Faculty are required to have the outline submitted to the Academic Affairs Office. The course outline is the form used for approval of new courses by the College-wide Curriculum Committee.

DEPT: Automotive  COURSE NO: AUTO 2107

COURSE TITLE: Automatic Transmissions

CATALOG DESCRIPTION: Perform the necessary skills to diagnose and repair automatic transmissions and transaxles. This course teaches the theory of operation of automatic transmissions and transaxles and related components. The fundamentals of service of the components of the transmissions will be introduced and practiced in this course.

3 Cr (1 lec, 2 lab, 0 other)

AUDIENCE: Auto students

FULFILLS MN TRANSFER CURRICULUM AREA(S) (Leave blank if not applicable)

Area : by meeting the following competencies:

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PREREQUISITES OR NECESSARY ENTRY SKILLS/KNOWLEDGE: NA

LENGTH OF COURSE: 20 days @ 4 hours a day = 80 hours

THIS COURSE IS USUALLY OFFERED:

Every year X Every other year

Fall Spring X Summer Undetermined

Four goals are emphasized in course at Minnesota West Community & Technical College:
**ACADEMIC CONTENT:** Implement the necessary skills to diagnose and repair automatic transmissions and transaxles. This course teaches the theory of operation of automatic transmissions and transaxles and related components. The fundamentals of service of the components of the transmissions will be introduced and practiced in this course. The basic theory of torque converters, planetary gears, multiple disc clutches, one-way clutches, bands, servos, accumulators, and hydraulics The class will use various transmissions to illustrate the basic principles of operation.

**THINKING SKILLS:**

A. To use different situations to diagnose & troubleshoot problems in Automatic transmission and clutch system.

B. To be able to think through how all of the internal parts of the Automatic transmission.

**COMMUNICATIONS SKILLS:**

A. Participation in class discussion.

B. Complete written reports and assignments

C. To improve oral communications skills through class presentations

**HUMAN DIVERSITY:**

A. To understand the roles of the technician in communicating with a diverse population.

B. To work effectively in teams comprised of diverse backgrounds.

C. To express personal philosophies on diverse issues.

**TOPICS TO BE COVERED:**

1. Transmission Fundamentals
2. Testing and Repairing of Transmission Systems
3. Hydraulic systems

**COURSE LEARNING OUTCOMES:** To gain overall knowledge of how the hydraulics work with electronic computer controlled shifting. The required outcomes follow the Auto Service Technician (AST) model of the National Automotive Technical Education Foundation (NATEF) certification program.
LEARNING/TEACHING TECHNIQUES USED IN THIS COURSE ARE:

X Collaborative Learning X Problem Solving
Student Presentations X Interactive Lectures
Creative Projects Individual Coaching
X Lecture X Films/Videos/Slides
X Demonstrations X Other (describe below)
X Lab Periodical Research and Summary

ASSIGNMENTS AND ASSESSMENTS FOR THIS CLASS INCLUDE:

X Reading X Tests X Individual Projects
Oral Presentations X Worksheets X Collaborative Projects
X Textbook Problems Papers Portfolio
X Group Problems Term Paper
X Other: NATEF Tasks

EXPECTED STUDENT LEARNING OUTCOMES:

After completing this class, students should be able to:

1. Diagnose and repair torque converters and gear trains.
2. Diagnose and repair hydraulic control and apply components.
3. Diagnose and repair electronic control systems.
4. Disassemble and reassemble an automatic transmission.
5. Successful completion of each assigned NATEF Task (National Technicians Education Foundation).

"This course will cover the characteristics of hazardous wastes and its safe handling, storage, and disposal."

**Veteran Services:** Minnesota West is dedicated to assisting veterans and eligible family members in achieving their educational goals efficiently. Active duty and reserve/guard military members should advise their instructor of all regularly scheduled military appointments and duties that conflict with scheduled course requirements. Instructors will make every effort to work with the student to identify adjusted timelines. If you are a veteran, please contact the Minnesota West Veterans Service Office.

To receive reasonable accommodations for a documented disability, please contact the campus Student Services Advisor or campus Disability Coordinator as arrangements must be made in advance. In addition, students are encouraged to notify their instructor.

This document is available in alternative formats to individuals with disabilities by contacting the Student Services Advisor or by calling 800-658-2330 or Minnesota Relay Service at 800-627-3529 or by using your preferred relay service.

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**An Affirmative Action Equal Opportunity Educator/Employer**