



Course Outline

2026-2027 Catalog

MFG 40 - Advanced ERP (Enterprise Resource Planning) Software for Manufacturing

Catalog Description

Transfer Status: CSU

Prerequisite: MFG 30, MFG 32, MFG 34, MFG 36

Corequisite: MFG 42, MFG 44, MFG 46

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 the principals and practices of ERP (enterprise resource planning) software as it relates to advanced manufacturing. Emphasis will be placed on developing advanced skills related to ERP software in the areas of information, production, planning development, manufacturing, customers, and quality control, employees, quotes, sales orders, invoices, and billing. Students will advance their skills as it relates to the flow of products through the facility and be able to recognize ways to increase efficiencies. 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 principles of ERP and why it is important to manufacturing facilities.
3. Describe the importance of collecting data on employees that work in the company.
4. Identify how ERP software can track customers and their order.
5. Identify how ERP can help with product consistency and quality.

Course Content

Topic Titles / Suggested Time Topic

Lecture

<u>Topics</u>	<u>Lec Hrs</u>
Introduction and Safety	2.00
ERP Software Programs	3.00
Streamline Information	3.00
ERP Used for Production	2.00
ERP Used for Planning Development	2.00
ERP Used for Manufacturing	2.00
ERP Used for Sales	2.00
ERP Used for Marketing	2.00
ERP Used for Customers	2.00
ERP Used for Inventory	2.00
ERP Used for Quotes	2.00
ERP Used for Sale Orders	2.00
ERP Used for Invoices	2.00
ERP Used for Billing	2.00
ERP Used for Employees	2.00
ERP used for Quality Control	2.00

Total Hours: 34.00

Lab

<u>Topics</u>	<u>Lab Hrs</u>
Introduction and Safety	2.00
ERP Software Programs	3.00
Streamline Information	4.00
ERP Used for Production	3.00
ERP Used for Planning Development	4.00
ERP Used for Manufacturing	4.00

Topics	Lab Hrs
ERP Used for Sales	3.00
ERP Used for Marketing	3.00
ERP Used for Customers	3.00
ERP Used for Inventory	4.00
ERP Used for Quotes	3.00
ERP Used for Sale Orders	3.00
ERP Used for Invoices	3.00
ERP Used for Billing	3.00
ERP Used for Employees	3.00
ERP used for Quality Control	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 sales orders 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 how you would track inventory within the manufacturing plant by using an ERP system and explain why this is a viable software for manufactures.
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 best ERP software program for tracking employees within the manufacturing plant.
2. Research manufacturing publications for the proper use of software to track inventory within a company. Write a one-page essay on how to use the software properly to reduce inventory overhead.

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

Date: 02/25/2019