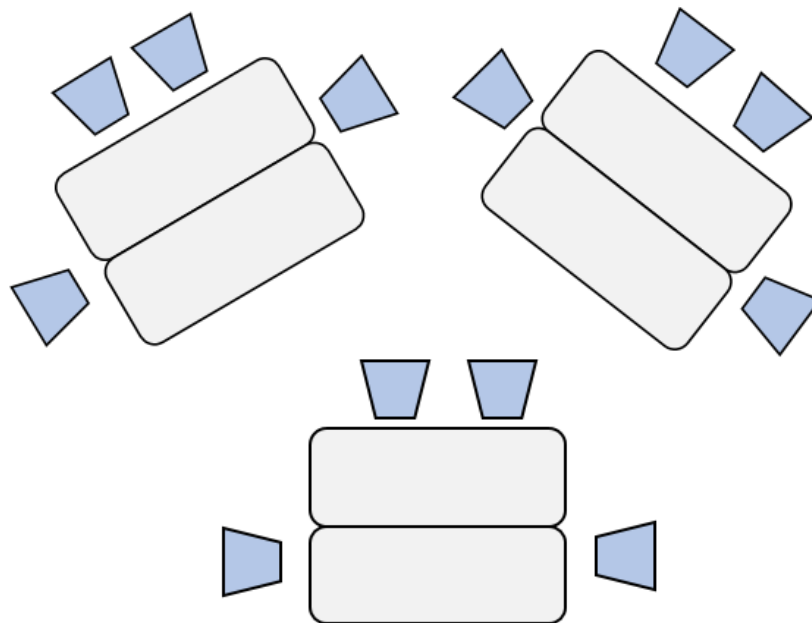
Delivery method is face-to-face in a classroom with the ability to project PowerPoint slides (see classroom setup below).

Printed handouts are provided to the participants.

**Classroom setup:** Allow 30-45 minutes for classroom setup and PowerPoint setup and projection prior to participant arrival.

For Modules 1 and 2, classroom tables are set up as small groups, 4-6 people to each table. Make sure students can face front of the room.

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Class room  
setup

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## Manufacturing Exploratory Welding (Lansing Community College)

### Program: Welding Basics

#### Lesson Plan

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#### Introduction and Intake (30 minutes)

NOTE: This course includes an opportunity to take the Accuplacer assessments at Capital Area Michigan Works! (CAMW!)

#### Module 1:

##### Behavioral Styles and Their Impact in the Workplace (3.5 hours)

GOAL: Increase participant's awareness and understanding of the four primary behavioral styles and their effect on interpersonal interactions and relationships in the workplace.

- Identify the four behavioral styles.
- Compare and contrast the strengths and weaknesses of each style.
- Identify their own behavioral style.
- Demonstrate their behavioral strengths appropriately.

Handout: DiSC® Classic Paper Profiles — see ©Inscape Publishing Inc. (1 per participant)

DiSC® cards

#### Module 2:

##### Waterworks Design Solutions: Team Build Model with Simulation Activity (4 hours)

GOAL: Through an interactive team built simulation, participants will understand the potential teams have for achieving results and the importance of interpersonal communication among employees.

SEE INSTRUCTIONAL LEADER GUIDE FOR DETAILED FACILITATOIN GUIDELINES.

- Discuss how working as a team can be more effective than working individually.
- Apply the concepts of effective communication, including listening, giving feedback, and avoiding roadblocks while working with teams.
- Discuss the following areas of teamwork: elements for a successful team, problem solving, and consensus building.

PowerPoint: WaterworksPPT

Handout: Waterworks Design Solutions Simulation Activity - Participant (9 pages, 1 per participant)

Handout: Waterworks Design Solutions Simulation PowerPoint slides (printed 3 slides to a page/1 per participant)

#### Module 3:

##### Virtual Welding (4 hours)

GOAL: Explore the exciting field of Welding with the Virtual Welders.

- Safety (30 minutes)
- What is Welding (60 minutes)
- VRTEX welding exercise (90 minutes). See Lincoln Electric examples.
- Lab tour, demo, and discussion (60 minutes)

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## Manufacturing Exploratory Welding (Lansing Community College)

### Program: Welding Basics

#### Lesson Plan

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#### Module 4:

#### Fork Lift Training (4 hours)

Includes training on OSHA Powered Industrial Truck Standard 1910.178 and forklift safety. Participants will complete a hands-on skills evaluation.

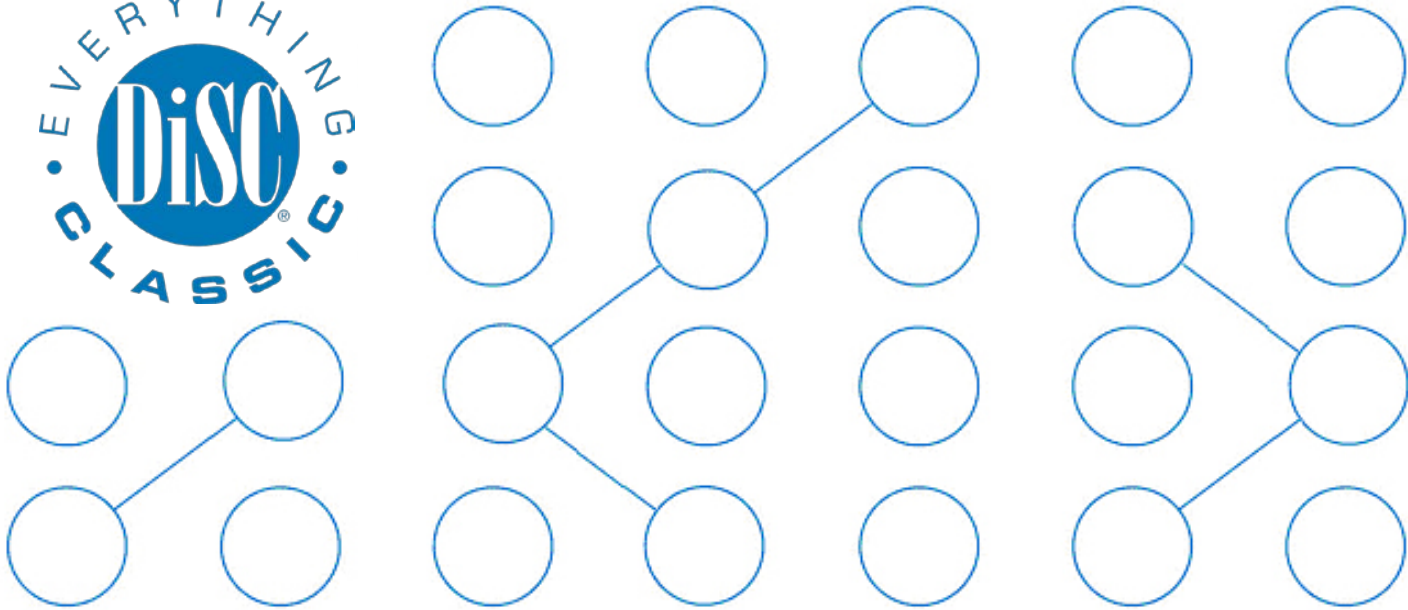
GOAL: Participants who complete the training successfully will be competent to operate forklifts without supervision.

