

Course Assessment Report
Washtenaw Community College

Discipline	Course Number	Title
Electricity/Electronics	254	ELE 254 11/27/2016-PLC Applications
Division	Department	Faculty Preparer
Advanced Technologies and Public Service Careers	Industrial Technology	Dale Petty
Date of Last Filed Assessment Report		

I. Assessment Results per Student Learning Outcome

Outcome 1: Install and troubleshoot PLC analog I/O.

- Assessment Plan
 - Assessment Tool: a departmental final exam will be used to assess understanding of key concepts
 - Assessment Date: Fall 2009
 - 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)
2014, 2013	2014, 2015	

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

# of students enrolled	# of students assessed
24	24

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.

Same

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 who took the final exam were included.

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

All questions on the Final Exam were scored according to an answer key. Average % wrong for each question related to this outcome was determined for each class using Scantron Item Analysis. Average % right for each question was calculated with Excel over all classes. The % of questions answered correctly by 75% of students was determined.

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 for this course (according to the paper master syllabus) is 75% of the students will score 70% or higher. The results show 71% of the questions were answered correctly by 75% of the students. 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.

Strengths in areas of understanding analog input and output configuration. Students did well on the hands-on quizzes.

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.

Analog input wiring is the main area of concern. Students have learned about wiring in at least two prior courses at this point, and I consider it a basic and important skill. Analog t/s questions on the final exam are especially difficult since they are: a) written instead of hands-on and b) multiple answer type questions with penalties for bad guesses. Indirect addressing is a relatively advanced programming skill that tends to be understood by the more computer savvy students. The good news is that 91% of students did well on the hands-on quizzes.

Outcome 1: Install and troubleshoot PLC analog I/O.

- Assessment Plan
 - Assessment Tool: a departmental task list will be used to assess proficiency in applying the concepts and in performing hands-on tasks
 - Assessment Date: Fall 2009
 - 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)
2014, 2013	2015, 2014	

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

# of students enrolled	# of students assessed
24	24

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.

Same

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 included.

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

All questions on the Task Checkups (hands-on quizzes) were scored according to an answer key. The % of students who scored 75% or higher was determined. Task Checkups were grouped by outcome and an average overall task

checkups for each class was determined. These averages were averaged over all classes to determine an overall average.

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

91% of students scored 75% or higher averaged over all Task Checkups and over all classes.

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

Strengths in areas of understanding analog input and output configuration. Students did well on the hands-on quizzes.

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.

Analog input wiring is the main area of concern. Students have learned about wiring in at least two prior courses at this point, and I consider it a basic and important skill. Analog t/s questions on the final exam are especially difficult since they are: a) written instead of hands-on and b) multiple answer type questions with penalties for bad guesses. Indirect addressing is a relatively advanced programming skill that tends to be understood by the more computer savvy students. The good news is that 91% of students did well on the hands-on quizzes.

Outcome 2: Install and troubleshoot PLC based process control.

- Assessment Plan
 - Assessment Tool: a departmental final exam will be used to assess understanding of key concepts
 - Assessment Date: Fall 2009
 - 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)
2014, 2013	2015, 2014	

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

# of students enrolled	# of students assessed
24	24

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 students who took the final were included.

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 who took the final were included.

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

All questions on the Final Exam were scored according to an answer key. Average % wrong for each question related to this outcome was determined for each class using Scantron Item Analysis. Average % right for each question was calculated with Excel over all classes. The % of questions answered correctly by 75% of students was determined.

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
91% of the questions were answered correctly by 75% of the students. The standard was met.

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

Students did well in most areas of the written and hands-on evaluation.

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.

Some students had some trouble understanding the effects of PID control.

Outcome 2: Install and troubleshoot PLC based process control.

- Assessment Plan
 - Assessment Tool: a departmental task list will be used to assess proficiency in applying the concepts and in performing hands-on tasks
 - Assessment Date: Fall 2009
 - 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)
2014, 2013	2015, 2014	

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

# of students enrolled	# of students assessed
24	24

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 students who took the final were included.

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 who took the final were included.

