Discipline	Course Number	Title
Computer Systems Technology	118	CST 118 11/24/2017- Microsoft Command Line Fundamentals
Division	Department	Faculty Preparer
Business and Computer Technologies	Computer Instruction	William Reichert
Date of Last Filed Assessment Report		

I. Assessment Results per Student Learning Outcome

Outcome 1: Identify various MS-DOS commands knowing each functionality, including syntax, error messsages, options, and the use of the editor and redirection in the use of multiple commands, etc.

- Assessment Plan

    o Assessment Tool: Departmental written exam

    o Assessment Date: Winter 2014

    o Course section(s)/other population: All course sections

    o Number students to be assessed: All students

    o How the assessment will be scored: Rubric: A written test will be given that addresses both the Outcomes and Objectives listed in the syllabus. The test will be divided into sections, each identified with an Outcome, and the questions in each section will address the objectives.

    o Standard of success to be used for this assessment: Average of all students taking the test should equal or exceed 70% correct answers for all questions used in the assessment test. 70% or greater of the number of students taking the test should equal or exceed the 70% mark for all the questions used in the assessment test. Outcome Success: average of all student scores for each particular Outcome's part of the test is equal to or exceeds 70%.

    o Who will score and analyze the data: All departmental instructors who teach sections of this course.

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)

		2017

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

# of students enrolled	# of students assessed
19	15

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.

Three students dropped the course mid-way through the term. One student took a new job, and did not complete the final exam on which this assessment was based at the same time as the other students. If he had been included, the results would have been even higher that those reported below, as his performance on all testing in the course was outstanding!!!

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.

There is only one section in the Spring-Summer semester, and all students taking that section were included except those four as outlined in the previous answer.

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

The process followed what was as listed as an assessment plan on the master syllabus with some variations. A written test was given that certainly addressed both the outcomes and objectives listed in the master syllabus. However, the test used was the actual final exam in the course which was not divided up into sections by outcome. Using this test resulted in one really good feature, and one feature that made the evaluation slightly more difficult.

The good feature: The two outcomes that are the most important ones in the course - the use of commands from the command line (actually the main purpose of the course), and the use of batch files (introductory programming and scripting which has now become essential in the maintenance of servers, networking equipment as well as in programming) have by far the most questions in this exam. Also, the batch file section had more questions since it did not have a separate exam earlier in the course and therefore more of it was covered on the final exam.

The feature that made evaluation more difficult: the questions that related to each outcome were not sectionalized into separate sections. While they were grouped somewhat together, it was necessary to go through the test and examine each

question, categorizing it into the outcome to which it belonged.
Actually, this had one additional benefit of making sure that all
outcomes/objectives were covered.

But, it had one additional disadvantage - there was no easy way to break down
each student's individual performance by outcome, as it would have meant setting
up a large spreadsheet, sectionalizing together all questions by outcome, then
going through each student test, pulling out the results one question at a time, and
placing it in the appropriate group. I considered doing this, but based on the
overall results and my analysis of them, I felt the assessment that was done was
more than adequate to reflect the performance of my students without this
considerable additional work.

However as you will see in the Analysis section, I added an additional analysis
based on outcomes. With this additional step, I took all questions missed by more
than 50% of the students, relating those to the specific outcomes to which they
apply, thereby giving me a real indication on where improvements need to be
made.

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: <u>Yes</u>

This outcome was one of the two most important - the use of commands from the
command line. The criteria for measurement for assessment were three - they are
listed below with the results.

Percentage grade of all students on the whole exam must be 70% or above.
Results: 50.2 correct answers/65 total questions = 77.2%

Percentage of students achieving 70% or above on the overall exam must be 70%
or above.
11 students of the 15 students taking test met the 70% goal. 11/15 = 73.3%

Percentage grade which students achieved for this outcome must exceed 70%
Results: 258 correct answers/315 total questions = 81.9%

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

With an 81.9% average, this outcome, which addresses the use of all basic
commands, is certainly a strength, particularly as this is one of the two most
important outcomes in this course. It is obvious that on the whole, most students

definitely have developed skills which should benefit them greatly, as, in many areas of computing, the use of the command line has become more and more important, especially with the importance of scripting in today's environment. What is surprising about this is that more than half of the students taking the course had actually never opened a command prompt.

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.

As I mentioned in the summary of the results, based on the success with outcomes, I was going to look at the individual questions (representing objectives within the outcome), that were missed by more than 50% of the class. Since there was only one of these, I will look at those missed by more than 34% of the class, which brings the total to three.

One question (only two people were correct) dealt with taking the output of one command, and sending it to another, looking for certain text in the first output. The main concept with this question, (it was one of the most difficult on the test), has to do with improving student's recognition of what the DIR command can show for output (only a listing), and how they find command filters within this (only text).

The other two questions were missed by 6 of the 15 people taking the test, and one of these areas is always an area where students can improve - the difference between internal and external commands. The other where improvement can be shown has to do with our imaging command, where to create an image, the disks must be identical.

Outcome 2: Distinguish folder and file system structures both physically and logically, and incorporate an understanding of PATH and its relationship to this structure.

- Assessment Plan
    - Assessment Tool: Departmental written exam
    - Assessment Date: Winter 2014
    - Course section(s)/other population: All course sections
    - Number students to be assessed: All students
    - How the assessment will be scored: Rubric: A written test will be given that addresses both the Outcomes and Objectives listed in the syllabus. The test will be divided into sections, each identified with an Outcome, and the questions in each section will address the objectives.

- Standard of success to be used for this assessment: Average of all students taking the test should equal or exceed 70% correct answers for all questions used in the assessment test. 70% or greater of the number of students taking the test should equal or exceed the 70% mark for all the questions used in the assessment test. Outcome Success: average of all student scores for each particular Outcome's part of the test is equal to or exceeds 70%.

- Who will score and analyze the data: All departmental instructors who teach sections of this course.

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)
		2017

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

# of students enrolled	# of students assessed
19	15

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.

