

YANBU INDUSTRIAL COLLEGE

ELECTRICAL POWER ENGINEERING TECHNOLOGY DEPARTMENT

COURSE SYLLABUS

1. Course Number and Name

Course Number : EEET 221
Course Name : Electrical Control Systems

2. Credits and Contact Hours

Credit Hours : 3 Credits
Contact Hours : 2 hours Lecture per week
3 hours Laboratory per week

3. Course Coordinator : Eng. Shameer A Koya

4. Textbook and Supplemental Materials

a. Text Book

1. EEET 221- Electrical Control Systems - Study Guide.
2. EEET 221- Electrical Control Systems - Laboratory Manual.

b. Other References and Supplemental Materials

1. Electrical Motor Control by Stephen L. Herman, 8th Ed, Del Mar Publishers 2006.
2. Electrical Motor Control by Walter N. Ale rich, 7th Ed, Del Mar Publishers 2002.
3. Power Electronics Circuits, Devices and Applications by Muhammad H. Rashid 3rd Ed, Prentice hall, 2003.

5. Specific Course Information

a. Catalog Description

This course covers the industrial control systems, relating to manual and automatic system control directed towards industrial applications and includes electromagnetic control and solid state control. The course also deals with components of a control system such as the contactors, relays, pilot devices, push button switches, master switches circuit breakers, manual and automatic starters for AC and DC motors, electrical braking methods, speed control methods, inverters and choppers. Laboratory exercises support the theory classes. Practical circuits are analyzed to promote and strengthen the mathematical and analytical capabilities of the students, and to help them understand & apply their concepts in the design and implementation of electrical systems.

- b. Pre-requisites : EEET 201, EEET 203, EEET 224
Co-requisites : Nil
c. Type of Course : Required

6. Course Goals

a. Course Learning Outcomes

After successfully completing the course, the students will be able to:

1. State the functions of control system components including switches, relays, circuit breakers and contactors.
2. Describe the principles of operation of different types of manual and automatic motor starters.
3. Describe the methods of DC and AC motor speed control and braking.
4. Describe the operation of special control devices including limit switches, float switches, and Proximity switches
5. Select, connect, and test starters and control devices for DC and AC motors.
6. Read and interpret wiring diagrams for different types of motor control circuits.

b. Relationship of Course to Student Outcomes

Student Outcomes	A	B	C	D	E	F	G	H	I
Relevance	✓	✓	✓	✓	✓	✓	✓	✓	

7. List of Topics to Be Covered

- Introduction to Electrical control systems
- Control System Components.
- DC Motor control.
- AC Motor Control
- Special Motors Control.

Course Coordinator: Eng. Shameer A Koya

Date: