

Washtenaw Community College Comprehensive Report

MEC 201 Mechanisms Effective Term: Fall 2014

Course Cover

Division: Advanced Technologies and Public Service Careers

Department: Industrial Technology

Discipline: Mechatronics

Course Number: 201

Org Number: 14400

Full Course Title: Mechanisms

Transcript Title: Mechanisms

Is Consultation with other department(s) required: No

Publish in the Following: College Catalog , Time Schedule , Web Page

Reason for Submission: New Course

Change Information:

Rationale: Theory and principles applied to actual design and use.

Proposed Start Semester: Fall 2014

Course Description: In this course, students will use hands-on experiences to gain an understanding of the theory and principles of electro-mechanical design in industrial devices and products. Students will examine the fundamental forces and motion within mechanisms. This class is a foundation class for the mechatronics program.

Course Credit Hours

Variable hours: No

Credits: 2

Lecture Hours: Instructor: 0 Student: 0

Lab: Instructor: 60 Student: 60

Clinical: Instructor: 0 Student: 0

Total Contact Hours: Instructor: 60 Student: 60

Repeatable for Credit: NO

Grading Methods: Letter Grades

Audit

Are lectures, labs, or clinicals offered as separate sections?: NO (same sections)

College-Level Reading and Writing

College-level Reading & Writing

College-Level Math

Level 3

Requisites

Prerequisite

MEC 101 minimum grade "C-"

General Education

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Identify the six classic machines.

Assessment 1

Assessment Tool: Written Test

Assessment Date: Fall 2015

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Department rubric

Standard of success to be used for this assessment: 75% of students will achieve 75% or higher.

Who will score and analyze the data: Departmental Faculty

2. Analyze models of mechanisms.

Assessment 1

Assessment Tool: Written Test

Assessment Date: Fall 2015

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Department rubric

Standard of success to be used for this assessment: 75% of students will achieve 75% or higher.

Who will score and analyze the data: Departmental Faculty

3. Select a suitable product for a specific force/motion application.

Assessment 1

Assessment Tool: Capstone Project

Assessment Date: Fall 2015

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Department rubric

Standard of success to be used for this assessment: 75% of students will achieve 75% or higher.

Who will score and analyze the data: Departmental Faculty

Course Objectives

1. Construct models of simple machines.

Matched Outcomes

1. Identify the six classic machines.

2. Analyze models of mechanisms.

2. Measure performance of simple machines.

Matched Outcomes

3. Calculate gear ratio for multiple gear drive train.

Matched Outcomes

2. Analyze models of mechanisms.

4. Predict speed ratio for V-belt and grooved pulley drive system.

Matched Outcomes

2. Analyze models of mechanisms.

5. Determine power rating of chain drive.

Matched Outcomes

2. Analyze models of mechanisms.

6. Design a mechanism to produce a specified motion.

Matched Outcomes

2. Analyze models of mechanisms.

3. Select a suitable product for a specific force/motion application.

7. Identify the component simple machines that are in a complex product.

Matched Outcomes

1. Identify the six classic machines.
8. Estimate force/power loss due to friction.

Matched Outcomes

2. Analyze models of mechanisms.
9. Design a mechanism to perform an inspection task.

Matched Outcomes

2. Analyze models of mechanisms.
10. Assemble components into a machine and evaluate its performance.

Matched Outcomes

2. Analyze models of mechanisms.
3. Select a suitable product for a specific force/motion application.

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom

Reviewer

Action

Date

Faculty Preparer:

Jeffrey Donahey

Faculty Preparer

Jan 09, 2014

Department Chair/Area Director:

Thomas Penird

Recommend Approval

Jan 09, 2014

Dean:

Marilyn Donham

Request Conditional Approval

Jan 10, 2014

Vice President for Instruction:

Bill Abernethy

Approve

Feb 10, 2014