Three students dropped the course mid-way through the term. One student took a new job, and did not complete the final exam on which this assessment was based at the same time as the other students. If he had been included, the results would have been even higher that those reported below as his performance on all testing in the course was outstanding!!!

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.

There is only one section in the Spring-Summer semester, and all students taking that section were included except those four as outlined in the previous answer.

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

The process followed what was as listed as an assessment plan on the master syllabus with some variations. A written test was given that certainly addressed both the outcomes and objectives listed in the master syllabus. However, the test used was the actual final exam in the course, which was not divided up into

sections by outcome. Using this test resulted in one really good feature, and one feature that made the evaluation slightly more difficult.

The good feature: The two outcomes that are the most important ones in the course - the use of commands from the command line (actually the main purpose of the course), and the use of batch files (introductory programming and scripting which has now become essential in the maintenance of servers, networking equipment as well as in programming) have by far the most questions in this exam. Also, the batch file section had more questions since it did not have a separate exam earlier in the course and therefore more of it was covered on the final exam.

The feature that made evaluation more difficult: the questions that related to each outcome were not sectionalized into separate sections. While they were grouped somewhat together, it was necessary to go through the test and examine each question, categorizing it into the outcome to which it belonged.
Actually, this had one additional benefit of making sure that all outcomes/objectives were covered.

But, it had one additional disadvantage - there was no easy way to breakdown each student's individual performance by outcome as it would have meant setting up a large spreadsheet, sectionalizing together all questions by outcome, then going through each student test, pulling out the results one question at a time, and placing it in the appropriate group. I considered doing this, but based on the overall results and my analysis of them, I felt the assessment that was done was more than adequate to reflect the performance of my students without this considerable additional work.

However as you will see in the Analysis section, I added an additional analysis based on outcomes. With this additional step, I took all questions missed by more than 50% of the students, relating those to the specific outcomes to which they apply, thereby giving me a real indication on where improvements need to be made.

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

Outcome #2 - File and folder structure. The criteria for measurement for assessment were three - they are listed below with the results.

Percentage grade of all students on the whole exam must be 70% or above.
Results: 50.2 correct answers /65 total questions = 77.2%

Percentage of students achieving 70% or above on the overall exam must be 70% or above.
11 students of the 15 students taking test met the 70% goal. 11/15 = 73.3%

Percentage grade which students achieved for this outcome must exceed 70%
Results: 57 correct answers/75 total questions = 76%

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

Strengths in understanding and creating file and folder structures and being able to move effectively around throughout complete file systems was certainly demonstrated by all students taking this exam, with the exception of the path command, explained below. While there were a limited amount of questions concerning this outcome, all the objectives were addressed.

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.

As I mentioned in the summary of the results, based on the success with outcomes, I was going to look at the individual questions (representing objectives within the outcome), that were missed by more than 50% of the class. There was only one question that fell into this category, and that was associated with understanding the environment path and the path command. Its purpose is to allow the operating system to look in other locations for executable files. In past assessments, this particular objective has also been written up as needing student improvement, and this will be addressed in the action plan.

Outcome 3: Define the various methods of implementing networking from the command line, including establishing the communication link through a redirector, attaching to network shares or devices and performing recovery over the network.

- Assessment Plan

    o   Assessment Tool: Departmental written exam

    o   Assessment Date: Winter 2014

    o   Course section(s)/other population: All course sections

- o Number students to be assessed: All students

- o How the assessment will be scored: Rubric: A written test will be given that addresses both the Outcomes and Objectives listed in the syllabus. The test will be divided into sections, each identified with an Outcome, and the questions in each section will address the objectives.

- o Standard of success to be used for this assessment: Average of all students taking the test should equal or exceed 70% correct answers for all questions used in the assessment test. 70% or greater of the number of students taking the test should equal or exceed the 70% mark for all the questions used in the assessment test. Outcome Success: average of all student scores for each particular Outcome's part of the test is equal to or exceeds 70%.

- o Who will score and analyze the data: All departmental instructors who teach sections of this course.

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)
		2017

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

# of students enrolled	# of students assessed
19	15

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.

Three students dropped the course mid-way through the term. One student took a new job, and did not complete the final exam on which this assessment was based at the same time as the other students. If he had been included, the results would have been even higher that those reported below as his performance on all testing in the course was outstanding!!!

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.

There is only one section in the Spring-Summer semester, and all students taking that section were included except those four as outlined in the previous answer.

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

The process followed what was as listed as an assessment plan on the master syllabus with some variations. A written test was given that certainly addressed both the outcomes and objectives listed in the master syllabus. However the test used was the actual final exam in the course which was not divided up into sections by outcome. Using this test resulted in one really good feature, and one feature that made the evaluation slightly more difficult.

The good feature: The two outcomes that are the most important ones in the course - the use of commands from the command line (actually the main purpose of the course), and the use of batch files (introductory programming and scripting which has now become essential in the maintenance of servers, networking equipment as well as in programming) have by far the most questions in this exam. Also the batch file section had more questions since it did not have a separate exam earlier in the course and therefore more of it was covered on the final exam.

The feature which made evaluation more difficult: the questions which related to each outcome were not sectionalized into separate sections. While they were grouped somewhat together, it was necessary to go through the test and examine each question, categorizing it into the outcome to which it belonged.
Actually this had one additional benefit of making sure that all outcomes/objectives were covered.
But it had one additional disadvantage - there was no easy way to break down each student's individual performance by outcome as it would have meant setting up a large spreadsheet, sectionalizing together all questions by outcome, then going through each student test, pulling out the results one question at a time, and placing it in the appropriate group. I considered doing this, but based on the overall results and my analysis of them, I felt the assessment which was done was more than adequate to reflect the performance of my students without this considerable additional work.

However as you will see in the Analysis section, I added an additional analysis based on outcomes. With this additional step, I took all questions missed by more than 50% of the students, relating those to the specific outcomes to which they apply, thereby giving me a real indication on where improvements need to be made.

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
Outcome #3 - Networking. The criteria for measurement for assessment were three - they are listed below with the results.

