

Course Assessment Report
Washtenaw Community College

Discipline	Course Number	Title
Computer Systems Security	210	CSS 210 04/20/2021- Network Perimeter Protection - CCNA Security
College	Division	Department
Business and Computer Technologies	Business and Computer Technologies	Computer Science & Information Technology
Faculty Preparer		Cyndi Millns
Date of Last Filed Assessment Report		

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

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

No

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

3.

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

5.

II. Assessment Results per Student Learning Outcome

Outcome 1: Configure router features to filter ingress and egress traffic.

- Assessment Plan
 - Assessment Tool: Outcome-related questions on the departmentally-developed final concepts and skills exam
 - Assessment Date: Winter 2024
 - Course section(s)/other population: All sections
 - Number students to be assessed: All students

- How the assessment will be scored: Departmentally-developed rubric
- Standard of success to be used for this assessment: At least 80% of students must score 70% or better
- Who will score and analyze the data: Department 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)
2020, 2019, 2018	2021, 2020, 2019, 2018, 2017	

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

# of students enrolled	# of students assessed
138	116

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

The data includes students who had at least one non-zero score for any assessments associated with the outcomes. Any student who had zeros for all assessments is excluded since there is a high probability that the student abandoned the class. This reduces the sample size to 116 students.

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 from all sections were included in the sample with the exception of students who abandoned the class (did not complete any of the assessments).

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

The tool is a multiple-choice assessment developed by Cisco. It is automatically graded upon completion. Students have one hour to complete the assessment.

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

Met Standard of Success: Yes

The standard of success was met with 93.1% (106/116) of students scoring a 75% or higher on the assessment.

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

Students were able to successfully configure router features using ACLs to filter ingress and egress traffic as demonstrated through the assessment.

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.

We plan to incorporate more areas of practice through skills-based labs.

Outcome 2: Configure firewalls to protect inside and demilitarized zone (DMZ) networks against external threats.

- Assessment Plan
 - Assessment Tool: Outcome-related questions on the departmentally-developed final concepts and skills exam
 - Assessment Date: Winter 2024
 - Course section(s)/other population: All sections
 - Number students to be assessed: All students
 - How the assessment will be scored: Departmentally-developed rubric
 - Standard of success to be used for this assessment: At least 80% of students must score 70% or better.
 - Who will score and analyze the data: Department 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)
2020, 2019, 2018	2021, 2020, 2019, 2018, 2017	

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

# of students enrolled	# of students assessed
138	113

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

The data includes students who had at least one non-zero score for any assessments associated with the outcomes. Any student who had zeros for all assessments is excluded since there is a high probability that the student abandoned the class. This reduces the sample size to 113 students.

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 from all sections were included in the sample with the exception of students who abandoned the class (did not complete any of the assessments).

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

The tool is a multiple-choice assessment developed by Cisco. It is automatically graded upon completion. Students have one hour to complete the assessment.

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

Met Standard of Success: Yes
The standard of success was met with 87.6% (99/113) of students scoring a 75% or higher on the assessment.

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

Students were able to successfully configure firewalls to protect inside and demilitarized zones against external threats as demonstrated through the assessment.

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.

We plan to incorporate more areas of practice through skills-based labs.

Outcome 3: Implement various authentication methods on routers and firewalls.

- Assessment Plan
 - Assessment Tool: Outcome-related questions on the departmentally-developed final concepts and skills exam
 - Assessment Date: Winter 2024
 - Course section(s)/other population: All sections
 - Number students to be assessed: All students
 - How the assessment will be scored: Departmentally-developed rubric
 - Standard of success to be used for this assessment: At least 80% of students must score 70% or better.
 - Who will score and analyze the data: Department 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)
2020, 2019, 2018	2020, 2019, 2018, 2017, 2021	

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

# of students enrolled	# of students assessed
138	115

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

The data includes students who had at least one non-zero score for any assessments associated with the outcomes. Any student who had zeros for all assessments is excluded since there is a high probability that the student abandoned the class. This reduces the sample size to 115 students.

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 from all sections were included in the sample with the exception of students who abandoned the class (did not complete any of the assessments).

