IND 104 Basic Electricity I Syllabus

Course Information

Credits 3
Campus Washburn Institute of Technology (Forbes Facility)
Address 6530 SE Forbes Avenue
City/State/Zip Topeka, Kansas 66619
Office Fax 785-670-2734

Description
This course is an introduction to electricity, basic electrical components and their characteristics, circuit schematics and basic analysis of series and parallel DC circuits. Hands on Labs help guide student learners to assimilate this material.

Textbooks

Student Learning Outcomes:
A. Communicate effectively
B. Integrate technology
C. Learn effectively
D. Demonstrate cooperative teamwork skills
E. Apply safety in the workplace
F. Think critically and creatively
G. Demonstrate responsible work ethics

Competencies
1. Explain safety practices to prevent electrical shock while working with electricity and performing electrical maintenance.
2. Describe proper PPE usage to prevent electrical shock.
3. Perform Lockout/Tagout
4. Explain the procedures for ensuring an electrical power tool is grounded, and a capacitor is discharged.
5. Describe the major parts of an atom, the nature of an electric charge, and how electrons move through a conductor.
6. Explain voltage, voltage polarity, the unit of voltage, and different names for voltage.
8. Describe electrical circuit symbols and diagrams.
9. Demonstrate using Ohm's Law to solve for an unknown value of voltage, current or resistance.
10. Calculate voltage, voltage drops, current, resistance, and power in series, parallel and series-parallel electrical circuits.
11. Explain the electrical terms: open circuit, short circuit, and Maximum Power Transfer.
12. Demonstrate correct meter settings and proper meter placement in a circuit to measure voltage, current, and resistance.
13. Demonstrate the correct use of the following: clamp-on ammeter, megohmmeter.
14. Describe the features of common digital and analog multimeters and their primary differences.
15. Connect and operate basic electrical circuit.
16. Troubleshoot basic electrical circuit.

Guidelines for Success

Assessment Plan
Assessment is an integral part of the educational process at Washburn Tech and accurate feedback is an important tool in continuously improving the institution's technical programs. Students can expect to participate in assessment activities prior to entry into programs, within specific courses and following program completion for specific fields of study.

Grading Rationale
Class sessions and assignments will include daily homework, in-class review of homework, quizzes. Grades will be based on: Attendance and general participation, daily homework, quizzes and tests and final exam.

Grading Scale
90% or higher A
80% to 89% B
70% to 79% C
60% to 69% D
Less than 60% F

Attendance
Tardies and absences will affect the daily grade for attendance. Students who miss class should inform the instructor beforehand whenever possible, and are responsible for course content, for turning in any required homework, and for taking the initiative to make up any missed tests, labs or quizzes.
Disability
The Special Support Services (SSS) Office is responsible for assisting in arranging accommodations and for identifying resources at Washburn Institute of Technology for persons with disabilities. Qualified students with disabilities MUST register and provide documentation with the office to be eligible for services. New requests for accommodations should be submitted two months or more prior to the date services should begin; however, contact the SSS Office as soon as a need may arise. Depending on the accommodation request, four to eight week lead time may be needed for timely and effective provision of services. SSS coordinates and assist in arranging services it deems appropriate of eligible students on a case-by-case basis.

If you are a student with a disability that may substantially limit your ability to participate in this class and believe you will need accommodations, it is your responsibility to contact:

Special Support Services Coordinator
Phone: 785-228-6356
E-Mail: ssscoordinator@washburn.edu