



## MASTER COURSE OUTLINE

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## COURSE TITLE

Industrial Electricity II

## GENERAL COURSE INFORMATION

Dept.: IST

Course Num: 207

(Formerly: )

CIP Code: 46.0302

Intent Code: 21

Program Code: 784

Credits: 5

Total Contact Hrs Per Qtr.: 77

Lecture Hrs: 33

Lab Hrs: 44

Other Hrs:

Distribution Designation:

## COURSE DESCRIPTION (as it will appear in the catalog)

Electrical theory and function as it applies to various control schemes with a practical understanding of the logic and safety considerations required for efficient control of "stand alone" machinery and or a complex system.

## PREREQUISITES

IST 107 or Instructor Permission

## TEXTBOOK GUIDELINES

Appropriate textbook as determined by faculty

(Example: *Electrical Motor Control*, by Gary Rockis and Glen Mazur; *Electrical Motor Controls Workbook*, by Gary Rockis and Glen Mazur; and *Ugly's Electrical Reference*, by George V. Hart)

## COURSE LEARNING OUTCOMES

*Upon successful completion of the course, students should be able to demonstrate the following knowledge or skills.*

- 1) Demonstrate a practical knowledge of electrical theory & control logic applied to machinery control
- 2) Reading & comprehension of industrial electrical schematics
- 3) Understand electrical control systems & the mechanics of their respective components
- 4) Demonstrate use of control logic and apply theories to troubleshooting practices.
- 5) Exhibit basic knowledge of safe wiring practices as prescribe by the National Electric Code.

## INSTITUTIONAL OUTCOMES

## COURSE CONTENT OUTLINE

1. Power supplies
2. Disconnection switches, fuses, and circuit breakers
3. Control units--(switching & communication)
4. Relays--(control switching schemes)
5. Solenoids--(discrete & proportional)
6. Types of Control
7. Motion, pressure, temperature time, & count control

8. Control circuit schematic conventions
9. Motors & motor starters
10. Brief introduction to Programmable Logic Controllers
11. Troubleshooting techniques

**DEPARTMENTAL GUIDELINES** *(optional)*

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**DIVISION CHAIR APPROVAL**

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**DATE**