

#453(B)

SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY

SAULT STE. MARIE, ON

**COURSE OUTLINE**

COURSE TITLE: **INTERNAL COMBUSTION ENGINES**

CODE NO.: **MVM012**

SEMESTER: **36 Weeks**

PROGRAM: **MOTOR VEHICLE TECHNICIAN**

AUTHORS: **Dan Tregonning/Steve Kent**

DATE: **August 1994** PREVIOUS OUTLINE DATED: **August 1993**

APPROVED: \_\_\_\_\_  
Dean, School of Technical Trades                      Date

COURSE NAME: INTERNAL COMBUSTION ENGINES MVM012

PREREQUISITE(S).

**I. PHILOSOPHY/GOALS:**

This course will stress the basics of the automotive trade and give the student comparable knowledge of a basic level apprentice.

**II. STUDENT PERFORMANCE OBJECTIVES:**

Upon successful completion of this course the student will have the basic knowledge of shop procedures and tools useful in engine repair, and how cooling & lubricating systems function.

**III. TOPICS TO BE COVERED:**

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#### **IV. LEARNING ACTIVITIES**

##### **1. Engine Fundamentals and Components**

- a) Demonstrate a working knowledge of the fundamental principles and concepts of internal combustion engines.
- b) Demonstrate a working knowledge of the internal combustion engine four stroke cycle.
- c) Demonstrate a working knowledge of valve timing, service and adjustment.
- d) Demonstrate a working knowledge of the internal combustion engine two stroke cycle.
- e) Identify the rationale for various engine applications and requirements.
- f) Demonstrate a working knowledge of internal combustion engines.
- g) Demonstrate a working knowledge of internal combustion engine valve train components and assemblies.
- h) Demonstrate a working knowledge of internal combustion engine, short block components and assemblies.
- i) Demonstrate a working knowledge of removing and replacing engines.
- j) Dismantle, inspect, measure, fit and assemble internal combustion engine components.
- k) Remove, service and replace cylinder heads.
- l) Demonstrate a working knowledge of reconditioning internal engines.
- m) Grind valves and valve seats.
- n) Remove cylinder ridge and prepare cylinder for piston fitting.

##### **2. Cooling Systems**

- a) Demonstrate a working knowledge of the fundamental principles of heat transfer to cooling system.
- b) Demonstrate a working knowledge of the operation of air and liquid cooling systems.

**Cooling Systems Continued.....**

- c) Demonstrate a working knowledge concerning the removal of cooling system components and systems service.
- d) Test and service cooling system.

**Lubricating Systems**

- a) Demonstrate a working knowledge of the fundamentals of lubricating system operation.
- b) Demonstrate a working knowledge of lubricants and additives.
- c) Demonstrate a working knowledge of performing oil system pressure tests.

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**V. EVALUATION METHODS:**

- . random tests and quizzes
- . weekly tests
- . shop practices
- . attendance

**VI. REQUIRED STUDENT RESOURCES:**

- . Text (Supplied by College)
- . Coveralls
- . Safety Glasses - C.S.A. Approved
- . Safety Boots - C.S.A. Approved (Min. 6")

**VII. ADDITIONAL RESOURCE MATERIALS AVAILABLE IN THE COLLEGE LIBRARY BOOK SECTION:**

**VII. SPECIAL NOTES:**