



## DMT 1301

**Division:** Career and Technical Education

**Department:** Transportation Technology

**Course:** DMT 1301

**Title:** Transmissions and Drivetrains

**Catalog Description:**

This course provides instruction on theory and operation of torque converters, powershift, automatic transmissions, manual transmissions, double and triple countershaft transmissions, differentials, clutches, transfer cases, axles, drivetrain components, drivelines, and electronic control devices. This course emphasizes troubleshooting, repair procedures, use of service manuals, and schematic diagrams. **Co-requisite: This lecture DMT 1301 must be taken concurrently with the lab DMT 1305.**

**General Education Requirements:** N/A

**Semesters Offered:** TBA

**Credit/Time Requirement:** Credit: 3; Lecture: 3; Lab: 0

**Clock/Hour Requirements:** 45

**Offered for Non-Credit:** Yes

**Prerequisites:** N/A

**Corequisites:** DMT 1305

**Justification:**

This course is required for Automotive Service Excellence (A.S.E.) certification. It is approved by the advisory committee.

**Student Learning Outcomes:**

Upon successful completion of this course, students will be able to safely perform the tasks listed in the current edition of *A.S.E. Certification for Diesel Training Programs*.

**Content:**

Upon completion of this course, students will be able to understand and explain:

- torque convertors
- planetary gearing
- planetary transmission clutch systems
- theory of operation and power flow through transmissions

- troubleshooting, service, and repair procedures for transmissions
- electronic transmission controls
- manual transmissions, double and triple counter shaft
- clutches
- drivelines
- transfer cases
- etc.

**General Education Outcomes:**

**Applied Education Outcomes:**

1) Students will acquire entry-level skills specific to and appropriate for employment in their chosen field of study.

Students will diagnose, repair, test on, and study modern diesel drivetrains and transmission systems similar to those found in the industry.

3) Students will demonstrate safe practices and awareness of potential hazards in their field of expertise.

Students will study, test on, and practice a safe work environment in the lab area.

**Key Performance Indicators:**

Student Learning Outcomes will be assessed by two or more of the following Key Performance Indicators:

- chapter assignments
- final test
- shop cleanup
- feedback as per A.S.E. requirements
- passing A.S.E. tests
- transferring to other post-secondary institutions
- performance in subsequent courses.

**Representative Text and/or Supplies:**

- Norman, Schariff, Corinchock, *Heavy Duty Truck Systems*, current edition, Delmar Publishers.

**Optimum Class Size:** 15

**Maximum Class Size:** 25

**Signatures:**

I hereby submit this course syllabus:

---

Robert Boyer, BS, Instructor

I hereby find this course consistent with the goals and resources of the Transportation Technology Department:

---

Brent Reese, BS, Associate Professor, Chair

I hereby find this course consistent with the goals and resources of the Career and Technical Education Division:

---

Michael P. Medley, MBA, Assistant Professor, Dean

I have discussed the need for library resources related to this class with the person submitting the syllabus:

---

Lynn Anderson, MLIS, Technical Services Librarian (Main Campus)

---

Michelle Olsen, MLS, Campus Librarian (Richfield Campus)