Western Technical College

32412408 Diesel Engine Rebuilding

Course Outcome Summary

Course Information

Description	This course will familiarize the student with all the internal components of a diesel engine with a major emphasis placed on disassembly, inspection, reconditioning and assembly of a variety of diesel engines used in industry. Engine component failure analysis and prevention will also be covered.
Career Cluster	Transportation, Distribution and Logistics
Instructional Level	Technical Diploma Courses
Total Credits	3
Total Hours	108

Pre/Corequisites

Prerequisite	32412400 Diesel Truck Preventive Maintenance
Prerequisite	32412401 Diesel Truck Powertrains
Prerequisite	32412351 DIesel Truck Brake Systems
Prerequisite	32412402 Diesel Truck Chassis Systems
Prerequisite	32412403 Diesel Online Service Utilization
Prerequisite	32412404 Diesel Safety and Industry Practices
Prerequisite	32412405 DIesel Heavy Truck and Forklift Familiarization
Prerequisite	32412406 Diesel Electricity Fundamentals
Prerequisite	32412407 Diesel Electricity Troubleshooting
Prerequisite	32412303 Diesel Basic Engines

Textbooks

Fundamentals of Medium/Heavy Duty Diesel Engines. Copyright 2015. Wright, Gus. Publisher: Jones &

Bartlett Publishers. **ISBN-13**:978-1-284-06705-7. Required.

Learner Supplies

Safety glasses with side eye protection that meet Z87 OSHA guidelines. **Vendor:** To be discussed in class. Required.

Six inch ankle high, quality leather work shoes - $75.00-100.00. **Vendor:** To be discussed in class. Required.

Uniform: Four black/grey shirts. **Vendor:** Campus Shop. Required.

Success Abilities

1. Cultivate Passion: Enhance Personal Connections
2. Cultivate Passion: Expand a Growth-Mindset
3. Cultivate Passion: Increase Self-Awareness
4. Live Responsibly: Develop Resilience
5. Live Responsibly: Embrace Sustainability
6. Live Responsibly: Foster Accountability
7. Refine Professionalism: Act Ethically
8. Refine Professionalism: Improve Critical Thinking
9. Refine Professionalism: Participate Collaboratively
10. Refine Professionalism: Practice Effective Communication

High Impact Practices

1. Learning Community: these courses are designed to enhance your learning experience in which a cohort of peers complete two or more courses that are linked through projects, themes, or program emphasis.

Program Outcomes

1. Diagnose, repair and service diesel engines

Course Competencies

1. Perform engine block diagnosis and repair on live engines.

Assessment Strategies

1.1. Skill Demonstration

Criteria

You will know you are successful when:

1.1. you perform critical steps from task sheets in the right order from start to finish.
1.2. you are able to verbalize sound reasoning for the decisions made throughout the process.
1.3. you complete lab task sheets with a minimum score of two.

1.4. you attend class regularly to participate in skill demonstration.
1.5. you follow safety procedures.

Learning Objectives

1.a. Disassemble runner engine.
1.b. Inspect parts for reuse.
1.c. Reassemble engine to running form.

2. Perform lubrication system diagnosis and repair on live engines.

Assessment Strategies

2.1. Skill Demonstration

Criteria

Performance will be satisfactory when:

2.1. you select the correct tools, equipment, instruments, materials, and supplies.
2.2. you perform critical steps from task sheets in the right order from start to finish.
2.3. you are able to verbalize sound reasoning for the decisions made throughout the process.
2.4. you attend class regularly and on time.
2.5. you complete lab task sheets with a minimum score of two.
2.6. you follow safety procedures.
2.7. you meet criteria for successful completion of written products; lab sheets, presentations, case studies, etc.

Learning Objectives

2.a. Inspect oil pump.
2.b. Determine reusability of oil pump.

3. Perform cooling system diagnosis and repair on live engines.

Assessment Strategies

3.1. Skill Demonstration

Criteria

Performance will be satisfactory when:

3.1. you follow safety procedures.
3.2. you select the correct tools, equipment, instruments, materials, and supplies.
3.3. you perform critical steps in the right order from start to finish.
3.4. you are able to verbalize sound reasoning for the decisions made throughout the process.
3.5. you complete lab task sheets with a minimum score of two.
3.6. you attend class regularly and on time.
3.7. you meet criteria for successful completion of written products; lab sheets, presentations, case studies, etc.

Learning Objectives

3.a. Inspect radiator.
3.b. Inspect water pump.

4. Perform exhaust and air intake inspection on live engines.

Assessment Strategies

4.1. Skill Demonstration

Criteria

You will know you are successful when:

4.1. you select the correct tools, equipment, instruments, materials, and supplies.
4.2. you perform critical steps from task sheets in the right order from start to finish.
4.3. you are able to verbalize sound reasoning for the decisions made throughout the process.
4.4. you attend class regularly and on time.
4.5. you follow safety procedures.
4.6. you complete lab task sheets with a minimum score of two.
4.7. you meet criteria for successful completion of written products; lab sheets, presentations, and case studies.

Learning Objectives

4.a. Check air induction system.
4.b. Inspect exhaust system.

5. Perform engine brake maintenance and repair on live engines.

Assessment Strategies

5.1. Skill Demonstration

Criteria

You will know you are successful when:

5.1. you select the correct tools, equipment, instruments, materials, and supplies.
5.2. you perform critical steps from task sheets in the right order from start to finish.
5.3. you are able to verbalize sound reasoning for the decisions made throughout the process.
5.4. you attend class regularly and on time.
5.5. you complete lab task sheets with a minimum score of two.
5.6. you follow safety procedures.
5.7. you meet criteria for successful completion of written products; lab sheets, presentations, case studies, etc.

Learning Objectives

5.a. Inspect and adjust engine compression/exhaust brakes; determine needed action.