

Course discipline/number/title: AMT 2650: Automotive Science

A. CATALOG DESCRIPTION

1. **Credits:** 2
2. **Hours/Week:** 2
3. **Prerequisites (Course discipline/number):** None
4. **Other requirements:** None
5. **MnTC Goals (if any):** NA

B. COURSE DESCRIPTION: This course covers the basics of hydraulics, gear ratios, and engine physics and vehicle sensor theory and diagnosis related to current automobiles and light trucks.

C. DATE LAST REVISED (Month, year): February, 2022

D. OUTLINE OF MAJOR CONTENT AREAS:

1. Pressure and Pressure Measurement Technology
2. Hydraulics
3. Gear Ratios
4. Engine Physics/Science
5. Vehicle Sensor Operation and Diagnosis
6. Hybrid Vehicles
7. Electric Vehicles

E. LEARNING OUTCOMES (GENERAL): The student will be able to:

1. Define hydraulic terms.
2. Calculate/solve hydraulic problems.
3. Describe hydraulic systems.
4. Define gear ratios.
5. Solve gear ratios values.
6. Define engine physics terms.
7. Calculate displacement, horsepower, etc.
8. Describe various engine design factors.
9. Understand operation of vehicle sensors, hybrid vehicles, and electric vehicles.

F. LEARNING OUTCOMES (MNTC): NA

G. METHODS FOR EVALUATION OF STUDENT LEARNING: Methods may include but are not limited to:

1. Quizzes
2. Tests
3. Worksheets

H. RCTC CORE OUTCOME(S). This course contributes to meeting the following RCTC Core Outcome(s):
Critical Thinking. Students will think systematically and explore information thoroughly before accepting or formulating a position or conclusion.

I. SPECIAL INFORMATION (if any): None