COURSE INFORMATION FORM

DISCIPLINE
INTE

COURSE TITLE
Microprocessor Hardware Repair

CR.HR  3  LECT HR.  2  LAB HR.  2  CLIN/INTERN HR.  _____  CLOCK HR.  _____

CATALOG DESCRIPTION
This course introduces the student to maintenance, upgrading, setup and expansion of industrial microprocessor hardware. Students will explore microprocessor architecture, functions and components as well as methods and procedures for installation, troubleshooting, and modifications of industrial microprocessor systems. Emphasis will be on the use of microprocessor hardware and software used in an industrial setting.

PREREQUISITES
None

EXPECTED STUDENT OUTCOMES IN THE COURSE (ESO)
Upon completion of this course, the student will be able to:

1. Setup microprocessor systems.
2. Troubleshoot software and hardware problems encountered during machine interface and troubleshooting.
3. Configure software used for machine interface and troubleshooting.
4. Install and configure peripherals such as memory and storage devices.
5. Demonstrate an understanding of microprocessor hardware architecture.
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>
<thead>
<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 student will demonstrate:
1) Students will demonstrate the ability to apply foundational skills in an industrial setting, safely and to industry guidelines.
2) Students will think critically and apply problem-solving skills
3) The program will graduate individuals who exhibit competence in the entry-level skills of 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.)

- Examinations/Quizzes (1 – 5)
- Class Discussion/Participation (1 – 5)
- Exercises/Projects (1 – 5)
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. Overview of microprocessor hardware
   A. General safety procedures
   B. Configurations and architectures
   C. Motherboards and memory

II. Power supplies

III. Microprocessor operating system and utilities
   A. Configuration utilities
   B. Industry software for machine interface

IV. Input devices
   A. Keyboards
   B. Mice
   C. Trackballs and tablets
   D. Multimedia devices

V. Output devices
   A. Video
   B. Audio
   C. Printers
   D. Industrial

VI. Storage devices
   A. Magnetic
   B. Optical
   C. Cloud

VII. I/O Interfaces
   A. Parallel
   B. Serial
   C. SCSI
   D. USB
   E. Ethernet

VIII. Troubleshooting and maintenance