

AUTO 1200 Manual Transmission & Clutches Syllabus

Instructor and Class Information

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Office Hours 7:10 a.m. – 3:45 p.m. Monday - Friday

Course Information

Course Description

An introduction to vehicle power trains, including a study of parts and their function, adjustment and repair procedures for clutches, manual transmissions and drive shafts. (25/15/0/0)

Purpose/Goals

To introduce the student to drivetrain theory and operation. To teach the function of the various drive train components. To provide the experience of clutch, transmission and drive shaft repair.

Target Population

Automotive Technology students

Textbooks

Textbook and workbook will be given to students at the beginning of the year. Students will be responsible for textbook and workbook care and return at the end of course.

Learner Supplies

Pen

Notebook

Safety glasses (optional – no tinted safety glasses allowed)

School issued device

Grading Information

98-100 A+	85-89 B	74-76 D+
93-97 A	82-84 C+	70-73 D

90-92 B+

77-81 C

<70 F

Instructor Grading Information

The student will be graded on their attendance, ability to work with others on projects, participation in class, workbook assignments, tests, and quizzes.

Shop – 55%

Tests – 25%

Workbooks/Quizzes – 20%

All late work will be 50% off and 1 point off every day after the due date.

Semester Final Grading

1st Quarter – 45% / 2nd Quarter – 45% / 1st Semester Final – 10%

3rd Quarter – 45% / 4th Quarter – 45% / 2nd Semester Final – 10%

Academic Honesty

Academic honesty is a core principle of learning and scholarship. When you violate this principle, you cheat yourself of the confidence that comes from knowing you have mastered the targeted skills and knowledge. You also hurt all members of the learning community by falsely presenting yourself as having command of competencies with which you are credited, thus degrading the credibility of the program, and your fellow learners who hold the same credential.

All members of the learning community share an interest in protecting the value, integrity, and credibility of the outcomes of this learning experience. We also have the responsibility to censor behaviors that interfere with this effort. The following behaviors will be subject to disciplinary action:

Plagiarism = presenting someone else's words, ideas, or data as your own work.

Fabrication = using invented information or falsifying research or other findings

Cheating = misleading others to believe you have mastered competencies or other learning outcomes that you have not mastered.

Examples include, but are not limited to: 1. Copying from another learner's work 2. Allowing another learner to copy from your work 3. Using resource materials or information to complete an assessment without permission from your instructor 4. Collaborating on an assessment (graded assignment or test) without permission from the instructor 5. Taking a test for someone else or permitting someone else to take a test for you.

Academic Misconduct - other academically dishonest acts such as tampering with grades, taking part in obtaining or distributing any part of an assessment, or selling or buying products such as papers, research, projects or other artifacts that document achievement of learning outcomes.

Course Competencies

1. Identify the operation of each clutch component.

Learning Objectives

- 1.a. Describe the operation of a clutch.
- 1.b. Identify different types of bearings.
- 1.c. Identify the components of a clutch assembly.

Criteria

Performance will meet expectations when the student:

- 1.1. identifies each component of the clutch.
- 1.2. identifies the different parts and how they are related to the operation of the clutch.
- 1.3. finds service information procedures while performing repair.

2. Identify the operation of manual transmission components.

Learning Objectives

- 2.a. Describe how transmissions multiply torque.
- 2.b. Identify different types of bearings.
- 2.c. Name each component in a manual transmission.

Criteria

Performance will meet expectations when the student:

- 2.1. identifies each component of a manual transmission.
- 2.2. uses service information to identify components.
- 2.3. demonstrates power flow through manual transmission components.

3. Identify the operation of mechanical and hydraulic linkages.

Learning Objectives

- 3.a. Identify the differences of the hydraulic and linkage clutches.
- 3.b. Identify the advantage and disadvantages of the two types of clutch linkages.
- 3.c. Outline the adjustments of the two types of clutch linkages.

Criteria

Performance will meet expectations when the student:

- 3.1. identifies the components of mechanical and hydraulic linkages.
- 3.2. finds service information procedures to adjust linkages.
- 3.3. explains mechanical and hydraulic adjustment and repair.

4. Diagnose clutch concerns.

Learning Objectives

- 4.a. Demonstrate diagnostic procedures based on customer concern.

- 4.b. Point out worn or damaged components.

Criteria

Performance will meet expectations when the student:

- 4.1. uses service information to diagnose a concern.
- 4.2. identifies improper clutch operation.
- 4.3. performs clutch pedal free play and clutch pedal height procedures.

5. Identify transmission concerns.

Learning Objectives

- 5.a. Illustrate multiple techniques that could be used to correct transmission problem.
- 5.b. Demonstrate diagnostic procedures based on customer concern.
- 5.c. Point out worn or damaged components.

Criteria

Performance will meet expectations when the student:

- 5.1. implements service information to aid in diagnosis of transmission concerns.
- 5.2. identifies worn or broken components.
- 5.3. document transmission concerns on a work order.

6. Disassemble transmission using manufacturer's recommended procedures.

Learning Objectives

- 6.a. Demonstrate removal of transmission components.
- 6.b. Inspect transmission for worn parts.
- 6.c. Point out what components must be replaced.
- 6.d. Arrange transmission parts in correct order.

Criteria

Performance will meet expectations when the student:

- 6.1. points out individual transmission components.
- 6.2. uses service information to disassemble transmission.
- 6.3. points out power flow through the transmission.
- 6.4. locates the correct tools to perform the repair.

7. Reassemble transmission using manufacturer's recommended procedures.

Learning Objectives

- 7.a. Replace worn parts as needed

- 7.b. Perform bearing adjustments.
- 7.c. Adjust and measure shaft endplay.
- 7.d. Assemble transmission components.

Criteria

Performance will meet expectations when the student:

- 7.1. installs transmission components.
- 7.2. uses service information to aid in assembly.
- 7.3. performs a function test after transmission assembly.
- 7.4. locates the correct tools to perform the repair.

Please see the school calendar for scheduled student days: 2022-2023 LPS School Year Calendar
available at <https://www.lexschools.org/calendar/>