

Washtenaw Community College Comprehensive Report

ATT 132 Automotive Engines 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: 132

Org Number: 14100

Full Course Title: Automotive Engines

Transcript Title: Automotive Engines

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.

Course description

Objectives/Evaluation

Rationale: Update the course for the new discipline.

Proposed Start Semester: Fall 2025

Course Description: In this course, students will explore the theory, operation and repair of automotive gasoline engines with emphasis on component identification, operation and proper measurement techniques. Students will gain skills such as disassembly, reassembly and running procedures with automotive drivetrains on test stands and also develop practical skills with on-car diagnostics and repairs. This course was previously ASV 132.

Course Credit Hours

Variable hours: No

Credits: 4

Lecture Hours: Instructor: 45 Student: 45

Lab: Instructor: 60 Student: 60

Clinical: Instructor: 0 Student: 0

Total Contact Hours: Instructor: 105 Student: 105

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 130 minimum grade C

or

Prerequisite

ATT 131 minimum grade C

General Education

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Identify various automotive engine parts and how they interact in a gasoline engine.

Assessment 1

Assessment Tool: Outcome-related project checklist

Assessment Date: Fall 2025

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

Assessment 2

Assessment Tool: Outcome-related exam questions

Assessment Date: Fall 2025

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 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. Interpret diagnostic procedures from vehicle service manuals.

Assessment 1

Assessment Tool: Outcome-related project checklist

Assessment Date: Fall 2025

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

Assessment 2

Assessment Tool: Outcome-related exam questions

Assessment Date: Fall 2025

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 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

3. Recognize, diagnose and recommend service and repairs for internal engine components.

Assessment 1

Assessment Tool: Outcome-related project checklist

Assessment Date: Fall 2025

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

Assessment 2

Assessment Tool: Outcome-related exam questions

Assessment Date: Fall 2025

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 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

4. Recognize, diagnose and replace engine gaskets due to failures.

Assessment 1

Assessment Tool: Outcome-related project checklist

Assessment Date: Fall 2025

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

Assessment 2

Assessment Tool: Outcome-related exam questions

Assessment Date: Fall 2025

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 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

5. Disassemble, reassemble and test automotive gasoline engines.

Assessment 1

Assessment Tool: Outcome-related project checklist

Assessment Date: Fall 2025

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

Assessment 2

Assessment Tool: Outcome-related exam questions

Assessment Date: Fall 2025

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 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

Course Objectives

1. Complete a work order that includes customer information, vehicle identifying information, customer concern, related service history, cause, and correction.
2. Identify service manual procedures based on symptoms related to engine issues.
3. Diagnose engine problems and determine necessary actions.
4. Research vehicle service precautions and technical service bulletins.
5. Research applicable service information such as internal engine operation and vehicle service history.
6. Inspect engine assembly for fuel, oil, coolant, and other leaks and determine necessary actions.
7. Diagnose engine noises and determine necessary actions.
8. Diagnose engine vibrations and determine necessary actions.
9. Perform engine vacuum tests and determine necessary actions.
10. Diagnose the cause of excessive oil or coolant consumption and determine necessary actions.
11. Diagnose the cause of unusual engine exhaust color and odor and determine necessary actions.
12. Perform cylinder cranking and running compression tests and determine necessary action.
13. Perform oil pressure tests and determine necessary actions.
14. Inspect and test radiator, pressure cap, coolant recovery tank, and hoses and determine necessary actions.
15. Perform cooling system pressure tests and determine necessary actions.

