

Clackamas Community College

Online Course/Outline Submission System

Section #1 General Course Information

Department: Manufacturing

Submitter

First Name: Mike

Last Name: Mattson

Phone: 3322

Email: mattsonm

Course Prefix and Number: IMT - 220

Credits: 3

Contact hours

Lecture (# of hours):

Lec/lab (# of hours): 66

Lab (# of hours):

Total course hours: 66

For each credit, the student will be expected to spend, on average, 3 hours per week in combination of in-class and out-of-class activity.

Course Title: Industrial Machinery II

Course Description:

This second course in industrial machinery will focus on advanced concepts in machinery trouble shooting, repair and maintenance. Students will learn about the integration of mechanical, fluid power and electrical systems, their characteristics and repair. Additionally, mechanical concepts of laser shaft alignment, vibration analysis and thermal diagnosis will be covered. Other topics will include electromechanical systems, lock-out tag-out, advanced mechanical diagnosis, motors and motor controls.

Type of Course: Career Technical Preparatory

Reason for the new course:

Industry demand

Is this class challengeable?

Yes

Can this course be repeated for credit in a degree?

No

Is general education certification being sought at this time?

No

Does this course map to any general education outcome(s)?

No

Is this course part of an AAS or related certificate of completion?

Yes

Name of degree(s) and/or certificate(s): IMT - eventually

Are there prerequisites to this course?

Yes

Pre-reqs: IMT-120 & MFG-130

Have you consulted with the appropriate chair if the pre-req is in another program?

Yes (A 'Yes' certifies you have talked with the chair and have received approval.)*

Are there corequisites to this course?

No

Are there any requirements or recommendations for students taken this course?

No

Are there similar courses existing in other programs or disciplines at CCC?

No

Will this class use library resources?

Yes

Have you talked with a librarian regarding that impact?

Yes (A 'Yes' certifies you have talked with the librarian and have received approval.)*

Is there any other potential impact on another department?

No

Does this course belong on the Related Instruction list?

No

GRADING METHOD:

A-F or Pass/No Pass

Audit: Yes

When do you plan to offer this course?

✓ **Fall**

Is this course equivalent to another?

If yes, they must have the same description and outcomes.

No

Will this course appear in the college catalog?

Yes

Will this course appear in the schedule?

Yes

Student Learning Outcomes:

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

1. use computer-aided tools to design elementary mechanical drive systems,
2. describe and perform preventative maintenance on electromechanical systems,
3. describe the function of fluid power systems in relation to machinery operation and implement repair and installation of these elements,
4. use diagnostic tools to determine the condition of electrical components and circuits,
5. perform alignment of rotating shafts with laser calibration tools,
6. diagnose the failure of bearing systems; repair and replace plain and rolling element bearings;
7. analyze vibration data to diagnose component failures in power transmission components.

This course does not include assessable General Education outcomes.

Major Topic Outline:

1. Mechanical Drive Design
2. Fluid Power Applications
3. Vibration and Thermal Analysis
4. Shaft Alignment

5. Industrial Electricity Review
6. Electrical Machines: Transformers, Motors and Starters
7. Variable Speed Drives

Does the content of this class relate to job skills in any of the following areas:

- | | |
|--------------------------------------|-----------|
| 1. Increased energy efficiency | No |
| 2. Produce renewable energy | No |
| 3. Prevent environmental degradation | No |
| 4. Clean up natural environment | No |
| 5. Supports green services | No |

Percent of course: 0%

First term to be offered:

Specify term: 2017/WI
