



Green Engine

Transportation Sector

- Transportation plays a crucial role in our society because moving people and goods is central to everything America does.
- Vehicle components and systems will continue to become increasingly sophisticated which, in turn, will require well-trained operators and maintenance and repair technicians. Examples of future transportation technology include rocket technology, super-capacity jet airplanes, hybrid, bio-diesel, and hydrogen fuel-cell technology involving automobiles and trucks.
- Transportation technology is increasingly electronic, computer-based and high tech with a steady job demand and high pay

Benefits of Taking This Pathway

- Green Engine is Dual Enrolled with American River College.

Students that pass with a C or better earn college 3 units per semester .

Seniors who meet the following requirements are eligible for a Career Pathways Cord at Graduation:

- Completion of a Pathway Program, with a C or better within the pathway.
- Earn an overall GPA of 2.0

Potential College Majors

- Automotive Technology
- Diesel Technology
- Automotive Collision Technology
- Mechanical Engineering

Potential Careers

- Truck Mechanics and Diesel Engine Specialists
- Aircraft Mechanics and Service Technicians
- Heavy Truck Drivers
- Automotive Body and Related Repairers
- Automotive Service Technicians and Mechanics

Sites

- HHS
- RLHS

Green Engine

Pathway Courses

Green Engine

(HHS, FLHS)

Grades: 10-11 **Duration:** Year

HS Grade Req: Electives **UC/CSU a-g:** Dual Enrolled with American River College

Prerequisite: none

CTE Pathway: Green Engine (concentrator)

Course Description: This course provides students with the knowledge and skills regarding various alternative fuel vehicles including, but not limited to, electric, fuel cell, hybrid/electric, hydrogen fuel, compressed natural gas, liquid natural gas, ethanol and methanol fuel vehicles. Environmental concerns, legislation, safety, applications, and their integrated systems from various manufacturers as well as the development of new technology will be discussed. Students develop critical thinking skills through a variety of multimodal, problem-solving techniques. Integrated content focuses on demystifying technology; increasing student literacy, confidence and competence in an age of rapidly advancing technology; providing students with the basis for making wise academic and career choices.



Diesel Engine

(HHS, RLHS)

Grades: 11-12 **Duration:** Year

HS Grad Req: Electives **US/CSU a-g:** Dual Enrolled with American River College

Prerequisite: Green Engine

CTE Pathway (level): Green Engine (capstone)

Course Description: This course provides students with knowledge and skills to diagnose, maintain, and repair diesel engines and related systems. Specific course topics may include principles underlying diesel engines, analyzing electrical circuits and systems, troubleshooting and repairing cooling systems, testing and repairing air conditioning charging systems, reading and interpreting service manuals, and identifying the principles and components of fuel injection systems; repair and replace and replacement of water pumps, generators, governors, auxiliary and accompanying power units and controls; transmissions, drive lines and drive axles; brakes, tires, and wheels,; steering and suspension systems; electrical and lighting systems; hydraulics and pneumatics; safety codes and regulations; and general shop skills, including brazing and welding.

Continuing Pathways Post-Secondary

American River College:

- Automotive Analysis AS Degree
- Alternative Fuels & Green Vehicles AS Degree
- Automotive Technology AS Degree
- Diesel Technology AS Degree

CSU Sacramento:

- Mechanical Engineering BS Degree
- Electrical and Electronic Engineering BS Degree