Washtenaw Community College Comprehensive Report

EGT 150 Engineering Design Technology Material Science
Effective Term: Winter 2023

Course Cover

College: Math, Science and Engineering Tech
Division: Math, Science and Engineering Tech
Department: Math & Engineering Studies
Discipline: Engineering Technology
Course Number: 150
Org Number: 12200
Full Course Title: Engineering Design Technology Material Science
Transcript Title: Eng. Design Tech. Mat. Science
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:
Course description
Total Contact Hours
Distribution of contact hours
Pre-requisite, co-requisite, or enrollment restrictions
Outcomes/Assessment
Objectives/Evaluation
Rationale: The course was conditionally approved and we are seeking full approval. The course has also been updated to reflect what is being taught.
Proposed Start Semester: Winter 2023
Course Description: In this course, students will be introduced to the structures and properties of materials used in design. Students will create their own engineering design to gain an understanding of the processing and design limitations of materials. Topics fundamental to the further study of material procurement, testing and failure will be emphasized as a foundation to engineering design technologies.

Course Credit Hours

Variable hours: No
Credits: 3
Lecture Hours: Instructor: 45 **Student:** 45
Lab: Instructor: 0 **Student:** 0
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 45 **Student:** 45
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 2

Requisites

General Education

Request Course Transfer

Proposed For:

Eastern Michigan University
Ferris State University
Grand Valley State University
Kendall School of Design (Ferris)
Lawrence Tech
Michigan State University
Oakland University
University of Michigan
Wayne State University
Western Michigan University

Student Learning Outcomes

1. Identify structural properties of materials used in design and their historical significance.
   Assessment 1
   Assessment Tool: Outcome-related exam questions
   Assessment Date: Winter 2023
   Assessment Cycle: Every Two Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: 70% of students will score 75% or higher.
   Who will score and analyze the data: Departmental faculty

2. Create an engineering design based on the materials studied in the course.
   Assessment 1
   Assessment Tool: Design work portfolio
   Assessment Date: Winter 2023
   Assessment Cycle: Every Two Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: 70% of the students will score 75% or higher.
   Who will score and analyze the data: Departmental faculty

3. Analyze structural failures.
   Assessment 1
   Assessment Tool: Presentation of design work
   Assessment Date: Winter 2023
   Assessment Cycle: Every Two Years
   Course section(s)/other population: All sections
   Number students to be assessed: All students
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: 70% of the students will score 75% or higher.
   Who will score and analyze the data: Departmental faculty

Course Objectives

1. List materials known to be used at different points in history, how they were initially used, and if or how they continue to be used today.
2. Name several types of wood/metals/polymers or other materials and describe characteristics and common uses for each.
3. Compare advantages and disadvantages of different materials.
4. Articulate the life cycle and environmental impact of common materials.
5. Sketch a prototype of a widget.
6. Develop a portfolio describing and analyzing materials used in a widget.
7. Define design results and describe connections.
8. Integrate feedback from faculty and peers to improve design.
9. Develop oral presentations of the evolution of the conceptual product, including evaluation of failure and fixes in design.
10. Evaluate and provide feedback to classmate presentations.
11. Utilize effective presentation strategies.

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Leslie Gilbert	*Faculty Preparer*	*May 19, 2022*
Department Chair/Area Director:		
Lawrence David	*Recommend Approval*	*May 26, 2022*
Dean:		
Victor Vega	*Recommend Approval*	*Jun 20, 2022*
Curriculum Committee Chair:		
Randy Van Wagnen	*Recommend Approval*	*Aug 15, 2022*
Assessment Committee Chair:		
Shawn Deron	*Recommend Approval*	*Aug 18, 2022*
Vice President for Instruction:		
Victor Vega	*Approve*	*Aug 19, 2022*

Washtenaw Community College Comprehensive Report

EGT 150 Engineering Design Technology Material Science
Conditional Approval
Effective Term: Fall 2014

Course Cover

Division: Advanced Technologies and Public Service Careers
Department: Construction Institute
Discipline: Engineering Technology
Course Number: 150
Org Number: 14725
Full Course Title: Engineering Design Technology Material Science
Transcript Title: Eng. Design Tech. Mat. Science
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: Needed for new certificate
Proposed Start Semester: Fall 2014
Course Description: In this course, students will be introduced to the structures and properties of metals, ceramics, polymers, wood, composites, and electronic materials. Students will also gain an understanding of the processing and design limitations of materials. Topics fundamental to the further study of material procurement, testing and failure will be emphasized as a foundation to engineering design technologies.

Course Credit Hours

Variable hours: No
Credits: 3
Lecture Hours: Instructor: 45 **Student:** 45
Lab: Instructor: 15 **Student:** 15
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

General Education

Request Course Transfer

Proposed For:
Central Michigan University
College for Creative Studies

Eastern Michigan University
Ferris State University
Grand Valley State University
Kendall School of Design (Ferris)
Lawrence Tech
Michigan State University
Oakland University
University of Michigan
Wayne State University
Western Michigan University

Student Learning Outcomes

1. Requesting Conditional Approval
    Assessment 1
        Assessment Tool: Requesting Conditional Approval
        Assessment Date: Fall 2017
        Assessment Cycle: Every Three Years
        Course section(s)/other population: All
        Number students to be assessed: All
        How the assessment will be scored: Rubric
        Standard of success to be used for this assessment: 75 % will score 75% or higher
        Who will score and analyze the data: Faculty

Course Objectives

1. Requesting Conditional Approval
    Matched Outcomes
        1. Requesting Conditional Approval

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Reviewer	Action	Date
Faculty Preparer:		
Cristy Lindemann	*Faculty Preparer*	*Mar 05, 2014*
Department Chair/Area Director:		
Cristy Lindemann	*Recommend Approval*	*Mar 05, 2014*
Dean:		
Marilyn Donham	*Recommend Approval*	*Mar 19, 2014*
Vice President for Instruction:		
Bill Abernethy	*Conditional Approval*	*Mar 20, 2014*