> Percentage grade of all students on the whole exam must be 70% or above.
> Results: 50.2 correct answers /65 total questions = 77.2%
>
> Percentage of students achieving 70% or above on the overall exam must be 70% or above.
> 11 students of the 15 taking test met the 70% goal. 11/15 = 73.3%
>
> Percentage grade which students achieved for this outcome must exceed 70%
> Results 65 correct answers/75 total questions = 86%

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

> This outcome had an overall average of 86% which was extremely high but indicated that all students have a good understanding of how to network from the command line including creating and accessing mapped drives to remote servers, printing to network attached printers, and the transparency of file systems over the network.

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.

> Student improvement in this area would result from expanding the use of network activities from the command line, such as introducing variables with batch files or PowerShell representing network addresses, network drives, and more.

Outcome 4: Use the DOS boot process, the necessary files, boot records, etc. to an extent necessary to create bootable removable devices for operating system recovery purposes.

- Assessment Plan

  o Assessment Tool: Departmental written exam

  o Assessment Date: Winter 2014

  o Course section(s)/other population: All course sections

  o Number students to be assessed: All students

  o How the assessment will be scored: Rubric: A written test will be given that addresses both the Outcomes and Objectives listed in the syllabus. The test will be divided into sections, each identified with an Outcome, and the questions in each section will address the objectives.

  o Standard of success to be used for this assessment: Average of all students taking the test should equal or exceed 70% correct answers for all questions used in the assessment test. 70% or greater of the number of students taking

the test should equal or exceed the 70% mark for all the questions used in the assessment test. Outcome Success: average of all student scores for each particular Outcome's part of the test is equal to or exceeds 70%.

- o Who will score and analyze the data: All departmental instructors who teach sections of this course.

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)
		2017

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

# of students enrolled	# of students assessed
19	15

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.

Three students dropped the course mid-way through the term. One student took a new job, and did not complete the final exam on which this assessment was based at the same time as the other students. If he had been included, the results would have been even higher that those reported below as his performance on all testing in the course was outstanding!!!

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.

There is only one section in the Spring-Summer semester, and all students taking that section were included except those four as outlined in the previous answer.

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

The process followed what was as listed as an assessment plan on the master syllabus with some variations. A written test was given that certainly addressed both the outcomes and objectives listed in the master syllabus. However the test used was the actual final exam in the course which was not divided up into sections by outcome. Using this test resulted in one really good feature, and one feature that made the evaluation slightly more difficult.

The good feature: The two outcomes that are the most important ones in the course - the use of commands from the command line (actually the main purpose

of the course), and the use of batch files (introductory programming and scripting which has now become essential in the maintenance of servers, networking equipment as well as in programming) have by far the most questions in this exam. Also the batch file section had more questions since it did not have a separate exam earlier in the course and therefore more of it was covered on the final exam.

The feature which made evaluation more difficult: the questions which related to each outcome were not sectionalized into separate sections. While they were grouped somewhat together, it was necessary to go through the test and examine each question, categorizing it into the outcome to which it belonged.
Actually, this had one additional benefit of making sure that all outcomes/objectives were covered.
But it had one additional disadvantage - there was no easy way to break down each student's individual performance by outcome as it would have meant setting up a large spreadsheet, sectionalizing together all questions by outcome, then going through each student test, pulling out the results one question at a time, and placing it in the appropriate group. I considered doing this, but based on the overall results and my analysis of them, I felt the assessment which was done was more than adequate to reflect the performance of my students without this considerable additional work.

However as you will see in the Analysis section, I added an additional analysis based on outcomes. With this additional step, I took all questions missed by more than 50% of the students, relating those to the specific outcomes to which they apply, thereby giving me a real indication on where improvements need to be made.

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
Outcome #4 Boot Files and Operating System Recovery. The criteria for measurement for assessment were three - they are listed below with the results. Percentage grade of all students on the whole exam must be 70% or above. Results: 50.2 correct answers /65 total questions = 77.2% Percentage of students achieving 70% or above on the overall exam must be 70% or above. 11 students of the 15 taking test met the 70% goal. 11/15 = 73.3% Percentage grade which students achieved for this outcome must exceed 70% Results 75 correct answers/105 total questions = 71.4%

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

> This outcome had the lowest percentage (71.4%) however, it did show that most students do have a basic understanding of the BOOT process with the DOS operating system, which in itself is not really relevant. However the "process" is still similar in most respects to our present day operating systems with similar configuration files - the names are different, the locations are different, but the same activities and results, etc. for both the computer and user must still be established and completed. By understanding the "process" the students will be able to translate to the same activities with the newer operating systems.

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.

> While there were no objective questions that 50% of the students missed, there were two that more than 34% of the students missed, and improvement is needed in these areas:
>
> One area was the method of locating files which may be missing, and which keep the operating system from booting up. Error messages may list the file; the process that the student uses to locate the missing file was not completely understood by a number of the students.
>
> Also, making a bootable disk without losing the data on that disk is definitely an important asset for a technician. A number of the students did not recognize the command which allows this process to complete. It should be noted again, that the command used in DOS is not the same as the one used in Windows, but the process of using the command from the command line is exactly the same and understanding this process is the really important part for the student.

Outcome 5: Identify the various commands and techniques used to create batch files, including evaluation of the batch file process to determine outcomes based on the structure and path through the file.

- Assessment Plan
    - Assessment Tool: Departmental written exam
    - Assessment Date: Winter 2014
    - Course section(s)/other population: All course sections
    - Number students to be assessed: All students

- How the assessment will be scored: Rubric: A written test will be given that addresses both the Outcomes and Objectives listed in the syllabus. The test will be divided into sections, each identified with an Outcome, and the questions in each section will address the objectives.

- Standard of success to be used for this assessment: Average of all students taking the test should equal or exceed 70% correct answers for all questions used in the assessment test. 70% or greater of the number of students taking the test should equal or exceed the 70% mark for all the questions used in the assessment test. Outcome Success: Average of all student scores for each particular Outcome's part of the test is equal to or exceeds 70%

- Who will score and analyze the data: All departmental instructors who teach sections of this course.

