Heavy Duty Equipment Technician

Course Title: Exploration Heavy Duty Equip Tech 15S
Instructor: Mr. Church
Contact Information:

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Prerequisites:

- Interest in mechanics
- Exploration of mechanical and technical concepts

Course Description:

This course introduces students to the fundamentals of heavy-duty equipment technology, providing foundational knowledge in mechanical systems, tools, and safety protocols. Students will learn about heavy-duty equipment maintenance, basic hydraulics, braking systems, and troubleshooting techniques.

Shop Rules and Policies:

- **Safety Glasses & CSA Approved Footwear:** Must be worn at all times in the shop.
- **Parts Pickup:** Students are not permitted to drive to town for parts during class. Customers provide parts for projects.
- **Safe Work Practices:** Students must follow the safe work practices outlined in the school and division policies. Failure to do so could result in removal from the course or program.
- **Phones:** Will not be aloud used in the classroom or shop.

General Objectives & Learning Outcomes:

- **Safety Practices:** Understand and apply safety practices in a heavy-duty equipment shop environment.
- **Tool and Equipment Use:** Identify, select, use, and maintain tools, equipment, materials, and consumables.
- **Mechanical Knowledge:** Understand and describe the fundamental components of heavy-duty equipment and their functions.

- **Basic Diagnostics:** Identify and troubleshoot common mechanical issues in heavy-duty equipment.
- **Cross-Curricular Knowledge:** Demonstrate transferable skills and knowledge relating to heavy-duty equipment technology.
- **Sustainability Awareness:** Understand the impact of sustainability on heavy-duty equipment technology and maintenance practices.
- **Ethical & Legal Standards:** Awareness of ethical and legal standards within the heavy-duty equipment service and repair industry.
- **Employability Skills:** Develop skills necessary for employment in the heavy-duty equipment industry.
- **Technological Awareness:** Demonstrate an understanding of the evolution of heavy-duty equipment technology, including emerging trends.

Units of Study:

- Safety Procedures and Shop Conduct
- Hand Tools and Power Tools
- Basic Hydraulics
- Brake Systems
- Tire and Wheel Maintenance
- Engine Components and Basic Functionality
- Lubrication and Cooling Systems
- Introduction to Electrical Systems
- Fasteners and Torque Principles
- Basic Troubleshooting Techniques
- Preventative Maintenance Practices
- Equipment Inspection and Reporting

Evaluation:

- **Assignments:** All assignments must be handed in on time. Late assignments will be marked as “0 and missing.” All assignments must be completed to pass the course.
- **Late Assignments:** Late submissions may incur a 20% deduction or may require a quiz to verify the student’s understanding of the material.
- **Additional Assignments:** Occasionally, supplementary assignments may be given to reinforce specific learning outcomes.

Learning Behaviors:

Students will be evaluated on the following learning behaviors based on in-class and shop activities. These behaviors will be marked in the PowerSchool program as follows:

- **Personal Management Skills**
- **Active Participation in Learning**
- **Social Responsibility**

Marking Criteria:

- **C** = Constantly demonstrates the behavior
- **U** = Usually demonstrates the behavior
- **S** = Sometimes demonstrates the behavior
- **R** = Rarely demonstrates the behavior

These marks will help assess how effectively students are managing their work and interactions in the class and shop settings.

Assessments:

- **Formative Assessments** will occur during the correction and class discussion of booklets.
- **Quizzes** will be graded by the instructor, and the answers will be discussed with the class.
- **Summative Assessments** will take place at the end of the semester.

Final Grade Weights:

- **Projects:** 50%
- **Quiz:** 20%
- **Classwork:** 15%
- **Demonstration:** 15%