Washtenaw Community College Comprehensive Report

ATT 220 Dynamometer Operations
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: 220
Org Number: 14100
Full Course Title: Dynamometer Operations
Transcript Title: Dynamometer Operations
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:
Course discipline code & number
Rationale: Update the course for the new discipline.
Proposed Start Semester: Winter 2025
Course Description: In this course, students will learn to identify the components and operation of a load control powersports chassis dynamometer. The primary emphasis is on the student learning to use the dynamometer as a diagnostic, data acquisition, and tuning tool. The course will instruct students in the design and application of various tuning technologies used in fuel and ignition mapping. Students will practice and develop the skills to become proficient in diagnosing runnability issues and tuning carbureted vehicles. This course was previously MST 220.

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

No Level Required

Requisites

Prerequisite
ATT 277 minimum grade "C"; may enroll concurrently

General Education

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Demonstrate the use of a load control dynamometer safely.
   Assessment 1
   Assessment Tool: Outcome-related practical lab checklists
   Assessment Date: Fall 2026
   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: 75% of the students will score 75% or higher.
   Who will score and analyze the data: Departmental faculty

2. Perform vehicle tests and acquire data using a load control dynamometer.
   Assessment 1
   Assessment Tool: Outcome-related practical lab checklists
   Assessment Date: Fall 2026
   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: 75% of the students will score 75% or higher.
   Who will score and analyze the data: Departmental faculty

3. Examine and analyze data and report on test findings.
   Assessment 1
   Assessment Tool: Outcome-related exam questions
   Assessment Date: Fall 2026
   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. Identify the components of a load control dynamometer.
2. Demonstrate the proper procedure for securing motorcycles and all-terrain vehicles (ATVs).
3. Demonstrate the proper procedure for safe operation within a load control dynamometer.
4. Demonstrate proficiency in using all controls and software on a load control dynamometer.
5. Run a vehicle test using a load control dynamometer.
6. Use a load control dynamometer as a diagnostic tool.
7. Use a load control dynamometer for data acquisition.
8. Interpret data acquired during testing.
9. Use a load control dynamometer to properly tune carburetor motorcycles and ATVs.
10. Demonstrate safe vehicle operation.

11. Develop techniques to graph collected vehicle data.
12. Disassemble and service a chassis dynamometer.

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Shawn Deron	*Faculty Preparer*	*Jun 26, 2024*
Department Chair/Area Director:		
Rocky Roberts	*Recommend Approval*	*Jun 27, 2024*
Dean:		
Eva Samulski	*Recommend Approval*	*Jun 28, 2024*
Curriculum Committee Chair:		
Randy Van Wagnen	*Recommend Approval*	*Feb 25, 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

MST 220 Dynamometer Operations
Effective Term: Fall 2024

Course Cover

College: Advanced Technologies and Public Service Careers
Division: Advanced Technologies and Public Service Careers
Department: Transportation Technologies
Discipline: Motorcycle Service Technology (new)
Course Number: 220
Org Number: 14100
Full Course Title: Dynamometer Operations
Transcript Title: Dynamometer Operations
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:
Pre-requisite, co-requisite, or enrollment restrictions
Rationale: Update prerequisite courses for new program layout.
Proposed Start Semester: Fall 2024
Course Description: In this course, students learn to identify the components and operation of a load control dynamometer. The primary emphasis is on the student learning to use the dynamometer as a diagnostic, data acquisition, and tuning tool. The course will instruct students in the design and application of various tuning technologies used in current custom fuel and ignition mapping. Students will develop the skills to become proficient in tuning carbureted vehicles.

