MECHANICS-DIESEL/HEAVY EQUIPMENT (MECN)

Community and Technical College
Diesel & Heavy Equipment Program
907-455-2800

MECN F103  Advanced Electrical Systems
3 Credits
Offered Fall
Theory, operation, and repair of starting and charging systems, diagnostic methods and specifications that are standard in the industry. Diagnosis and repair of common sensors, actuators, electronic fuel injectors and systems will be covered, as well as electronic scan tools, multiplexing, and CAN Bus network diagnosis and repair.
Lecture + Lab + Other: 1 + 4 + 0
Grading System: Letter Grades with option of Plus/Minus

MECN F104  Mobile Equipment Maintenance
1 Credit
Offered As Demand Warrants
Technical, financial and legal aspects of mobile equipment maintenance. Students will work in groups to perform a maintenance operation and create maintenance records on a variety of vehicle types.
Lecture + Lab + Other: 0.5 + 1 + 0
Grading System: Letter Grades with option of Plus/Minus

MECN F112  Basic Auto Maintenance
1 Credit
Offered As Demand Warrants
Covers basic automobile system functions, owner maintenance of electrical, cooling and fuel systems, auto lubricants and fluids, tires and wheels, tune-ups, and cold weather maintenance and operation. For the person without mechanical experience.
Lecture + Lab + Other: 1 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

MECN F154  Diesel Fuel Injection
2 Credits
Offered As Demand Warrants
Two major areas of automotive maintenance and repair: inspection and replacement of common clutch types; and maintenance, inspection and overhaul of automotive manual transmissions.
Lecture + Lab + Other: 1 + 2 + 0
Grading System: Letter Grades with option of Plus/Minus

MECN F159  Manual Transmissions and Clutches
2 Credits
Offered As Demand Warrants
Troubleshooting and repairing a wide range of electronic systems found in both light and heavy equipment including, but not limited to, load moment limiting, motor speed control, electronic control of hydraulic systems and electronic governors for power generation.
Lecture + Lab + Other: 1 + 2 + 0
Grading System: Letter Grades with option of Plus/Minus

MECN F202  Principles of Electric Drive Vehicles
2 Credits
Offered As Demand Warrants
In-depth study of batteries: design, construction, testing and charging, currents and maintenance. Knowledge applied to DC motors, electronic controls and electronic traction motor controls. The in-shop training discusses environmental impacts of electric drive vehicles.
Lecture + Lab + Other: 2 + 0 + 0
Grading System: Letter Grades with option of Plus/Minus

MECN F203  Basic Power Generations
3 Credits
Offered As Demand Warrants
Portable and stationary electric power generators and the relationship of magnetism, AC/DC currents, motors, generators, transformers and electrical distribution.
Recommended: AUTO F110.
Lecture + Lab + Other: 2 + 2 + 0
Grading System: Letter Grades with option of Plus/Minus

MECN F204  Basic Alternating Current Electrician Skills
2 Credits
Offered As Demand Warrants
Basic residential and commercial electrician skills; current theory and applications; electrical measurement and circuitry.
Lecture + Lab + Other: 1 + 2 + 0
Grading System: Letter Grades with option of Plus/Minus

MECN F205  Uninterruptible Power Supplies
1 Credit
Offered As Demand Warrants
Residential and commercial power supplies; troubleshooting batteries; electronic components; reading UPS schematics.
Lecture + Lab + Other: 0.5 + 1 + 0
Grading System: Letter Grades with option of Plus/Minus

MECN F206  Emergency Backup Power Generation
1 Credit
Offered As Demand Warrants
Language and fundamentals of electricity; circuitry; conductor types and sizes; writing methods; system requirements of power generation.
Lecture + Lab + Other: 0.5 + 1 + 0
Grading System: Letter Grades with option of Plus/Minus

MECN F207  Power Generation Governors
2 Credits
Offered As Demand Warrants
Mechanically and electrically controlled engines with emphasis on what is a governor and what is its function in power generation will be covered in the hands-on diagnostic training.
Lecture + Lab + Other: 1 + 2 + 0
Grading System: Letter Grades with option of Plus/Minus

MECN F208  Alternative Fuels
2 Credits
Offered As Demand Warrants
History of fuels with emphasis on the known alternative fuels: natural gas, methanol, ethanol and propane. A research project is required.
Lecture + Lab + Other: 1 + 2 + 0
Grading System: Letter Grades with option of Plus/Minus
MECN F210   Hydraulics
3 Credits
Offered Spring
Theory of fluid power and the components that make up a hydraulic system found on heavy equipment. Identification and description of hydraulic cylinders, motors, directional valves commonly found on heavy equipment. Includes testing of equipment and performing hydraulic pressure and flow tests.
Prerequisites: DSLT F101; DSLT F103; DSLT F105.
Lecture + Lab + Other: 1 + 4 + 0
Grading System: Letter Grades with option of Plus/Minus