- Safety
- User Manual
- Pre-operation inspection
- Demonstrate the operation of a Fork Lift.
  - Steer and maneuver safely.
  - Give proper signal when turning.
  - Demonstrate the ability to drive in proper traffic aisles and yield to pedestrians.
  - Vehicle operating limitations.
  - Types of loads to be carried and their stability characteristics.
  - Demonstrate the ability to lift loads.
  - Demonstrate the ability to manipulate loads.
  - Safety travel with loads and keep them at the proper height.
  - Hazardous area dangers.
  - Demonstrate understanding of what to do in the case of a vehicle tip over.
  - Demonstrate the ability to safely refuel or recharge the vehicle.
- Earn a Fork Lift Certification.

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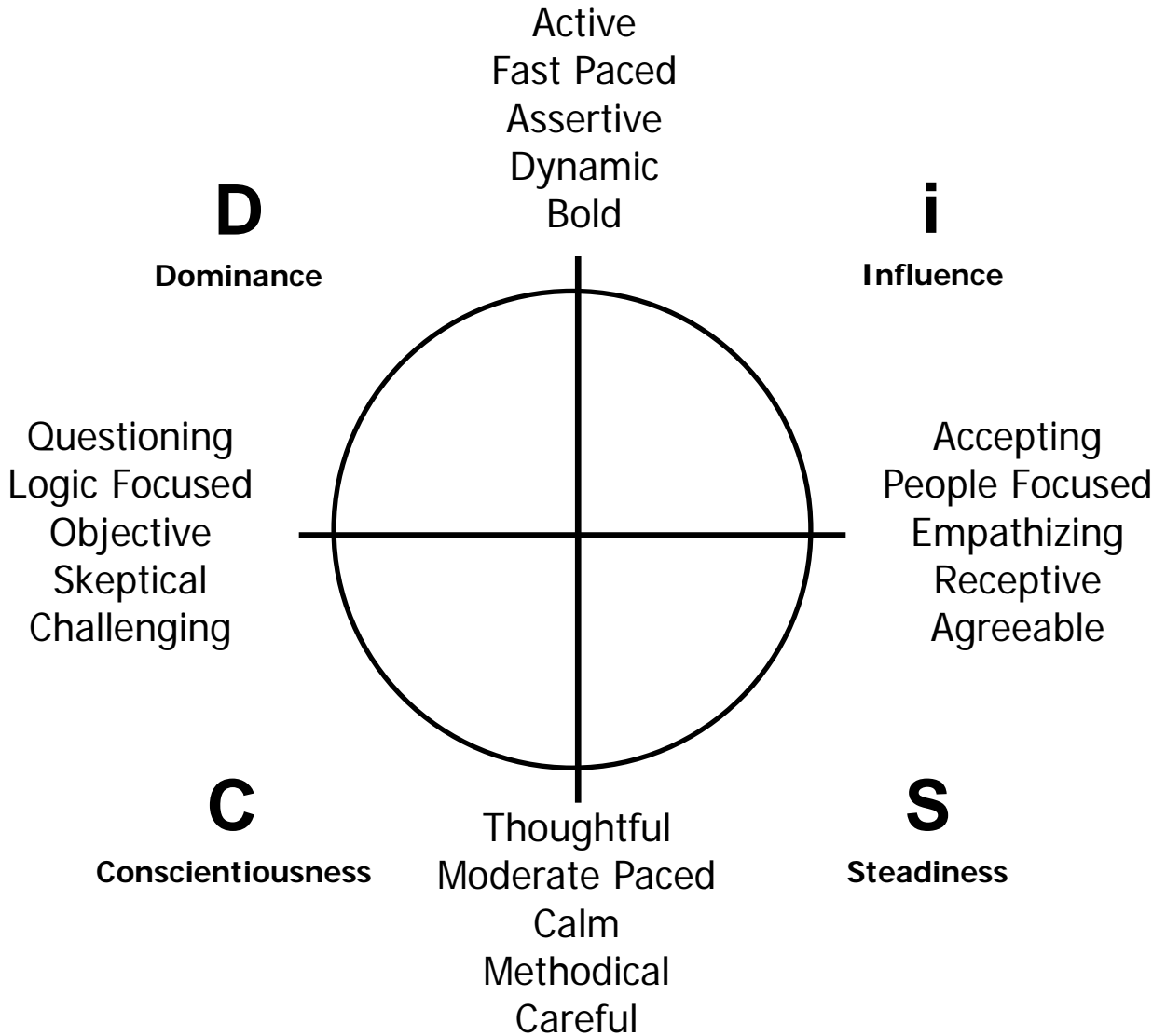
# Manufacturing Exploratory

Business & Community Institute  
Lansing Community College

Friday, February 9, 2017  
8:00am – 5:00pm







NOTES:

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**Emphasize:** shaping the environment by overcoming opposition and challenge

**Tendencies:** getting immediate results, taking action, accepting challenges

**Motivated by:** challenge, power and authority, direct answers

**Fears:** loss of control in their environment; being taken advantage of

**You will notice:** self-confidence, decisiveness, and risk-taking

**Limitations:** lack of concern for others, impatience

NOTES:

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**Emphasize:** shaping the environment by persuading and influencing others

**Tendencies:** involvement with people, making a favorable impression

**Motivated by:** social recognition, group activities, relationships

**Fears:** social rejection, disapproval, loss of influence

**You will notice:** enthusiasm, charm, sociability

**Limitations:** impulsiveness, disorganization, and lack of follow through

NOTES:

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## S — STEADINESS

HO 4-6

**Emphasize:** achieving stability, accomplishing tasks by cooperating with others

**Tendencies:** calm, patient, loyal, good listener

**Motivated by:** infrequent change, stability, sincere appreciation, cooperation

**Fears:** loss of stability, the unknown, change, unpredictability

**You will notice:** patience, a team player, stability, methodical approach, calm

**Limitations:** overly willing to give, putting their needs last

NOTES:

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# MY VALUE TO THE ORGANIZATION

HO 4-8

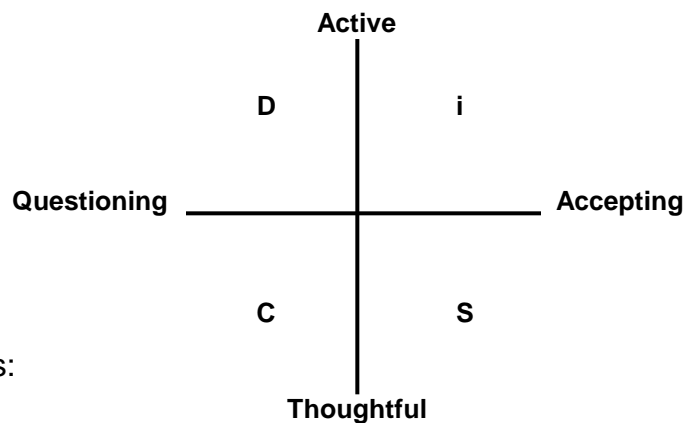
My primary DiSC® style(s):

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My secondary DiSC style(s):

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**INSTRUCTIONS:** Circle your primary DiSC style, as well as the two adjectives that combine to make that style. Then complete the statements below.



What I have in common with other styles:

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Things that make me different from other styles:

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The three characteristics of my style that I think are most important for others to understand:

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My value to the organization is:

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**Getting on a busy elevator...**

- The **D** walks up, gets on the elevator, and pushes the button that closes the door.
- The **i** lets others in, says “Always room for one more,” and “Come in, you’re going to be late; we’ll wait for you!”
- The **S** will wait in line, moving from one line to another, unable to make a decision.
- The **C** will get on the elevator. If it’s crowded, the C will count the number of people and, if the number is over the limit, will make someone get off.

**Shopping for groceries...**

- The **D** is the impulse shopper. No list.
- The **i** tells you where everything is in the store, whether you ask or not.
- The **S** is prepared, has a list, and gets it done efficiently.
- The **C** wouldn’t think of going shopping without coupons and a calculator.

**On the golf course...**

- The **D** frequently drives through groups of golfers.
- The **i** spends more time in the clubhouse talking than on the course.
- The **S** plays golf the same day, the same time, the same place, using the same clubs.
- The **C** keeps score, plays strictly by the rules, and cleans his or her clubs a lot.

**Hanging wallpaper...**

- The **D** says, “Come over Saturday and help me wallpaper. And bring the paste.” The D then starts in the middle of the living room. The patterns don’t match. The D says, “So what? That’s what drapes and pictures are for.”
- The **i** has the wallpaper in the closet with the paste. It’s on the list of things to do. The i never gets around to it.
- The **S** has to find a pattern that everyone likes before even beginning to think about hanging it.
- The **C** starts in a closet or in the garage to be sure the pattern is going to match. The C then gets it exactly right before starting on the living room.

**Ask for something on their desk...**

- The **D** has a messy desk and says, “It’s there somewhere — you look for it.”
- The **i** says, “I’m busy right now. Give me a few minutes and I’ll get back to you.” The **i** doesn’t know where it is, but won’t admit it.
- The **S** drops what he’s doing to get it for you, then offers to refill your coffee at the same time.
- The **C** has everything filed in alphabetical order or by color code.

**Cooking a meal...**

- The **D** can’t cook without a microwave.
- The **i** likes to cook for groups and has an extra place set at the table in case of unexpected company.
- The **S** prepares a meal from scratch and rotates around a dozen standard recipes.
- The **C** can’t cook without a timer and measuring cups.

**Reading a newspaper...**

- The **D** mainly reads the headlines and scatters the sections in the process.
- The **i** will read the obituaries first to see if he knows anyone.
- The **S** looks over the entire paper and clips interesting articles.
- The **C** calls the newspaper if a word is spelled incorrectly.

**Seeing a movie in a theater...**

- The **D** comes in late and makes everyone stand while taking a middle seat.
- The **i** attends in groups and applauds and talks during the entire movie.
- The **S** gets there 15 minutes early and is seeing the film again.
- The **C** reads reviews before attending.



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*BEHAVIORAL STYLES AND THEIR  
IMPACT IN THE WORKPLACE (DiSC)*

*4-Hours*

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# TRAINING INFORMATION SHEET

## BEHAVIORAL STYLES AND THEIR IMPACT IN THE WORKPLACE (DiSC)

Total Hours: 4

### DESCRIPTION

As more and more organizations strive to implement quality initiatives and self-directed work teams, it becomes increasingly important to improve interpersonal communication among employees. One of the critical building blocks to improved interaction is an understanding of the different behavioral styles and how they affect the way people communicate.

The purpose of this program is to increase participants' awareness and understanding of the four primary behavioral styles and their effect on interpersonal interactions and relationships.

### TRAINING OBJECTIVES

After completing this training program, participants should be able to:

1. Identify the four behavioral styles.
2. Compare and contrast the strengths and weaknesses of each style.
3. Identify their own behavioral style.
4. Demonstrate their behavioral strengths appropriately.

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# *Fork Lift Training*

*4-Hours*

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# AGENDA

## Manufacturing Exploratory

February 9-10, 2017

8:00am – 5:00pm

Welcome to the Lansing Community College Manufacturing Exploratory!

During this event you'll be able to:

- Explore the exciting field of Welding with the Virtual Welders
- Enhance your team building and communication skills through an active Team Build activity
- Discover your DiSC behavioral style to improve work production, teamwork, and communication
- Earn a Fork Lift Certification

### Friday, February 9, 2017

Introduction and Intake

Behavior Styles in the Workplace (DiSC)

CAMW! Grand River Rm

### LUNCH

Waterworks Design Solutions (Team Build Simulation)

### Saturday, February 10, 2017

Fork Lift Training

Room W161

### LUNCH

Virtual Welding

Room N175

### LCC West Campus

5708 Cornerstone Dr.  
Lansing, MI 48917

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*Waterworks Design Solutions:  
Team Build Module with Simulation  
Activity*

*4.0 Hours*

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# *Virtual Welding*

*4-Hours*

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## Waterworks Design Solutions Team Build Module with Simulation Activity

### AGENDA

#### Introduction

- Participant/Topic Introductions
- Objectives
- Simulation Activity Round 1

#### Communication and Teambuilding Skills Overview

- Listening and Avoiding Roadblocks
- Successful Teams, Problem Solving and Consensus Building

#### Simulation Activity

- Set-Up
- Rounds 2 and 3
- Debrief and Application

#### Session Objectives Review and Close



### OBJECTIVES

- Experience how working as a team can be more effective than working individually.
- Use learning techniques such as discovery and sensory input to accelerate learning, and reflective discussion to reinforce the benefits and importance of working as a team.
- Apply the concepts of effective communication, including listening, giving feedback and avoiding roadblocks, while working with each other to design a product.
- Build knowledge in the following areas of teamwork: what makes a successful team, problem solving, and consensus building.
- What additional expectations can you add? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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## Waterworks Design Solutions Simulation Activity

### INTRODUCTION

For this activity you will be taking on the role of a budding entrepreneur in the plumbing industry. You have recently purchased the Waterworks Design Solutions plumbing company and will be expected to master and demonstrate the assembly process of the company's number one plumbing product.

The product you will be assembling is a pipe fixture that is made to fit specifically around a wall beam. It has a very detailed production process and as you are a new owner of the company you don't want to change too much too fast. You have decided to follow the old production process to the smallest detail.



After you have read through the following assembly instructions you will have five minutes to gather your materials and begin production. Build as many of the fixtures as you can but make sure to follow the process step by step, completing one whole fixture before gathering materials for the next.

### INDIVIDUAL PIECES

Bended Fitting



Straight Tube



End Piece



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## THE PRODUCT



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## PLUMBING FIXTURE ASSEMBLY STEPS

Follow these steps in order, exactly as written.

### Step 1: Materials Collection

1. Gather seven bended fittings and place them in the work area.
2. Gather eight straight tubes and place them in the work area.
3. Collect two end pieces and put them in the work area.

### Step 2: Figure A

1. Attach one end piece to the end of a straight tube.
2. Attach a bended fitting to the other end of the straight tube.
3. Attach a straight tube to the other end of the bended fitting making an “L” shaped piece.
4. Set this assembly aside



Figure A

### Step 3: Figure B

1. Select a bended fitting and attach it to one end of a straight tube. The opening of the bended fitting should be facing to the side.
2. Select another bended fitting and attach it to the other end of the straight tube. This bended fitting should be facing downward, or in a different direction than the previous bended fitting.
3. Set this assembly aside.



Figure B

### Step 4: Figure C

1. Attach a bended fitting to the bottom of a straight tube.
2. Attach another straight tube to the bended fitting making an “L shape.”
3. Set this assembly aside.



Figure C

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## PLUMBING FIXTURE ASSEMBLY STEPS (continued)

### Step 5: Figure D

1. Select a bended fitting and attach it to one end of a straight tube. The opening of the bended fitting should be facing to the side.
2. Select another bended fitting and attach it to the other end of the straight tube. This bended fitting should be facing downward, or in a different direction than the previous bended fitting.
3. Set this assembly aside.



Figure D

### Step 6: Figure E

1. Attach a bended fitting to the bottom of a straight tube.
2. Attach another straight tube to the bended fitting making an "L shape."
3. Attach an end piece to the bottom of the "L" and set aside.