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)
		2017

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

# of students enrolled	# of students assessed
19	15

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.

Three students dropped the course mid-way through the term. One student took a new job, and did not complete the final exam on which this assessment was based at the same time as the other students. If he had been included, the results would have been even higher that those reported below as his performance on all testing in the course was outstanding!!!

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.

There is only one section in the Spring-Summer semester, and all students taking that section were included except those four as outlined in the previous answer.

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

The process followed what was as listed as an assessment plan on the master syllabus with some variations. A written test was given that certainly addressed both the outcomes and objectives listed in the master syllabus. However the test used was the actual final exam in the course which was not divided up into sections by outcome. Using this test resulted in one really good feature, and one feature that made the evaluation slightly more difficult.

The good feature: The two outcomes that are the most important ones in the course - the use of commands from the command line (actually the main purpose of the course), and the use of batch files (introductory programming and scripting which has now become essential in the maintenance of servers, networking equipment as well as in programming) have by far the most questions in this exam. Also, the batch file section had more questions since it did not have a separate exam earlier in the course and therefore more of it was covered on the final exam.

The feature which made evaluation more difficult: the questions which related to each outcome were not sectionalized into separate sections. While they were grouped somewhat together, it was necessary to go through the test and examine each question, categorizing it into the outcome to which it belonged.
Actually this had one additional benefit of making sure that all outcomes/objectives were covered.
But it had one additional disadvantage - there was no easy way to break down each student's individual performance by outcome as it would have meant setting up a large spreadsheet, sectionalizing together all questions by outcome, then going through each student test, pulling out the results one question at a time, and placing it in the appropriate group. I considered doing this, but based on the overall results and my analysis of them, I felt the assessment which was done was more than adequate to reflect the performance of my students without this considerable additional work.

However as you will see in the Analysis section, I added an additional analysis based on outcomes. With this additional step, I took all questions missed by more than 50% of the students, relating those to the specific outcomes to which they apply, thereby giving me a real indication on where improvements need to be made.

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
Outcome #5 Batch Files. The criteria for measurement for assessment were three - they are listed below with the results.

Percentage grade of all students on the whole exam must be 70% or above.
Results: 50.2 correct answers/65 total questions = 77.2%

Percentage of students achieving 70% or above on the overall exam must be 70% or above.
11 students of the 15 taking test met the 70% goal. 11/15 = 73.3%

Percentage grade which students achieved for this outcome must exceed 70%
Results 298 correct answers/405 total questions = 73.5%

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

The strengths in this area are the knowledge of the special commands that are used in batch files and understanding how they are used. Surprisingly, while still an area that needs improvement, the last part of the test involved the interpretation of the outcome of various batch files based on conditions presented in the questions. Actually, I was surprised on how well a majority of the students did in this area as it requires careful reading, interpretation and understanding of different paths that can be taken within the batch file itself.

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.

Once again, since the outcome standard was met, I will look at specific questions which represent the objectives in this outcome where student improvement could be noted. These are the questions that more than 50% of the students missed.

1. The use of the ECHO command in the batch file. Actually in other questions referencing the use of this command either by itself or in the analysis of batch files, students certainly did understand its use. This particular question gave an output as well as the command which may have caused confusion since other possible answers did not have output.

2. The knowledge that the CHOICE command is an external command, not internal. Therefore, the path to it should be included within the batch file itself as with any external command used to insure that it can be found.

The last three below involve analysis of a batch file output when certain conditions are specified in the question as mentioned above in the student success portion.

During the analysis of conditions used with the "IF" statements in the batch file, anything following the double equal sign must match EXACTLY, including

case. Two questions involving this type of analysis were missed by more than 50% of the students and therefore is definitely an area for improvement.

During the use of the CHOICE command within the batch file, choosing a choice other than one of the selections specified as options will result in a "beep", forcing the user to make a correct choice before the batch file continue to process. A majority of students chose the selection that the batch file would be exited.

Note that of the four questions, two involved the "IF" statement, and two involved the "CHOICE" command, so these are two objectives - the understanding of how these important batch file commands work - definitely need improvement.

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?

With the increased importance of both the command line and scripting (such as PowerShell) in virtually all phases of network and server administration, I feel this course definitely meets the needs of students entering the IT field, particularly since over half of the students enrolled in this course have never even opened a command prompt and certainly all but a very few have ever written a batch file which introduces them to elementary programming.

I have noticed in the networking course which generally follows this, where the command line is important for network monitoring and configuration (using such commands as PING, TRACERT, NETSTAT and IPCONFIG), students that have had the command line course first are by far more comfortable using it and are able to interrupt and understand the output from the commands in a more effective manner.

Subsequent courses such as Cisco (using the command prompt for router configuration), and the Windows Server courses (using PowerShell from the prompt to perform activities that can no longer be done graphically as well as performing network administration from the prompt using NET SH, etc.), require students to at least have learned and be able to apply the basic fundamentals. The advanced PowerShell course as mentioned below requires elementary programming skills which batch files give an introduction to, but does not give total preparation and an introductory programming course should follow.

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

The information was recently shared and will be continually shared within our department meetings held regularly every month. The main PowerShell instructor has emphasized over and over how important two things are for his course - the use of the command prompt and the importance of having introductory programming skills and understanding. The action plan will be discussed in this meeting with emphasis particularly on the batch file improvements, as this is the first introduction to many students that involves any sort of programming techniques. However, incorporation of our basic programming course back into our curriculum along with the command line course has been and will be discussed further.

