

**J. Sargeant Reynolds Community College
Course Content Summary**

Course Prefix and Number: ARC 242

Credits: 3

Course Title: Building Electrical Systems

Course Description: Studies components and design for lighting and electrical systems, security, fire, and smoke alarms. Lecture 3 hours per week.

General Course Purpose: Course introduces students to the principles of design and functions of electrical systems to buildings, including lighting, communications, security systems, and emergency backup systems.

Course Prerequisites and Co-requisites:
None

Course Objectives:

Upon completing the course, the student will be able to

- a. Understand the principles of electrical power service to a typical residential and commercial structure;
- b. Understand the necessity of proper switch, outlet, and fixture location;
- c. Understand the requirements of appliance wiring and panel locations; and
- d. Apply the knowledge to draw complete and accurate electrical drawings for residential construction.

Major Topics to Be Included:

- a. Blueprint reading
- b. Circuit calculations
- c. Circuit requirements
- d. GFCI requirements
- e. Outlet installation
- f. Switch and fixture installation
- g. Appliances and their impact on power requirements in a building design

Effective Date of Course Content Summary: August, 2008