COURSE INFORMATION FORM

DISCIPLINE   INTE

COURSE TITLE Industrial Electrical AC Principles

CR.HR    2    LECT HR.    1    LAB HR.    2    CLIN/INTERN HR.    _______    CLOCK HR.    _______

CATALOG DESCRIPTION

This course is an introductory course for the individual who is moving into an industrial maintenance or related activity. This course will build on the concepts learned in INTE 112 and expand into alternating circuit concepts including introduction to transformers and 3 phase power distribution.

PREREQUISITES

INTE 112 or equivalent

EXPECTED STUDENT OUTCOMES IN THE COURSE (ESO)

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

1. Describe and apply safe practices around electricity.
2. Describe the sources and behavior of alternating current electricity.
3. Describe the behavior of magnetism.
4. Operate standard test equipment such as multimeters, oscilloscopes, and function generators.
5. Demonstrate an understanding of the use of metric notation in electronics work.
6. Apply Ohm’s Law and Watt’s Law.
7. Describe electrical distribution principles.
8. Wire basic electric lighting circuits.
9. Describe AC wave form characteristics.
10. Describe the effects RC and RL on circuits.
11. Determine power factor of circuits.
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.

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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.

The students will demonstrate:
1. the ability to think critically and apply problem-solving skills.
2. the ability to apply foundational skills in an industrial setting, safely and to industry guidelines.
3. the ability to exhibit competence in the entry-level skills of a technical profession in Industrial Technology.

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. Written examinations (1 - 11)
2. Project (5-11)
COURSE OUTLINE FORM

DISCIPLINE INTE

COURSE TITLE: Industrial Electrical AC Principles

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. Electrical Safety
II. Review of Basic Electrical and Electronic Theory
III. Measurements
   A. Voltage
   B. Current
   C. Resistance
IV. Electrical and electronic Components
   A. Resistors
   B. Switches, Fuses and Breakers
   C. Magnetism, Relays and Meters
   D. Capacitors
   E. Inductors
   F. Transformers
V. Review of basic AC circuits
VI. Reactive devices
   A. Capacitors
   B. Coils
VII. Power factor