3.
Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
Assessment Tool	I feel the final test is a better tool for assessment than the previous "special" tests written specifically for the assessment - the reasons are detailed below under "rationale". However, I plan on reordered the test such that the questions are grouped by outcome, rather than have them scattered and mixed throughout the test. Again the reasons for this are listed under rationale below.	The final test is a better assessment tool as it "weights" (by number of questions) the parts of the course that are the most important and which we spend the most time on - the knowledge and use of the actual commands themselves, plus the ability to create and run effective batch file executables. The older specific tests that I used for assessment had an equal amount of questions for each outcome which gave equal weight to outcomes that	2018

		were covered in a week or a week and a half with those that covered 3 to 4 weeks. Therefore the assessments did not really reflect totally the important skills learned. Secondly, the final test will be reordered with the questions grouped by outcome. This will make assessment much easier and more accurate and will give the ability once again to easily determine the percentage of students achieving 70% correct answers by outcome, rather than just the test total.	
Objectives	Increase the time spent on explaining and demonstrating the "PATH" environment variable. Better differentiate internal and external commands through visual aids. Provide more examples of redirection to the "FIND" command	Weakness was noted in student performance in all the areas covered in the above changes. Better understanding of the PATH, internal/external commands, FIND, CHOICE, IF, and ECHO commands will improve the students' performance, not	2018

	emphasizing FIND's output. Expand the network section of the course to include additional exercises with remote devices. Demonstrate the use of the "SYS" command in bootable disk creation and the use of the "DIR" command in searching for missing files which keep the system from booting. Emphasize with additional examples the use of the "CHOICE" command for interactive output in batch files. Provide better explanations of the double equal sign with the "IF" Conditional statement in batch files. Review in each batch file lecture the use of and importance of all the different ways of using the "ECHO" command.	only in the exams and assessments for this course, but improve their performance in the additional courses that follow which use similar concepts.	

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

5.

III. Attached Files

[Grading Sheet](#)
[Correct Answers by Outcome](#)
[Scantron Summary](#)
[Final Examp](#)

Faculty/Preparer:	William Reichert	**Date:** 11/25/2017
Department Chair:	Philip Geyer	**Date:** 01/02/2018
Dean:	Eva Samulski	**Date:** 01/05/2018
Assessment Committee Chair:	Michelle Garey	**Date:** 02/26/2018

COURSE ASSESSMENT REPORT

I. Background Information

1. Course assessed:

    Course Discipline Code and Number: CST118
    Course Title: Command Line Fundamentals
    Division/Department Codes: BCT/CISD

2. Semester assessment was conducted (check one):

    ☐ Fall 20__
    ☒ Winter 2011
    ☐ Spring/Summer 20__

3. Assessment tool(s) used: check all that apply.

    ☐ Portfolio
    ☐ Standardized test
    ☐ Other external certification/licensure exam (specify):
    ☐ Survey
    ☐ Prompt
    ☒ Departmental exam
    ☐ Capstone experience (specify):
    ☐ Other (specify):

4. Have these tools been used before?

    ☒ Yes
    ☐ No

    If yes, have the tools been altered since its last administration? If so, briefly describe changes made.

The assessment test (as well as the course itself) has been altered in the last three years to incorporate the use of networking commands, initiating network connections and connecting to remote file shares and printers from the command line. These changes reflect what is actually occurring in network administration with the introduction of the Windows PE environment which is a command line version of Windows for remote installations. We actually have a new server addition to Microsoft's server line, called Server Core, which is all command line based, and which we use to do considerable configuration in the advanced Windows courses. The commands used in this basic command line course are still the most used ones with these newer versions of Windows and, with the addition of the networking components, make the course reflect today's IT environment.

5. Indicate the number of students assessed/total number of students enrolled in the course.
    33 students were enrolled at the time of the assessment in two separate sections, and all 33 took the assessment test. One student's results could not be used – he did not finish the back page of the test.

6. Describe how students were selected for the assessment.
    No selection process was used – all enrolled students took the assessment test.

II. Results

1. Briefly describe the changes that were implemented in the course as a result of the previous assessment.

    There were basically two main changes implemented.
    Concerning output redirection, I improved the method with which I contrast the different types of redirection (between Files/Devices and between Commands) with better examples of each. In particular, I broke down the more complex problems demonstrating multiple redirection into simpler segments, by defining the _order_ of the redirection, with files/devices being at the start or end of a complex example, and command redirection being operations in the center.

    Concerning the executable PATH environmental variable - I addressed this with graphical representations on the board by actually turning the operating system into a "person" looking in different places for certain things, and choosing the places to look based on the "type" of thing being looked for.

COURSE ASSESSMENT REPORT

2.   List each outcome that was assessed for this report exactly as it is stated on the course master syllabus.

Outcome #1: Identify various MS-DOS commands knowing each functionality, including syntax, error messages, options, and the use of the editor and redirection in the use of multiple commands, etc.

Outcome #2: Distinguish folder and file system structures both physically and logically, and incorporate an understanding of PATH and its relationship to this structure.

Outcome #3: Define the various methods of implementing networking from the command line, including establishing the communication link through a redirector, attaching to network shares or devices, and performing recovery over the network.

Outcome #4: Use the DOS boot process, the necessary files, and boot records, etc. to an extent necessary to create bootable removable devices for operating system recovery purposes.

Outcome #5: Identify the various commands and techniques used to create batch files, including evaluation of the batch file process to determine outcomes based on the structure and path through the file.

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3.   Briefly describe assessment results based on data collected during the course assessment, demonstrating the extent to which students are achieving each of the learning outcomes listed above. ***Please attach a summary of the data collected.***

Overall Results: Average Score: **27.4 out of 33 questions for an 83% average** *This meets and exceeds my expectation of having a 70% overall average for the class.*   The testing results included every student in the class from the best all the way to the worst and therefore is very representative. As far as the test results go, the same students that did poorly on the course tests also did poorly on the assessment test as well. This high an average reflects a fairly high level of comprehension and retention by the students. Also, the students were given an extra five points on their semester total for just taking the assessment test which was the only effect this test had on their grade, so they had little *personal* incentive to try really hard. Also they were told NOT to study for this test as the purpose of it was to give an indication of retention for the overall course.

Some other points to be noted which actually would have resulted in an even higher average.

-    The one exam which I could not use due to the last page of questions being skipped, actually would most likely have raised the average, based on the responses for the 80% of the questions that were answered.
-    One of the two most missed questions *__had no right answer because of a typographical error (this will be discussed below).__* If it had been entered correctly, it probably would have been one of the least missed questions, as it certainly was one of the easiest. The only thing that bothers me about it is that nobody brought to my attention that there was no right answer!!!

