



Course Outline

2026-2027 Catalog

MFG 14 - Introduction to Finishing

Catalog Description

Transfer Status: CSU

Corequisite: MFG 10, MFG 12, MFG 16

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 provide an introduction to basic finishing as it relates to advanced manufacturing. Emphasis will be placed on developing safety skills, trade math, and the industry terminology, industry history and future, types of finishes, base materials, surface prep, durability, application types, aesthetics, equipment 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 urethane paint from a spray gun.
3. Describe the principles that guide setup and operation of a powder system.
4. Identify different types of base materials.
5. Identify types of finishes.
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
Industry History	1.00
Industry Future	1.00
Industry Terminology	2.00
Communication Skills	1.50
Basic Measuring and Applied Trade Math	1.50
Surface Preparation	3.00
Types of Finishes	3.00
Types of Materials	3.00
Aesthetics	3.00
Durability	3.00
Application Types	2.00
Types of Equipment	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
Industry History	2.00
Industry Future	2.00
Industry Terminology	2.00
Communication Skills	5.00
Basic Measuring and Applied Trade Math	3.00

Topics	Lab Hrs
Surface Preparation	3.00
Types of Finishes	5.00
Types of Materials	5.00
Aesthetics	4.00
Durability	4.00
Application Types	3.00
Types of Equipment	3.00
Equipment Maintenance & Troubleshooting	3.00
Drawings and Work Orders	3.00
Quality Assurance	2.00
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 module introducing surface preparation methods 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 service techniques used as it relates to field inspections of equipment.
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 setting up a powder coating application system 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

Created/Revised by: Peacock, Miles

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