

# Los Angeles Trade-Technical College

## Clean and Green Automotive Technology, Collision, and Diesel Technology Programs

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Los Angeles Trade-Technical College offers several Associate in Science degrees and Certificates of Completion programs in its automotive technology, automotive collision, and diesel technology programs. The following are the green activities, courses, and programs that have been implemented.



### ***Alternative Fuel Systems***

The diesel technology program includes an Introduction to Alternative Fuels Course in which new and emerging "green" or "clean" fuels and technologies such as CNG, biodiesel, LNG, ethanol, fuel cell, and hybrid are compared with the traditional fuels they were designed to replace. In addition, throughout both the diesel technology and automotive technology degree and certificate programs at the College, students are introduced to "green" and "clean" transportation technologies and are trained for troubleshooting, maintaining, and repairing alternative fuel systems.

The Diesel Technology program also provides contract training for transit companies that are part of the Southern California Regional Transit Training Consortium. Through this program the College trains incumbent, journey-level mechanics on new, alternative fuels and on complex trouble shooting and repair of a CNG fuel system.

Lastly, beginning in spring semester 2008, Diesel Technology program faculty member Jess Guerra and his students are now conducting biodiesel research using opacity testing to assess the measured opacity of different biodiesel fuels including B20 and B99. Opacity testing is the only emissions test required by law for heavy-duty diesels. Opacity is the density of tail pipe emissions with 0% being perfectly clear and 100% being completely dirty, not allowing light to be seen from one side of the smoke plume to the other. Future plans include conducting the same tests using B99 (99% biofuel, 1% diesel) and other biodiesel fuels as they emerge.



### ***Diesel Opacity Testing and Emission Control Devices***

The Diesel Technology program at Los Angeles Trade-Technical College is one of five official certification sites in the state of California for the California Air Resources Board in which incumbent mechanics are trained to conduct diesel engine opacity tests. Also in conjunction with the California Air Resources Board, the College offers training on the technology, installation, and repair of computer controlled, CARB-certified exhaust control device(s) that reduce particulate matter and possibly other precursor emissions. The training includes both the diagnosis and repair of the filter and of the computer controls that monitor and operate the filter.



### ***Certified Green Business Operations***

The Automotive and Diesel Technology programs are currently "cleaning" and "greening" its policies, practices, and facilities to meet the standards of a certified green business. This includes bringing department operations into compliance with all environmental regulations then going beyond compliance to meet the standards of green practices and targeted resource conservation and pollution prevention measures. Measures the department is taking to conserve water, reduce solid waste and recycle, conserve energy, and prevent pollution includes using biodegradable soap, non-caustic, and ultra-sonic cleaners that are water dilutive for cleaning parts; recycling automotive parts/materials; and trapping auto collision painting vapors through a complex filtering process.



## **Other Green Activities**

**MTA Donates CNG Engines to Trade-Tech Diesel Technology Program.** The Los Angeles Metropolitan Transportation Authority (Metro) recently donated two Series 50G Detroit Diesel engines to the Diesel Technology program at Trade-Tech. This is a significant donation to the program because these engines run on Compressed Natural Gas (CNG) fuel and this equipment will enable the program to provide training for students and industry partners on alternative fuel technology. CNG is the primary fuel used in mass transit buses today and it is also being used by many of the municipalities in the state. This donation was made possible by the significant work of Jess Guerra, Diesel Technology instructor at Trade-Tech.

**Challenge X Road Rally.** On November 29, 2007, Los Angeles Trade-Technical College hosted the Challenge X Road Rally. Challenge X: Crossover to Sustainable Mobility is a competition developed by General Motors Corporation (GM), US Department of Energy, and other government and industry leaders. This ground-breaking, three-year competition gives engineering schools an opportunity to participate in hands-on research and development with leading-edge automotive propulsion, fuels, materials, and emissions-control technologies. The Road Rally, held at Trade-Tech, is part of a two-week long culmination of the third year of the competition in which vehicles are tested and are driven from the college to Quantum in Anaheim, California. Students in the automotive department were called upon to lend their technological skills to the teams to assist them with preparing their vehicles for testing and for the road rally.



## **Contact Information @ Los Angeles Trade-Technical College**

### **Program and Training Information on Automotive Department Programs and the Green Business Certification**

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### **Greening of Diesel Technology**

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