DEPT: Automotive  COURSE NO: AUTO 2113

COURSE TITLE: Manual Drivetrain and Axles

CATALOG DESCRIPTION: Describe conventional automotive and light truck manual transmissions and clutch. Contents will include power flow, design, adjustment, overhaul procedures, diagnosis, and repairs.

3 Cr (1 lecture, 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: Perform conventional automotive and light truck manual transmissions and clutch repair. Contents will include power flow, design, adjustment, overhaul procedures, diagnosis, and repairs.

THINKING SKILLS:

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

B. To be able to think through how all of the internal parts of the manual transmission and clutch system work

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. Manual transmission and clutch fundaments
2. Manual transmission system
3. Clutch systems
4. Testing and repairing of manual transmission and clutch systems.

COURSE LEARNING OUTCOMES: To gain overall knowledge of how manual gears and axles work will incorporate four wheel and all-wheel drive systems in current technology. 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:

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
X Oral Presentations X Worksheets X Collaborative Projects
X Textbook Problem X 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. Identify and interpret drivetrain concerns
2. Inspect and replace clutch pressure plate assembly
3. Diagnose constant-velocity joint noise and vibration
4. Inspect, service, and replace shafts, yokes, boots
5. Diagnose universal joints and vibration concerns
"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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