Figure E

### Step 7: Figure F

Attach all five parts together as shown and check that your fixture has the correct "in" and "out" points and that the wall beam (or your arm) will fit through the middle of the fixture as shown on page 2.

### Step 8:

Record how many fixtures you completed in Round 1:

\_\_\_\_\_

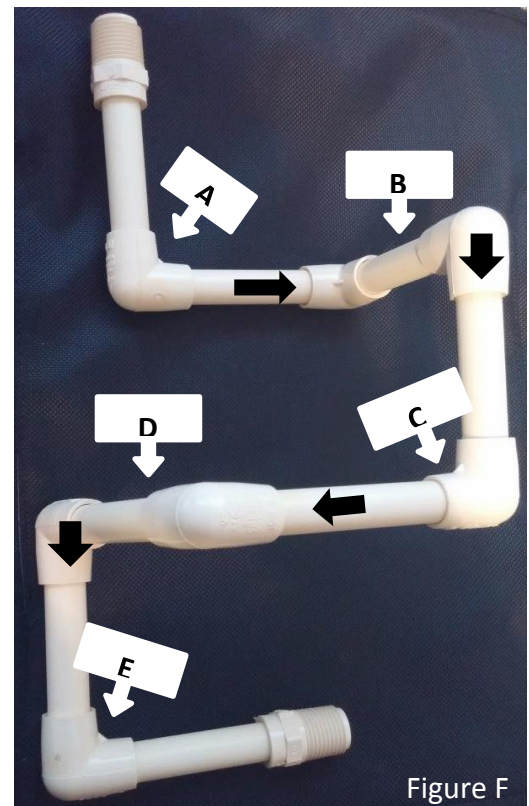


Figure F

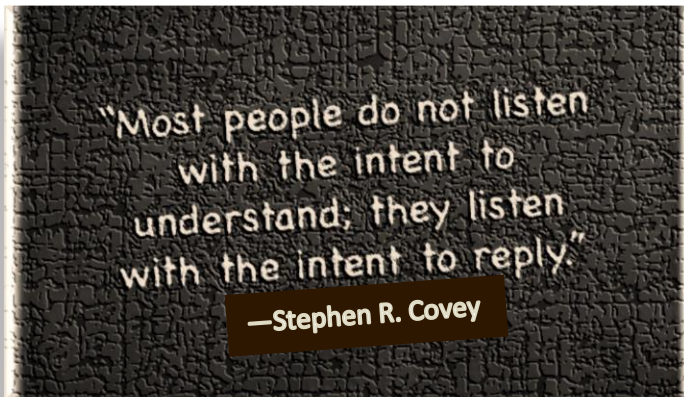
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## COMMUNICATING EFFECTIVELY

### Effective Listening

- Think about the purpose of the message
- Eye contact
- Nod to show understanding
- Ask questions
- Take notes
- Restate what was said in your own words
- Remain alert
- Ask open ended questions
- Remain sensitive to speaker's perspective
- Be patient!



### Avoiding Roadblocks to Communication

- Differences in Background** – Take time to understand each other.
- Excessive information** – Screen, edit and organize the information.
- Interference** – Eliminate or block it.
- Inaccurate Assumptions** – Be straightforward and concise.
- "Shoot the messenger"** – Avoid blame.

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### Recipe for Successful Teams:

- Clarity in Team Goals
- Improvement Plans
- Clearly Defined Roles
- Clear Communication
- Beneficial Behavior
- Well-Defined Decision Procedures
- Balanced Participation
- Established Ground Rules
- Group Process

### Team Problem Solving

- Analyze the Problem
- Generate Solutions
- Choose the Best Solution
- Implement the Solution
- Monitor Progress
- Evaluate the Outcome

### Building Consensus:

#### Conditions for Team Consensus Seeking

- Common Goal
- Commitment to reaching consensus
- Trust and openness
- Sufficient time
- Clear Process
- Active participation

### Basic Guidelines for Consensual Decision Making

- Avoid blindly arguing for your own individual judgments.
- Avoid changing your mind ONLY to reach agreement and avoid conflict.
- Avoid “conflict-reducing” procedures.
- Seek out differences of opinion.
- Do not assume that someone must win and someone must lose.
- Discuss the underlying assumptions, listen carefully to one another, and encourage the participation of all members.

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## OBSERVATIONS

Take three minutes to record ideas you have for improvement to the process or for a redesign of the fixture itself.

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Write down your group's ideas for improvement.

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## FINAL IMPROVEMENT PLAN

Write or draw your team's final improvement plan below.

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## REFLECTION QUESTIONS

1. What improvements did your team make? And how did those improvements affect your overall production?
2. How did round 1 of the activity compare with round 3? How many more fixtures did you build?
3. What observations do you have about how you felt in round 1 compared to round 3?
4. How did your different teammates contribute to the redesign?
5. What were the difficulties in working alone?
6. How did the team help solve those problems of being alone?
7. What were the challenges of working as a team?
8. What were the benefits of working as a team?

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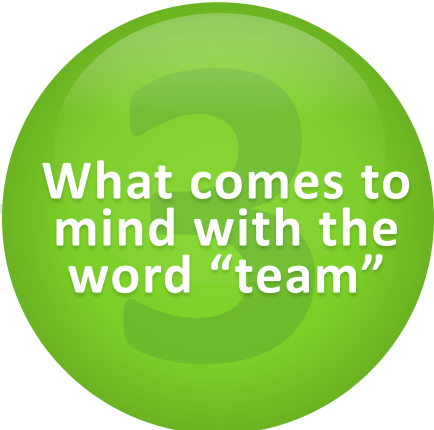
# Welcome!

## Waterworks Design Solutions Team Build Module and Simulation Activity

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# Introductions





What are the Pros and Cons of:

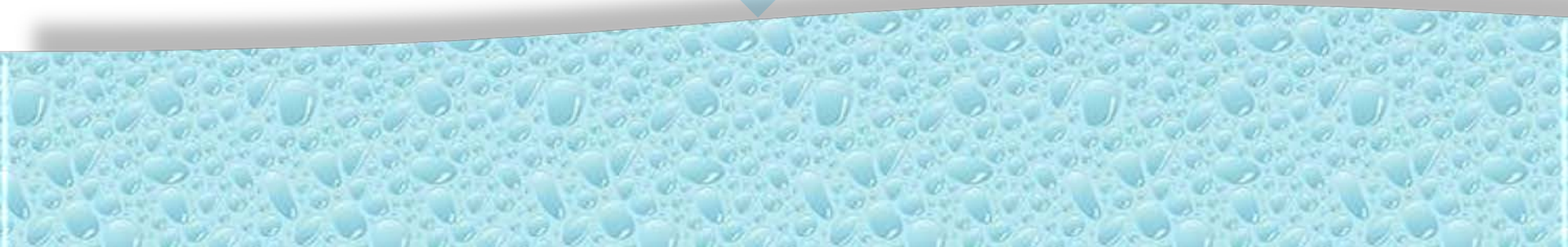
# Teams



What are some positive outcomes of working in a team?

