

**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/Corequisites (Entry-level competencies **required** for enrollment)

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.
- 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