Mohawk valley community college  
Utica and Rome New york

Electrical Machinery and Controls 1 ET131

4.0 Credit Hours

1. Course or Catalog Description:

ET131 Electrical Machinery and Controls 1 C-3, P-3, Cr-4.0

This introductory course investigates the construction, operation, and control of electrical equipment installed and maintained by the various electrical trades. Topics pertain to direct current equipment and include shunt, series, and compound motors and generators, manual and automatic DC controllers, stepping motors, and DC meters. It emphasizes the practical aspects of magnetic flux, counter-electromotive force, armature and field currents, motor and generator loading conditions, and the relationship of these electrical characteristics to specific types of mechanical, electrical, and electronic controllers.

Corequisite: ET102 Technical Electricity 2

1. Required Texts, Reading, Materials:
2. STUDENT LEARNING OUTCOMES:

This course supplements student knowledge of direct current related information and provides new opportunities for individual growth through; introduction to D.C. generators, D.C. Motors and Controls.

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

* Construct, troubleshoot and maintain most of the D.C. machinery and controls used throughout the electrical industry.
* Evaluate motor circuits and their diagrams.
* Differentiate between various motor control sensors and their applications
* Design and debug various motor control circuits.
* Develop laboratory reports using data taken in experiments
* Integrate a safety plan into their laboratory experiments.

1. DETAILED COURSE OUTLINE:

Topics

SECTION 1 Introduction

SECTION 2 Circuit Layout, Connections, and Symbols

SECTION 3 Control Pilot Devices

SECTION 4 Basic Control Circuits

SECTION 5 AC Reduced Voltage Starters

SECTION 6 Three-Phase, Multi-speed Controllers

SECTION 7 Wound Rotor (Slip Ring) Motor Controllers

**COURSE NAME:** \_\_\_\_\_\_\_\_ **MT 139 Mechanical Systems**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

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| **DATE** | **FACULTY NAME** | **CHANGE** | **INPUT** | **MEASUREMENT** | **ASSESSMENT** | **ACTION** |
| 1/14/16 | M. Higgins | Clean up format |  |  |  |  |
| 1/18/16 | M. Higgins | Expand Disclaimers | From NFI |  |  |  |
| 3/17/16 | M. Higgins | Detailed Course Outline and Schedule | From Text |  |  |  |
| 4/20/16 | M. Higgins | Reformat Course Outline and Schedule | From Sybil web page |  |  |  |
| 8/17/17 | M. Higgins | Reformat Course Outline and Schedule | From Sybil web page |  |  |  |
| 1/20/19 | M Higgins | Reviewed to conform to College Standards | Review Standards |  |  |  |
| 5/16/19 | M Higgins | Update for fall 2019 schedule | Fall 2019 schedule |  |  |  |
| 1/7/2021 | M Higgins | Update CRNs, Sec #’s | SIRS |  |  |  |
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