

**TEN-175 MANUAL TRANS/TRANSAXLES 3 CREDITS****SYLLABUS**

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**CATALOG DESCRIPTION**

The theory and repair of Toyota and Lexus manual transmissions and transaxles, differentials, clutches, transfer cases and drive axles will be covered. Noise, hard shifting and other common concerns will be addressed. Diagnosis and troubleshooting will be stressed. Safety is emphasized.

Prerequisite: TEN-120

Corequisites: TEN-172

Semester Offered: Fall

***COMMON STUDENT LEARNING OUTCOMES***

*Upon successful completion of San Juan College programs and degrees, the student will demonstrate competency in...*

**BROAD AND SPECIALIZED LEARNING**

Students will actively and independently acquire, apply, and adapt skills and knowledge with an awareness of global contexts.

**CRITICAL THINKING**

Students will think analytically and creatively to explore ideas, make connections, draw conclusions and solve problems.

**CULTURAL AND CIVIC ENGAGEMENT**

Students will act purposefully, reflectively, and ethically in diverse and complex environments.

**EFFECTIVE COMMUNICATION**

Students will exchange ideas and information with clarity in multiple contexts.

**INFORMATION LITERACY**

Students will be able to recognize when information is needed and have the ability to locate, evaluate, and use it effectively.

**INTEGRATING TECHNOLOGIES**

Students will demonstrate fluency in the application and use of technologies in multiple contexts.

Student work from this class may be randomly selected and used anonymously for assessment of course, program, and/or institutional learning outcomes. For more information, please refer to the Dean of the appropriate School.

**COURSE LEARNING OUTCOMES**

*Upon successful completion of the course, the student will be able to...*

1. Complete 100% of NATEF priority 1 tasks.

2. Complete 85% of NATEF priority 2 tasks.
3. Complete 75% of NATEF priority 3 tasks.

## SPECIFIC LEARNING OUTCOMES

*Upon successful completion of the course, the student will be able to...*

1. Demonstrate safe techniques for working on standard transmissions, as well as transaxles.
2. Remove and replace universal joints.
3. Overhaul rear differentials.
4. Replace axle bearings and seals.
5. Diagnose differential failures such as leaks, gear howl, and bearing noises.
6. Replace wheel studs.
7. Disassemble front drive axles.
8. Diagnose transfer cases malfunctions.
9. Diagnose and overhaul manually shifted transmissions and transaxles.
10. Remove and replace clutch and pressure plate assemblies.
11. Remove and replace clutch forks, pilot bearings, and clutch release bearings.
12. Adjust clutch linkage and cables.
13. Diagnose clutch problems.
14. Measure flywheel run-out.
15. Remove and replace manually shifted transmissions.
16. Adjust manual transmission shift linkage or cables
17. Overhaul various manual transmissions.