



# **ILLINOIS VALLEY COMMUNITY COLLEGE**

## **COURSE OUTLINE**

**DIVISION: Workforce Development**

**COURSE: GNT 1220; Intro to Manufacturing & OSHA 10-Hour Safety**

Date: Spring 2015

Credit Hours: 4

Prerequisite(s): None

Delivery Method:  **Lecture**                      **3 Contact Hours** (1 contact = 1 credit hour)  
 **Seminar**                              **0 Contact Hours** (1 contact = 1 credit hour)  
 **Lab**    **2 Contact Hours** (2 contact = 1 credit hour)  
 **Clinical**                                      **0 Contact Hours** (3 contact = 1 credit hour)  
 **Online**  
 **Blended**

Offered:  **Fall**       **Spring**       **Summer**

IAI Equivalent –**Only for Transfer Courses**-go to <http://www.itransfer.org>:

### **CATALOG DESCRIPTION:**

This course provides the student with an introduction to the manufacturing world and provides specific instruction to facilitate safe work practices in industrial environments. Covers fire safety, pressurized gases, electrical hazards, first aid, safe machine usage, personal protective equipment and basic communication skills including written and oral. Students will also become acquainted with OSHA policies, understanding of workplace recordkeeping. The OSHA 10 Hour General Industry card will be earned upon successful completion of this class. Students will have the opportunity to earn the Safety Certification through Manufacturing Skill Standards Council (MSSC).

## GENERAL EDUCATION GOALS ADDRESSED

*[See the last page of this form for more information.]*

### Upon completion of the course, the student will be able:

[Choose those goals that apply to this course.]

- To apply analytical and problem solving skills to personal, social and professional issues and situations.
- To communicate orally and in writing, socially and interpersonally.
- To develop an awareness of the contributions made to civilization by the diverse cultures of the world.
- To understand and use contemporary technology effectively and to understand its impact on the individual and society.
- To work and study effectively both individually and in collaboration with others.
- To understand what it means to act ethically and responsibly as an individual in one's career and as a member of society.
- To develop and maintain a healthy lifestyle physically, mentally, and spiritually.
- To appreciate the ongoing values of learning, self-improvement, and career planning.

### EXPECTED LEARNING OUTCOMES AND RELATED COMPETENCIES:

*[Outcomes related to course specific goals.]*

#### Upon completion of the course, the student will be able to:

1. Identify MSSC and describe learning and study techniques necessary for success in MSSC certification course.
2. List types of manufacturing, benefits of manufacturing careers, and responsibilities of six (6) types of frontline manufacturing jobs
3. Describe the importance of manufacturing on everyday lives and skills needed for success in high performance manufacturing
4. Identify methods of responding to customer expectations, systems used by high performance manufacturing to produce quality products, and advanced manufacturing techniques
5. Analyze case studies in best practices techniques used by successful U.S. companies to achieve high performance manufacturing
6. Demonstrate techniques for effective verbal communication, including giving/receiving feedback and listening
7. Describe how to communicate effectively with internal and external customers; communicate effectively with production team members
8. Demonstrate techniques for effective written communication; use email and other written communication technologies
9. Identify techniques for building successful frontline teams, consensus decision making, idea generation, concept of concurrent engineering, customer service concepts
10. Understand how to deliver effective training; prepare to train; evaluate training results; lead teams; conflict resolution
11. Identify types of internal and external customers and their importance, identification of internal and external customer needs
12. Describe agencies that regulate safety, internal safety groups, emergency procedures, perform a job safety analysis, workplace behavior, and safety inspections
13. Identify types, applications and use of personal protective equipment for ears, eyes, body, face, hand, foot, and respiration

14. Demonstrate an understanding of fire and electrical safety guidelines, use of fire extinguishers, lockout / tagout procedure, basic first aid, and accident reporting
15. Describe housekeeping safety, work area permits, ergonomics, platform and man lift safety
16. Demonstrate an understanding of types of hazardous materials, Hazmat safety guidelines, Hazmat labeling systems, Material Safety Data Sheets, Handling and storage procedures
17. Summarize safety guidelines for machine operation, hand tools, cutting tools, compressed air, portable power tools, guards; pneumatic lockout / tagout; use of ladders
18. Summarize safety guidelines for powered lift trucks, cranes, rigging, and equipment movement; use a hoist; select a sling; use a pry truck; use a lift truck
19. Demonstrate an understanding of the major provisions of OSHA including the inspection and citation process, working and walking surfaces, emergency plans and exit routes, material safety data sheets and labeling, electrical safety, machine guarding and record keeping.