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

No Level Required

Requisites

Prerequisite
MST 140 minimum grade "C"
or

Prerequisite
ASV 277 minimum grade "C"; may enroll concurrently

General Education

Request Course Transfer
Proposed For:

Student Learning Outcomes

1. Demonstrate the use of a load control dynamometer safely.
   Assessment 1
   Assessment Tool: Outcome-related practical lab checklist completed 9 times during the semester
   Assessment Date: Fall 2024
   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: 75% of the students will score 75% or higher
   Who will score and analyze the data: Departmental faculty

2. Perform vehicle tests and acquire data using a load control dynamometer.
   Assessment 1
   Assessment Tool: Outcome-related practical lab checklist completed 9 times during the semester
   Assessment Date: Fall 2024
   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: 75% of the students will score 75% or higher
   Who will score and analyze the data: Departmental faculty

3. Examine and analyze data and report on test findings.
   Assessment 1
   Assessment Tool: Final lab exam
   Assessment Date: Fall 2024
   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. Identify the components of a load control dynamometer.
2. Demonstrate the proper procedure for securing motorcycles and all terrain vehicles (ATVs).
3. Demonstrate the proper procedure for safe operation within a load control dynamometer.
4. Demonstrate proficiency in using all controls and software on a load control dynamometer.
5. Run a vehicle test using a load control dynamometer.
6. Use a load control dynamometer as a diagnostic tool.

7. Use a load control dynamometer for data acquisition.
8. Interpret data acquired during testing.
9. Use a load control dynamometer to properly tune carburetor motorcycles and ATVs.

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Rocky Roberts	*Faculty Preparer*	*Jan 18, 2024*
Department Chair/Area Director:		
Rocky Roberts	*Recommend Approval*	*Jan 18, 2024*
Dean:		
Jimmie Baber	*Recommend Approval*	*Jan 19, 2024*
Curriculum Committee Chair:		
Randy Van Wagnen	*Recommend Approval*	*Feb 05, 2024*
Assessment Committee Chair:		
Jessica Hale	*Recommend Approval*	*Feb 08, 2024*
Vice President for Instruction:		
Brandon Tucker	*Approve*	*Feb 09, 2024*

Washtenaw Community College Comprehensive Report

MST 220 Dynamometer Operations
Effective Term: Fall 2020

Course Cover

Division: Advanced Technologies and Public Service Careers
Department: Transportation Technologies
Discipline: Motorcycle Service Technology (new)
Course Number: 220
Org Number: 14100
Full Course Title: Dynamometer Operations
Transcript Title: Dynamometer Operations
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:
Pre-requisite, co-requisite, or enrollment restrictions
Rationale: Prerequisite course change only
Proposed Start Semester: Winter 2019
Course Description: In this course, students learn to identify the components and operation of a load control dynamometer. The primary emphasis is on the student learning to use the dynamometer as a diagnostic, data acquisition, and tuning tool. The course will instruct the student in the design and application of various tuning technologies used in current custom fuel and ignition mapping. The student will develop the skills to become proficient in tuning carbureted vehicles.

Course Credit Hours

Variable hours: No
Credits: 4
Lecture Hours: Instructor: 45 **Student:** 45
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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

No Level Required

Requisites

Prerequisite
MST 140 minimum grade "C"
or

Prerequisite
ASV 277 minimum grade "C"

General Education

Request Course Transfer
Proposed For:

Student Learning Outcomes

1. Demonstrate the use of a load control dynamometer safely.
   Assessment 1
   Assessment Tool: Practical lab checklist completed 9 times during the semester
   Assessment Date: Fall 2021
   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: 75% of the students will score 75% or higher
   Who will score and analyze the data: Departmental faculty

2. Perform vehicle tests and acquire data using a load control dynamometer.
   Assessment 1
   Assessment Tool: Practical lab checklist completed 9 times during the semester
   Assessment Date: Fall 2021
   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: 75% of the students will score 75% or higher
   Who will score and analyze the data: Departmental faculty

3. Examine and analyze data and report on test findings.
   Assessment 1
   Assessment Tool: Final lab exam
   Assessment Date: Fall 2021
   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. Identify the components of a load control dynamometer.
2. Demonstrate the proper procedure for securing motorcycles and all terrain vehicles (ATVs).
3. Demonstrate the proper procedure for safe operation within a load control dynamometer.
4. Demonstrate proficiency in using all controls and software on a load control dynamometer.
5. Run vehicle test using a load control dynamometer.
6. Use a load control dynamometer as a diagnostic tool.
7. Use a load control dynamometer for data acquisition.
8. Interpret data acquired during testing.

