Dalton State College

Detailed Assessment Report
2015-2016 CAPS 1277
As of: 8/15/2016 10:02 AM EDT
(Includes those Action Plans with Budget Amounts marked *One-Time, Recurring, No Request*.)

Course Description

Understanding of WAN technology basics to include: devices, encapsulation formats, PPP components, Access Control Lists, NAT, DHCP, DNS and Frame Relay. This course satisfies the computer literacy requirement.

Program Outcomes

PO 1: Demonstrate skills and knowledge that emphasizes current computer networks, systems management, and internet technologies.
Demonstrate skills and knowledge that emphasizes current computer networks, systems management, and internet technologies.

PO 2: Demonstrate basic networking knowledge of OSI model, subnetting, and router configuration.
Demonstrate basic networking knowledge of OSI model, subnetting, and router configuration.

PO 3: Demonstrate knowledge of basic security fundamentals.
Demonstrate knowledge of basic security fundamentals.

Outcomes, with Any Associations and Related Measures, Targets, Findings, and Action Plans

Outc. 1: Configure WAN protocols including PPP, Frame Relay, and HDLC.
Configure WAN protocols including PPP, Frame Relay, and HDLC.

Relevant Associations:

Standard Associations

SACSCOC 2012* Principles of Accreditation
3.3.1.1 educational programs, to include student learning outcomes
4.1 The institution evaluates success with respect to student achievement consistent with its mission. Criteria may include: enrollment data; retention, graduation, course completion, and job placement rates; state licensing examinations; student portfolios; or other means of demonstrating achievement of goals. (Student achievement)

General Education Goals Associations

5.1 Students will utilize appropriate models, systematic methods, and concepts such as the scientific method to solve problems.

Institutional Mission Associations

2 Dalton State offers targeted bachelor's degrees, a full range of associate's degrees and career certificate programs, and a wide variety of public service activities.

Related Measures

M 1: Hands-On Skills Exam
Students will configure WAN protocols including PPP, Frame Relay and HDLC while also securing the network with ACLs and NAT during a comprehensive hands-on skills exam.

Source of Evidence: Comprehensive/end-of-program subject matter exam

Target:
At least 80% of students should pass the hands-on skills exam with a score of 70% or better.

Finding (2015-2016) - Target: Met
7 students were enrolled in the CAPS 1277 Connecting Networks course. This course was taught face-to-face in a hands-on lab environment where students had access to real and virtual computer networking equipment. 7 out of 7 students passed the hands-on skills exam with a score of 80% or better for a completion percentage of 100%. No students failed to meet the target score. The average score for the class was 96.5%, which is an extremely good average. The students' experience doing labs throughout the semester prepared them well for the rigors of the hands-on exam. I was pleased this semester to see that the improvements that Cisco made in the online curriculum and the in-class lab assignments helped students markedly improve from the beginning of the course until its end. Overall, I was very pleased that the action plan I had of having more individual assignments rather than the majority of the assignments being in groups is having a positive effect. There is a little less reliance on having some group members lean on the stronger students to achieve results and the class as a whole is benefiting. I think it would be a good measure to continue on this course and lessen the group activities to a further degree and observe if the results continue to improve.

Related Action Plans (by Established cycle, then alpha):

For full information, see the *Details of Action Plans* section of this report.

Find Different Method For Teaching Frame Relay
Established in Cycle: 2012-2013
Frame Relay continues to be one of the most difficult subjects in this course and I plan to try a new method to teach it. This ...

Focus on student study during break periods
Established in Cycle: 2013-2014
Students tend to forget a lot of material during the Christmas and summer break periods. It's my intention to

drive them to con...

Push for more individual effort
Established in Cycle: 2013-2014
I will change the grading criteria slightly to push more individual grades over team grades to encourage more effort from each i...

Continue to create more individual learning opportunities.
Established in Cycle: 2015-2016
I believe the success of having more individual lab and homework assignments is having a more positive effect on student improve...

