Washtenaw Community College Comprehensive Report

UAT 270 Applied Metallurgy (UA 8003)
Effective Term: Spring/Summer 2021

Course Cover

Division: Advanced Technologies and Public Service Careers
Department: United Association Department
Discipline: United Association Training
Course Number: 270
Org Number: 28200
Full Course Title: Applied Metallurgy (UA 8003)
Transcript Title: Applied Metallurgy (UA 8003)
Is Consultation with other department(s) required: No
Publish in the Following: College Catalog , Web Page
Reason for Submission: Course Change
Change Information:
Consultation with all departments affected by this course is required.
Course title
Total Contact Hours
Outcomes/Assessment
Objectives/Evaluation
Rationale: Updating UA course for relevancy.
Proposed Start Semester: Fall 2021
Course Description: In this course, students will learn methods of teaching the properties and characteristics of metals commonly used in the pipe trades. Emphasis will be given to explaining the nature of ferrous and non-ferrous metals in both their raw and manufactured form, the physical and mechanical properties of common metals and the processes used to create desired changes. The title of this course was previously Properties of Metals. Limited to United Association program participants.

Course Credit Hours

Variable hours: No
Credits: 1.5
The following Lecture Hour fields are not divisible by 15: Student Min ,Instructor Min
Lecture Hours: Instructor: 22.5 **Student:** 22.5
The following Lab fields are not divisible by 15: Student Min, Instructor Min
Lab: Instructor: 1.5 **Student:** 1.5
Clinical: Instructor: 0 **Student:** 0

Total Contact Hours: Instructor: 24 **Student:** 24
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

Requisites

General Education

Degree Attributes

Below College Level Pre-Reqs

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Identify the central concepts and skills of applied metallurgy.
   Assessment 1
   Assessment Tool: Skills demonstration
   Assessment Date: Spring/Summer 2021
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All
   Number students to be assessed: All
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: 80% of the students will score 80% or higher.
   Who will score and analyze the data: U.A. instructors

2. Demonstrate the proper installation and repair procedures for applied metallurgy.
   Assessment 1
   Assessment Tool: Skills demonstration
   Assessment Date: Spring/Summer 2021
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All
   Number students to be assessed: All
   How the assessment will be scored: Departmentally-developed rubric
   Standard of success to be used for this assessment: 80% of the students will score 80% or higher.
   Who will score and analyze the data: U.A. instructors

3. Prepare and present a learning activity utilizing approved industry and UA course/training materials.
   Assessment 1
   Assessment Tool: Presentation
   Assessment Date: Spring/Summer 2021
   Assessment Cycle: Every Three Years
   Course section(s)/other population: All
   Number students to be assessed: All
   How the assessment will be scored: Observational checklist
   Standard of success to be used for this assessment: 80% of the students will score 80% or higher.
   Who will score and analyze the data: U.A. instructors

Course Objectives

1. Recognize and describe the common physical and mechanical properties of metals.
2. Explain the properties and characteristics of metals.
3. Describe the processes used to produce steel and the effects of alloying elements.
4. Explain the effects of heating and cooling metals at various temperatures and rates.
5. Differentiate and explain the metallurgical characteristics of various alloys as they relate to soldering and brazing processes.

6. Demonstrate appropriate use and knowledge of course materials.
7. Differentiate and explain the corrosion processes of various metals.
8. Prepare and present a learning activity for use in the classroom.
9. Navigate resources that can be used in lesson plans for applied metallurgy instruction.

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Tony Esposito	*Faculty Preparer*	*Feb 19, 2021*
Department Chair/Area Director:		
Marilyn Donham	*Recommend Approval*	*Feb 22, 2021*
Dean:		
Jimmie Baber	*Recommend Approval*	*Feb 23, 2021*
Curriculum Committee Chair:		
Lisa Veasey	*Recommend Approval*	*Mar 19, 2021*
Assessment Committee Chair:		
Shawn Deron	*Recommend Approval*	*Mar 24, 2021*
Vice President for Instruction:		
Kimberly Hurns	*Approve*	*Mar 25, 2021*