



# High School Diesel Tech Proposal

3 YEAR CLASS PLAN

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The goal of this program would be to encourage students, both male and female, to consider a career in the field of Diesel Technology.

The entry level certificate would equip students with the basic needed skills to go to work immediately in the field, students would receive a forklift certification and entry level welding skills to help them jumpstart their career.

The intermediate level certificate would build onto the entry level certificate by equipping students with the ability to read and understand schematics and diagrams as well as give them the ability to diagnose and repair electrical problems on today's vehicles. Students would also receive a 609 AHVAC certification for working on vehicle's AC systems.

The advanced certificate would build on both the previous certificates by introducing students to the teardown, diagnosis, and rebuilding of medium and heavy duty diesel engines, as well as valve adjustments. The students would also be given the opportunity to receive their CDL during the summer at 18 years of age. This would give them an advantage, as they would have the ability to test drive trucks themselves.

The skills earned in these certificates would easily transfer into the automotive field, they are as follows:

# Diesel Tech 1 (Entry Level, First Year)

## Diesel Preventive Maintenance Certificate

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**DHM 107** *Diesel Equipment Service and Diagnosis* (1-4-3) (First 7.5 weeks, 5 days a week, students come 1 block with 2.5 hours weekly A-synchronous)

**DHM 255** *Air Brake Systems* (2-3-3) (Second 7.5 weeks, 5 days a week, students come 1 block with 2.5 hours weekly A-synchronous)

**DHM 251** *Suspension and Steering* (2-3-3) (Third 7.5 weeks, 5 days a week, students come 1 block with 2.5 hours weekly A-synchronous)

**DHM 262** *ABS and TCS Systems* (2-1-2) (Fourth 7.5 weeks, 5 days a week, students come 1 block)

### SUMMER COURSES:

**LOG 115** *Forklift Operations*

**WLD 130** *Welding Fundamentals*

**MFG 106** *Manufacturing Internship*

# Diesel Tech 2 (Intermediate Level, Second Year)

## Diesel Electronics Certificate

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**DHM 173** *Electrical Systems I* (3-1-3) (First 7.5 weeks, 5 days a week, students come 1 block)

**DHM 121** *Introduction to Diagnostic Testing* (2-1-2) (Second 7.5 weeks, 5 days a week, students come 1 block)

**DHM 273** *Electrical Systems II* (2-3-3) (Third 7.5 weeks, 5 days a week, students come 1 block with 2.5 weekly A-synchronous)

**DHM 231** *Diesel Air Conditioning* (2-1-2) (Fourth 7.5 weeks, 5 days a week, students come 1 block)

### SUMMER COURSES:

**DHM 225** *Electronic Fuel Systems*

**MET 105** *DC and AC Electricity*

# Diesel Tech 3 (Advanced Level, Third Year)

## Diesel Engine Repair Certificate

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**DHM 105** *Diesel Engines I* ( 3-0-3) (First 7.5 weeks, 5 days a week, students come 1 block)

**DHM 108** *Diesel Engine Tune-Up* (1-3-2) (Second 7.5 weeks, 5 days a week, students come 1 block)

**DHM 125** *Diesel Fuel Systems* (2-2-2) (Third 7.5 weeks, 5 days a week, students come 1 block)

**DHM 216** *Medium Diesel Engines* (1-4-3) (Fourth 7.5 weeks, 5 days a week, students come 1 block with 2.5 hours A-synchronous weekly)

### SUMMER COURSES:

**DHM 205** *Diesel Engines II*

**TDR 102** *Truck Driver Training*

# Course Descriptions

## Diesel Preventive Maintenance

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**DHM 107 Diesel Equipment Service and Diagnosis:** this course is a study of heavy vehicle systems with emphasis on preventive maintenance, problem diagnosis, and repair procedures.

**DHM 255 Air Brake Systems:** this course is a study of air compressors, valves, electrical controls and brake designs.

**DHM 251 Suspension and Steering:** this course is a study of steering systems, suspension systems, and basic front-end alignment techniques.

**DHM 262 ABS and TCS Brake Systems:** this course is a study of the theory and practical application of ABS(Automatic Braking Systems) and TCS(Traction Control Systems) for truck safety systems.

**LOG 115 Forklift Operations:** This course will introduce students to the operation and maintenance of the forklift vehicles used in warehouse operations.

**WLD 130 Welding Fundamentals:** This course introduces students to the principals of cutting and welding, the identification of welding tools and equipment, and the process for setting up and repairing welding equipment.

# Course Descriptions

## Diesel Electronics Certificate

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**DHM 173 *Electrical Systems I:*** This course is a study of basic electrical theory as applied to truck and heavy equipment batteries, starters, and alternators.

**DHM 121 *Introduction to Diagnostic Testing:*** This course is an introduction to the basic theory and practical application of diagnostic testing equipment in troubleshooting procedures. Content includes the study of diagnostic software and generic diagnostic readers for all major engine manufacturers.

**DHM 273 *Electrical Systems II:*** This course covers advanced electrical/electronic controls for diesel trucks and heavy equipment. Troubleshooting and repair techniques are included.

**DHM 231 *Diesel Air Conditioning:*** This course is a study of diesel air conditioning theory, maintenance, troubleshooting, and repair procedures.

**DHM 225 *Electronic Fuel Systems:*** This course covers the theory and practical application of electronic fuel power systems.

**MET 105 *DC and AC Electricity:*** This course covers the fundamentals of DC and AC, including resistance, current, voltage, inductive reactance, capacitive reactance, and impedance. Emphasis is placed on electrical equipment such as DC and AC motors and generators, electrical switch gears, and transforms.

# Course Descriptions

## Diesel Engine Repair Certificate

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**DHM 105 *Diesel Engines I:*** This course covers the basic study of diesel engine design and operating principals.

**DHM 108 *Diesel Engine Tune-Up:*** This course is a study of diesel engine tune-up principals and practices. Students will explore ways to minimize overall operational costs, as well as the use of aftermarket add-on equipment such as performance computer chips, high output turbochargers and custom exhaust installation.

**DHM 125 *Diesel Fuel Systems:*** This course is a basic study of diesel engine fuel systems including pumps, governors, and injectors.

**DHM 216 *Medium Diesel Engines:*** This course is the study of major manufacturer's configuration of medium diesel engines, diagnostic adjustment and settings, specific exhaust turbo performance settings, and reassembly techniques.

**DHM 205 *Diesel Engines II:*** This course covers the practical application of diesel engine repair, including engine disassembly, unit repair, reassembly, and testing.

**TDR 102 *Truck Driver Training:*** This course covers the safe operation of a tractor-trailer on the open highway.