



Course Description

ETS2530C | Process Control Technology | 3.00 credits

This course is designed for students studying systems and associated electronic circuits encountered in the field of electric machinery and industrial controls. Students learn to analyze systems and devices and perform calculations to determine parameters to accurately predict operation. Students examine the concepts and principles of open and closed loop systems, transducers, transformers, transmission and distribution systems. Prerequisite: EET1025C.

Course Competencies

Competency 1: The student will analyze electronic circuits and systems by:

1. Evaluating the behavior of various electronic components within electric machinery applications
2. Investigating the operational characteristics of transducers and transformers in industrial control systems
3. Comparing the performance of open and closed loop systems through practical case studies and simulations

Competency 2: The student will perform calculations to determine operational parameters by:

1. Applying mathematical models to predict the performance of electric machinery and industrial control systems
2. Conducting load calculations for transmission and distribution systems to ensure efficiency and safety
3. Utilizing software tools to simulate circuit behavior and validate theoretical predictions against experimental data

Competency 3: The student will examine the principles of system control by:

1. Differentiating between open and closed loop control mechanisms and their respective applications in industrial environments
2. Assessing the impact of feedback loops on system stability and performance
3. Exploring the role of sensors and actuators in enhancing system responsiveness and accuracy

Competency 4: The student will design effective solutions for industrial control challenges by:

1. Creating circuit diagrams that illustrate the integration of various components within electric machinery systems
2. Developing troubleshooting strategies for diagnosing and resolving issues in electronic circuits
3. Proposing enhancements to existing systems based on analysis of operational data and performance metrics

Learning Outcomes

- Solve problems using critical and creative thinking and scientific reasoning
- Use computer and emerging technologies effectively