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

All questions on the Task Checkups (hands-on quizzes) were scored according to an answer key. The % of students who scored 75% or higher was determined. Task checkups were grouped by outcome and an average over all task checkups for each class was determined. These averages were averaged over all classes to determine an overall average.

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
94% of students scored 75% or higher on the Task Checkups. The standard was met.

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

Students did well in most areas of the written and hands-on evaluation.

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.

Some students had some trouble understanding the effects of PID control.

Outcome 3: Install and troubleshoot PLC communications.

- Assessment Plan
 - Assessment Tool: a departmental final exam will be used to assess understanding of key concepts
 - Assessment Date: Fall 2009
 - 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)
2014, 2013	2015, 2014	

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

# of students enrolled	# of students assessed
24	24

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.

Same

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 who took the final were assessed.

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

All questions on the Final Exam were scored according to an answer key. Average % wrong for each question related to this outcome was determined for each class using Scantron Item Analysis. Average % right for each question was calculated with Excel over all classes. The % of questions answered correctly by 75% of students was determined.

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
 40% of the questions were answered correctly by 75% of the students. The standard was not met.

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

Students struggled in all areas on the written exam. They did pretty well on the hands-on quizzes. Most of the low scores on the hands-on quizzes were because some students got behind in the class and were not able to take the quiz.

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 struggled in all areas on the written exam. They did pretty well on the hands-on quizzes. Most of the low scores on the hands-on quizzes were because some students got behind in the class and were not able to take the quiz.

Outcome 3: Install and troubleshoot PLC communications.

- Assessment Plan
 - Assessment Tool: a departmental task list will be used to assess proficiency in applying the concepts and in performing hands-on tasks
 - Assessment Date: Fall 2009
 - 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)
2014, 2013	2015, 2014	

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

# of students enrolled	# of students assessed
24	24

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.

Same

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 were assessed.

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

All questions on the Task Checkups (hands-on quizzes) were scored according to an answer key. The % of students who scored 75% or higher was determined. Task Checkups were grouped by outcome and an average over all Task Checkups for each class was determined. These averages were averaged over all classes to determine an overall average.

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

78% of students scored 75% or higher on the Task Checkups. The standard was met.

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

Students struggled in all areas on the written exam. They did pretty well on the hands-on quizzes. Most of the low scores on the hands-on quizzes were because some students got behind in the class and were not able to take the quiz.

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 struggled in all areas on the written exam. They did pretty well on the hands-on quizzes. Most of the low scores on the hands-on quizzes were because some students got behind in the class and were not able to take the quiz.

Outcome 4: Configure and troubleshoot PLC operator interface terminals.

- Assessment Plan

- Assessment Tool: a departmental final exam will be used to assess understanding of key concepts
- Assessment Date: Fall 2009
- 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)
2014, 2013	2015, 2014	

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

# of students enrolled	# of students assessed
24	24

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.

Same

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 who took the final were assessed.

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

This outcome was changed to "Program and troubleshoot ControlLogix Systems" to be more in line with the actual course content.

All questions on the final exam were scored according to an answer key. Average % wrong for each question related to this outcome was determined for each class using Scantron Item Analysis. Average % right for each question was calculated

with Excel over all classes. The % of questions answered correctly by 75% of students was determined.

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

56% of the questions were answered correctly by 75% of the students. The standard was not met.

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

This outcome was changed to "Program and troubleshoot ControlLogix Systems" to be more in line with the actual course content.

Strength in function block diagram programming on written exam and in all areas of hands-on quizzes.

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.

Difficulties with more conceptual information as opposed to skills based. Difficulty with Structured Text programming, unless students have done previous 'computer programming' this is a new and different way of thinking. We only have time to introduce the topic in this course.

Outcome 4: Configure and troubleshoot PLC operator interface terminals.

- Assessment Plan
 - Assessment Tool: a departmental task list will be used to assess proficiency in applying the concepts and in performing hands-on tasks
 - Assessment Date: Fall 2009
 - 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)
2014, 2013	2015, 2014	

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

# of students enrolled	# of students assessed
24	24

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.

