



NASHUA COMMUNITY COLLEGE

COURSE OUTLINE FORM

Course Title: ADVANCED AUTOMOTIVE ELECTRICITY AND ELECTRONICS			
Course Prefix & No.: AUTO115N	Lecture Hours: 2	Lab Hours: 3	Credit Hours: 3
Department: Transportation Technology			
Program: Automotive Technology			

Prerequisites/ Co-requisites:

AUTO113N

Required Accuplacer Score:

Entrance Skills:

- A minimum of one year of high school Algebra I is recommended.
- Basic skills in written English are required.
- Basic reading skills are required.
- Basic computer skills are required.
- Students are expected to possess a good work ethic and a strong desire to learn.
- A valid motor vehicle driver's license is required.

Catalog Description:

The course includes operating principles and troubleshooting of various systems, body computers, multiplexing, keyless entry, etc. Testing of sensors and circuits and On-board diagnostics related to these systems will be covered.

Course Competencies:

Competency (Knowledge and Skills)	Critical Thinking Level
Students will be able to:	
To develop safe working habits and respect for equipment and shop management.	Recognize and apply
Understand the operation of components found in solid state circuitry, such as capacitors, transistors, diodes and resistors.	Identify and apply
Proper knowledge and interpretation of wiring diagrams of computer controlled systems.	Recognize and apply
Diagnose systems with the use of diagnostic test equipment.	Analyze
Understand the basics of multiplex systems.	Recognize
To become proficient at reading wiring diagrams and service manuals.	Recognize, apply and analyze
To build experience and competence in the troubleshooting of electrical problems on vehicles.	Recognize, apply and analyze

Course Outline:

Content Topic	Subtopics (a., b., etc.)
Introduction and Shop Safety	<ul style="list-style-type: none">a. Battery safetyb. Electrical safetyc. Hybrid safety
Computer Fundamentals	<ul style="list-style-type: none">a. Computer design and operationb. Input and output testing and operationc. Diagnostic procedures
Test Equipment	<ul style="list-style-type: none">a. Oscilloscopesb. Graphing Multi-meters
Communication Systems	<ul style="list-style-type: none">a. Design and operation of communication systemsb. Diagnostic proceduresc. Repair and testing of communication systems
Accessory Circuits	<ul style="list-style-type: none">a. Comfort systemsb. Convenience systemsc. Anti-theft systemsd. Audio systemse. Driver Information and Navigation Systems

Performance Evaluation:

Formative Assessments	Summative Assessments
<ol style="list-style-type: none">1. Lab participation grade2. Classroom participation3. Quizzes4. Midterm exam5. Homework assignments, reading6. Electude	<ol style="list-style-type: none">1. Final exam2. Lab practical exam

Method of Instruction:

1. Lecture and discussion
2. Required reading
3. Demonstration
4. Laboratory work

Instructional Facilities:

For this course a traditional classroom with working audio/visual equipment is required as well as working lab space in the automotive lab. Access to both a lab classroom with benches and main shop space with lifts is required for this class.

Revision History:

February, 2008 Brian Creegan
April, 2013 Brian Creegan
January, 2017 Dan Jones

Will this course be taught online? Yes ___ No X

If yes, please complete the Online Course Outline Form.