Outc. 2: Design network topology that includes LAN and WAN devices and connectivity.
Design network topology that includes LAN and WAN devices and connectivity.

Relevant Associations:

Standard Associations

SACSCOC 2012* Principles of Accreditation
3.3.1.1 educational programs, to include student learning outcomes
4.1 The institution evaluates success with respect to student achievement consistent with its mission. Criteria may include: enrollment data; retention, graduation, course completion, and job placement rates; state licensing examinations; student portfolios; or other means of demonstrating achievement of goals. (Student achievement)

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Related Measures

M 2: Network Design Lab
Students will design a full network topology that includes LAN and WAN devices and their configurations.

Source of Evidence: Project, either individual or group

Target:
At least 80% of students will pass the network design lab with a score of 70% or better.

Finding (2015-2016) - Target: Met
7 students were enrolled in the CAPS 1277 Connecting Networks course. This course was taught face-to-face in a hands-on lab environment where students had access to real and virtual computer networking equipment. 6 out of 7 students passed the Network Lab Project with a score of 80% or better for a completion percentage of 85.7%. 1 students failed to meet the target score because he began the project too late and didn't complete the work on time. The average score for the passing students in the class was 92.6%, which is a good average, but still one that could be improved even more. The students' experience doing labs throughout the semester prepared them well for the challenge that the Network Design Project presents. However, the students still struggle in the security portion of the project. Students that missed parts of the project mostly missed the section on access control lists and protocol authentication. Therefore, I feel that it is necessary to put more of an emphasis on security design in future CAPS 1277 courses. Hopefully, this area will improve with added practice assignments and more focus on security during class lectures.

Related Action Plans (by Established cycle, then alpha):
For full information, see the *Details of Action Plans* section of this report.

Project Time Management
Established in Cycle: 2012-2013
Students achieved a lower percentage on this goal because some of them did not begin the project in due time. In future semeste...

Add more technologies to design lab
Established in Cycle: 2013-2014
I will modify the design lab for next semester to add new technologies recently added to the curriculum in order to maintain the...

More focus on network security.
Established in Cycle: 2015-2016
Students in the network design project lab had more difficulties with networking security, especially in the areas of access con...

Outc. 3: Create a security scheme that incorporates ACLs and NAT.
Create a security scheme that incorporates ACLs and NAT.

Relevant Associations:

Standard Associations

SACSCOC 2012* Principles of Accreditation
3.3.1.1 educational programs, to include student learning outcomes
4.1 The institution evaluates success with respect to student achievement consistent with its mission. Criteria may include: enrollment data; retention, graduation, course completion, and job placement rates; state licensing examinations; student portfolios; or other means of demonstrating achievement of goals. (Student achievement)

General Education Goals Associations

5.1 Students will utilize appropriate models, systematic methods, and concepts such as the scientific method to solve problems.

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2 Dalton State offers targeted bachelor's degrees, a full range of associate's degrees and career certificate programs, and a wide variety of public service activities.

Related Measures

M 1: Hands-On Skills Exam
Students will configure WAN protocols including PPP, Frame Relay and HDLC while also securing the network with ACLs and NAT during a comprehensive hands-on skills exam.

Source of Evidence: Comprehensive/end-of-program subject matter exam

Target:
At least 80% of students should pass the hands-on skills exam with a score of 70% or better.

Finding (2015-2016) - Target: Met
7 students were enrolled in the CAPS 1277 Connecting Networks course. This course was taught face-to-face in a hands-on lab environment where students had access to real and virtual computer networking equipment. 7 out of 7 students passed the hands-on skills exam with a score of 80% or better for a completion percentage of 100%. No students failed to meet the target score. The average score for the class was 96.5%, which is an extremely good average. The students' experience doing labs throughout the semester prepared them well for the rigors of the hands-on exam. I was pleased this semester to see that the improvements that Cisco made in the online curriculum and the in-class lab assignments helped students markedly improve from the beginning of the course until its end. Overall, I was very pleased that the action plan I had of having more individual assignments rather than the majority of the assignments being in groups is having a positive effect. There is a little less reliance on having some group members lean on the stronger students to achieve results and the class as a whole is benefiting. I think it would be a good measure to continue on this course and lessen the group activities to a further degree and observe if the results continue to improve.

