

## Washtenaw Community College Comprehensive Report

### ASV 251 Engine Diagnosis and Repair Effective Term: Winter 2018

#### Course Cover

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

**Department:** Automotive Services

**Discipline:** Auto Services

**Course Number:** 251

**Org Number:** 14100

**Full Course Title:** Engine Diagnosis and Repair

**Transcript Title:** Engine Diagnosis and Repair

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

**Publish in the Following:** College Catalog , Time Schedule , Web Page

**Reason for Submission:** Three Year Review / Assessment Report

#### **Change Information:**

**Consultation with all departments affected by this course is required.**

**Course description**

**Outcomes/Assessment**

**Objectives/Evaluation**

**Other:**

**Rationale:** Revisions due to assessment results.

**Proposed Start Semester:** Winter 2018

**Course Description:** In this course, students will learn how to diagnose and repair automotive engine mechanical systems. The focus will involve the use of industry approved techniques and various skills in assessing engine condition before performing repairs. This course was previously ASV 241.

#### 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

## Requisites

### **Prerequisite**

ASV 132 minimum grade "C"

## General Education

## Request Course Transfer

### **Proposed For:**

## Student Learning Outcomes

1. Analyze engine specification data obtained from service manuals to determine if parts are within specification.

### **Assessment 1**

Assessment Tool: Final written exam

Assessment Date: Winter 2020

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: Answer sheet

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

Who will score and analyze the data: Departmental faculty

2. Use various tools to diagnose and repair engine components.

### **Assessment 1**

Assessment Tool: Lab worksheets

Assessment Date: Winter 2020

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 70% or higher

Who will score and analyze the data: Departmental faculty

3. Perform engine-related repairs on project vehicles.

### **Assessment 1**

Assessment Tool: Vehicle repair project

Assessment Date: Winter 2020

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: Vehicle repair checklist

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

Who will score and analyze the data: Departmental faculty

## Course Objectives

1. Recognize and apply shop safety practices.
2. Recognize and apply appropriate measuring equipment.
3. Recognize and apply standard diagnostic procedures as outlined in vehicle service manual.
4. Perform proper inspection, diagnosis and recognize needed repairs on engine components.
5. Identify correct procedure for diagnosing and repairing symptoms such as engine noises and overheating.
6. Perform cylinder head service.
7. Repair various types of intake manifold damage and leaks.
8. Identify, service or replace engine bearings and gaskets.
9. Recognize piston ring types and specific functions of each ring.
10. Identify, service or replace crankshafts, piston rods, pistons, cam shafts and valve train components.
11. Test the engine lubrication system for proper function.
12. Determine the cause of various exhaust smoke colors and smells related to engine malfunctions.

## New Resources for Course

### Course Textbooks/Resources

#### Textbooks

Hadfield, Chris. *Today's Technician - Automotive Engine Repair & Rebuilding*, 5th ed. Delmar Cengage Learning, 2013, ISBN: 978-113360248.

#### 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>Justin Carter</i>	<i>Faculty Preparer</i>	<i>May 03, 2017</i>
<b>Department Chair/Area Director:</b> <i>Allen Day</i>	<i>Recommend Approval</i>	<i>May 10, 2017</i>
<b>Dean:</b> <i>Brandon Tucker</i>	<i>Recommend Approval</i>	<i>Jun 21, 2017</i>
<b>Curriculum Committee Chair:</b> <i>Lisa Veasey</i>	<i>Recommend Approval</i>	<i>Sep 18, 2017</i>
<b>Assessment Committee Chair:</b> <i>Michelle Garey</i>	<i>Recommend Approval</i>	<i>Sep 19, 2017</i>
<b>Vice President for Instruction:</b> <i>Kimberly Hurns</i>	<i>Approve</i>	<i>Sep 24, 2017</i>