

J. Sargeant Reynolds Community College
Course Content Summary

Course Prefix and Number: AUT 129

Credits: 3

Course Title: Automotive Electronic Safety Control Systems

Course Description: Introduces advanced automotive electronic safety control systems, including driver alert, unintended lane departure, blind spot detection, active headlights, and electronic control of braking systems. Addresses diagnostic procedures and maintenance of electronic safety control systems, and the theory, function, and operation of each system. Lecture 3 hours per week.

General Course Purpose: To examine theory, function, and maintenance of electronic safety control systems and to emphasize the critical importance of safety.

Course Prerequisites and Co-requisites:

None

Student Learning Outcomes:

Upon completing the course, the student will be able to

- a. Explain the concepts of safety in all areas of electronic safety control systems;
- b. Describe the operation principles for electronic safety control systems;
- c. Discuss the various electronic safety control systems components and their relationship to system operation; and
- d. Identify and explain the different types of electronic safety control systems produced by current automotive manufactures.

Major Topics to Be Included:

- a. Introduction to electronic safety control systems
 1. History
 2. Early electronic safety control systems
 3. Types of electronic safety control systems
- b. Electronic driver alert systems
 1. System operation
 2. System components
 3. System diagnostics and repair
- c. Electronic unintended lane departure warning systems
 1. System operation
 2. System components
 3. System diagnostics and repair
- d. Electronic blind spot detection systems
 1. System operation
 2. System components
 3. System diagnostics and repair
- e. Active headlight systems
 1. System operation
 2. System components
 3. System diagnostics and repair
- f. Electronic control of braking systems
 1. System operation
 2. System components
 3. System diagnostics and repair

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