

**Course Assessment Report**  
**Washtenaw Community College**

Discipline	Course Number	Title
Computer Systems Technology	165	CST 165 06/20/2017-Computer Technology II
Division	Department	Faculty Preparer
Business and Computer Technologies	Computer Instruction	James Lewis
Date of Last Filed Assessment Report		

**I. Assessment Results per Student Learning Outcome**

Outcome 1: Identify and describe the physical and functional characteristics of the hardware components of a typical server computer system.

- Assessment Plan
  - Assessment Tool: A multiple-choice departmental final exam.
  - Assessment Date: Winter 2016
  - Course section(s)/other population: All
  - Number students to be assessed: All
  - How the assessment will be scored: Answer Key
  - Standard of success to be used for this assessment: At least 70% of the students will score 70% or better.
  - Who will score and analyze the data: Blackboard will score the test, and departmental faculty will 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)
	2017	

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

# of students enrolled	# of students assessed
34	33

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.

One student was absent during the second phase of assessment for SLO1.

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 F2F.

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

Students performed a physical assessment of computer hardware and performed POST (Power On Self Test) initialization exercises. They answered test questions pertaining to both.

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  
98.5% of the students were successful.

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

Strength in student achievement for this outcome is demonstrated by student ability to do hands-on inspection and identify functional components of a network server.

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 achievement for this SLO could be improved by acquiring upgraded equipment. This is expected to be accomplished within the next calendar year.

Outcome 2: Troubleshoot and repair client and server computer systems.

- Assessment Plan

- Assessment Tool: A skills-based assessment test
- Assessment Date: Winter 2016
- Course section(s)/other population: All
- Number students to be assessed: All
- How the assessment will be scored: A departmental task list will be used.
- Standard of success to be used for this assessment: At least 70% of the students will score 70% or better on the completion of tasks.
- Who will score and analyze the data: Departmental faculty

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

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2017	

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

# of students enrolled	# of students assessed
34	34

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 enrolled students were assessed.

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.

Both sections of this courses were F2F.

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

Final exam questions 29 and 39 were pass/fail; exercise 20 part IV was a hands-on exercise for troubleshooting client/server environments.

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 was met as demonstrated by the majority of the students demonstrating skill in configuring and troubleshooting client server relationships. 88% of the students were successful.

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

Student demonstration of hands-on troubleshooting ability reveals acceptable skill level for this objective.

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.

Improvement can be obtained by increased exposure to troubleshooting opportunities with a variety of equipment. This is expected to be addressed within the next calendar year.

Outcome 2: Troubleshoot and repair client and server computer systems.

- Assessment Plan
  - Assessment Tool: A multiple-choice departmental final exam.
  - Assessment Date: Winter 2016
  - Course section(s)/other population: All
  - Number students to be assessed: All
  - How the assessment will be scored: Answer Key
  - Standard of success to be used for this assessment: At least 70% of the students will score 70% or better.
  - Who will score and analyze the data: Blackboard will score the test, and departmental faculty will 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)
	2017	

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

# of students enrolled	# of students assessed
34	34

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 were assessed.

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 sections of this course are F2F.

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

Students answered final exam multiple choice questions 29 and 39.

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

88% of students answered both questions successfully.

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

Student demonstration of hands-on troubleshooting ability reveals acceptable skill level for this objective.

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.

Improvement can be obtained by increased exposure to troubleshooting opportunities with a variety of equipment. This is expected to be addressed within the next calendar year.

### Outcome 3: Deploy Microsoft Windows clients.

- Assessment Plan
  - Assessment Tool: A skills-based assessment lab activity

- Assessment Date: Winter 2016
- Course section(s)/other population: All
- Number students to be assessed: All
- How the assessment will be scored: A departmental task list will be used.
- Standard of success to be used for this assessment: At least 70% of the students will score 70% or better on the completion of tasks.
- Who will score and analyze the data: Departmental faculty

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

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2017	

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

# of students enrolled	# of students assessed
34	34

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 enrolled students were assessed.

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.

Both sections of this course were F2F.

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

Course exercises 3B, 4A and 4B were used with a pass/fail criteria. These exercises required the students to configure Windows client systems and demonstrate a client / server relationship.

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

97% of the students were successful in completion of this assessment.

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

Student demonstration of hands-on troubleshooting ability reveals acceptable skill level for this objective.

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 were successful and continuous improvement for this SLO is achieved by continual injection of new technology information.

Outcome 3: Deploy Microsoft Windows clients.

- Assessment Plan
  - Assessment Tool: A multiple-choice departmental final exam.
  - Assessment Date: Winter 2016
  - Course section(s)/other population: All
  - Number students to be assessed: All
  - How the assessment will be scored: Answer Key
  - Standard of success to be used for this assessment: At least 70% of the students will score 70% or better.
  - Who will score and analyze the data: Blackboard will score the test, and departmental faculty will analyze the data.

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

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	2017	

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

# of students enrolled	# of students assessed
34	34

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 were assessed.

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 sections were F2F.

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

Students were assessed based on a multiple choice examination.

