

Louisiana Delta Community College

Academic Affairs Master Syllabus

Course Name: INTRODUCTION TO MANUFACTURING

Course Number: IMFG 1010

Lecture hours: 30

Lab Hours: 45

Credit Hours: 3

Textbook, Author, and Publisher:

Instructor Information:

Class Location:

Course Description:

This course is an overview of the functional and structural compositions of manufacturing; including processes, plant safety, and quality in the manufacturing environment. Presents the personal and interpersonal skills required to be part of a high performance team in a manufacturing environment. Topics include team building, effective communication skills, and ethics in the workplace. Knowing how to use a tape to measure is important part of daily activities in a Manufacturing plant. In this course you will know how to consistently measure with a ruler, tape measure and precision measurement devices.

Prerequisites: None

Co-requisites: None

Learning Outcomes:

On completion of this course, the student will be able to:

1. Demonstrate understanding of basic manufacturing terms.
 - a. Describe the various terms used in the machining process.
 - b. Describe the various terms used in the assembly process.
 - c. Describe the various terms used in the fabricating process.
 - d. Describe the various terms used to describe forming operations.
2. Compare and contrast continuous processes and batch processes.
 - a. Define continuous processes found in the manufacturing environment.
 - b. Define batch processes found in the manufacturing environment.
 - c. Explain the advantages and disadvantages of continuous processes in the manufacturing environment.
 - d. Explain the advantage and disadvantages of batch processes in the manufacturing environment
3. Evaluate the changing environment of today's manufacturing industry.
 - a. Describe the basic concepts of Just in Time manufacturing.
 - b. Discuss the advantages of using Pull rather than Push systems to schedule production.
 - c. Explain how technology can be used to shorten the lag time between order and delivery of the product.
 - d. Expound on the benefits of reducing inventory in finished goods, Work in Process and raw materials.

Learning Outcomes (continued): On completion of this course, the student will be able to:

4. Explain automation's positive impact on a manufacturing environment.
 - a. Contrast the machining operation using a live machinist as opposed to a NC operated machining center.
 - b. Discuss benefits of using automated equipment for lifting/placing heavy loads as opposed to live operators.
 - c. Discuss advantages of using automated conveyors to sort/sequence work in process and finished goods.
 - d. Describe an automated order picking system and contrast it to a manual system.
5. Illustrate how automation and technology influences manufacturing.
 - a. Describe the economic impact of automatic controls for distribution systems.
 - b. List advantages for production when utilizing Programmable Logic Controllers.
 - c. State how use of automation equipment has enabled operation of plant facilities in remote locations.
6. Describe the importance of how the general safety culture impacts the manufacturing environment.
 - d. Discuss the reasons for machine guarding and Lockout/Tagout rules.
 - e. Discuss the requirements for identifying and safely handling chemicals in the workplace.
 - f. Explain how housekeeping helps to keep the workplace free of hazards and at home.
7. Explain how awareness, attitude, and behavior impact the safety culture.
 - a. Discuss Safety attitudes toward safety policies and programs such as chemical labeling, Lockout/Tagout, grounding,
 - b. Demonstrate how following (behavior) safety rules can prevent accidents (i.e. Lockout/Tagout, Grounding, GFCI use, Chemical Labeling, Fire and Electrical Safety).
8. Explain the importance of quality in the manufacturing environment.
 - a. Define the concept of quality from the customer viewpoint.
 - b. Describe the attributes which define product quality.
 - c. Discuss the various roles and responsibilities for product quality.
 - d. Discuss methods to sample and measure quality in the manufacturing process.
 - e. Explain how and why the customer must be protected from poor quality
9. Apply the concepts, principles, and tools used in Lean manufacturing to identify and reduce waste in the workplace.
 - a. Describe the purpose and benefits of implementing Lean Manufacturing in the manufacturing workplace.
 - b. Discuss the various Lean Tools available to reduce waste in the manufacturing environment.
 - c. Describe culture which must exist for Lean Manufacturing to be successfully implemented and sustained.
 - d. Discuss the process of implementing and sustaining Lean initiatives.
10. Explain why high performing teams are important in a manufacturing environment.
 - a. Identify challenges individuals face when working as a team.
 - b. Explain the importance of synergy in a High Performance Team.
11. Apply the team building concepts and skills needed to be a high performing team.
 - a. Identify the different stages of team development.
 - b. Identify characteristics of successful High Performance Teams.
12. Identify the basic components of effective communication.
 - a. Discuss the different ways individuals communicate today, and what mediums are used to communicate.
 - b. Discuss the difference between one-way and two-way communication.
 - c. Identify common barriers that hinder or stop effective communication.
Discuss how barriers can be eliminated.
13. Demonstrate effective communications in a team environment.
 - a. Discuss what team did well and what they could have done better regarding the communication activity.
Explain in written form why your team was or was not successful with the activity.
14. Describe the importance of positive values and ethics in the workplace.
 - a. Discuss personal values and where individuals get their values.
 - b. Discuss The Golden Rule and how it impacts our values.
 - c. Discuss what type of values companies are looking to use.
 - d. Discuss each team company values and why these values were chosen.
 - e. Define ethics and how ethics and our actions/behavior are impacted by our values.
 - f. Discuss how a person's individual values can impact a team positively and negatively.
 - g. Discuss how your decisions will impact the company.
15. Demonstrate ethical behavior when given specific situations.
 - a. Explain what you would do and why given certain dilemmas.
 - b. Explain what you would do as a team and why given certain situations.
16. Explain tape measurements both standard and metric
 - a. Explain the importance of measurements and how it will be used in Manufacturing
 - b. Explain the markings on a tape measure in fractions of an inch
 - c. Explain how to measure with ruler and tape using standard measurements
 - d. Explain metric measurement in millimeters and centimeters

Assessment Measures: To be provided by College Campus

Library Resource Center:

The Delta Library and Learning Resource Center is committed to providing quality information and learning resources and services, including technology, in supporting the overall mission of Louisiana Delta Community College and its commitment to lifelong learning.

Special Accommodations:

Louisiana Delta Community College complies with Section 504 of the Rehabilitation Act, as well as the Americans with Disabilities Act. Students with disabilities who attend the Monroe campus may make a request by contacting the Director of Counseling and Disability Services (See College Directory for contact information.) at the beginning of each semester. Reasonable accommodations will be attempted for students with documented disabilities. If an impairment is identified later in the semester, a non-retroactive accommodation plan will be developed. Students at satellite campuses should contact the Coordinator of Student Affairs at their particular campus.

Title IX:

Louisiana Delta Community College is committed to protecting the rights of students, which includes compliance with Title IX requirements. As such, the institution and members of our community will not tolerate the offenses of dating violence, domestic violence, sexual assault, and stalking. Students with Title IX concerns should contact the College's Title IX Coordinator (See College Directory for contact information.) Students are required to complete Sexual Assault Awareness and Prevention Online Training. Access to this online course will be sent out through the Delta email account.

Student Code of Conduct:

Louisiana Delta Community College encourages an environment of academic integrity and mutual respect. Students should read and follow both academic and behavioral expectations identified in the Code of Student Conduct that can be found online at www.ladelta.edu. Students are expected to act with integrity, respect the rights of others, and conduct themselves in a professional manner. The Honor Code prohibits academic misconduct such as cheating, engaging in unauthorized collaboration, and plagiarism. Violations of the Code of Student Conduct may result in disciplinary action as provided in the Code. Incidents are reported through the online Student Conduct system.