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

The tool is a multiple-choice assessment developed by Cisco. It is automatically graded upon completion. Students have one hour to complete the assessment.

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

Met Standard of Success: Yes

The standard of success was met with 80.0% (92/115) of students scoring a 75% or higher on the assessment.

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

Students were able to successfully implement various authentication methods on routers and firewalls as demonstrated through the assessment.

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.

We plan to incorporate more areas of practice through skills-based labs.

Outcome 4: Configure and implement Virtual Private Networks.

- Assessment Plan
 - Assessment Tool: Outcome-related questions on the departmentally-developed final concepts and skills exam
 - Assessment Date: Winter 2024
 - Course section(s)/other population: All sections
 - Number students to be assessed: All students
 - How the assessment will be scored: Departmentally-developed rubric
 - Standard of success to be used for this assessment: At least 80% of students must score 70% or better.
 - Who will score and analyze the data: Department 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)
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2020, 2019, 2018	2021, 2020, 2019, 2018, 2017	
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2. Provide assessment sample size data in the table below.

# of students enrolled	# of students assessed
138	115

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

The data includes students who had at least one non-zero score for any assessments associated with the outcomes. Any student who had zeros for all assessments is excluded since there is a high probability that the student abandoned the class. This reduces the sample size to 115 students.

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 from all sections were included in the sample with the exception of students who abandoned the class (did not complete any of the assessments).

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

The tool is a multiple-choice assessment developed by Cisco. It is automatically graded upon completion. Students have one hour to complete the assessment.

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

Met Standard of Success: Yes
The standard of success was met with 92.2% (106/115) of students scoring a 75% or higher on the assessment.

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

Students were able to successfully configure and implement Virtual Private Networks as demonstrated through the assessment.

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.

We plan to incorporate more areas of practice through skills-based labs.

Outcome 5: Implement 802.1x on switches.

- Assessment Plan
 - Assessment Tool: Outcome-related questions on the departmentally-developed final concepts and skills exam
 - Assessment Date: Winter 2024
 - Course section(s)/other population: All sections
 - Number students to be assessed: All students
 - How the assessment will be scored: Departmentally-developed rubric
 - Standard of success to be used for this assessment: At least 80% of students must score 70% or better.
 - Who will score and analyze the data: Department 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)
2020, 2019, 2018	2021, 2020, 2019, 2018, 2017	

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

# of students enrolled	# of students assessed
138	114

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

The data includes students who had at least one non-zero score for any assessments associated with the outcomes. Any student who had zeros for all assessments is excluded since there is a high probability that the student abandoned the class. This reduces the sample size to 114 students.

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 from all sections were included in the sample with the exception of students who abandoned the class (did not complete any of the assessments).

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

The tool is a multiple-choice assessment developed by Cisco. It is automatically graded upon completion. Students have one hour to complete the assessment.

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

Met Standard of Success: Yes

The standard of success was met with 93.9% (107/114) of students scoring a 75% or higher on the assessment.

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

Students were able to successfully implement 802.1x on switches as demonstrated through the assessment.

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.

We plan to incorporate more areas of practice through skills-based labs.

III. Course Summary and Intended Changes Based on Assessment Results

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

n/a

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

Cisco is a master of developing assessment tools to accurately assess a student's knowledge, skills and abilities, including the incorporation of skills-based activities in the assessment. They have recently updated the curriculum to include newer technologies and more labs, including how attacks at the local network occur and the best defense. Perimeter protection and network security are still key components of cybersecurity even with a shift towards cloud architecture.

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

This report will be shared at the next department meeting.

4. Intended Change(s)

Intended Change	Description of the change	Rationale	Implementation Date
Other: skills-based labs	Incorporate more skills-based labs for areas covered by each outcome.	Students would benefit from additional skills-based practice, and the recent update to the Cisco curriculum includes additional labs.	2021

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

6.

III. Attached Files

[Analysis 2021](#)

Faculty/Preparer: Cyndi Millns **Date:** 05/21/2021

Department Chair: Cyndi Millns **Date:** 05/21/2021

Dean: Eva Samulski **Date:** 05/25/2021

Assessment Committee Chair: Shawn Deron **Date:** 11/03/2021