Hibbing Community College

ELM 1101: DC Electrical Theory & Applications

A. COURSE DESCRIPTION

Credits: 5
Lecture Hours: 3
Lab Hours: 2
Prerequisites: None
MnTC Goals: None

DC Electrical Theory and Applications covers the introduction of direct current, its production, Ohm's Law, series, parallel and combination circuits and applicable National Electrical code articles.

B. COURSE EFFECTIVE DATES: 06/22/2006 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Safety
2. Atomic structure
3. Electrical quantities
4. Ohm's Law
5. Static electricity
6. Magnetism
7. Resistors
8. Electrical circuits
   A. Series circuits
   B. Parallel circuits
   C. Combination circuits
9. Measuring instruments
10. Wire tables and conductor size
11. Conduction in
   A. Liquids
   B. Gases
12. Sources of electricity
   A. Batteries
   B. Other sources
13. Magnetic induction

D. LEARNING OUTCOMES (General)

1. Students will explain and define basics of DC theory.
2. Students will define and use Ohm’s Law to calculate DC circuits.
3. Students will demonstrate the use of meters in DC circuits.
4. Students will show knowledge of various DC circuit types.
5. Students will explain other uses and sources of DC electricity.
6. Students will explain unwanted results of DC electricity.
7. Students will calculate and size wire and fuses.
8. Students will demonstrate knowledge of resistors.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies
None

F. LEARNER OUTCOMES ASSESSMENT
As noted on course syllabus

G. SPECIAL INFORMATION
HCC COMPETENCIES MET:
Working Productively and Cooperatively, Communicating Clearly and Effectively, Thinking Creatively and Critically and Valuing Self

STUDENT CONTRIBUTIONS:
The student is expected to read the required textbook, spend sufficient time outside of class to complete assignments, submit assignments when due, take tests on scheduled dates, and participate in class discussions.

STUDENT ASSESSMENT SHALL TAKE PLACE USING INSTRUMENTS SELECTED/DEVELOPED BY THE COURSE INSTRUCTOR.

ADDITIONAL INFORMATION:
ELM 1101 requires students to maintain a minimum of 95% attendance. Attendance below 95%, may be made up by completing 1-credit make-up classes. The 1-credit make up class will equal 3 days of attendance. This course must be pre-approved by the course instructor. Three days that are less than full days (tardy or early leave) will equal one full day absence. Course attendance below 95% will result in retaking this course. National Electrical Code (Current Edition) NFPA
Scientific calculator, VOM, 6 volt flashlight, and safety glasses

AASC APPROVAL DATE: October 25, 2017
REVIEW DATE: October 2022