9. Use a load control dynamometer to properly tune carburetor motorcycles and ATVs.

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Shawn Deron	*Faculty Preparer*	*Dec 13, 2019*
Department Chair/Area Director:		
Allen Day	*Recommend Approval*	*Jan 09, 2020*
Dean:		
Jimmie Baber	*Recommend Approval*	*Jan 29, 2020*
Curriculum Committee Chair:		
Lisa Veasey	*Recommend Approval*	*Feb 19, 2020*
Assessment Committee Chair:		
Shawn Deron	*Recommend Approval*	*Feb 24, 2020*
Vice President for Instruction:		
Kimberly Hurns	*Approve*	*Feb 25, 2020*

Washtenaw Community College Comprehensive Report

MST 220 Dynamometer Operations
Effective Term: Spring/Summer 2018

Course Cover

Division: Advanced Technologies and Public Service Careers
Department: Motorcycle Technology
Discipline: Motorcycle Service Technology
Course Number: 220
Org Number: 14140
Full Course Title: Dynamometer Operations
Transcript Title: Dynamometer Operations
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:
Course description
Outcomes/Assessment
Objectives/Evaluation
Rationale: This is a 3 year course update based on curriculum assessment findings.
Proposed Start Semester: Spring/Summer 2018
Course Description: In this course, students learn to identify the components and operation of a load control dynamometer. The primary emphasis is on the student learning to use the dynamometer as a diagnostic, data acquisition, and tuning tool. The course will instruct the student in the design and application of various tuning technologies used in current custom fuel and ignition mapping. The student will develop the skills to become proficient in tuning carbureted vehicles.

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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

MST 140 minimum grade "C"

General Education

Request Course Transfer

Proposed For:

Student Learning Outcomes

1. Demonstrate the use of a load control dynamometer safely.

Assessment 1

Assessment Tool: Practical lab checklist completed 9 times during the semester
Assessment Date: Fall 2021
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: 75% of the students will score 75% or higher
Who will score and analyze the data: Departmental faculty

2. Perform vehicle tests and acquire data using a load control dynamometer.

Assessment 1

Assessment Tool: Practical lab checklist completed 9 times during the semester
Assessment Date: Fall 2021
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
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2. Demonstrate the proper procedure for securing motorcycles and ATVs.
3. Demonstrate the proper procedure for safe operation within a load control dynamometer.
4. Demonstrate proficiency in using all controls and software on a load control dynamometer.
5. Run vehicle test using a load control dynamometer.
6. Use a load control dynamometer as a diagnostic tool.
7. Use a load control dynamometer for data acquisition.
8. Interpret data acquired during testing.
9. Use a load control dynamometer to properly tune carburetor motorcycles and ATV's.

New Resources for Course

Course Textbooks/Resources

Textbooks
Manuals
Periodicals
Software

Equipment/Facilities

Level III classroom

Reviewer	Action	Date
Faculty Preparer:		
Mark Daily	*Faculty Preparer*	*Aug 14, 2017*
Department Chair/Area Director:		
Shawn Deron	*Recommend Approval*	*Sep 19, 2017*
Dean:		
Brandon Tucker	*Recommend Approval*	*Sep 28, 2017*
Curriculum Committee Chair:		
Lisa Veasey	*Recommend Approval*	*Nov 06, 2017*
Assessment Committee Chair:		
Michelle Garey	*Recommend Approval*	*Nov 07, 2017*
Vice President for Instruction:		
Kimberly Hurns	*Approve*	*Nov 07, 2017*