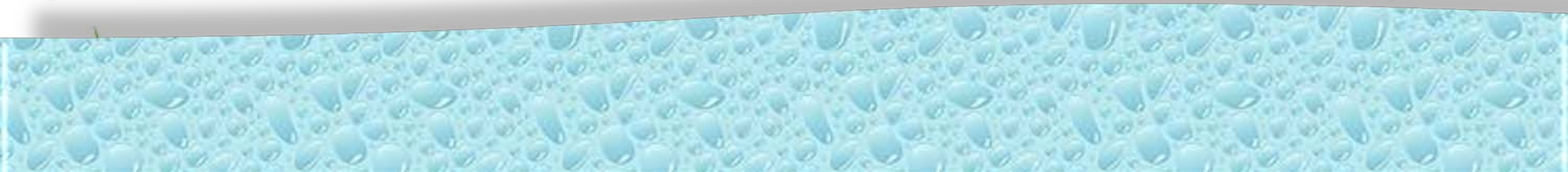


What are some less productive outcomes of working in a team?



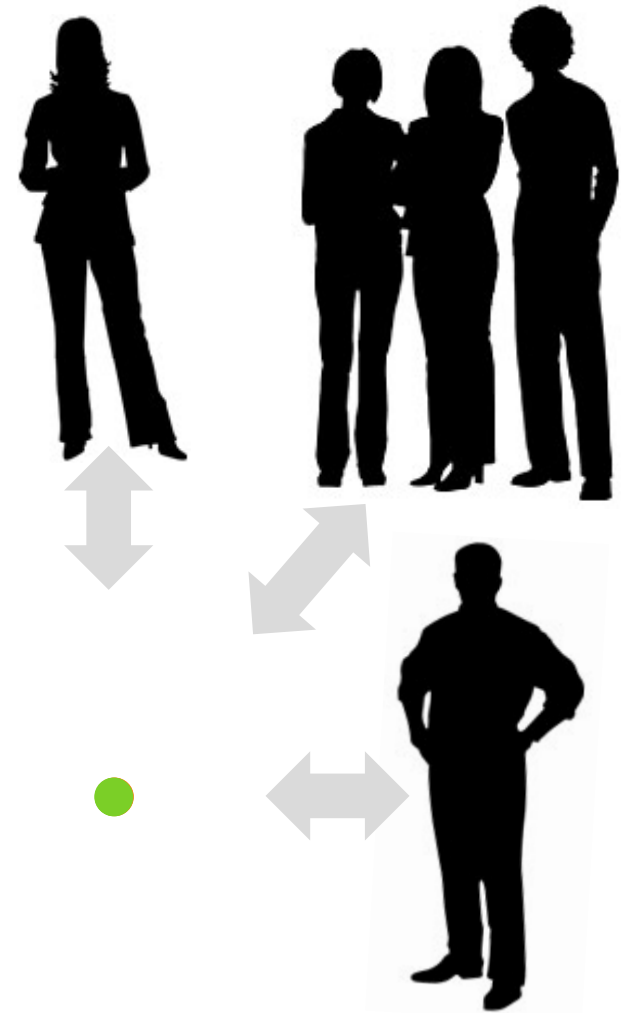


**Why do you think more  
companies are moving  
toward work teams?**



# Objectives

- ✓ Experience teamwork vs. individual work
- ✓ Use sensory input and reflection to accelerate learning
- ✓ Apply the concepts of effective communication
- ✓ Build knowledge in teamwork skills



What Objectives  
and Expectations  
do you have?

# Agenda



**1**

Welcome

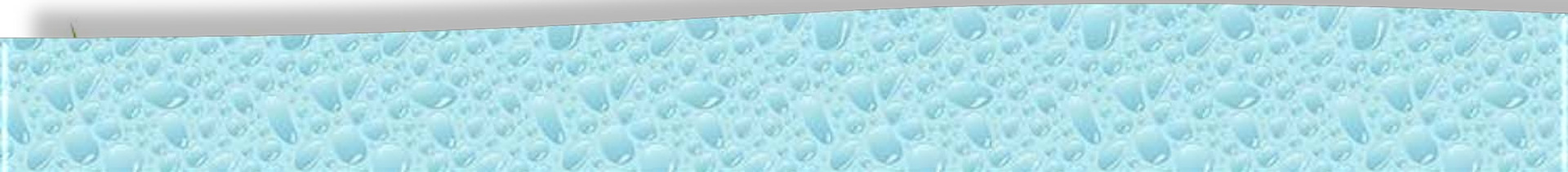
- Introduction
- Topic Intro
- Goals and Expectations

**2**

Communication  
and  
Teambuilding  
Skills Overview

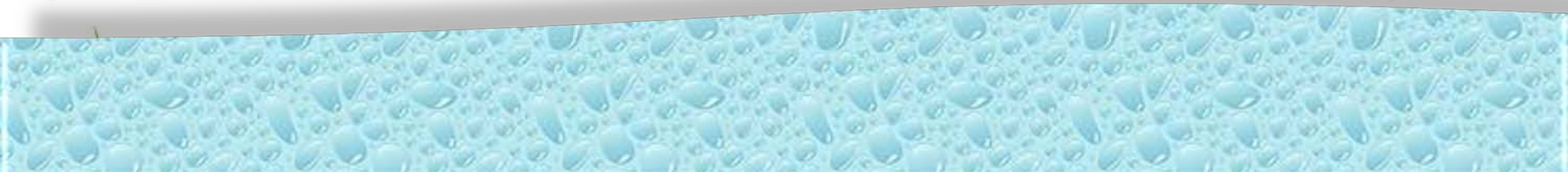
**3**

Simulation  
Activity, Debrief  
and Application





# **Waterworks Design Solutions Simulation Activity (Round 1)**





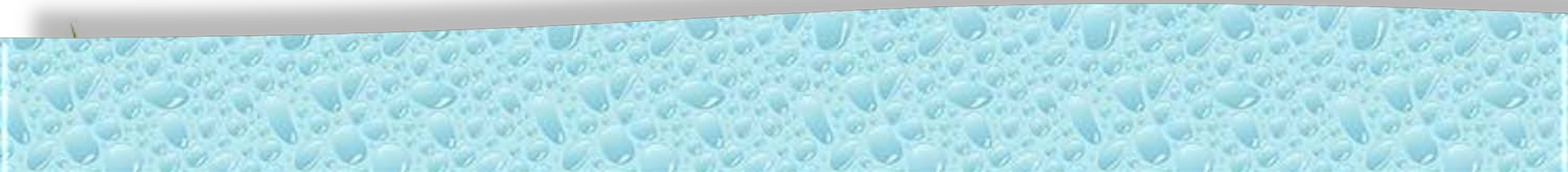
# Waterworks Design Solutions

**Round 1: Assemble Fixtures Individually**

**5 minutes**

**Complete each part of the assembly process before moving on**

**Fixture must fit “in” and “out” points and wall beam (or your arm)**





# Communication and Teambuilding

An Overview

# Communication is...an information exchange.



Listening

Speaking/Non  
Verbal

Reading/Writing



# Communication involves transferring a message



Sender Medium Receiver

.....and ensuring the message is understood.



