Minnesota State University Moorhead

PHYS 312: Analog Electronics

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 2

Lab Hours/Week: 3

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: MATH 323

MnTC Goals: None

This course provides a general overview of analog electronics (electrical engineering), and includes a number of electronics laboratory activities completed during regular class hours. The course will cover circuit analysis (DC and AC), explore semiconductor devices (diodes and transistors), analog electronics (operational amplifiers) and timer circuits. Student must have completed either PHYS 161 or PHYS 201 and either MATH 229 or MATH 261.

B. COURSE EFFECTIVE DATES: 04/19/2005 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. DC and AC circuits
2. Ohms law and Kirchhoffs laws
3. RC circuits and filters
4. Diodes and power supplies
5. Transistors
6. Operational amplifiers
7. 555 Timer
8. Comparators
9. Multivibrators

D. LEARNING OUTCOMES (General)

1. Demonstrate a mastery of a wide variety of skills appropriate to electronics: measuring currents, voltages; use of the oscilloscope; ability to read and draw schematic diagrams
2. Design and build a variety of circuits
3. Demonstrate a mastery of conceptual and quantitative evaluation of circuits

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted