Course Assessment Report
Washtenaw Community College

Discipline	Course Number	Title
Motorcycle Service Technology (new)	220	MST 220 06/24/2024- Dynamometer Operations
College	Division	Department
Advanced Technologies and Public Service Careers	Advanced Technologies and Public Service Careers	Transportation Technologies
Faculty Preparer		Shawn Deron
Date of Last Filed Assessment Report		

I. Review previous assessment reports submitted for this course and provide the following information.

1. Was this course previously assessed and if so, when?

   Yes

   Winter 2015

2. Briefly describe the results of previous assessment report(s).

   Overall, it appeared that students met the standards of success on both outcomes originally developed in the master syllabus. The course summary also mentioned student retention tapered by the mid semester point.

3. Briefly describe the Action Plan/Intended Changes from the previous report(s), when and how changes were implemented.

   The report discussed adding a third outcome to broaden the scope of data collected from students to better capture and evaluate what students should be able to master by the end of the course before moving on to the advanced dynamometer course.

II. Assessment Results per Student Learning Outcome

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

- Assessment Plan
  - Assessment Tool: Outcome-related practical lab checklist completed 9 times during the semester
  - Assessment Date: Fall 2024

- 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

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
2023, 2022, 2021		

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
28	28

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

All of the students from all three sections completed the assessment tasks.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

This course can only be taught on campus in OE 188 with the chassis dynamometer. The course is also only offered in the fall semesters.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

The assessment tools are skills checklists administered in the lab for safety. Students are assessed three times during the semester using a student skills checklist. A third assessment tool was added in the last few years to capture data related to students that have little or no motorcycle experience or that needed a review on manual transmission operation. There are 50 total points for all three of the safety skills checklists. Two are administered early in the semester and one in the latter part of the semester. In order to achieve the standard of success, 75% of students will earn a score of at least 35 out of 50 possible points.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes
Reviewing the final, riding, and second safety skills checklist data, all of the students scored higher than 75% on all of their checklists combined. The students had to execute 10 different tasks on each of the checklists. Students performed these tasks based on lecture information, instructor demonstrations and industry expectations to operate a vehicle and the room safely. It is worth noting that more students scored higher at the early part of the semester and then tapered off more by the end of the semester. I can only guess that the earlier checklist and the riding checklist are administered shortly after demonstrations, and that the later checklist scores fall somewhat as students develop habits that result in lower scores.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

We collected data from a third metric in this cycle of assessment for the course. We wanted to add the third skills checklist to capture data from students who needed practice riding a vehicle in the room and those who needed time with a manual transmission. We found that the style in which students are taught allows them to exceed our expectations, increasing their comfort level to complete the tasks needed to be successful in the room.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

Moving forward we will be keeping the new data set and possibly adding more checklists items related to operation safety.

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

- Assessment Plan
    - Assessment Tool: Outcome-related practical lab checklist completed 9 times during the semester
    - Assessment Date: Fall 2024
    - 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

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
2023, 2022, 2021		

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
28	28

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

All of the students from all three sections completed the assessment tasks.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

This course can only be taught on campus in OE 188 with the chassis dynamometer. The course is also only offered in the fall semesters.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

The tools used to assess this outcome are the lab checklists for data acquisition (Roll-on, Loaded roll-on and negative horsepower). Each checklist is administered several times so students develop muscle memory and the software setup to collect usable data. The included data for this report were the checklists that were used for scoring at the end of each module. Students are graded using the checklist criteria after each related module. Students must get 3 out of 4 criteria correct on each checklist to achieve the standards of success.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes

Reviewing the data for the combined scores for the data acquisition checklists, 96% of the students (27/28) scored 75% or higher. In a more in-depth breakdown and review of the data we can see which dynamometer tests students did better on.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

Students seem to grasp the roll-on portion of vehicle operations and become eager for more tests such as the all gear, loaded, and negative test collection. We do find that students who practice the skills for each test and use their time wisely in the room develop muscle memory and program setup much faster, enabling them to guide others.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

Moving forward, we may change the data set that we use for assessment. We currently use the checklists that are collected at the end of each training module related to each of the dynamometer tests, which help students build their comfort and skill levels. We may start using the data from the mid-term or final exam.