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

97% of the students were successful.

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

Student demonstration of hands-on troubleshooting ability reveals acceptable skill level for this objective.

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 were successful and continuous improvement for this SLO is achieved by continual injection of new technology information.

Outcome 4: Perform client and server disaster recovery.

- Assessment Plan
  - Assessment Tool: A skills-based assessment lab activity
  - Assessment Date: Winter 2016



- Course section(s)/other population: All
- Number students to be assessed: All
- How the assessment will be scored: A departmental task list will be used.
- Standard of success to be used for this assessment: At least 70% of the students will score 70% or better on the completion of tasks.
- Who will score and analyze the data: Departmental faculty

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

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2017	

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

# of students enrolled	# of students assessed
34	34

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 enrolled students in both sections of this course were assessed.

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.

Both sections of this course were F2F.

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

Students were required to demonstrate successful completion of course exercises 5A, 5B and 5C, which included recovery of client and server operating systems with configuration errors.

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 students were successful.

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

Student demonstration reveals acceptable skill level for this objective.

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

Continuous improvement is attained by injecting new and relevant information as it is released to industry.

Outcome 4: Perform client and server disaster recovery.

- Assessment Plan
  - Assessment Tool: A multiple-choice departmental final exam.
  - Assessment Date: Winter 2016
  - Course section(s)/other population: All
  - Number students to be assessed: All
  - How the assessment will be scored: Answer Key
  - Standard of success to be used for this assessment: At least 70% of the students will score 70% or better.
  - Who will score and analyze the data: Blackboard will score the test, and departmental faculty will 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)
	2017	

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

# of students enrolled	# of students assessed
34	34

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 enrolled students in both sections were assessed.

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.

Both sections were F2F.

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

Students answered multiple choice test questions.

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 students (31/34) were successful.

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

Student demonstration reveals acceptable skill level for this objective.

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

Continuous improvement is attained by injecting new and relevant information as it is released to industry.

Outcome 5: Determine the power, cooling, cabling and equipment requirements for a given data center.

- Assessment Plan
  - Assessment Tool: A skills-based assessment
  - Assessment Date: Winter 2016
  - Course section(s)/other population: All
  - Number students to be assessed: All
  - How the assessment will be scored: A departmental task list will be used.

- Standard of success to be used for this assessment: At least 70% of the students will score 70% or better on the completion of tasks.
- Who will score and analyze the data: Departmental faculty

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

Fall (indicate years below)	Winter (indicate years below)	SP/SU (indicate years below)
	2017	

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

# of students enrolled	# of students assessed
34	34

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 enrolled students in both sections were assessed.

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.

Both sections of this course were F2F.

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

Exercises 9A, 9B, 9C, 9D, 9E, 14 Part I and 14 Part II were used to assess student performance and understanding of how to determine power, cooling and cabling of equipment for a small to medium size data center. Pass / fail was the criteria for successful completion of this SLO.

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  
95% of the students were successful in demonstrating ability to perform per the SLO criteria.

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

Strength is demonstrated by successful completion of determining power, cooling and cabling requirements for a small or mid-size data center per the exercises.
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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.

Improvement can be obtained by continued exposure to new methods and technologies as they are introduced into this profession, which is done on a monthly basis.
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Outcome 5: Determine the power, cooling, cabling and equipment requirements for a given data center.

- Assessment Plan
  - Assessment Tool: A multiple-choice departmental final exam.
  - Assessment Date: Winter 2016
  - Course section(s)/other population: All
  - Number students to be assessed: All
  - How the assessment will be scored: Answer Key
  - Standard of success to be used for this assessment: At least 70% of the students will score 70% or better.
  - Who will score and analyze the data: Blackboard will score the test, and departmental faculty will 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)
	2017	

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

# of students enrolled	# of students assessed
34	34

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 enrolled students were assessed.
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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.

Both sections were F2F.

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

Students were assessed on their ability to calculate and determine adequate cooling and equipment requirements for a data center.

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

95.5% of the students were successful

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

Strength is demonstrated by successful completion of determining power, cooling and cabling requirements for a small or mid-size data center per the exercises.

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.

Improvement can be obtained by continued exposure to new methods and technologies as they are introduced into this profession, which is done on a monthly basis.

## 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?

There are no surprises in the assessment outcomes and it is the impression of this instructor that this course is meeting the needs of data center and server technologies for entry level positions in this profession.

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

Via this assessment report.

- Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
Course Materials (e.g. textbooks, handouts, on-line ancillaries)	Infusion of new materials and updated equipment will be introduced to this course over the next calendar year.	Data center and server hardware technology advances towards the latest technologies. This material must be infused into the course not only on a monthly basis but with development of new course modules. This is in process.	2018

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

5.

### III. Attached Files

[CST 165 SLO Assessment Tally](#)

**Faculty/Preparer:** James Lewis **Date:** 06/22/2017  
**Department Chair:** Philip Geyer **Date:** 06/22/2017  
**Dean:** Kristin Good **Date:** 06/26/2017  
**Assessment Committee Chair:** Michelle Garey **Date:** 10/18/2017