

# 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

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

## 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

**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"

**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

<u>Reviewer</u>	<u>Action</u>	<u>Date</u>
<b>Faculty Preparer:</b> <i>Shawn Deron</i>	<i>Faculty Preparer</i>	<i>Dec 13, 2019</i>
<b>Department Chair/Area Director:</b> <i>Allen Day</i>	<i>Recommend Approval</i>	<i>Jan 09, 2020</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>Feb 19, 2020</i>
<b>Assessment Committee Chair:</b> <i>Shawn Deron</i>	<i>Recommend Approval</i>	<i>Feb 24, 2020</i>
<b>Vice President for Instruction:</b> <i>Kimberly Hurns</i>	<i>Approve</i>	<i>Feb 25, 2020</i>

## 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.

#### 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"

## **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 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

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