Course Assessment Report
Washtenaw Community College

Discipline	Course Number	Title
Fluid Power	214	FLP 214 08/12/2019- Hydraulic Circuits and Controls
Division	Department	Faculty Preparer
Advanced Technologies and Public Service Careers	Advanced Manufacturing	Jim Popovich
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?

   No

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

   3.

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

   5.

II. Assessment Results per Student Learning Outcome

Outcome 1: Build a hydraulic circuit on the fluid power trainer.

- Assessment Plan
  - Assessment Tool: Lab project
  - Assessment Date: Winter 2019
  - 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

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)
2013, 2012		

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

# of students enrolled	# of students assessed
16	16

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.

The number of students assessed did not differ from the number of students enrolled in the FLP 214 classes.

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.

All students in the two classes conducted in 2012 and 2013 were assessed.

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

The students were asked to construct a hydraulic circuit on the FPT2 hydraulic trainer that involved externally piloted sequence valves, flow controls and two cylinders. They were each given a circuit diagram.

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
The standard of success should be for students to interpret a circuit diagram and correctly tie the circuit components together into a functioning circuit. This standard of success was met, as all but one student (15 out of 16 or 93%) were able to construct the circuit without assistance.

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

The students met the standard of success based on their performance on the department exam.

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.

Continuous improvement is achievable through the addition of more worksheets and homework for the students to solve.

Outcome 2: Interpret hydraulic circuit diagrams to solve problems.

- Assessment Plan
    - Assessment Tool: Exam
    - Assessment Date: Winter 2019
    - 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

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)
2013, 2012		

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

# of students enrolled	# of students assessed
16	16

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.

The number of students assessed does not differ.

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.

The class is generally conducted once a year. All students who completed the final exam in 2012 and 2013 were selected for assessment.

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

Circuit diagrams were employed on the test where students had to determine function and operation. Questions pertaining to this outcome were selected.

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
75% of the students scored 70% or better on the assessed questions from the final exam. The standard of success was met.

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

The students performed well with regards to this outcome, working through circuit diagrams that were different from those covered in class.

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.

Doing more of the same will hopefully produce similar results.

Outcome 3: Identify faulty components through logical troubleshooting methods.

- Assessment Plan
    - Assessment Tool: Exam
    - Assessment Date: Winter 2019
    - 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

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)
2013, 2012		

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

# of students enrolled	# of students assessed
16	16

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.

The number of students assessed does not differ from the number of students enrolled.

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.

The class is conducted once a year on average. All students taking the class took part in the assessment.

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

A written exam with questions requiring knowledge of component operation and troubleshooting was scored as part of the assessment.

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: No
From the questions germane to the outcome specified, 11 of 16 students met the 70% standard of success, which is 69%. The standard of success was NOT met.

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

The students were successful in identifying components in hydraulic circuits and understanding their function within that circuit. They fell slightly short on the troubleshooting questions.

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.

The students as a group performed well, as 69% of the students were successful in scoring 70% or better. No change is necessary, other than continuous improvement of the variety of circuits covered in class.

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.

This course was improved by the addition of prints that the students had to analyze.

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?

The additional student work and virtual hands-on with Automation Studio does contribute to student learning.

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

I am the only remaining department faculty, after Gary Schultz's retirement, who teaches fluid power courses at WCC.

4. Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
No changes intended.			

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

6.

III. Attached Files

Faculty/Preparer:	Jim Popovich	**Date:** 09/05/2019
Department Chair:	Thomas Penird	**Date:** 09/10/2019
Dean:	Brandon Tucker	**Date:** 09/12/2019
Assessment Committee Chair:	Shawn Deron	**Date:** 01/13/2020