

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

Course Prefix and Number: **AUT 153** **Credits:** **5**

Course Title: **Automotive Steering and Suspension Systems Diagnostics**

Course Description:

Introduces basic and advanced automotive steering and suspension system concepts, including theory and practical application. Covers steering systems, suspension systems, tires and wheels, electronic suspension, power assisted steering, and wheel alignments. Provides preparation for the Automotive Service Excellence (ASE) A4 Steering and Suspension Certification examination. Lecture 2 hours. Laboratory 6 hours. Total 8 hours per week.
5 credits

General Course Purpose:

This course serves as an introduction to basic and advanced automotive steering and suspension system concepts, including theory and practical application. Steering systems, suspension systems, tires and wheels, electronic suspension, power assisted steering, and wheel alignments are covered. Course provides preparation for the Automotive Service Excellence (ASE) A4 Steering and Suspension Certification examination.

Course Prerequisites and Co-requisites:

Prerequisites: AUT 149

Student Learning Outcomes:

Upon completing the course, the student will be able to

- define basic steering and suspension principles.
- diagnose and repair steering and suspension concerns.
- demonstrate the ability to properly use diagnostic test equipment.
- determine the cause of vibration, shimmy, noise, and abnormal tire wear and restore the system to industry standards.
- perform on-vehicle testing of electronic and mechanical components.
- evaluate the proper operation of sensors and control modules using appropriate test equipment and service manuals.
- perform vehicle alignments and determine other necessary actions.

Major Topics to Be Included:

- Front and rear suspension components
- Front and rear suspension service
- Steering components and service
- Wheel alignment principles
- Alignment diagnosis and service
- Tires and wheels
- Tire pressure monitoring systems
- Electronic suspension and service

Effective Date/Updated: November 1, 2022