

**Western Dakota Technical Institute
800 Mickelson Drive
Rapid City, SD 57703-4018**

Master Syllabus

Course Number: IEL 226
Course Name: Electrical Motor Fundamentals and Maintenance
Credits: 2
Contact Hours: 2 Lecture

Course Description: This course involves a study of the operational theory and construction of AC and DC motors. It is important for the electrician to have an understanding of motor principles and motor construction in order to facilitate proper motor installation and troubleshooting. This course should be taken concurrently with IEL 223 – Electric Motor Lab.

Prerequisites: IEL 132 and IEL 133

Textbooks: <http://bookstore.wdt.edu>

Materials: None

Student Learning Outcomes:

- Describe the differences between series and shunt field windings in DC generators and motors.
- Explain the theory of an induction and a capacitor start single-phase motor.
- Explain the terminal connection for high and low voltage induction and capacitor start single-phase motors.
- Explain the terminal connection for high and low voltage wye and delta connected three-phase motors.
- Describe the operating principles of three-phase motors and generators.

Assessment: Students' analytical skills and employability will be assessed throughout this course.

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