### COURSE INFORMATION FORM

<table>
<thead>
<tr>
<th>DISCIPLINE</th>
<th>HVAC</th>
</tr>
</thead>
<tbody>
<tr>
<td>COURSE TITLE</td>
<td>Commercial Refrigeration</td>
</tr>
<tr>
<td>CR.HR</td>
<td>4</td>
</tr>
<tr>
<td>LECT HR</td>
<td>2</td>
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<tr>
<td>LAB HR</td>
<td>4</td>
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<td>CLIN/INTERN HR</td>
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<td>CLOCK HR</td>
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### CATALOG DESCRIPTION

The refrigeration cycle applied to commercial uses. Sizing, selection, installation, and servicing of commercial refrigeration equipment.

### PREREQUISITES

HVAC 109, 120 & 136

### EXPECTED STUDENT OUTCOMES IN THE COURSE (ESO)

Upon completion of this course, the student will be able to:

1. Install and service commercial refrigeration units.
2. Install and service commercial refrigeration controls.
3. Install and service commercial refrigeration electrical components.
4. Install and service commercial refrigeration mechanical components.
5. Install and service commercial refrigeration specialty components.
6. Diagnose, troubleshoot and test commercial refrigeration units and controls.
7. Demonstrate an understanding of the business community.
GENERAL EDUCATION OUTCOMES (ESO)
Specify which general education outcomes, if any, are substantially addressed by the course. Numbers in parentheses identify the Expected Student Outcomes linked to the specific General Education Outcome.

<table>
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<tr>
<th>Outcomes</th>
<th>ESO</th>
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PROGRAM-LEVEL OUTCOMES

CAREER AND TECHNICAL EDUCATION PROGRAM OUTCOMES
Specify which Career and Technical program outcomes, if any, are substantially addressed by the course by completing the “Career and Technical Education template” to show the relationship between course and program outcomes to assessment measures.

CLASS-LEVEL ASSESSMENT MEASURES
Student accomplishment of expected student outcomes may be assessed using the following measures. (Identify which measures are used to assess which outcomes.)

1. Quizzes and written examinations (1 – 6)
2. Classroom exercises (1 – 6)
3. Student participation and in-class discussions (1 – 7)
4. Lab assignments (1 – 6)
COURSE OUTLINE FORM

DISCIPLINE: HVAC

COURSE TITLE: Commercial Refrigeration

Individual instructors may order this outline as fits the needs of their individual courses. In addition, they may place more emphasis on some areas than on others. What is assured is that this particular list is covered in the course. Other topics may be added to a course as the instructor sees fit, and as time and interest allow. An *asterisk can be used to mark an item as optional.

I. Refrigeration Fundamentals-Review
II. Basic Systems
III. Compression Systems & Compressors
IV. Refrigeration Controls
V. Refrigerants Review
VI. Small Hermetic Systems
   A. Installing
   B. Servicing
VII. Commercial Systems and applications
VIII. Walk-in Coolers
IX. Ice Making Equipment
X. Commercial Systems
   A. Equipment sizing
   B. Piping
XI. Low ambient controls