

I. COURSE DESCRIPTION: In this course the student will learn basic aspects of four different but related trade areas: Automotive, Marine & Small Engines, Heavy Equipment and Truck & Coach. The course will cover the shop and safety practices related to all of the trades and the student(s) will learn to use the appropriate tools used in a safe working manner. The student(s) will learn about the types of internal combustion engines used in these trade areas and learn to do basic maintenance to the engines. He or she will also learn about the electrical, fuel, gear train, suspension steering and braking systems used on the different types of vehicles and equipment used in the Motive Power Trade Areas. The student(s) will be introduced to the computerized aspects involved in the Motive Power Trades from the ordering of parts and supplies to the electronic computerized controls and diagnostics used on today's vehicles and equipment.

II. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:

Upon successful completion of this course, the student will demonstrate the ability to:

1. Use the appropriate shop equipment and hand tools associated with the Motive Power Trade areas taught in a safe and proper manner;
Potential Elements of the Performance:
 - demonstrate the ability to use shop hoists
 - choose the proper tool for the task to be performed
 - demonstrate the ability to work safely in a Motive Power shop environment
2. Demonstrate basic theoretical knowledge of the topic areas covered in the four Motive Power Trade Areas listed;
Potential Elements of the Performance:
 - identify the differences between the types of engines used in the Motive Power Trade areas
 - list the major electrical / electronic components of today's vehicles and equipment
 - locate and identify the vehicles or equipments transmission and drive axle(s)
 - list and identify the steering system and suspension system of different types of equipment and vehicles
 - identify the type of braking system relative to the vehicle or equipment used in each trade area
 - compare the sub-systems of each trade related vehicle or equipment and identify the similar mechanical and electrical components and their intended use
 - use electronic and hard copy manuals to locate and identify electrical and electronic components on various types of equipment

and vehicles

-use electronic parts and service system to provide identification and service procedures for automotive systems

3. Perform basic shop tasks associated with the Theory related to each topic area in a safe working manner according to Manufacturers Service Procedures.

Potential Elements of the Performance:

-perform basic electrical tests on automotive batteries using proper testing tools and safety equipment

-perform visual checks on different types of vehicles and equipment lighting systems

-perform minor repairs to the vehicle lighting and electrical systems

-perform simple visual and mechanical tests to ensure that the sub systems; suspension, steering and brakes are working in a safe manner

III. TOPICS:

1. Trade Practices and Procedures; as related to the motive power trades including: Automotive Technicians, Truck and Coach Technicians, Heavy Equipment Technicians and Marine and Small Engine Technicians
2. Engine Types and Sub Systems: Overview of each Trade Area and the types of engines used and the subsystems of each
3. Motive Power Electrical Systems
4. Motive Power Fuel Systems
5. Motive Power Gear Train Systems
6. Motive Power Suspension, Steering and Brake Systems

IV. REQUIRED RESOURCES/TEXTS/MATERIALS:

-work boots and safety glasses required for all shop classes

-coveralls or other suitable clothing required for shop classes

-binders, pencils, pens, students responsibility

-no text book relevant for this course and handouts will be provided for course related topics

V. EVALUATION PROCESS/GRADING SYSTEM:

The final grade for this course will be based on the results of classroom, assignments and shop evaluations weighed as indicated:

Classroom – 60% of the final grade is comprised of term tests

Assignments – 10% of the final grade is comprised of a number of technical reports

Shop – 30% of the final grade is comprised of attendance, punctuality, preparedness, student ability, work organization and general attitude

(Student will be given notice of test and assignment at least one day in advance)

The following semester grades will be assigned to students:

Grade	<u>Definition</u>	<i>Grade Point Equivalent</i>
A+	90 – 100%	4.00
A	80 – 89%	3.00
B	70 - 79%	2.00
C	60 - 69%	1.00
D	50 – 59%	0.00
F (Fail)	49% and below	
CR (Credit)	Credit for diploma requirements has been awarded.	
S	Satisfactory achievement in field /clinical placement or non-graded subject area.	
U	Unsatisfactory achievement in field/clinical placement or non-graded subject area.	
X	A temporary grade limited to situations with extenuating circumstances giving a student additional time to complete the requirements for a course.	
NR	Grade not reported to Registrar's office.	
W	Student has withdrawn from the course without academic penalty.	

VI. SPECIAL NOTES:

Special Needs:

If you are a student with special needs (e.g. physical limitations, visual impairments, hearing impairments, or learning disabilities), you are encouraged to discuss required accommodations with your professor and/or the Special Needs office. Visit Room E1101 or call Extension 703 so that support services can be arranged for you.

Retention of Course Outlines:

It is the responsibility of the student to retain all course outlines for possible future use in acquiring advanced standing at other postsecondary institutions.

Communication:

The College considers **WebCT/LMS** as the primary channel of communication for each course. Regularly checking this software platform is critical as it will keep you directly connected with faculty and current course information. Success in this course may be directly related to your willingness to take advantage of the **Learning Management System** communication tool.

Plagiarism:

Students should refer to the definition of “academic dishonesty” in *Student Code of Conduct*. Students who engage in academic dishonesty will receive an automatic failure for that submission and/or such other penalty, up to and including expulsion from the course/program, as may be decided by the professor/dean. In order to protect students from inadvertent plagiarism, to protect the copyright of the material referenced, and to credit the author of the material, it is the policy of the department to employ a documentation format for referencing source material.

Course Outline Amendments:

The professor reserves the right to change the information contained in this course outline depending on the needs of the learner and the availability of resources.

Substitute course information is available in the Registrar's office.

<include any other special notes appropriate to your course>

VII. PRIOR LEARNING ASSESSMENT:

Students who wish to apply for advanced credit in the course should consult the professor. Credit for prior learning will be given upon successful completion of a challenge exam or portfolio.

VIII. DIRECT CREDIT TRANSFERS:

Students who wish to apply for direct credit transfer (advanced standing) should obtain a direct credit transfer form from the Dean's secretary. Students will be required to provide a transcript and course outline related to the course in question.