

NASSAU BOCES - ADULT EVENING PROGRAM  
Joseph M. Barry Career & Technical Education Center  
1196 Prospect Ave.  
Westbury, NY 11590

COURSE OUTLINE

Course Name: **AUTO MECHANICS III (Engine Performance)**  
Weeks: 10  
Sessions: 20  
Hours: 60  
Days/Time: Tue/Thu, 7-10 pm  
Instructor: Sean Bradley  
Required Textbook: Automotive Technology – A Systems Approach; Erjacvec; Delmar Publishing  
Prerequisites: Auto Mechanics I or II  
Adult evening Office: (516) 622-6950

Course Overview:

This course is both a hands-on and theoretical in its approach to engine tuning and drive-ability problems. Topics covered include ignition systems, carburetors, fuel injection computer control systems and emission systems. Based on the knowledge learned at the beginning of the course, the instructor will teach more advanced skills such as port fuel injection, C31 Computer Controlled Coil ignition, GM TBI and PFI advanced diagnosis, EFI on board Computer System diagnosis, GM Fuel Injection and Micro-processor Control Unit (MCU).

Auto Mechanics Certificate: Requires Auto Mechanics I, Auto Mechanics II, Auto Mechanics III and Auto Mechanics IV for a total of 240 hours.

Course Topics

Session 1 Introduction, Ignition Systems  
Session 2 Ignition System Service  
Session 3 Fuel Systems  
Session 4 Fuel System Diagnosis and Service  
Session 5 Hands-On Ignition Coil Diagnosis  
Session 6 Carburetors  
Hands-On Carburetor Overhaul  
Session 7 Electronic Fuel Injection  
Session 8 Fuel Injection System Diagnosis and Service  
Session 9 Emission Control Systems  
Session 10 Emission Control Diagnosis and Service  
Session 11 Hands-On Fuel control Circuits; Midterm Exam  
Session 12 On-Board Diagnostic Systems  
Session 13 Hands-On Scanning Systems  
Hands-On Reading DTC's (Diagnostic Trouble Codes)  
Session 14 Hands-On EVAP Systems  
On-Board Diagnostic System - Diagnosis and Service (cont'd)

- Session 15 Hands-On Reading Sensors with DVOM (Digital volt/ohm/amp meter)  
On-Board Diagnostic System - Diagnosis and Service (cont'd)
- Session 16 Hands-On Fuel Pressure Diagnosis  
Hands-On Reading Data Streams  
Hands-On O2 Sensor Diagnosis
- Session 17 Hands-On DIS Diagnosis (Distributorless Ignition Systems, i.e. Electronic Ignition System)
- Session 18 Hands-On Engine Misfire Diagnosis  
Hands-On Fuel Injector Diagnosis
- Session 19 Hands-on Input Sensors, Hands on Output Sensors
- Session 20 Review and Final Exam