

Washtenaw Community College Comprehensive Report

ATT 251 Engine Diagnosis and Repair Effective Term: Fall 2025

Course Cover

College: Advanced Technologies and Public Service Careers
Division: Advanced Technologies and Public Service Careers
Department: Transportation Technologies
Discipline: Automotive & Transportation Tech (new)
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: Course Change
Change Information:

Consultation with all departments affected by this course is required.

Rationale: Update the course for the new discipline.

Proposed Start Semester: Fall 2025

Course Description: In this course, students will learn how to diagnose and repair automotive engine mechanical systems using precision measuring tools and manufacturers' recommendations. The focus of the course will involve the use of industry approved techniques and various skills in assessing engine condition before performing repairs. Students will also learn symptom diagnostic skills related to internal engine systems such as oil pressure issues, cooling system conditions, and vehicle emissions. This course was previously ASV 251.

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

ATT 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: Outcome-related exam questions

Assessment Date: Winter 2025

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

How the assessment will be scored: Answer key

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: Outcome-related skills checklist

Assessment Date: Winter 2025

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

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: Outcome-related skills checklist

Assessment Date: Winter 2025

Assessment Cycle: Every Three Years

Course section(s)/other population: All

Number students to be assessed: All

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

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>
Faculty Preparer: <i>Shawn Deron</i>	<i>Faculty Preparer</i>	<i>Mar 27, 2024</i>
Department Chair/Area Director: <i>Rocky Roberts</i>	<i>Recommend Approval</i>	<i>Mar 27, 2024</i>
Dean: <i>Eva Samulski</i>	<i>Recommend Approval</i>	<i>Apr 03, 2024</i>
Curriculum Committee Chair: <i>Randy Van Wagnen</i>	<i>Recommend Approval</i>	<i>Mar 20, 2025</i>
Assessment Committee Chair: <i>Jessica Hale</i>	<i>Recommend Approval</i>	<i>Mar 20, 2025</i>
Vice President for Instruction: <i>Brandon Tucker</i>	<i>Approve</i>	<i>Mar 21, 2025</i>

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

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Manuals

Periodicals

Software

Equipment/Facilities

Level III classroom

Computer workstations/lab

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