Outcome 3: Examine and analyze data and report on test findings.

- Assessment Plan
    - Assessment Tool: Final lab exam
    - Assessment Date: Fall 2024
    - 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

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
2023, 2022, 2021		

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
28	28

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

All of the students from all three sections completed the assessment tasks.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

This course can only be taught on campus in OE 188 with the chassis dynamometer. The course is also only offered in the fall semesters.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

Students are given a final exam that consists of 50 questions directly related to analyzing graphed data acquired from vehicles tested in the dyno room. They are asked to interpret and suggest solutions to either fix the data, how the data is presented/graphed or recommend vehicle adjustments and/or repairs needed to fix vehicles running poorly.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes
Reviewing the data for this outcome indicates that all of the students scored above 70% on this outcome. Students are asked to run a vehicle in the room and capture the data for part of the final exam. Graphs using similar data are then used for students to answer questions relating to accuracy, vehicle test performance and conditions, and vehicle performance issues.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

It might be that this is the intro course to the motorcycle chassis dyno or that the students who are taking the co-requisite prior to this course or concurrently, grasp how to critique the data they collect from the bike to improve data collection. In

doing so, students can also interpret the data screening to identify vehicle faults or possible improvements in runnability.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

Students are well prepared to excel in this potion of the exam if they use their time in the room wisely. We plan to continue supporting lab and room use to ensure a high level of student success preparing them for higher level courses.

III. Course Summary and Intended Changes Based on Assessment Results

1. Based on the previous report's Intended Change(s) identified in Section I above, please discuss how effective the changes were in improving student learning.

The previous report discussed adding a third outcome and splitting up the previous outcome to dig into the data and potentially uncover ways to improve student success.

2. Describe your overall impression of how this course is meeting the needs of students. Did the assessment process bring to light anything about student achievement of learning outcomes that surprised you?

Having taught this course several times in the past, I am happy to see the small changes in the course supporting student learning and improving students comfort levels in the room. We see a wide, diverse range of students and capturing the newer safety checklist helped monitor how it is working. We should see this comfort level follow students into the advanced courses.

3. Describe when and how this information, including the action plan, was or will be shared with Departmental Faculty.

The assessment report results will be shared at the next department meeting.

4. Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
Assessment Tool	We will change the standards of success on outcome 2 to reflect the 3 out of 4 rubric scoring (75%).	We might change the number of tests included for outcome 2, and that may affect the	2024

		standards of success.	

5. Is there anything that you would like to mention that was not already captured?

I would like to thank Steve Carr, the lead instructor, for supplying the data used to assess this course. I would also like to mention that he has been the key instructor for implementing adjustments to the course to improve student learning and comfort levels in the dyno room.

III. Attached Files

MST 220 Summary Data

Faculty/Preparer:	Shawn Deron	**Date:**	06/26/2024
Department Chair:	Rocky Roberts	**Date:**	06/27/2024
Dean:	Eva Samulski	**Date:**	06/28/2024
Assessment Committee Chair:	Jessica Hale	**Date:**	03/28/2025

Course Assessment Report
Washtenaw Community College

Discipline	Course Number	Title
Motorcycle Service Technology	220	MST 220 03/31/2016- Dynamometer Operations
Division	Department	Faculty Preparer
Advanced Technologies and Public Service Careers	Motorcycle Technology	Mark Daily
Date of Last Filed Assessment Report		

I. Assessment Results per Student Learning Outcome

Outcome 1: Students will demonstrate time and quality proficiency in the safe operation of a load control dynamometer.

- Assessment Plan
    - Assessment Tool: Final and Practical Lab Exams
    - Assessment Date: Winter 2010
    - Course section(s)/other population: all
    - Number students to be assessed: all
    - How the assessment will be scored:
    - Standard of success to be used for this assessment:
    - Who will score and analyze the data:

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2015	

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
10	9

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

9 out of 10 students enrolled were assessed. One student withdrew from the class 2/3rds into the semester.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

This course can only be taught on campus. All students assessed met in the morning.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

The assessment tool is a skills checklist for safety. Students are assessed 2 times per semester using a student skills checklist. There are 50 total points for the safety skills checklist. In order to achieve the standard of success, 70% of students will earn a score of at least 35 out of 50 possible points.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes

In reviewing the final and practical lab exam data, 90% of the students scored higher than 70% on their first checklist. On the final checklist 70% of the students scored 70% or higher.

