

**NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY  
AUT 142 - AUTO POWER TRAINS II (4 CR.)**

**Course Description**

Presents operation, design, construction and repair of power train components, standard and automatic transmission. Includes clutches, propeller shaft, universal joints, rear axle assemblies, fluid couplings, torque converters as well as 2, 3, and 4 speed standard, overdrive and automatic transmissions. Part II of II. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

**General Course Purpose**

This is a detailed study of automatic transmissions.

**Course Prerequisites/Corequisites**

The ability to read, write, and speak the English language.

**Course Objectives**

Upon completion of this course the student should be able to:

- Explain how a torque converter functions and be able to diagnose problems relating to it
- Explain how a simple planetary gear set functions and which members must be input, output, and reactionary to enable different modes of operation
- Explain basic hydraulic operating principles of an automotive automatic transmission
- Disassemble, inspect, repair, and reassemble an automotive automatic transmission
- Perform diagnostics on vehicle mounted automatic transmissions
- Use available service information to locate specifications related to the inspection, repair and adjustments of automotive engines
- Demonstrate skills using inspection procedures, troubleshooting and making corrective repairs

**Major Topics to be Included**

- Hydrodynamic units
- Planetary gear sets
- Automatic transmission hydraulic system
- Fundamentals of operation
- Automatic transmission service
- Principles of diagnosis