

# Washtenaw Community College Comprehensive Report

## ASV 266 Advanced Transmissions Effective Term: Fall 2020

### Course Cover

**Division:** Advanced Technologies and Public Service Careers

**Department:** Transportation Technologies

**Discipline:** Auto Services (new)

**Course Number:** 266

**Org Number:** 14100

**Full Course Title:** Advanced Transmissions

**Transcript Title:** Advanced Transmissions

**Is Consultation with other department(s) required:** No

**Publish in the Following:**

**Reason for Submission:** New Course

**Change Information:**

**Rationale:** This course will complement ASV 134 Automotive Transmissions, which is the introductory transmissions training course, as it does not have time to adequately cover the scope of full transmission and drivetrain repair on late model drivetrain systems and late model in-vehicle diagnosis.

**Proposed Start Semester:** Fall 2020

**Course Description:** In this course, students will learn how to inspect, diagnose, and repair late-model automotive drivetrain systems. Students will learn how to diagnose and repair manual and automatic transmissions/transaxles, transfer cases, and differentials/axles. Upon successful completion, students will be able to conduct advanced in-vehicle diagnosis on all components of the drivetrain system, and repair as necessary. The drivetrain components will focus on advancing technologies and tooling representative of manufacturer trends.

### Course Credit Hours

**Variable hours:** No

**Credits:** 2

**Lecture Hours: Instructor:** 30 **Student:** 30

**The following Lab fields are not divisible by 15: Student Min, Instructor Min**

**Lab: Instructor:** 22.5 **Student:** 22.5

**Clinical: Instructor:** 0 **Student:** 0

**Total Contact Hours: Instructor:** 52.5 **Student:** 52.5

**Repeatable for Credit:** NO

**Grading Methods:** Letter Grades

Audit

**Are lectures, labs, or clinicals offered as separate sections?:** NO (same sections)

### College-Level Reading and Writing

College-level Reading & Writing

### College-Level Math

No Level Required

### Requisites

**Prerequisite**

ASV 134 minimum grade "C"

**General Education****Request Course Transfer**

**Proposed For:**

**Student Learning Outcomes**

1. Analyze drivetrain related service information to facilitate inspection procedures, diagnostic routines, and repair processes.

**Assessment 1**

Assessment Tool: Student achievement checklist

Assessment Date: Winter 2021

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: All students

How the assessment will be scored: Departmentally-developed rubric

Standard of success to be used for this assessment: 70% of the students will score an overall average of 70% or higher

Who will score and analyze the data: Departmental faculty

2. Perform in-vehicle diagnostic routines on drivetrain systems in late model vehicles.

**Assessment 1**

Assessment Tool: Student achievement checklist

Assessment Date: Winter 2021

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: All students

How the assessment will be scored: Departmentally-developed rubric

Standard of success to be used for this assessment: 70% of the students will score an overall average of 70% or higher.

Who will score and analyze the data: Departmental faculty

3. Repair vehicle drivetrain systems through repair, rebuild, or replacement of manual transmissions/transaxles, automatic transmissions/transaxles, transfer cases, and final drive assemblies.

**Assessment 1**

Assessment Tool: Student achievement checklist

Assessment Date: Winter 2021

Assessment Cycle: Every Three Years

Course section(s)/other population: All sections

Number students to be assessed: All students

How the assessment will be scored: Departmentally-developed rubric

Standard of success to be used for this assessment: 70% of the students will score an overall average of 70% or higher.

Who will score and analyze the data: Departmental faculty

**Course Objectives**

1. Perform inspection procedures on automatic transmissions/transaxles, manual transmissions/transaxle, transfer cases and axles/differentials based on service information.
2. Perform diagnostic routines on automatic transmissions/transaxles, manual transmissions/transaxles, transfer cases and axles/differentials based on service information.

3. Repair automatic transmissions/transaxles, manual transmissions/transaxles, transfer cases and axles/differentials using service information.
4. Diagnose mechanical drivetrain failures following a diagnostic routine that addresses symptom and root cause.
5. Diagnose electrical-related and/or computerized drivetrain failures following a diagnostic routine that addresses symptom and root cause.
6. Diagnose hydraulic drivetrain failures following a diagnostic routine that addresses symptom and root cause.
7. Repair manual transmissions.
8. Repair manual transaxles.
9. Repair automatic transmissions.
10. Repair automatic transaxles.
11. Repair transfer cases.
12. Repair differentials and/or axles (final drive assemblies).
13. Rebuild drivetrain assemblies, including transmissions/transaxles, transfer cases and differentials/axles (final drive assemblies).
14. Remove and replace drivetrain assemblies, including transmissions/transaxles, transfer cases and differentials/axles (final drive assemblies).

### New Resources for Course

#### Course Textbooks/Resources

Textbooks  
Manuals  
Periodicals  
Software

#### Equipment/Facilities

Level III classroom  
Computer workstations/lab

<u>Reviewer</u>	<u>Action</u>	<u>Date</u>
<b>Faculty Preparer:</b> <i>Rocky Roberts</i>	<i>Faculty Preparer</i>	<i>Dec 11, 2019</i>
<b>Department Chair/Area Director:</b> <i>Allen Day</i>	<i>Recommend Approval</i>	<i>Dec 11, 2019</i>
<b>Dean:</b> <i>Jimmie Baber</i>	<i>Recommend Approval</i>	<i>Jan 29, 2020</i>
<b>Curriculum Committee Chair:</b> <i>Lisa Veasey</i>	<i>Recommend Approval</i>	<i>Mar 04, 2020</i>
<b>Assessment Committee Chair:</b> <i>Shawn Deron</i>	<i>Recommend Approval</i>	<i>Mar 06, 2020</i>
<b>Vice President for Instruction:</b> <i>Kimberly Hurns</i>	<i>Approve</i>	<i>Mar 06, 2020</i>