## What are some costs of miscommunication in a team?

Loss of time  
& materials

Poor quality  
work

Lack of  
focus/goals

Confusion Tension



**Would you say you are a good communicator?**

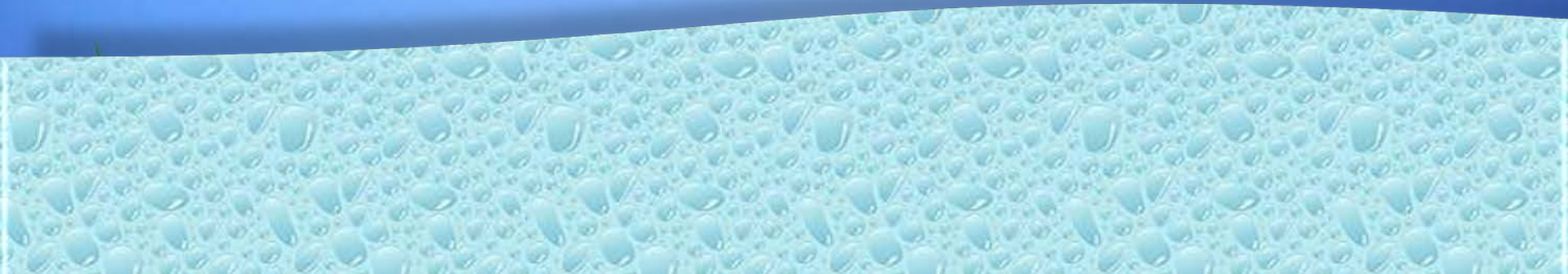
**Why or why not?**

**How is *hearing* different from *listening*?**

# Communication is more than just talking...

## Effective Listening Skills include:

- \* Considering the purpose of the message
- \* Making Eye contact
- \* Nodding to show understanding

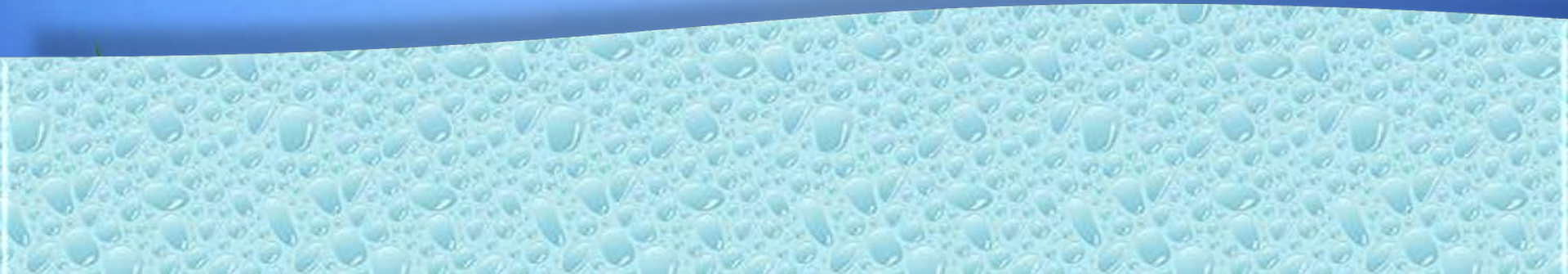




# Communication is more than just talking...

## Effective Listening Skills include:

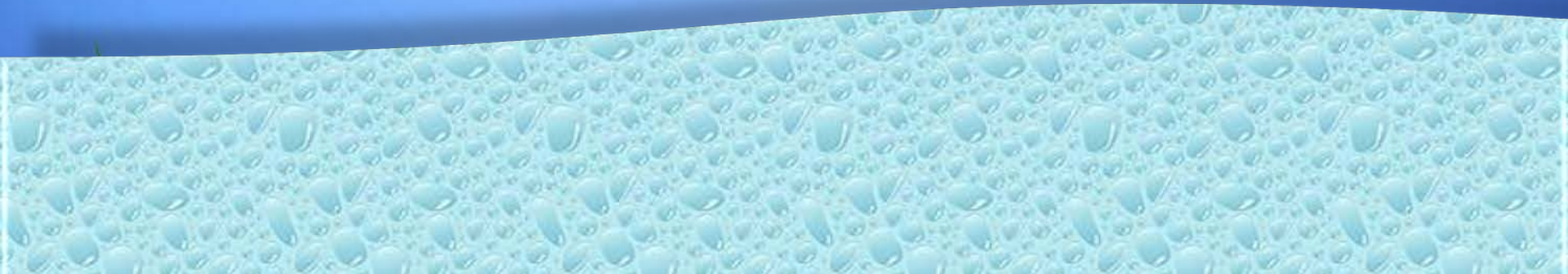
- \* Asking questions
- \* Taking notes
- \* Restating what was said in your own words
- \* Remaining alert



# Communication is more than just talking...

## Effective Listening Skills include:

- \* Asking open ended questions
- \* Sensitivity to the speaker's perspective
- \* Patience!