New Resources for Course

Course Textbooks/Resources

Textbooks

Manuals

Periodicals

Software

Equipment/Facilities

Level III classroom

Computer workstations/lab

Reviewer

Action

Date

Faculty Preparer:

Shawn Deron

Faculty Preparer

Mar 27, 2024

Department Chair/Area Director:

Rocky Roberts

Recommend Approval

Mar 27, 2024

Dean:

Eva Samulski

Recommend Approval

Apr 03, 2024

Curriculum Committee Chair:

Randy Van Wagnen

Recommend Approval

Mar 20, 2025

Assessment Committee Chair:

Jessica Hale

Recommend Approval

Mar 20, 2025

Vice President for Instruction:

Brandon Tucker

Approve

Mar 21, 2025

Washtenaw Community College Comprehensive Report

ASV 132 Automotive Engines Effective Term: Fall 2019

Course Cover

Division: Advanced Technologies and Public Service Careers

Department: Automotive Services

Discipline: Auto Services

Course Number: 132

Org Number: 14100

Full Course Title: Automotive Engines

Transcript Title: Automotive Engines

Is Consultation with other department(s) required: Yes

Please Explain:

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

Reason for Submission:

Change Information:

Consultation with all departments affected by this course is required.

Rationale: Three-year master syllabus update based on assessment results.

Proposed Start Semester: Fall 2019

Course Description: In this course, students explore the theory, operation and repair of automotive gasoline engines with emphasis on component identification, operation and proper measurement techniques. Students gain skills such as disassembly, assembly and running procedures with automotive drivetrains on test stands and also develop practical skills with on-car diagnostics and repairs.

Course Credit Hours

Variable hours: No

Credits: 4

Lecture Hours: Instructor: 45 **Student:** 45

Lab: Instructor: 60 **Student:** 60

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

Total Contact Hours: Instructor: 105 **Student:** 105

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 130 minimum grade "C"

or

Prerequisite

ASV 131 minimum grade "C"

or

Prerequisite

MST 110 minimum grade "C"

General Education**Request Course Transfer**

Proposed For:

Student Learning Outcomes

1. Identify various automotive parts and how they interact in a gasoline engine.

Assessment 1

Assessment Tool: Project checklist and Module Exam

Assessment Date: Fall 2022

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

2. Read and interpret vehicle service manuals.

Assessment 1

Assessment Tool: Project checklist and Module Exam

Assessment Date: Fall 2022

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. Recognize, diagnose and recommend service and repairs for internal engine components.

Assessment 1

Assessment Tool: Project checklist and Module Exam

Assessment Date: Fall 2022

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

4. Recognize, diagnose and replace engine gaskets due to failures.

Assessment 1

Assessment Tool: Project Checklist and Module Exam

Assessment Date: Fall 2022

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

5. Disassemble, reassemble and test automotive gasoline engines.

Assessment 1

Assessment Tool: Project Checklist and Module Exam

Assessment Date: Fall 2022

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

Course Objectives

1. Complete a work order that includes customer information, vehicle identifying information, customer concern, related service history, cause, and correction.
2. Identify and interpret engine concern, diagnose problems and determine necessary actions.
3. Research vehicle service precautions and technical service bulletins.
4. Research applicable service information such as internal engine operation and vehicle service history.
5. Inspect engine assembly for fuel, oil, coolant, and other leaks and determine necessary actions.
6. Diagnose engine noises and determine necessary actions.
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8. Perform engine vacuum tests and determine necessary actions.
9. Diagnose the cause of excessive oil or coolant consumption and determine necessary actions.
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12. Perform oil pressure tests and determine necessary actions.
13. Inspect and test radiator, pressure cap, coolant recovery tank, and hoses and determine necessary actions.
14. Perform cooling system pressure tests and determine necessary actions.

New Resources for Course

Course Textbooks/Resources

Textbooks

Vangelder. *Fund. of Automotive Technology*, 2nd ed. Jones-Bart, 2018, ISBN: 9781284109955.

Manuals

Periodicals

Software

Equipment/Facilities

Level III classroom

Computer workstations/lab

Reviewer

Action

Date

Faculty Preparer:

Michael Duff

Faculty Preparer

Feb 20, 2019

Department Chair/Area Director:

Justin Morningstar

Recommend Approval

Mar 05, 2019

