

**J. Sargeant Reynolds Community College
Course Content Summary**

Course Prefix and Number: AUT 141

Credits: 4

Course Title: Auto Power Trains I (Manual Transmissions)

Course Description (including lecture hours, lab hours, total contacts)

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. Lecture 3 hours. Laboratory 3 hours. Total 6 hours per week.

General Course Purpose

To examine automotive clutch systems, coupling devices, manual transmissions, drive shafts, universal joints and rear axle assemblies. Safety will be emphasized.

Course Prerequisites/Corequisites (*Entry-level competencies **required** for enrollment*)

None

Course Objectives (Each item should complete the following sentence.)

Upon completing the course, the student will be able to:

- a. Describe the purpose of and operating principles of automotive power transmissions systems
- b. Describe assemblies, sub assemblies and component parts of the conventional transmission power train
- c. Describe power train defects, their cause, and effect on automobile operation
- d. Describe trouble-shooting methods, tools, and equipment required for power train diagnosis and repair
- e. Analyze power train defects and determine the extent of repairs and/or adjustments necessary to correct

Major Topics to be Included

- a. Clutches and Clutch service
- b. Manual transmissions
- c. Overdrives
- d. Drive lines, Rear axles, and differentials

Effective Date of Course Content Summary (Month, Date Year): February 9, 2009