# Roadblocks to Communication



# Successful Teams Have.....

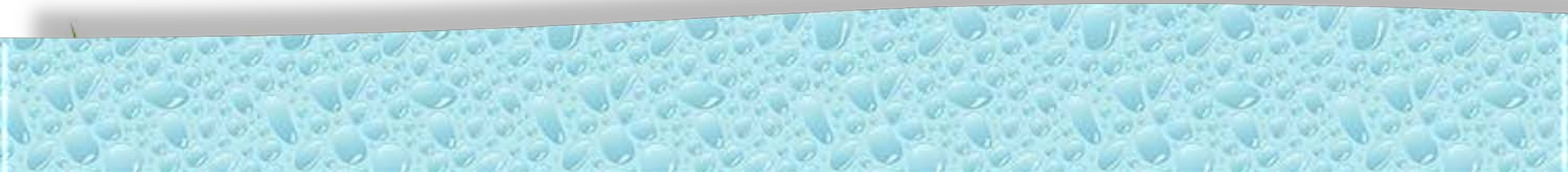
**Recipe For  
a Team**

**Clarity in  
Team  
Goals**

**Improvement Plan**

**Clearly  
Defined Roles**

**Clear Communication**





# Successful Teams Have.....



**Beneficial  
Behavior**

**Well-Defined  
Decision Procedures**

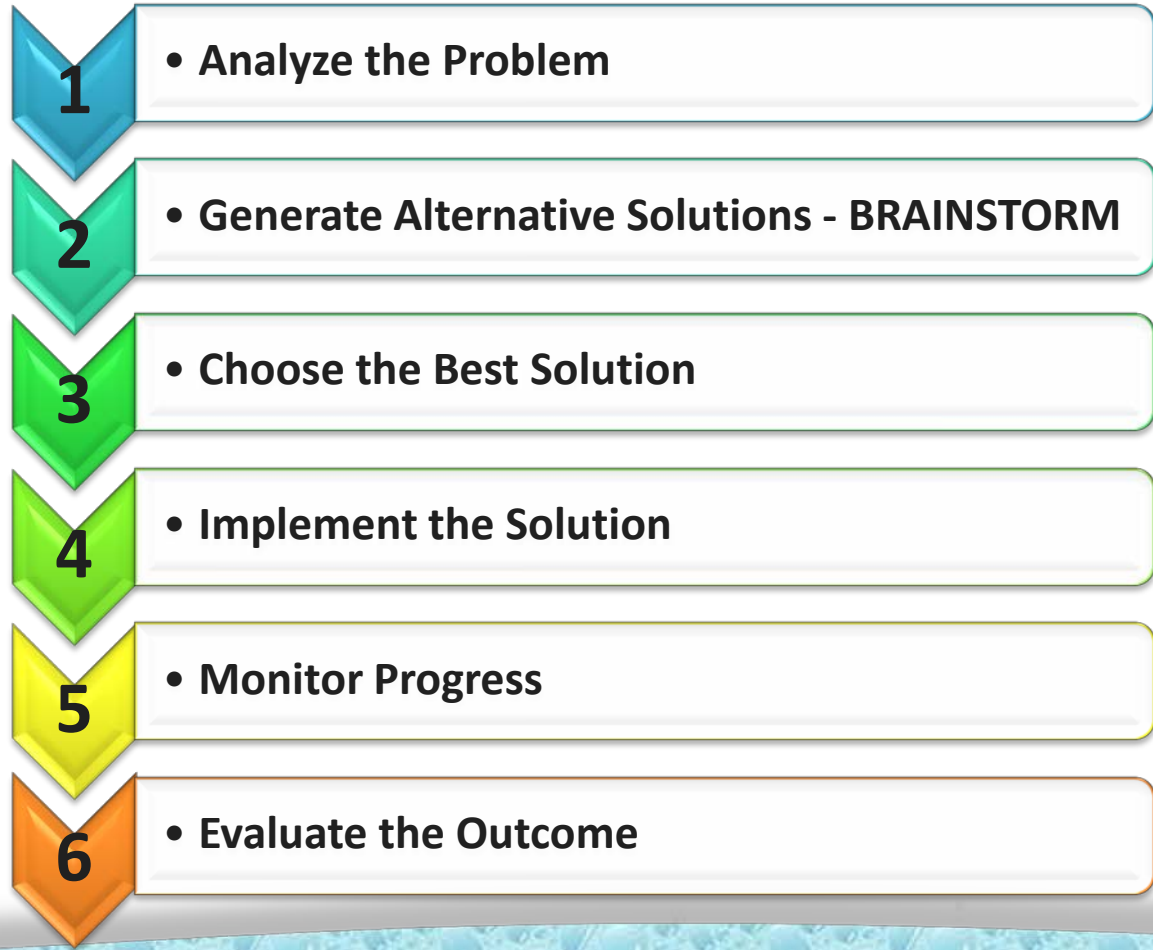
**Balanced  
Participation**

**Established  
Ground Rules**

**Group  
Process**



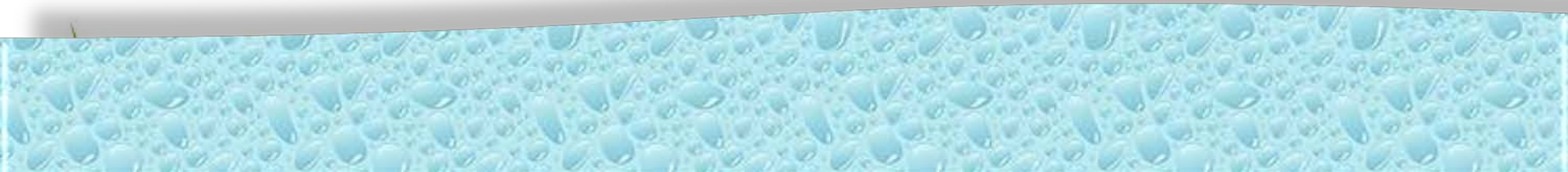
# Team Problem Solving



# Building Consensus

## Basic Guidelines for Consensual Decision Making:

1. Avoid blindly arguing.
2. Avoid changing your mind only to reach agreement.
3. Avoid “conflict- reducing”
4. Seek out differences of opinion.
5. Do not assume winner and loser.
6. Encourage participation.



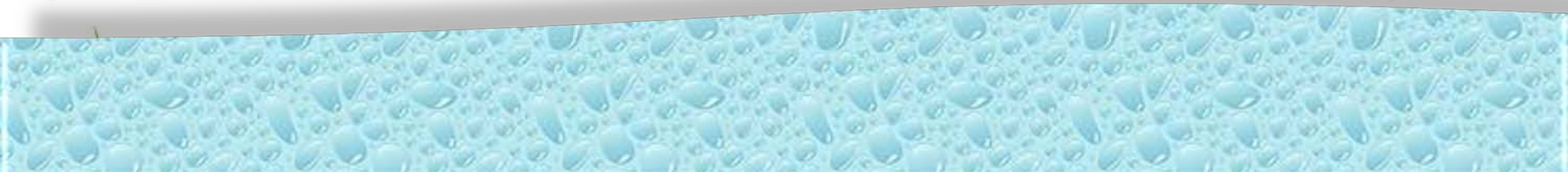
# Building Consensus

Best Conditions for Consensual Decision Making:





# **Waterworks Design Solutions Simulation Activity (Rounds 2 & 3)**



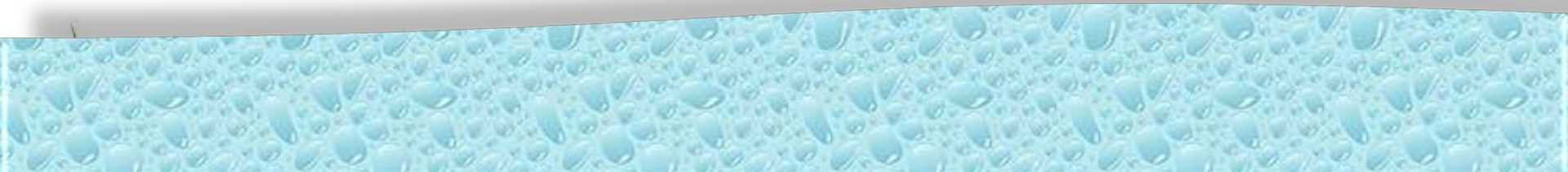


# Waterworks Design Solutions

**Round 1: Assemble Fixtures Individually  
5 minutes.**

**Complete each part of the assembly  
process before moving on**

**Fixture must fit “in” and “out” points and  
wall beam (or your arm)**



# Waterworks Design Solutions

**Round 1: Assemble Fixtures Individually**



**Round 2: Create Improvement Ideas**

**Individually 3 minutes**

**Group – SHARE ONLY – 1-2 min. per person**

**Group – Discuss and Design – 5 minutes**



# Waterworks Design Solutions

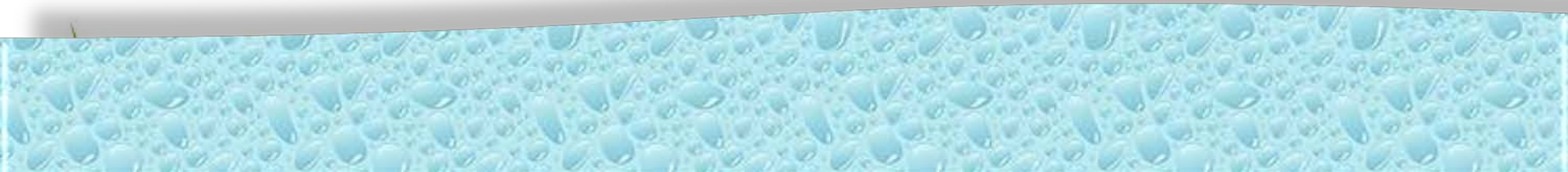
**Round 1: Assemble Fixtures Individually**



**Round 2: Create Improvement Ideas**



**Round 3: Implement Group Design – 5 min.**





**What improvements did your team make?  
How did those improvements affect your overall production?**

**How did round 1 of the activity compare with round 3?  
How many more fixtures did you build?**

**What observations do you have about how you felt in round 1  
compared to round 3?**

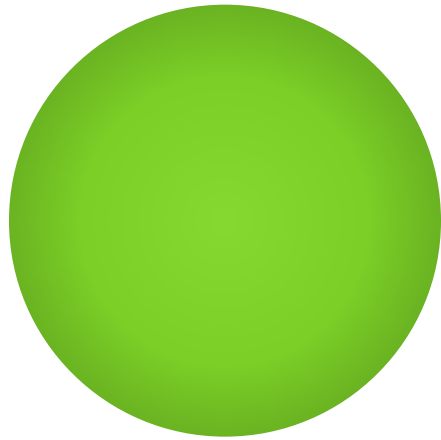
**How did your teammates contribute?**

**What were the difficulties in working alone?**

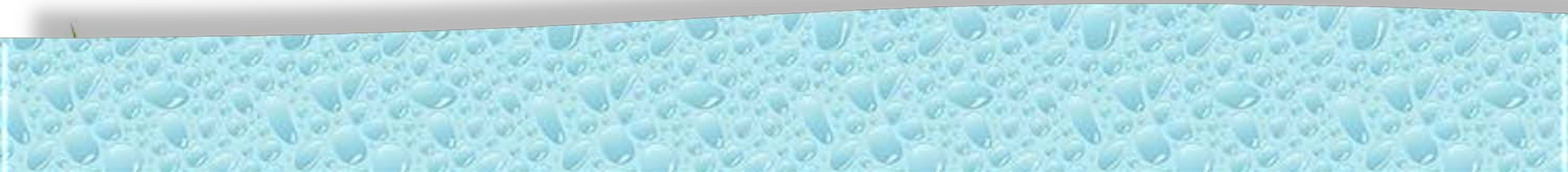
**How did the team help solve those problems of being alone?**