One area I was particularly pleased with was the 5th outcome having to do with batch files. This section was covered the last three weeks, was rather extensive in nature, and was only tested on the final exam, so the student preparation would have been less than the other outcomes which were covered and tested more thoroughly earlier in the course.

Also, note that 28 of the 32 students taking the test achieved 70% or better. This 87.5% mark also exceeds the goal of having 70% of the students make a 70% grade or better on the test.

Attached are the results, and a breakdown by outcome is shown below in the next section.

Approved by the Assessment Committee 11/08

COURSE ASSESSMENT REPORT

4. For each outcome assessed, indicate the standard of success used, and the percentage of students who achieved that level of success. *Please attach the rubric/scoring guide used for the assessment.*

Breakdown by Outcome:

Outcome #1: Question 1 through 7 represented Outcome #1: Total Questions 7

187 correct answers out of 224 answers for an **83.4% average.** This was above the expected 70% average for the students achieving this outcome. 27 of the 32 students met or exceeded the 70% mark for this outcome.

Outcome #2: Question 9 through 14 represented Outcome #2: Total Questions 6

Note: This is the Outcome which included the question (question 8) with no right answers. Therefore I am not including this question in the results below, although it was included in the Overall Result Summary listed above. (Actually, even WITH it included, the overall percentage from this outcome was still above 70% - 72%

153 correct answers out of a possible 192 answers for a **79.6% average**. This was above the expected 70% average for students achieving this outcome.   22 of the 32 students met or exceeded the 70% mark for this outcome.

Outcome #3 Question 15 through 19 represented Outcome #3: Total Questions 5

137 correct answers out of a possible 160 answers for an **85% average**. This was above the expected 70% average for students achieving this outcome. 25 of the 32 students met or exceeded the 70% mark for this outcome.

Outcome #4 Questions 20 through 26 represented Outcome #4: Total Questions 7

195 correct answers out of a possible 224 answers for an **87% average.** This was above the expected 70% average for students achieving this outcome. 28 of the 32 students met or exceeded the 70% mark for this outcome.

Outcome #5 Questions 27 through 33 represent Outcome #5: Total Questions 7

196 correct answers out of a possible 224 answers for an **87.5% average**. This was above the expected 70% average for students achieving this outcome. 27 of the 32 students met or exceeded the 70% mark for this outcome..

5. Describe the areas of strength and weakness in students' achievement of the learning outcomes shown in assessment results.

Strengths: In all areas/outcomes, our expectation of at least a 70% average was exceeded. In only one cast, Outcome #2, while having an overall test average of 79.6%, did the percentage of students exceeding 70% fall below 70%, (result was 22/32 = 68.75%). This outcome will be discussed below, as it had the most missed question – again dealing with executable paths, which was a problem in the last assessment for this course as well.   Two large strengths were in the results for batch file question/results (explained above in the overall analysis), and in output redirection which had been a problem in the last assessment. There was significant improvement in the student understanding of this concept, such that the results met all expectations.

Weaknesses:

Outcome #2 – Objective dealing with the Environmental Variable "Path" used for searching for executable files:

While the overall percentage for this outcome (**79.6%**), certainly was successful, it was our lowest percentage and the reason largely lies with one objective that was part of this outcome, the PATH Environmental Variable for executable commands, in which only 10 of 32 people answered the question (Question 11) correctly. *This was the ONLY question which did not meet the 50% goal expressed in our attached rubric for objective success*. In the previous assessment, the PATH concept was also the biggest problem, and what I did to address it was described above. Obviously, this was not enough. While this concept is one of the three most difficult concepts to grasp throughout the course – it certainly isn't "unteachable", and below are described the changes which will be put into effect based on these assessment results.

III. Changes influenced by assessment results

1. If weaknesses were found (see above) or students did not meet expectations, describe the action that will be taken to address these weaknesses.

   Outcome #2 – The PATH Environment Variable.

   While simplifying the explanation on the board with drawings seemed at the time to be sufficient, obviously it was not, so I plan to expand on this in three ways:

   a. Not only use the simplified explanation described above of using a "person" to represent the operating system on the classroom board, but also create a graphic which can be handed out to the students describing this process.

   b. Increase the amount of time explaining the PATH statement. Actually, presently, this comes at the END of a really long lecture, and by the time the concept is addressed, most of the students are long ready to start on their lab projects. By separating it out, and moving it to the FRONT of the lecture, the students will be "fresher" which should help their understanding of this complex concept.

   c. Alter the lab project concerning this concept which, while addressed in two sections, is only emphasized with one of the two. I will, the next time the lab book is revised, expand the second section significantly which should give the students extra practical experience configuring the PATH.

2. Identify 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.
   a. ☐ Outcomes/Assessments on the Master Syllabus
      Change/rationale:

   b. ☐ Objectives/Evaluation on the Master Syllabus
      Change/rationale:

   c. ☐ Course pre-requisites on the Master Syllabus
      Change/rationale:

   d. ☐ 1st Day Handouts
      Change/rationale:

   e. ☒ Course assignments

Change/rationale: Additional exercises in the lab projects concerning the use of the executable PATH statement.

f. ☒ Course materials (check all that apply)
    ☐ Textbook
    ☒ Handouts
    ☐ Other: Lab Projects

g. ☒ Instructional methods
    Change/rationale: Lecture handouts will reflect the changes listed in Section 1 above, as will my lectures.

h. ☒ Individual lessons & activities
    Change/rationale: Lab projects will also reflect the changes listed in Section 1 above.

3. What is the timeline for implementing these actions?

Fall semester of 2011.

IV. Future plans

1. Describe the extent to which the assessment tools used were effective in measuring student achievement of learning outcomes for this course.

