

**SAN DIEGO COMMUNITY COLLEGE DISTRICT
MIRAMAR COLLEGE
ASSOCIATE DEGREE COURSE OUTLINE**

SECTION I**SUBJECT AREA AND COURSE NUMBER:** Diesel Technology 165**COURSE TITLE:** Truck Automatic Transmissions**Units: 3**
Grade Only**CATALOG COURSE DESCRIPTION:**

Students learn how to maintain, overhaul, and troubleshoot automatic transmissions for heavy duty transportation (HDT) using accepted industry standards and procedures. The course includes theory and laboratory practice. Students also learn how to prepare written records of HDT repairs.

REQUISITES:

Corequisite: Completion of or concurrent enrollment in:
DIES 100 with a grade of "C" or better, or equivalent

FIELD TRIP REQUIREMENTS: May be required**TRANSFER APPLICABILITY:** Associate Degree Credit & transfer to CSU and/or private colleges and universities**TOTAL LECTURE HOURS:** 32 - 36**TOTAL LAB HOURS:** 48 - 54**STUDENT LEARNING OBJECTIVES:**

Upon successful completion of the course the student will be able to:

1. Analyze and explain the function of heavy duty automatic transmissions
2. Examine and describe how heavy duty automatic transmissions operate
3. Assess and perform required maintenance on heavy duty automatic transmissions
4. Use accepted industry procedures and tools to diagnose problems and assess serviceability of heavy duty automatic transmissions
5. Perform major overhaul operations on heavy duty automatic transmissions
6. Prepare written records of repairs and lab activities including the evaluation of automatic transmissions used in class (with repair plans and component serviceability).

SECTION II**1. COURSE OUTLINE AND SCOPE:****A. Outline Of Topics:**

The following topics are included in the framework of the course but are not intended as limits on content. The order of presentation and relative emphasis will vary with each instructor.

- I. Organization and procedures

- A. Course content and instructional procedures
 - B. Safe working procedures
 - C. Project organization
 - D. Handling components
 - E. Special tools.
- II. Automatic transmissions
- A. Torque converters
 - B. Hydraulic system
 - C. Operation of controls
 - D. Unit disassembly and assembly
 - E. Service procedures
 - F. Problem diagnosis.

B. Reading Assignments:

Reading assignments are required and may include but, are not limited to, the following:

- I. 1. Course texts and repair manuals
- II. 2. Professional journals such as Heavy Duty Trucking, Service Tech, Fleet Owner, Maintenance Manager, Fleet Equipment, and Transportation Equipment News
- III. 3. Laboratory guides associated with heavy duty automatic transmissions.

C. Appropriate Assignments that Demonstrate Critical Thinking:

Critical thinking assignments are required and may include, but are not limited to, the following:

- I. 1. Evaluating heavy duty automatic transmissions and formulating repair plans
- II. 2. Analyzing and explaining the function of heavy duty automatic transmissions
- III. 3. Calculating and solving mathematical problems.

D. Appropriate Outside Assignments:

Outside assignments may include, but are not limited to, the following:

- I. 1. Conducting research
- II. 2. Completing all reading and writing assignments including a shop notebook and a written evaluation of heavy duty automatic transmissions
- III. 3. Completing field assignments/projects.

E. Writing Assignments:

Writing assignments are required and may include, but are not limited to, the following:

- I. 1. Completing assigned papers or reports including a shop notebook
- II. 2. Responding to short answer/essay questions about the operation, maintenance, and repair of HDT automatic transmissions
- III. 3. Preparing written records of repairs and lab activities including a written evaluation of heavy duty automatic transmissions.

2. METHODS OF EVALUATION:

A student's grade will be based on multiple measures of performance unless the course requires no grade. Multiple measures may include, but are not limited to, the following:

- A. Performing manipulative skills as needed to satisfactorily complete laboratory assignments
- Applying theory to laboratory assignments
- Performing on written, oral, and/or practical examinations
- Performing on out-of-class assignments including writing assignments
- Contributing to class discussions.

3. METHODS OF INSTRUCTION:

Methods of instruction may include, but are not limited to, the following:

- * Lecture
- * Lecture Discussion
- * Computer Assisted Instruction
- * Laboratory
- * Discussion Seminar
- * Lecture-Lab Combination
- * Learning Modules
- * Audio-Visual
- * Collaborative Learning
- * Other (Specify)
 - * 1. Demonstration
 - * 2. Field trips and/or field assignments
 - * 3. Laboratory assignments utilizing specifically planned instructional activities or "live" work.

4. REQUIRED TEXTS AND SUPPLIES:

Textbooks may include, but are not limited to:

TEXTBOOKS:

1. Brady, Robert N.. Heavy Duty Trucks and Power Train Systems and Services, 1st ed. Prentice-Hall, 1997, ISBN: 0131814702
2. Lewis, Jim.. DIES-M Daily Reports, 2nd ed. Miramar Reprographics, 1976,

MANUALS:

PERIODICALS:

SOFTWARE:

SUPPLIES:

1. Shop notebook (8 1/2" x 11" spiral bound)
2. Safety glasses
3. Calculator
4. Proper clothing and footwear for shop work
5. Scantron answer sheets

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CO-CONTRIBUTOR(S)

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