

Course Code: AFD 233

Course Title: Automatic Transmissions

Department: Applied Sciences and Technologies
PCS Code: 1.2 - Occupational/Technical Instruction
CIP Code: 47.0604
Repeatability: 0

Effective Date: Summer 2026

Credit Hours

Catalog Notation: 2-2-3

Credit Hour Distribution:

Lecture: 2

Lab: 2

Clinical: 0

Total: 3

General Course Information

Catalog Description

Theory and overhaul procedures for automotive and light truck automatic transmissions. Students work on transmissions in both lab and cars, including transaxles.

General Course Objectives

- Students will be able to understand the principles of operation of a typical automatic transmission.
- Students will be able to diagnose and effect repair on typical automatic transmissions.

Minimum Placement Levels

English	Reading	Math
Placement into ENG 098	Placement into CCS 098	Placement into MAT 060

Prerequisites

Credit or concurrent enrollment in AFD 110 and AFD 111, or AFD 298

Methods of Evaluation

The minimum number of evaluation methods will include: 2 exams and 4 quizzes.

Instructional Materials and Additional Supplies

Automatic Transmissions and Transaxles, 7th edition. Halderman, Pearson 2017. 0134616790

Course Content

General Learning Outcomes (GLOs)

- Reasoning and Inquiry: Students will demonstrate the ability to solve problems using deductive reasoning and logic, quantitative reasoning, or the scientific method.
- Technology: Students will demonstrate the ability to evaluate, select, and appropriately use current and emerging tools.

Course Segments and Student Learning Outcomes

Course Segment	Learning Outcomes	Lecture Hours	Lab Hours	Clinical Hours
Planetary Gearsets	1. Identify planetary gearset components. 2. List different gearset functions.	2	0	0
Torque Converters	1. Describe torque converter components and principles of operation.	2	0	0
Hydraulic Principles and Components	1. Identify hydraulic components within the transmission and describe the principles of operation of each component. 2. List various control systems and define their principles of operation.	12	0	0
Hydraulic Circuit Flow	1. Trace hydraulic circuit flow in various gear quadrant positions in common.	4	0	0
Seals and Gaskets	1. Describe uses, characteristics, and installation practices.	2	0	0
Troubleshooting and Diagnosis Procedures	1. List general procedures and list specific procedures pertaining to particular models.	4	0	0
Overhaul and Testing Procedures	1. Describe general procedures and list specific procedures pertaining to particular models.	4	0	0
Transmission Overhaul	1. Overhaul multiple speed transmissions and transaxles. 2. Inspect and repair servos, clutch packs and seals, sprags and one-way clutches, accumulators, and bands.	0	15	0
Diagnose and Adjust Transmission Problems	1. Diagnose transmission problems and effect minor repairs: band adjustments, vacuum modulator adjustments, pressure adjustments, etc. 2. Use correct procedures to remove and reinstall the transmission on a car. 3. Perform complete checkouts on installed transmission before releasing car.	0	15	0

Total Contact Hours

Lecture Hours	Lab Hours	Clinical Hours
30	30	0