

Maintenance Management

Course Outcome Summary

Course Information

Organization	Madison Area Technical College
Developers	Dennis D. James
Development Date	1/1/1992
Revised Date	8/1/1999
Course Number	32-462-313
Instructional Level	Associate Degree
Total Credits	2

Description

Emphasizes maintenance management and quality control techniques to give maintenance students an understanding of their roles in an organization. Covers maintenance record keeping, parts ordering and shop operation.

Learner Supplies

none. **Manufacturer:** ---.

Competencies

- A. Explore technological systems**
Competence will be demonstrated:
 A.1. by defining five essential elements
 A.2. by identifying technological systems
 A.3. by describing four major groups
Criteria - Performance will be satisfactory when:
 A.1. you summarize the elements of a technological system
 A.2. you cite examples of technological systems
 A.3. you summarize the four major groups of technological systems
- B. Explore manufacturing systems components**
Competence will be demonstrated:
 B.1. when, given the information, the student lists the major components of a manufacturing system
 B.2. when, given the manufacturing system components, the student identify the inputs
 B.3. when, given the manufacturing system components, the student is able to describe the manufacturing process
 B.4. when, given the manufacturing system components, the student is able to identify the outputs
Criteria - Performance will be satisfactory when:
 B.1. you summarize the major components of a manufacturing system
 B.2. you identify manufacturing inputs
 B.3. you explore manufacturing processes
 B.4. you identify manufacturing outputs
- C. Explore manufacturing materials**
Competence will be demonstrated:
 C.1. when, given the information on materials, the student is able to relate it to manufacturing systems
 C.2. when, given the information, the student selects materials to match manufacturing processes to

material processes

C.3. when, given the information, the student relates the reasoning behind material conditioning

Criteria - Performance will be satisfactory when:

C.1. you explore the relationship between materials and manufacturing

C.2. you select materials based on an understanding of various properties

C.3. you examine the reasons materials are conditioned

D. Explore manufacturing processes

Competence will be demonstrated:

D.1. when, given the information, the student is able to describe the different roles of primary and secondary processes

D.2. when, given the data, the student describes the six types of processes in manufacturing

D.3. when, given the information, the student lists the steps involved in casting and molding

D.4. when, given the information, the student lists the three elements that must be present in the forming process

D.5. when, given the information, the student identify types of shaping that are used in the forming processes

D.6. when, given the information, the student determines why the temperature of a material is important in manufacturing operations

D.7. when, given the information, the student identify the basic machines that have been developed to separate materials

D.8. when, given the information, the student describes how low heat, mechanical force or chemical action is used in conditioning materials

D.9. when, given the information, the student describes a variety of assembly processes

D.10. when, given the information, the student describes finishing processes

Criteria - Performance will be satisfactory when:

D.1. you examine the roles of primary processing and secondary processing in manufacturing

D.2. you summarize the six types of families of processes in producing parts, subassemblies, or final assemblies

D.3. you use the steps involved in casting and molding

D.4. you summarize the three essential elements that must be present in order for forming processes to take place

D.5. you identify various types of shaping used in the forming processes

D.6. you explain why the temperature of a material is an important consideration in all operations

D.7. you identify the basic machines that have been developed to separate materials

D.8. you explain how heat, mechanical force or chemical action can be used to condition materials

D.9. you examine the assembly processes

D.10. you examine the finishing processes

E. Explore manufacturing management

Competence will be demonstrated:

E.1. when, given the information, the student explains how risks, profit and free enterprise apply to most enterprises

E.2. when, given the information, the student lists the major tasks of management

E.3. when the student lists the groups for which management is responsible

E.4. when the student describes those involved in manufacturing

E.5. when the student lists the three considerations present in developing an efficient company structure

E.6. when the student describes how participatory management is used in management

E.7. when, given the information, the student identify levels of authority

E.8. when, given the information, the student lists three product-centered activities used in manufacturing

- E.9. when the student explains the functions of research and development in manufacturing
- E.10. when, given the information, the student discusses their understanding

Criteria - Performance will be satisfactory when:

- E.1. you explain how risks, profit and free enterprise apply to most business enterprises
- E.2. you examine the four major tasks of management
- E.3. you summarize the five areas of managed activity involved in manufacturing
- E.4. you summarize three considerations that must be present in developing an efficient company structure
- E.5. you examine how participatory management is used
- E.6. you identify levels of authority and responsibility in businesses
- E.7. you summarize three product-centered activities used in manufacturing
- E.8. you explain the functions of research and development in manufacturing systems
- E.9. you examine ethics and the effects of Title VII in the workplace

F. Explore manufacturing enterprises

Competence will be demonstrated:

- F.1. when, given the information, the student is able to discuss the functional areas of production
- F.2. when, given the information, the student describes the role of marketing
- F.3. when the student is able to describe the area of responsibility in financial affairs
- F.4. when the student is able to research and list the reasons for employing automation
- F.5. when, given the information, the student describes the functions of engineering
- F.6. when the student is able to describe four types of management information systems
- F.7. when the student is able to discuss the future trends of management
- F.8. when the student is able to discuss the changing image of American industry
- F.9. when the student explains the difference between leadership and control
- F.10. when, given the seven elements of an effective plan, the student is able to list and explain them
- F.11. when the student lists the five considerations that will help them choose the right job
- F.12. when the student is able to discuss considerations involved in making a purchase

Criteria - Performance will be satisfactory when:

- F.1. you examine four functional areas of production
- F.2. you summarize the role marketing plays in manufacturing systems
- F.3. you examine the three major areas of responsibility in financial affairs activities
- F.4. you summarize at least five reasons for employing automation
- F.5. you examine the functions of engineering design and analysis
- F.6. you summarize the four types of management information systems
- F.7. you explain the future trends of management
- F.8. you identify the changing image of American industry
- F.9. you differentiate between leadership and control
- F.10. you use the seven elements of an effective plan

G. Explore quality control

Competence will be demonstrated:

- G.1. when the student defines the components of a quality control system
- G.2. when, given the information, the student prepares an SPC chart
- G.3. when the student interprets the SPC chart they prepared

Criteria - Performance will be satisfactory when:

- G.1. you summarize a quality control system
- G.2. you prepare a statistical process control chart
- G.3. you interpret data to apply a solution to a given problem

H. Explore maintenance records

Competence will be demonstrated:

H.1. when identification matches instructor's checklist

Criteria - Performance will be satisfactory when:

H.1. you identify types of work order systems

H.2. you identify preventive maintenance techniques

H.3. you apply various macro maintenance software programs

I. Explore purchasing and inventory

Competence will be demonstrated:

I.1. when application meets current procurement standards

I.2. when identification matches instructor's checklist

Criteria - Performance will be satisfactory when:

I.1. you apply various parts ordering techniques

I.2. you apply current inventory techniques and support software

I.3. you identify types of contracts as they apply to support and service maintenance