

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

Master Syllabus

Course Number: IEL 133
Course Name: Electrical Fundamentals Lab
Credits: 7 credits
Contact Hours: 14 Lab

Course Description: This course addresses the lab study of AC, DC, solid state, series, parallel, series-parallel, inductance, and capacitance. Measuring basic quantities using a VOM and the oscilloscope and analyzing and troubleshooting circuits are included. Voltages and currents are measured to demonstrate circuit characteristics.

Prerequisites: None

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

Student Learning Outcomes:

- Use test equipment correctly and safely in the lab
- Calculate current, resistance, and voltage in the lab
- Measure current, resistance, and voltage in the lab plus effective-, peak-, peak-to-peak voltage and frequency of an AC sine wave while illustrating phase relationship between voltage and current
- Operate accurately the readings of an oscilloscope including interpretations of readings
- Analyze circuits while troubleshooting as needed

Assessment: Life skills, analytical skills, technology skills, teamwork techniques, and employability will be assessed throughout this course.

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