

BARSTOW COMMUNITY COLLEGE COURSE OUTLINE –**IMMT 76****Dept & Nbr:** IMMT 76**Abbrev Title:** Distillation Towers and Vessels.**Full Title:** Distillation Tower and Vessels.**Old Number:****Title 5 Category:** Associate Degree Applicable.**Certificate Applicable:**

Units	Course Hrs per Week	Nbr of Weeks	Course Hrs Total
Max: 1.0	Lecture .75	18	Lecture 13.5
Min: 1.0	Lab .25		Lab 13.5
	Contact DHR 0.0		Contact DHR 0.0
	Contact Total 1.5		Contact Total 27.0
	Non-contact DHR 0.0		Non-contact DHR 0.0

Delivery method: Lecture and Online.**Selected Topic:** No**Grading:** Option (A-F) (P/NP)**Concurrent Course:** None.**Repeat Code:** May be taken two times with a grade of less than "C".**Basic Skills** 0: This is not a basic skills class.**CATALOG DESCRIPTION:**

Designed to give the student the fundamental skills necessary to work with various types of distillation towers and vessels commonly found on the jobsite.

PREREQUISITES: None.**COREQUISITES:** None.**RECOMMENDED PREPARATION:** None.**CONTENT:**

- A. Safety procedures for confined space.
- B. Coded and non-coded vessels.
- C. Types of towers.
- D. Types of trays and their applications.

COURSE OBJECTIVES:**Upon success completion of this course the student will be able to:**

- 1. Identify all safety procedures for confined space entry in tower and vessels.
- 2. Identify all safety precautions for tower and vessels.
- 3. Explain the difference between coded and non-coded vessels.
- 4. Identify the various types of towers and their components.
- 5. Discuss the functions of various types of towers.
- 6. Identify the types of trays and their applications.
- 7. Identify materials, components, and layout tray.
- 8. Identify the types of packing and packing materials.
- 9. Explain the shakeout for a repair job.

10. Describe typical maintenance procedures on a tower, including:
 - Removal of trays.
 - Cleaning and inspection.
 - Installing of trays.
 - Installation of demisters and ceramics.

COURSE-LEVEL STUDENT LEARNING OUTCOMES:

- 1. Explain the proper safety procedures and correct PPE to work in confined space.**

Assessment Method(s): Performance Evaluation.

- Communication.
- Critical Thinking.
- Global Awareness.
- Personal/Professional Development.

- 2. Explain the functions of various types of towers.**

Assessment Method(s): Performance Evaluation.

- Communication.
- Critical Thinking.
- Global Awareness.
- Personal/Professional Development.

- 3. Explain typical maintenance procedures on tower, including:**

- Removal of trays.
- Cleaning and inspection.
- Installation of trays.
- Installation of demisters and ceramics.

Assessment Method(s): Performance Evaluation.

- 4.** Communication.
- 5.** Critical Thinking.
- 6.** Global Awareness.
- 7.** Personal/Professional Development.

B. Critical Thinking Tasks/Assignments:

Critical thinking assignments include (but are not limited to) the following:

1. Identify options for tools using Distillation Tower and vessels used by industrial Maintenance Mechanics.
2. Solve problems related to various situations.

C. Measurement of Student Learning Outcomes:

1. Substantial writing assignments, including:
 - Written homework
 - The course primarily involves skill demonstrations or problem solving.
2. Computational or non-computational problem-solving demonstration, including:
 - Exam(s)
 - Quizzes
 - Homework problems
3. Skill demonstration, including:
 - Class performance(s)
4. Objective examinations, including:
 - Multiple choice
 - Completion
5. Other
 - Attendance/Participation
 - Observation

REQUIRED READING, WRITING AND OTHER OUTSIDE-OF-CLASS ASSIGNMENTS:

Over an 18-week presentation of the course three hours of study are required for each unit of credit. Two hours of independent work done out of class are required for each hour of lecture. Outside of the regular class time the students in this class will be doing the following:

- Study
- Answer questions
- Skill Practice
- Required reading
- Problem solving activity or exercise
- Written work

BASIS FOR GRADES:

Writing Assignments	20%
Problem-Solving	20%
Skill Demonstrations	20%
Objective Examinations	20%
Attendance & Participation	20%
Other.....	%
TOTAL	100%

TEXTS/MATERIALS

Contren, Industrial Maintenance Mechanic Level1, Prentice-Hall 2007

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=====Instructional Office Use Only - Signatures and Codes=====

Instructional Vice President Approval: Steven Eaton, AAVP

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