



Course Outline

2026-2027 Catalog

MFG 24 - Finishing

Catalog Description

Transfer Status: CSU

Prerequisite: MFG 10, MFG 12, MFG 14, MFG 16

Corequisite: MFG 20, MFG 22, MFG 26

Unit(s): 3.00

Lecture: 34.00 Contact hours/68.00 Out of class hours/102.00 Total hours/2.00 Unit(s)

Lab: 51.00 Contact hours/0.00 Out of class hours/51.00 Total hours/1.00 Unit(s)

Total: 85.00 Contact hours/68.00 Out of class hours/153.00 Total hours/3.00 Unit(s)

Course Description: This course is designed to develop skills involving finishing applications in advanced manufacturing. Emphasis will be placed on developing safety skills, trade math, surface preparation, types of application equipment, application methods, aesthetics, durability, product types, equipment maintenance, troubleshooting of equipment, work orders, and quality assurance. These areas of instruction will be reinforced by hands-on application in several performance lab exercises.

Objectives

Upon successful completion of this course, the student should be able to:

1. Practice safety skills that are required on job-sites.
2. Explain the basic principles of applying powder from a spray gun.
3. Describe the principles that guide setup and operation of a powder system.
4. Identify different types of application equipment.
5. Identify different types of applications.
6. Convert units of measurement from liters, quarts, and gallons to the metric systems, and vice-versa.

Course Content

Topic Titles / Suggested Time Topic

Lecture

<u>Topics</u>	<u>Lec Hrs</u>
Introduction and Safety	2.00
Communication Skills	1.50
Basic Measuring and Applied Trade Math	1.50
Surface Preparation	3.00
Types of Application Equipment	5.00
Types of Application Methods	6.00
Aesthetics	3.00
Durability	2.00
Application Types	2.00
Types of Products	2.00
Equipment Maintenance & Troubleshooting	2.00
Drawings and Work Orders	2.00
Quality Assurance	2.00
Total Hours:	34.00

Lab

<u>Topics</u>	<u>Lab Hrs</u>
Introduction and Safety	2.00
Communication Skills	3.00
Basic Measuring and Applied Trade Math	3.00
Surface Preparation	5.00
Types of Application Equipment	5.00
Types of Application Methods	5.00
Aesthetics	5.00
Durability	5.00
Application Types	3.00

Topics	Lab Hrs
Types of Equipment	3.00
Equipment Maintenance & Troubleshooting	5.00
Drawings and Work Orders	4.00
Quality Assurance	3.00
Total Hours: 51.00	

Methods of Instruction

- A. Demonstrations
- B. Homework: Students are required to complete two hours of outside-of-class homework for each hour of lecture
- C. Laboratory Experiments
- D. Lecture
- E. Multimedia Presentations

Methods of Evaluation

- A. Exams/Tests
- B. Quizzes
- C. Homework
- D. Lab Projects

Examples of Assignments

Reading Assignments

1. Read the selection on surface preparation for aluminum and be prepared to discuss in class.
2. Read assigned trade journal article and be prepared to discuss in class.

Writing Assignments

1. Write an order of operations for application techniques used as it relates to application of powder.
2. Write a two-page essay, explaining how the trade journal article can be implemented in workplace safety and how it relates to the class.

Out-of-Class Assignments

1. Research online the proper process for applying a single stage urethane paint using manufactures publications and be prepared to discuss in class.
2. Research OSHA publications for the use and safety of power tools properly and write a one-page essay.

Recommended Materials of Instruction

Schmid, S., & Kalpakjian, S. (2014). Manufacturing Engineering and Technology. *Pearson, 7th.*

Other Learning Materials

All tools listed in the Advanced Manufacturing Program Guide.

Minimum Qualifications

Machine Tool Technology
Manufacturing Technology

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Date: 02/25/2019