Same

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 were assessed.

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

This outcome was changed to "Program and troubleshoot ControlLogix Systems" to be more in line with the actual course content.

All questions on the Task Checkups (hands-on quizzes) were scored according to an answer key. The % of students who scored 75% or higher was determined. Task Checkups were grouped by outcome and an average over all task checkups for each class was determined. These averages were averaged over all classes to determine an overall average.

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

85% of students scored 75% or higher on the Task Checkups. The standard was met

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

This outcome was changed to "Program and troubleshoot ControlLogix Systems" to be more in line with the actual course content.

Strength in function block diagram programming on written exam and in all areas of hands-on quizzes.

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.

Difficulties with more conceptual information as opposed to skills based. Difficulty with Structured Text programming, unless students have done previous 'computer programming' this is a new and different way of thinking. We only have time to introduce the topic in this course.

Outcome 5: Configure and troubleshoot PLC based sequential control.

- Assessment Plan
 - Assessment Tool: a departmental final exam will be used to assess understanding of key concepts
 - Assessment Date: Fall 2009
 - 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)
2014, 2013	2014, 2013	

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

# of students enrolled	# of students assessed
24	24

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.

Same

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 who took the final were assessed.

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

All questions on the final exam were scored according to an answer key. Average % wrong for each question related to this outcome was determined for each class using Scantron Item Analysis. Average % right for each question was calculated with Excel over all classes. The % of questions answered correctly by 75% of students was determined.

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 questions were answered correctly by 75% of the students. The standard was met.

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

Not evaluated, no longer a significant part of course.

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.

Not evaluated, no longer a significant part of course.

Outcome 5: Configure and troubleshoot PLC based sequential control.

- Assessment Plan

- Assessment Tool: a departmental task list will be used to assess proficiency in applying the concepts and in performing hands-on tasks
- Assessment Date: Fall 2009
- 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)
2014, 2013	2015, 2014	

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

# of students enrolled	# of students assessed
24	0

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.

This outcome was not evaluated, as it is no longer a significant part of the course.

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 outcome was not evaluated, as it is no longer a significant part of the course.

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

This outcome was not evaluated, as it is no longer a significant part of the course.

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

This outcome was not evaluated, as it is no longer a significant part of the course.

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

Not evaluated, no longer a significant part of course.

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.

Not evaluated, no longer a significant part of course.

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?

This “advanced” PLC course is taken by only about a third of the students who take the intro course. I have received very positive feedback about this course from students who go on to use it on the job, and that actually gives me more confidence in the value of the course than the assessment process. Our students are not fond or especially good at taking tests and by the end of the semester; they don’t seem to put much effort into doing well on the final exam. Students did much better on the hands-on evaluation of this knowledge than on the written evaluation. This is consistent with what I know of our students' predominant learning style. I think both evaluations are meaningful, since more depth can be easily covered in the written exam, and the hands-on test gives a better idea of how students might perform on the job on the primary skills.

Many of the concepts in this course are challenging to students and involve conceptual mathematical and programming skills that our students haven’t had much experience with. However since they are concepts students are likely to run into in the field, I feel it is important to at least give them an introduction to the concepts. As with our other ELE courses, the biggest factor in how students do is what they bring to the table. Our more mature students who are working in the field are generally very dedicated to learning the material in spite of often having full time work, families and long commutes. The younger students don't have this ethic as often and also have difficulty working methodically step by step and sticking with a problem. On the other hand, some younger students who have some computer programming background and more math pick up those concepts more quickly.

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

This information will be shared with the other ELE instructors, in a department meeting and with our outside advisors.

- Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
Other: Increase lectures on topic	Spend additional time discussing ethernet and devicenet and general communication topic.	Improve understanding of concepts and test scores.	2017
Other: Increase lectures on topic	Spend additional time discussing controllogix conceptes and programming.	Increase understanding of topics and improve test scores.	2017

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

None

III. Attached Files

[ELE 254 Assessment Analysis](#)
[254 final exam](#)

Faculty/Preparer: Dale Petty **Date:** 01/02/2017
Department Chair: Thomas Penird **Date:** 02/01/2017
Dean: Brandon Tucker **Date:** 03/01/2017
Assessment Committee Chair: Michelle Garey **Date:** 07/11/2017

To be filed

COURSE ASSESSMENT REPORT

copy received 7/30/07 jlg

Background Information

I. Course assessed:

Course Discipline Code and Number: ELE 254

Course Title: PLC Applications

Division Code: BCT Department Code: ELE

II. Semester assessment was administered (check one):

- Fall 20__
- Winter 2005
- Spring/Summer 20__

III. Assessment tool used (check one):

Please attach a copy of the tool and scoring rubric used.

- Portfolio
- Standardized test
- Other external certification/licensure exam (please describe): _____
- Survey
- Prompt
- Departmental exam
- Capstone experience (please describe): _____
- Other (please describe): _____

Has this tool been used before?

- Yes
- No

If yes, has this tool been altered since its last administration? If so, briefly describe changes made.

The exam was rewritten

IV. Please list the section(s) in which this tool was administered:

01 _____

V. How many students were assessed? 12-24

1/6/05

COURSE ASSESSMENT REPORT

Results

- I. Briefly describe assessment results based on data collected for the course assessed, demonstrating to what extent students are achieving the learning outcomes as found in the master syllabus (see attached).
Please attach any data collected.

Methods: (See attached spreadsheet). Each final exam question was categorized according to which outcome it assessed. Overall averages were determined for each objective. Overall averages of >30% for any outcome were examined (highlighted in red).

Results: As can be seen from the accompanying chart, there were ten questions which more than 30% of the class answered incorrectly. Most of the difficulty occurred in the outcomes areas: Motion Control (32% overall average wrong for this outcome) and Complex Systems (23% overall average wrong for this outcome. These two areas were taught at the end of the semester and it feels a little cramped trying to cover the material adequately. A better fit for the motion control material may be the Motors and Controls course. A better assessment tool for the Complex Systems would be a hands on approach. Next time the class is taught, we will try using a Task List for assessing this outcome.

- II. Based on the outcomes outlined in the master syllabus for the course assessed, did students meet expectations of the learning outcomes of that course?

- Yes
 No

Percentage of students meeting outcomes: If all objectives are averaged, the overall average %wrong was 20%, or in other words, the success rate was 80%. If all the questions for an objective were averaged, the average % wrong ranged from 19 to 32% (success rate ranged from 68% to 91%.

- III. What areas of strength and weakness in students' achievement of the learning outcomes of the assessed course (as stated in the master syllabus) did assessment results show?

Strengths: PLC communications, Analog I/O, and Process Control were about equally strong.

Weaknesses: Motion Control and Complex Systems

COURSE ASSESSMENT REPORT

Changes influenced by assessment results

I. If weaknesses were found (see III above) or students did not meet expectations, what action will be taken to address this?

Motion Control material will be taught in the Motors and Controls course next semester.

Complex Systems will be assessment using a Task List next time.

II. Identify any other intended changes that will be instituted based on results of this assessment activity (check all that apply). Please describe changes and give rationale for change.

Master syllabus

Description and rationale:

Curriculum

Description and rationale: _____

Course syllabus

Description and rationale: _____

Course assignments

Description and rationale: _____

Course materials (check all that apply)

Textbook:

Handouts

Other: _____

Teaching methodology

Description and rationale: _____

Other: _____

Description and rationale: _____

COURSE ASSESSMENT REPORT

Future plans

I. Was the assessment tool used effective in measuring student achievement of learning objectives for this course? If not, why?

Yes, it confirmed what I already suspected.

II. If the assessment tool was not effective, what changes will be made in future assessments?

The final exam can be improved by more evenly distributing the exam questions among the objectives (3 or 4 questions per objective.) and by adding a Task List

Submitted by:

Name: _____

Date: _____

Department Chair: _____

Date: _____

Dean: _____

Date: _____

Please return completed form to the Office of Curriculum & Assessment, SC 247.