

**NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY
AUT 225 - AUTOMOTIVE EMISSIONS INSPECTION (1 CR.)**

Course Description

Provides training for certified inspectors in the Virginia State Emissions Inspection Program. Emphasizes current legislation and inspection techniques using industry standard emission analyzers. Lecture 1 hour per week.

General Course Purpose

This course is designed to provide the emissions inspector candidate with specialized training in conducting a thorough vehicle emissions inspection. The student will become knowledgeable about State program regulations pertaining to inspection requirements and procedures. Students will be instructed in the proper use of the latest test equipment designed to measure and record concentrations of different exhaust gasses and other pertinent information. The student will also be taught essential information required to perform a visual inspection for emission control component tampering.

Course Prerequisites/Corequisites

The ability to read, write, and speak the English language.

Course Objectives

Upon completion of this course, the student should be able to:

- Demonstrate the ability to conform to applicable motor vehicle laws and emissions inspection regulations
- Explain emission inspector responsibilities for providing the customer with appropriate information with regards to the inspection procedure
- Describe applicable aspects of sections 207(a) and 207(b) of the 1990 Clean Air Act Amendment
- Explain the chemical reactions that occur during the combustion process
- List the common causes for excessive HC, CO and NOx
- Identify and describe the operation of various emission control devices
- Locate and/or detect instances of emission control device tampering
- Implement all applicable information pertaining to vehicle emissions procedures as outlined in the Virginia Inspection Manual
- Demonstrate proficiency in the performance of the entire vehicle emissions inspection procedure
- Demonstrate proficiency in the operation, care, maintenance, and use of the vehicle exhaust emissions analyzer

Major Topics to be Included

- Vehicle emissions and legislative trends
- Chemistry of combustion/cause and effect
- Vehicle emission control devices
- Inspector responsibilities and customer relations
- Virginia Inspection Program Regulations and Procedures
- Operating the exhaust emissions analyzer
- Tampering detection
- OBD I and OBD II and Inspection and Maintenance (I/M) procedures