MECHANICS-DIESEL/HEAVY EQUIPMENT (MECN)

**MECN F103  Starting and Charging Systems**  
3 Credits  
Offered Fall  
Starting and charging systems, diagnostic methods and specifications that are standard in the industry. Volt, amperage and load tests on a battery.  
Lecture + Lab + Other: 1 + 4 + 0  

**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  

**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  

**MECN F154  Diesel Fuel Injection**  
2 Credits  
Offered As Demand Warrants  
Lecture + Lab + Other: 0 + 0 + 0  

**MECN F159  Manual Transmissions and Clutches**  
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  

**MECN F201  Advanced Automobile Equipment Electronics**  
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  

**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  

**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  

**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  

**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  

**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  

**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  

**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  

**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