I feel my assessment tool, and method of applying it, was very effective in measuring whether the students had grasped and retained what I believe are the key concepts of the course expressed in my course outcomes. In particular, the instructions I gave to NOT study for the assessment, and that taking the test would only affect their grade positively, whether or not they did well on it, gave me an excellent indication of how much they had actually learned. Again, they had no reason to personally care about the results of this test, yet overall they did outstanding and certainly exceeded my expectations. **None of the students "rushed through" this assessment test – they all took as much time with it as they took on their actual final exam, giving me the indication that they did care and what they had answered is actually what they had _retained_ from the course.** Since the test was designed and written around the concepts expressed in the course outcomes, I feel that using this type of assessment tool was successful.

2. If the assessment tools were not effective, describe the changes that will be made for future assessments.
Not Applicable

3. Which outcomes from the master syllabus have been addressed in this report?
    All ___XXXXXX   Selected _____

If "All", provide the report date for the next full review: Every three years, which would be Winter, 2014.

If "Selected", provide the report date for remaining outcomes: _____.

Submitted by:

Print: William Reichert Signature William Reichert Date: 5/6/2011
Faculty/Preparer

Print: Tom Hasselbach Signature Glen Hamilton Date: 5/9/2011
Department Chair

Print: Rosemary Wilson Signature Rosemary Wilson Date: 5/31/11
Dean/Administrator

COURSE ASSESSMENT REPORT

I. Background Information
1. Course assessed:
   Course Discipline Code and Number: CST118
   Course Title: Command Line Fundamental
   Division/Department Codes: 14300

2. Semester assessment was conducted (check one):
   ☐ Fall 20__
   ☒ Winter 2008
   ☐ Spring/Summer 20__

3. Assessment tool(s) used: check all that apply.
   ☐ Portfolio
   ☐ Standardized test
   ☐ Other external certification/licensure exam (specify):
   ☐ Survey
   ☐ Prompt
   ☒ Departmental exam
   ☐ Capstone experience (specify):
   ☐ Other (specify):

4. Have these tools been used before?
   ☐ Yes
   ☒ No

   If yes, have the tools been altered since its last administration? If so, briefly describe changes made.

5. Indicate the number of students assessed/total number of students enrolled in the course.
   20 enrolled, 19 Tested

6. Describe how students were selected for the assessment.
   All students taking the final exam took the separate assessment exam as well.

II. Results
1. Briefly describe the changes that were implemented in the course as a result of the previous assessment.
   This is the first assessment done on this course using the departmental exam.

2. State each outcome (verbatim) from the master syllabus for the course that was assessed.

   Outcome # 1. Identify various MS-DOS commands knowing each functionality, including syntax, error messages, options, and the use of the editor and redirection in the use of multiple commands, etc.

   Outcome #2. Distinguish folder and file system structures both physically and logically, and incorporate an understanding of PATH and its relationship to this structure.

   Outcome #3. Define the various methods of implementing networking from the command line, including establishing the communication link through a redirector, attaching to network shares or devices, and performing recovery over the network.

   Outcome #4. Demonstrate an understanding of the DOS boot process, the necessary files, boot records, etc. to an extent necessary to create bootable removable devices for operating system recovery purposes.

   Outcome #5. Identify the various Commands and techniques used to create batch files, including evaluation of the batch file process to determine outcomes based on the structure and path through the file.

COURSE ASSESSMENT REPORT

3. Briefly describe assessment results based on data collected during the course assessment, demonstrating the extent to which students are achieving each of the learning outcomes listed above. *Please attach a summary of the data collected.*

Overall Results: Average Score 29 out of 33 questions for a 90.3 % Average. This meets and exceeds my expectation of having a 75% overall average for the class.

Obviously, I am extremely pleased with these results. The students were getting four additional points added to their overall total for the class just to take the assessment test, no matter what score each of them obtained. Therefore, they had no incentive to do well on the test, outside of my urging them to try their best, since the results would be reflected in improvements to the course. Actually, I told them NOT to study for it, as the test addressed the key concepts, which I hoped they would retain without special memorization, etc.
This course is a beginning course, in the CST series, and normally class averages on the tests (from previous sections of the class) range in the mid-70 percentile.

However, this class had a test average that actually was approximately 10% higher on all the tests than "normal" (past history of class averages), so I was not surprised that they did well on the Assessment test. However, I did not expect them to do THAT well, particularly in the 5th outcome having to do with Batch Files. This section was covered the last three weeks, was rather extensive in nature, and was only tested on the final exam, so the student preparation would have been less than the other outcomes which were covered and tested more thoroughly earlier in the course.

4. For each outcome assessed, indicate the standard of success used, and the percentage of students who achieved that level of success. *Please attach the rubric/scoring guide used for the assessment.*

The standard of success used was a percentage of 75% correct answers for each of the outcomes. In all five outcomes, this was achieved, with an overall average as pointed out above, of over 90%.

Looking at success rate by student population, 17 of the 19 students scored higher than 75% with one student scoring just below the 75% mark (72.7) and one scoring 57.5. This means that 17 of 19 – 89% of the students scored over the 75% mark, most obviously scoring considerably higher than that.

Also, as shown in the attached rubric, any question missed by more than 50% of the class is investigated, both from the viewpoint of the question itself as well as the content from which the question was derived. No questions were missed by more than 50% of the class, however, one or two questions were missed by more than 25% of the class and these are addressed further on. Below is a complete breakdown by outcome.

Breakdown by Outcome:

Outcome #1

Questions 1 through 7 represented outcome #1. Total questions: 7
126 correct answers out of 133 questions for a **94.7% Average.** This is considerably above my expectations of a 75% average for the students achieving this outcome.
Questions not achieving a 50% success rate: None

Outcome #2

Questions 8 through 14 represented outcome #2. Total questions: 7
118 correct answers out of 133 questions for an **88.7% Average.** This is considerably above my expectations of a 75% average for the students achieving this outcome.
Questions not achieving a 50% success rate: None

COURSE ASSESSMENT REPORT

Outcome #3

Questions 15 through 20 (No question 17) represented Outcome #3. Total questions: 5
85 correct answers out of 95 questions for an **89.4% Average.** This is considerably above my expectations of a 75%
average for the students achieving this outcome.
Questions not achieving a 50% success rate: None.

