

**SAULT COLLEGE OF APPLIED ARTS AND TECHNOLOGY**

**SAULT STE. MARIE, ON**

**COURSE OUTLINE**

**COURSE TITLE: AUTOMATIC TRANSMISSIONS/CONTROL SYSTEMS**

**CODE NO.: MVM113**

**SEMESTER: 32 Week Program**

**PROGRAM: MOTOR VEHICLE MECHANIC PRE-APPRENTICE PROGRAM**

**AUTHOR: THOMAS COOK**

**DATE: MAY 1997**

**PREVIOUS OUTLINE DATED: FEBRUARY 1997**

**APPROVED:**

**DEAN**



**^DATE**

**TOTAL CREDITS: 8**

**PREREQUISITE(S): ONTARIO SECONDARY SCHOOL DIPLOMA WITH GRADE 12 ENGLISH AT GENERAL LEVEL AND 1 SENIOR LEVEL HIGH SCHOOL AUTOMOTIVE COURSE OR EQUIVALENT WORK EXPERIENCE.**

**LENGTH OF COURSE: 32 WEEKS      TOTAL CREDIT HOURS: 96**

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**I. COURSE DESCRIPTION:** This course will help a student learn the basic knowledge and skills to confidently troubleshoot and repair clutches, drive shafts, manual transmissions, transaxles and automatic transmissions and transaxles.

**H. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE:**  
(Generic Skills Learning Outcomes placement on the course outline will be determined and communicated at a later date.)

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

- 1) Troubleshoot and repair clutch assemblies and linkages.

Potential Elements of the Performance:

- 1) Describe the parts of clutch linkage and clutch assemblies.
- 2) Demonstrate proficiency in using the tools and skills in troubleshooting, removing and replacing clutch assemblies.
- 3) Demonstrate the proper way of adjusting clutch linkage.
- 4) Road test vehicle for proper performance with the instructor.

- 2) Troubleshoot and repair manual shift transmissions.

Potential Elements of the Performance:

- 1) Describe the working parts of standard shift transmission and front wheel drive standard transmission.
- 2) Demonstrate proficiency in troubleshooting, dismantling, inspection and reassemble of standard shift transmission and standard transaxles.
- 3) Describe and demonstrate the working knowledge of removal and installation of standard rear wheel drive transmission and standard shift transaxle.
- 4) Demonstrate a working knowledge of the removal and installation of axle drive gear and differential assemblies.

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**H. LEARNING OUTCOMES AND ELEMENTS OF THE PERFORMANCE  
(Continued)**

- 3) Troubleshoot and repair front wheel drive lines.

Potential Elements of the Performance:

- 1) Describe a working knowledge of the basic design of drive lines.
- 2) Demonstrate the working knowledge of the removal, installation of and service procedures of drive lines.
- 3) Service align and balance drive shaft assemblies.
- 4) Demonstrate the working knowledge of the removal, installation and service of front wheel drive wheel bearings.
- 5) Describe the proper use of tools required to service front wheel drive bearings and half shafts.

- 4) Troubleshoot and repair complete torque converters.

Potential Elements of the Performance:

- 1) Demonstrate the working knowledge of the construction, operating principles, testing and servicing of lockup torque converters.
- 2) Describe the construction of lockup torque converters, sensors and controls.
- 3) Explain the principles of operation of lockup torque converters, sensors and controls.
- 4) Describe manufactures maintenance procedures for torque converters sensors, and control and perform assigned operation.

- 5) Troubleshoot and repair complete automatic transmissions.

Potential Elements of the Performance:

- 1) Demonstrate a working knowledge of the construction, operating principles, testing and servicing of rear and front wheel drive automatic transmissions.
- 2) Explain the construction of automatic control systems, pumps, gear sets, driving and holding devices.
- 3) Explain the principles of operation of automatic transmissions control systems, pumps, gear sets, driving and holding devices.
- 4) Inspect, test and diagnose automatic transmissions with the prescribed service tools and equipment.
- 5) Describe manufacturers maintenance and repair procedures for automatic transmissions and perform assigned operations.

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**m. TOPICS:**

- 1) Mechanical skills
- 2) Reading skills
- 3) Students will also be responsible to accessing shop manuals

**IV. REQUIRED RESOURCES/TEXTS/MATERIALS:**

Text (Supplied by College)  
Coveralls  
Safety Glasses  
Regulation Safety Boots - CSA Approved, Minimum 6

**V. EVALUATION PROCESS/GRADING SYSTEM**

Random tests and quizzes  
Weekly tests  
Shop Practices  
Attendance

**VI. SPECIAL NOTES:**

Special Needs

If you are a student with special needs (eg. physical limitations, visual impairments, hearing impairments, learning disabilities), you are encouraged to discuss required accommodations with the instructor and/or contact the Special Needs Office, Room E1204, Ext. 493, 717, 491 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 post-secondary institutions.
- Disclaimer for Meeting the Needs of the Learners
- Substitute Course Information is available at the Registrar's Office.
- Any Other Special Notes appropriate to your course.

Power Train

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## **VII. PRIOR LEARNING ASSESSMENT**

Students who wish to apply for advanced credit in the course should consult the instructor. Credit for prior learning will be given upon successful completion of the following: