

Washtenaw Community College Comprehensive Report

UAT 373 Petrochemical Facility Awareness (UA 5028)

Effective Term: Fall 2020

Course Cover

Division: Advanced Technologies and Public Service Careers

Department: United Association Department

Discipline: United Association Training

Course Number: 373

Org Number: 28200

Full Course Title: Petrochemical Facility Awareness (UA 5028)

Transcript Title: Petrochem Facility Aware 5028

Is Consultation with other department(s) required: No

Publish in the Following:

Reason for Submission: New Course

Change Information:

Rationale: New United Association course

Proposed Start Semester: Fall 2020

Course Description: In this course, students will learn the history of oil and identify its global impact in the petrochemical industry and the refineries that produce it. Students will study the fundamentals of refinery units and their operations, refinery culture, permit requirements, and emergency action plan awareness. Students will also discuss the hazards of each unit and review pipefitting skills which include fabrication, pressure testing, safe bolting practices and rigging fundamentals. Limited to United Association Instructor Training program graduates.

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. Describe and demonstrate safe bolt up practices, pump set-up and safe pressure testing procedures.

Assessment 1

Assessment Tool: Demonstration

Assessment Date: Fall 2020

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

2. Identify and describe the history, process, and safe transport of petroleum used in the current industry.

Assessment 1

Assessment Tool: Outcome-related written exam questions

Assessment Date: Fall 2020

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Answer key

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. Identify and describe petrochemical facility requirements including facility access, emergency action plans and the permit process.

Assessment 1

Assessment Tool: Outcome-related written exam questions

Assessment Date: Fall 2020

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Answer key

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. Discuss and demonstrate calculations for equipment, including the torque requirements of flange and gasket installation.
2. Discuss and demonstrate dead weight tests.
3. Discuss and demonstrate the ability to read a spec sheet.
4. Discuss the history of oil, crude oil and its properties.
5. Identify petrochemical units, crude distillation, coker, reformer, alkylation, fluid catalytic, desulfurization, hydrotreating, hydrocracking, and isomerization.
6. Discuss the skill trades crafts involved in the petrochemical industry including boilermakers, ironworkers, and electricians.

7. Describe permits and procedures according to the National Fire Protection Administration (NFPA) 704 and Occupational Safety and Health Administration (OSHA) requirements.
8. Review requirements of safety training, personal protective equipment (PPE), and safety equipment need to work in the refinery environment.
9. Discuss the process, relevance, and initiation of emergency action plans.
10. Identify actual and possible hazards in the process of refining oil in a refinery environment.
11. Review safe rigging fundamentals in a refinery environment.

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

<u>Reviewer</u>	<u>Action</u>	<u>Date</u>
Faculty Preparer: <i>Tony Esposito</i>	<i>Faculty Preparer</i>	<i>Jun 02, 2020</i>
Department Chair/Area Director: <i>Marilyn Donham</i>	<i>Recommend Approval</i>	<i>Jun 05, 2020</i>
Dean: <i>Jimmie Baber</i>	<i>Recommend Approval</i>	<i>Jun 09, 2020</i>
Curriculum Committee Chair: <i>Lisa Veasey</i>	<i>Recommend Approval</i>	<i>Sep 25, 2020</i>
Assessment Committee Chair: <i>Shawn Deron</i>	<i>Recommend Approval</i>	<i>Oct 02, 2020</i>
Vice President for Instruction: <i>Kimberly Hurns</i>	<i>Approve</i>	<i>Oct 06, 2020</i>