**What were the challenges of working as a team?**

**What were the benefits of working as a team?**

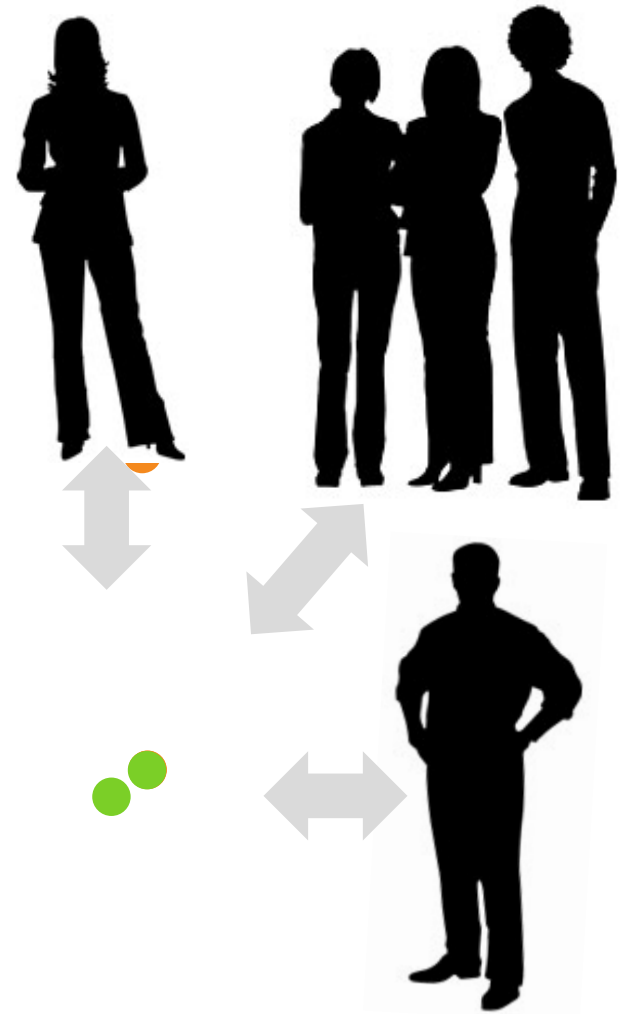


**What have you learned from today's session that you can apply to your current workplace environment?**



# Objectives

- ✓ Experience teamwork vs. individual work
- ✓ Use sensory input and reflection to accelerate learning
- ✓ Apply the concepts of effective communication
- ✓ Build knowledge in teamwork skills





# Thank you!

Waterworks Design Solutions  
Team Build Module  
and Simulation Activity

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

Comments or recommendations:			
<b>4. Assessment Tools/Criteria for Evaluation</b>	<b>Exceptional</b>	<b>Satisfactory</b>	<b>Ineffective</b>
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:			
<b>5. Equipment/Technology</b>	<b>Exceptional</b>	<b>Satisfactory</b>	<b>Ineffective</b>
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**

<b>1. Course Overview and Objectives</b>	<b>Exceptional</b>	<b>Satisfactory</b>	<b>Ineffective</b>
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:			
<b>2. Material and Resources</b>	<b>Exceptional</b>	<b>Satisfactory</b>	<b>Ineffective</b>
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:			
<b>3. Learning Activities</b>	<b>Exceptional</b>	<b>Satisfactory</b>	<b>Ineffective</b>
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	



### 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:** Manufacturing Exploratory

#### 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

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

#### Synopsis of Findings:

1. In the Welding section, there are some Xeroxed copies that are hard to read. Either get new one, or re-type where applicable.
2. Weld examples are not clear, need new photo/diagram.

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

Date: \_\_\_\_\_ 3/10/17



# Robert C. Hess

47737 Remer Ave.  
Shelby Twp., MI 48317  
586-322-1033  
[bob.hess@mhtechnologies.net](mailto: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

- |  |                                     |  |
|--|-------------------------------------|--|
| <b>2015 – Present</b>  | <b>M H Technologies LLC</b>         | <b>Warren, MI</b>                                      |
| <b>Senior Instructional Designer/Trainer</b>   |                                     |  |
| <ul style="list-style-type: none"><li>• Perform Needs Analysis and quote training programs</li><li>• Develop on-line training programs, system manuals, student workbooks, and job aids</li><li>• Deliver on-site training programs</li></ul>  |                                     |  |
| <b>2002 – 2015</b>   | <b>R.C. Technologies</b>            | <b>Shelby Twp. MI</b>                                  |
| <b>Business Owner – R.C. Technologies</b>  |                                     |  |
| <ul style="list-style-type: none"><li>• Research and quote training programs</li><li>• Development of training programs for Ford Motors, DaimlerChrysler, General Motors, Kuka Robotics, Fame Conveyor, Lamb Technicon, Delphi, Magna, and SPX</li><li>• Design training programs, system manuals, student workbooks, PowerPoint presentations, and job aids</li><li>• Deliver on-site training programs</li><li>• Professional Industrial photography</li></ul> |                                     |  |
| <b>1995 – 2002</b>   | <b>DCT Inc.</b>                     | <b>Sterling Heights, MI</b>                            |
| <b>Training Designer</b>   |                                     |  |
| <ul style="list-style-type: none"><li>• Research and quote training programs</li><li>• Design training programs, system manuals, student workbooks, and job aids</li><li>• Deliver on-site training programs</li></ul>   |                                     |  |
| <b>1990 – 1995</b>   | <b>Bond Robotics</b>                | <b>Sterling Heights, MI</b>                            |
| <b>Training Manager / Field Service Engineer</b>   |                                     |  |
| <ul style="list-style-type: none"><li>• Managed Training Department</li><li>• Research and quote training programs</li><li>• Design operation and maintenance manuals plus training guides</li><li>• Deliver all training programs</li><li>• Perform on-site electrical and mechanical customer support for installation, start-up, and debugging of pressroom automation</li></ul>  |                                     |  |
| <b>1986 – 1990</b>   | <b>Robotic Vision Systems, Inc.</b> | <b>Sterling Heights</b>                                |
| <b>Field Service Engineer / Trainer</b>  |                                     |  |
| <ul style="list-style-type: none"><li>• Research, installation, programming and training of 3D vision guided robotic welding and sealant systems for military, aerospace, and automotive industry</li></ul>  |                                     |  |
| <b>Education</b>   | <b>1977 – 1981</b>                  | <b>Ferris State University</b>                         |
|  |                                     | <b>Big Rapids, MI</b>                                  |
|  |                                     | <ul style="list-style-type: none"><li>• BSEE</li></ul> |