DEPARTMENT OF INDUSTRIAL & ENGINEERING TECHNOLOGY

ENT 351 - 3 Credit Hours

I. Title: Industrial and Commercial Power Distribution

II. Catalog Description:
An in-depth study of industrial and commercial power distribution including three-phase systems, transformers, cable and conduit, grounding, system protection and safety. Pre-requisite: TSM 110.

III. Purpose
To provide the student with a good working knowledge of industrial and commercial power distribution.

IV. Course Objectives:
1. To provide the student with an understanding of ac circuit analysis using phasors
2. To provide the student an understanding of active, reactive and apparent power
3. To provide the student with an in-depth understanding of three-phase theory.
4. To provide the student with a working knowledge of transformers and their applications.
5. To provide the student with a working knowledge of the various specialty transformers and their applications.
6. To provide the student with an understanding of the basics of electric energy generation, transmission and distribution.

V. Content Outline:
1. Introduction
2. Active, Reactive and Apparent Power
3. Three-Phase Circuits
4. The Ideal Transformer
5. Practical Transformers
6. Special Transformers
7. Three-Phase Transformers
8. Generation of Electrical Energy
9. Transmission of Electrical Energy
10. Distribution of Electrical Energy

VI. Instructional Activities:
1. Lecture
2. Demonstrations

VII. Field and Clinical Experiences: Field Trips

VIII. Resources: See XII. Text and References

IX. Grading Procedures:
1. Grading: Four (4) one-hour tests of 100 points each for a total of 400 points. Final grades will be determined by dividing total points earned by 400. Grading Scale: 90 and above an A, 80-89 a B, 70-79 a C, 60-69 a D and 59 and below an E.
2. Make-up Tests: No make-up test will be given unless the instructor is notified before the test concerning the reason for missing that test. Excuses for missing tests must be documented.

X. Attendance Policy: This course will adhere to the “Attendance Policy” published in the MSU Undergraduate Bulletin.

XI. Academic Honesty Policy: This course will adhere to the “Academic Honesty Policy” published in the MSU Undergraduate Bulletin.

XII. Text and References:

Text: Electric Machines, Drives and Power Systems by Theodore Wildi, 6th Ed., Prentice Hall, 2005.

XIII. Prerequisite:

TSM 110 or equivalent

XIV. NON-DISCRIMINATION POLICY STATEMENT:

Murray State University endorses the intent of all federal and state laws created to prohibit discrimination. Murray State University does not discriminate on the basis of race, color, national origin, gender, sexual orientation, religion, age, veteran status, or disability in employment, admissions, or the provision of services and provides, upon request, reasonable accommodation including auxiliary aids and services necessary to afford individuals with disabilities equal access to participate in all programs and activities. For more information, contact the Director of Equal Opportunity, Murray State University, 103 Wells Hall, Murray, KY 42071-3318. Telephone: 270-809-3155 (voice), 270-809-3361 (TDD).

J. Weatherly
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