Outcome #4

Questions 21 through 27 represented outcome #4. Total questions: 7
120 correct answers out of 133 questions for a **90.2% Average.** This is considerably above my expectations of a
75% average for the students achieving this outcome.
Questions not achieving a 50% success rate: None.

Outcome #5

Questions 28 through 34 represented outcome #5. Total questions: 7
119 correct answers out of 133 questions for an **89.4%** Average. This is considerably above my expectation of a
75% average for the students achieving this outcome.
Questions not achieving a 50% success rate: None

5. Describe the areas of strength and weakness in students' achievement of the learning outcomes shown in
   assessment results.
   Strengths:
   Students were actually very strong in all areas – Command Knowledge and Interpretation, use of the
   Editor, File System Structure, Networking Concepts, DOS Boot Process, Bootable Devices, and Batch File
   Implementation and Concepts.

   Weaknesses:
   Based on the two questions that were missed by more than 25% of the class, one of these questions
   addressed the concept associated with Redirection. Students had problems, in particular, identifying the
   differences with redirection between the output and input of files and/or devices, which uses a certain set of
   symbols, and redirection from the output of one command to the input of another command which uses a
   different symbol. Generally, the students throughout the term did not have a problem with this concept,
   however, with the most missed question, (7 out of 19 people for 37% missed rate), PATH for executable
   commands is one of three most difficult concepts to grasp throughout the course – I was not surprised that a
   question addressing this concept was one of the most misunderstood questions.

III. Changes influenced by assessment results

1. If weaknesses were found (see above) or students did not meet expectations, describe the action that will be
   taken to address these weaknesses.

   Outcome #1 – Redirection – I am going to improve the method with which I contrast the different types of
   redirection (between Files/Devices and between Commands) with better examples of each. In particular, I am
   going to breakdown the more complex problems demonstrating multiple redirections into simpler segments, and
   defining the _**Order**_ of the redirection with files/devices being at the start or end of a complex example, and
   command redirection being operations in the center. I have not taken this approach previously, and it should
   help differentiate the two types.

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Approved by the Assessment Committee 10/10/06

COURSE ASSESSMENT REPORT

Outcome #2 – PATH - I have addressed this concept in multiple different ways in the past, however without graphical representations of this. I intend now to produce a graphic which will actually turn the operating system into a "person" looking in different places for certain things and choosing the places to look based on the "type" of thing being looked for.

2. Identify 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.

   a. ☐ Outcomes/Assessments on the Master Syllabus
      Change/rationale:

   b. ☐ Objectives/Evaluation on the Master Syllabus
      Change/rationale:

   c. ☐ Course pre-requisites on the Master Syllabus
      Change/rationale:

   d. ☐ 1st Day Handouts
      Change/rationale:

   e. ☐ Course assignments
      Change/rationale:

   f. ☒ Course materials (check all that apply)
      ☐ Textbook
      ☐ Handouts
      ☒ Other: Lecture notes, which are given to the students, will be modified with the changes outlined in the previous section.

   g. ☒ Instructional methods
      Change/rationale: Better demonstration of the concepts associated with redirection and path will be modified and outlined in the previous section.

   h. ☐ Individual lessons & activities
      Change/rationale:

   i. ☒ Review of the most missed questions (less than 50% of the class had the correct answer.

Since we didn't have any questions that more than 50% of the class missed, I will address the two questions that more than 25% of the class missed.

Question 3: "Redirection" - The question is very well written and straightforward – it addresses the concept directly. As mentioned in the Weaknesses above, I will need to contrast the differences between the different types of redirection better in both my lecture notes and in my demonstrations during lecture.

Question 11: "PATH": Actually, the question itself has a problem that I did not realize until doing this assessment. While the concept definitely needs the changes described in the section on Weaknesses (better demonstration of an improved example of its use), the question itself actually leaves out the "present working directory". This is the first place the operating system looks for an executable, which is emphasized in class. While the correct answer addresses the rest of the places that the operating system uses (and the wrong answers are definitely wrong), leaving out the "present working directory" may have confused some of the students. I am going to alter the question to include this point.

3. What is the timeline for implementing these actions?

Changes for the lectures and demonstrations will be done during the preparation for my lectures in the next semester. The changes to Question 11 will be done immediately.

IV. Future plans
1. Describe the extent to which the assessment tools used were effective in measuring student achievement of learning outcomes for this course.

My assessment tool and method of applying it were effective in measuring whether the students had grasped and retained what I believe are the key concepts of the course expressed in my course outcomes. In particular, the instructions I gave to not study specifically for the assessment, and that taking the test would only affect their grade positively, whether or not they did well on it, gave me and excellent indication of how much they had learned. Again, they had no reason to personally care about the results of this test, yet on the whole, they did exceptionally well and far, far exceeded my expectations. **None of the students "rushed through" this assessment test – they all took as much time with it as they took on their actual final exam, giving me the indication that they did care and what they had answered is actually what they had** _retained_ **from the course.** Since the test was designed and written around the concepts expressed in the course outcomes, I feel that it was this tool was a total success.

2. If the assessment tools were not effective, describe the changes that will be made for future assessments.

3. Which outcomes from the master syllabus have been addressed in this report?
    X All of the outcomes have been addressed   Selected _____

If "All", provide the report date for the next full review:

Every three years, which would be the Fall of 2011 – I would like to do these more often, however due to the extremely complex curriculum and assessment process used at this school, and the number of courses that have to processed; it is an impossibility to do it at any greater frequency.

If "Selected", provide the report date for remaining outcomes: _____.

Submitted by:

Name: _____ Date: 6\2\2008
Print/Signature GARY DOWHEN

Department Chair: _____ Date: 6/9/08
Print/Signature

Dean: _____ Date: 10/8/08
Print/Signature

logged 10/7/08
Please return completed form to the Office of Curriculum & Assessment, SC 247.   **5**
Approved by the Assessment Committee 10/10/06