### **COURSE TOPICS AND CONTENT REQUIREMENTS:**

- I. Learning Techniques
- II. Working in Manufacturing
- III. The Impact of Manufacturing
- IV. Responding to Customer Expectations
- V. Best Practice Companies
- VI. Communication Skills
- VII. Production Group Communication
- VIII. Communication Strategies
- IX. Production Teams
- X. Training and Leadership
- XI. Meeting Customer Needs
- XII. Safety Organization
- XIII. Personal Protective Equipment
- XIV. Fire and Electrical Safety
- XV. Work Area Safety
- XVI. Hazardous Material Safety
- XVII. Tool and Machine Safety
- XVIII. Material Handling Safety
- XIX. OSHA 10 Hour General Industry

### **INSTRUCTIONAL METHODS:**

1. Lecture
2. Demonstration
3. Problem solving and discussion
4. MSSC online e-Learning modules

### **INSTRUCTIONAL MATERIALS:**

Goetsch, David L. *Basics of Occupational Safety*. Prentice Hall, 2010  
ISBN: 978-0-13-502613-7

Manufacturing Skill Standards Council, *High-Performance Manufacturing*, Woodland Hills, CA, 2006

### **STUDENT REQUIREMENTS AND METHODS OF EVALUATION:**

1. Tests and quizzes
2. Student presentations

## OTHER REFERENCES

“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, timelines, usefulness, adequacy, continued availability, or ownership. This solution is copyrighted by the institution that created it. Internal use, by an organization and/or personal use by an individual for non-commercial purposes, is permissible. All other uses require the prior authorization of the copyright holder.”

# Course Competency/Assessment Methods Matrix

GNT 1220; Intro to Manufacturing & OSHA 10-Hour Safety	Assessment Options																															
For each competency/outcome place an "X" below the method of assessment to be used.	Assessment of Student Learning	Article Review	Case Studies	Group Projects	Lab Work	Oral Presentations	Pre-Post Tests	Quizzes	Written Exams	Artifact Self Reflection of Growth	Capstone Projects	Comprehensive Written Exit Exam	Course Embedded Questions	Multi-Media Projects	Observation	Writing Samples	Portfolio Evaluation	Real World Projects	Reflective Journals	Applied Application (skills) Test	Oral Exit Interviews	Accreditation Reviews/Reports	Advisory Council Feedback	Employer Surveys	Graduate Surveys	Internship/Practicum /Site Supervisor Evaluation	Licensing Exam	In Class Feedback	Simulation	Interview	Written Report	Assignment
	Direct/ Indirect	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	D	I	I	I	I	D	D							
Assessment Measures – Are direct or indirect as indicated. List competencies/outcomes below.																																
1. Identify MSSC and describe learning and study techniques necessary for success in MSSC certification course.				X		X	X	X				X		X								X	X			X	X					
2. List types of manufacturing, benefits of manufacturing careers, and responsibilities of six (6) types of frontline manufacturing jobs				X		X	X	X				X		X								X	X			X	X					
3. Describe the importance of manufacturing on everyday lives and skills needed for success in high performance manufacturing				X		X	X	X				X		X								X	X			X	X					
4. Identify methods of responding to customer expectations, systems used by high performance manufacturing to produce quality products, and advanced manufacturing techniques				X		X	X	X				X		X								X	X			X	X					
5. Analyze case studies in best practices techniques used by successful U.S. companies to achieve high performance manufacturing				X		X	X	X				X		X								X	X			X	X					
6. Demonstrate techniques for effective verbal communication, including giving/receiving feedback and listening				X		X	X	X				X		X								X	X			X	X					
7. Describe how to communicate effectively with internal and external customers; communicate effectively with production team members				X		X	X	X				X		X								X	X			X	X					

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8. Demonstrate techniques for effective written communication; use email and other written communication technologies				X		X	X	X				X		X					I		I	X	X	X	X	D		X	X				
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10. Understand how to deliver effective training; prepare to train; evaluate training results; lead teams; conflict resolution				X		X	X	X				X		X								X	X	X	X		X	X					
11. Identify types of internal and external customers and their importance, identification of internal and external customer needs				X		X	X	X				X		X								X	X	X	X		X	X					
12. Describe agencies that regulate safety, internal safety groups, emergency procedures, perform a job safety analysis, workplace behavior, and safety inspections				X		X	X	X				X		X								X	X	X	X		X	X					
13. Identify types, applications and use of personal protective equipment for ears, eyes, body, face, hand, foot, and respiration				X		X	X	X				X		X								X	X	X	X		X	X					
14. Demonstrate an understanding of fire and electrical safety guidelines, use of fire extinguishers, lockout / tagout procedure, basic first aid, and accident reporting				X		X	X	X				X		X								X	X	X	X		X	X					

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15. Describe housekeeping safety, work area permits, ergonomics, platform and man lift safety				X	X	X	X			X	X										X	X	X	X		X	X					
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17. Summarize safety guidelines for machine operation, hand tools, cutting tools, compressed air, portable power tools, guards; pneumatic lockout / tagout; use of ladders			X	X	X	X				X	X										X	X	X	X		X	X					
18. Summarize safety guidelines for powered lift trucks, cranes, rigging, and equipment movement; use a hoist; select a sling; use a pry truck; use a lift truck			X	X	X	X				X	X										X	X	X	X		X	X					
19. Demonstrate an understanding of the major provisions of OSHA including the inspection and citation process, working and walking surfaces, emergency plans and exit routes, material safety data sheets and labeling, electrical safety, machine guarding and record keeping.			X	X	X	X				X	X										X	X	X	X		X	X					