

DIESEL SERVICE TECHNOLOGY II

Diesel Service Technology II includes classroom and laboratory experiences concerned with all phases of repair work on diesel electrical systems used to power buses, ships, trucks, railroad trains, electrical generators, construction machinery, and similar equipment. Instruction and practice is provided in the diagnostics and repair of electrical/electronic systems. Students will demonstrate performance of these tasks as defined by ASE/NATEF standards. Use of technical manuals, hand and power tools and testing and diagnostic equipment are also studied in the course. Instruction in personal and environmental safety practices as related to OSHA and other agencies that affect individuals working in the ground transportation technology areas will also be covered. This course addresses the fundamental theories of electricity and electronics as applied to ground transportation technology areas. Utilization of analog and digital meters, wiring diagrams, and other diagnostic tools will be stressed in a hands-on course that introduces the student to automotive electrical theory, batteries, charging systems, starting systems, wiring repairs, lighting systems and accessories.

- DOE Code: 5624
- Recommended Grade Level: Grade 12
- Recommended Prerequisites: Diesel Service Technology I
- Credits: 2-3 credits per semester, maximum of 6 credits
- Counts as a Directed Elective or Elective for the General, Core 40, Core 40 with Academic Honors and Core 40 with Technical Honors diplomas
- This course is aligned with postsecondary courses for Dual Credit:
 - Vincennes University
 - AUTO 105- Transportation Fundamentals
 - AUTO 110/L- Transportation Electrical and Lab

Dual Credit

This course provides the opportunity for dual credit for students who meet postsecondary requirements for earning dual credit and successfully complete the dual credit requirements of this course.

Application of Content and Multiple Hour Offerings

Intensive laboratory applications are a component of this course and may be either school based or work based or a combination of the two. Work-based learning experiences should be in a closely related industry setting. Instructors shall have a standards-based training plan for students participating in work-based learning experiences. When a course is offered for multiple hours per semester, the amount of laboratory application or work-based learning needs to be increased proportionally.

Career and Technical Student Organizations (CTSOs)

Career and Technical Student Organizations are considered a powerful instructional tool when integrated into Career and Technical Education programs. They enhance the knowledge and skills students learn in a course by allowing a student to participate in a unique program of career and leadership development. Students should be encouraged to participate in SkillsUSA, the CTSO for this area.

Content Standards

Domain – Workplace Competency

Core Standard 1 Students demonstrate employability skills to prepare for diesel service careers or additional training opportunities.

Standards

- DSTII-1.1 Allocate the appropriate resources for task completion
- DSTII-1.2 Demonstrate effective interpersonal skills
- DSTII-1.3 Develop leadership skills
- DSTII-1.4 Establish positive relationships with people from diverse backgrounds
- DSTII-1.5 Research, analyze, and use data for work assignments
- DSTII-1.6 Apply effective critical thinking, decision making, and problem-solving techniques
- DSTII-1.7 Implement quality assurance measures and safeguards
- DSTII-1.8 Read and interpret written materials
- DSTII-1.9 Apply written communication skills
- DSTII-1.10 Demonstrate effective listening and speaking skills
- DSTII-1.11 Perform appropriate mathematical calculations correctly
- DSTII-1.12 Exhibit a responsible work ethic
- DSTII-1.13 Demonstrate accepted standards for ethical behavior

Domain – Career Development

Core Standard 2 Students construct personal goals to structure successful paths recognized by business and industry.

Standards

- DSTII-2.1 Evaluate employment and career pathway opportunities related to established career interest(s)
- DSTII-2.2 Create a continuing education plan that identifies further education and training options
- DSTII-2.3 Prepare for exams leading to certifications recognized by business and industry
- DSTII-2.4 Develop skills needed to enter the workforce
- DSTII-2.5 Evaluate resources that keep workers current in the career field
- DSTII-2.6 Demonstrate skills and attitudes needed for lifelong learning
- DSTII-2.7 Apply effective money management strategies

Domain –I Electrical Systems

Core Standard 3 Students analyze all components of Diesel electrical systems to determine corrective actions needed for diagnosis and repair.

Standards

- DSTII-3.1 Demonstrate an understanding of personal and shop safety practices
- DSTII-3.2 Identify various types of fasteners and their grades
- DSTII-3.3 Take both standard and metric measurements with various types of measuring devices
- DSTII-3.4 Explain how a modern Diesel battery works
- DSTII-3.5 Explain how a modern starting motor works
- DSTII-3.6 Demonstrate an understanding of how a modern charging system works
- DSTII-3.7 Demonstrate an understanding of how a modern lighting system works
- DSTII-3.8 Utilize modern automotive testing equipment

- DSTII-3.9 Diagnose common electrical problems in a modern vehicle
- DSTII-3.10 Interpret a modern wiring diagram
- DSTII-3.11 Diagnose and repair electrical and electronic fuel systems
- DSTII-3.12 Diagnose and repair electrical and electronic components of the lubrication systems
- DSTII-3.13 Analyze and repair electrical and electronic components of the heating/cooling system
- DSTII-3.14 Assess and repair electrical and electronic components of the intake and exhaust systems
- DSTII-3.15 Diagnose electrical and electronic components that effect engine performance
- DSTII-3.16 Inspect and repair electrical and electronic components of the pneumatic/hydraulic braking systems
- DSTII-3.17 Organize, research, and implement a complete preventive maintenance and inspection (P.M.I.)