The students had to execute 7 different tasks. Students performed these tasks based on discussions and demonstrations.

It was discovered that students met a higher success rate at the midpoint of the semester and then struggled more by the end of the semester.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

It appears that the students had the best understanding of the outcome by the middle of the semester.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

It appears that reviewing may be implemented at higher rate after the midpoint of the semester to promote retention of the outcome.

Outcome 2: Students will demonstrate time and quality proficiency in the use of a load control dynamometer as a diagnostic, data acquisition, and tuning tool.

- Assessment Plan
    - Assessment Tool: Final and Practical Lab Exams
    - Assessment Date: Winter 2010
    - Course section(s)/other population: all
    - Number students to be assessed: all
    - How the assessment will be scored:
    - Standard of success to be used for this assessment:
    - Who will score and analyze the data:

1. Indicate the Semester(s) and year(s) assessment data were collected for this report.

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2015	

2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
10	9

3. If the number of students assessed differs from the number of students enrolled, please explain why all enrolled students were not assessed, e.g. absence, withdrawal, or did not complete activity.

9 out of 10 students enrolled were assessed. One student withdrew from the class 2/3rds into the semester.

4. Describe how students from all populations (day students on campus, DL, MM, evening, extension center sites, etc.) were included in the assessment based on your selection criteria.

This course can only be taught on campus. All students assessed met in the morning.

5. Describe the process used to assess this outcome. Include a brief description of this tool and how it was scored.

The assessment tool is a final exam that includes a written component as well as a practical exam. The standard of success is 70% of students will earn 70% or higher on the final exam.

6. Briefly describe assessment results based on data collected for this outcome and tool during the course assessment. Discuss the extent to which students achieved this learning outcome and indicate whether the standard of success was met for this outcome and tool.

Met Standard of Success: Yes
In reviewing the final exam, the data showed that 70% of students scored 70% or higher. 35 questions from the final exam were targeted for review. The students had to execute 10 different tasks. 80% of the questions were answered correctly by 100% of the students. On the practical portion of the exam, 78% of the students scored at 70% or higher. All of the students met the standard of success, but the data showed that the practical portion of the exam had a lower success rate than the written portion.

7. Based on your interpretation of the assessment results, describe the areas of strength in student achievement of this learning outcome.

The strengths were the written portion of the assessment tool.

8. Based on your analysis of student performance, discuss the areas in which student achievement of this learning outcome could be improved. If student met standard of success, you may wish to identify your plans for continuous improvement.

Although the students met the standard of success, it was found that the students scored lower on the practical checklist portion of the final exam. Plans for improvement include allocating more time during the semester for students to practice the skills required for success.

II. Course Summary and Action Plans Based on Assessment Results

1. Describe your overall impression of how this course is meeting the needs of students. Did the assessment process bring to light anything about student achievement of learning outcomes that surprised you?

The evaluation of the course revealed to me that while it meets the needs of the students, the students' retention tapered off after the middle of the semester.

2. Describe when and how this information, including the action plan, was or will be shared with Departmental Faculty.

The assessment results will be shared at our departmental meeting.

3. Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
Outcome Language	Narrow the scope of the outcomes. For example, outcome number two has the faculty assessing the students on five different skills wrapped up in a single outcome. I feel that better outcomes can be developed.	Using the current outcomes, it is impossible to accurately assess the students success because the outcomes are too broad. See note provided above about current outcome number two.	2018

4. Is there anything that you would like to mention that was not already captured?

5.

III. Attached Files

mst 220

Faculty/Preparer:	Mark Daily	**Date:** 08/02/2017
Department Chair:	Shawn Deron	**Date:** 08/09/2017
Dean:	Brandon Tucker	**Date:** 08/20/2017
Assessment Committee Chair:	Michelle Garey	**Date:** 10/30/2017