Related Action Plans (by Established cycle, then alpha):
For full information, see the *Details of Action Plans* section of this report.

Increase Fundamental Knowledge
Established in Cycle: 2012-2013
I believe Access Control Lists continue to be a problem for some students due to a lack of some students knowledge of protocols....

Focus on student study during break periods
Established in Cycle: 2013-2014
Students tend to forget a lot of material during the Christmas and summer break periods. It's my intention to drive them to con...

Push for more individual effort
Established in Cycle: 2013-2014
I will change the grading criteria slightly to push more individual grades over team grades to encourage more effort from each i...

Continue to create more individual learning opportunities.
Established in Cycle: 2015-2016
I believe the success of having more individual lab and homework assignments is having a more positive effect on student improve...

Details of Action Plans for This Cycle (by Established cycle, then alpha)

Find Different Method For Teaching Frame Relay
Frame Relay continues to be one of the most difficult subjects in this course and I plan to try a new method to teach it. This will include both different ways of explaining the technology as well as a possible extra week later in the semester to refresh said subject material.

Established in Cycle: 2012-2013
Implementation Status: Planned
Priority: High

Relationships (Measure | Student Learning Outcome):
Measure: Hands-On Skills Exam | **Student Learning Outcome:** Configure WAN protocols including PPP, Frame Relay, and HDLC.

Increase Fundamental Knowledge
I believe Access Control Lists continue to be a problem for some students due to a lack of some students knowledge of protocols. I plan to increase my time spent on the basics of protocols in both this course and prerequisite courses to strengthen this knowledge.

Established in Cycle: 2012-2013
Implementation Status: Planned
Priority: High

Relationships (Measure | Student Learning Outcome):
Measure: Hands-On Skills Exam | **Student Learning Outcome:** Create a security scheme that incorporates ACLs and NAT.

Project Time Management
Students achieved a lower percentage on this goal because some of them did not begin the project in due time. In future semesters, I will stress to them just how much effort they need to put into this project as well as how soon they should begin it. I will also add to the class calendar just how much of the project they should finish by certain dates to help them budget their time more efficiently.

Established in Cycle: 2012-2013
Implementation Status: Planned
Priority: High

Relationships (Measure | Student Learning Outcome):

Measure: Network Design Lab | **Student Learning Outcome:** Design network topology that includes LAN and WAN devices and connectivity.

Add more technologies to design lab

I will modify the design lab for next semester to add new technologies recently added to the curriculum in order to maintain the challenge presented to students by the lab.

Established in Cycle: 2013-2014
Implementation Status: Planned
Priority: High

Relationships (Measure | Student Learning Outcome):
> **Measure:** Network Design Lab | **Student Learning Outcome:** Design network topology that includes LAN and WAN devices and connectivity.

Focus on student study during break periods

Students tend to forget a lot of material during the Christmas and summer break periods. It's my intention to drive them to continue their studies during these periods to make the transition to advanced courses like this one easier.

Established in Cycle: 2013-2014
Implementation Status: Planned
Priority: High

Relationships (Measure | Student Learning Outcome):
> **Measure:** Hands-On Skills Exam | **Student Learning Outcome:** Configure WAN protocols including PPP, Frame Relay, and HDLC.
> | Create a security scheme that incorporates ACLs and NAT.

Push for more individual effort

I will change the grading criteria slightly to push more individual grades over team grades to encourage more effort from each individual. This should lead to a stronger team effort as each student should be more knowledgeable themselves.

Established in Cycle: 2013-2014
Implementation Status: Planned
Priority: High

Relationships (Measure | Student Learning Outcome):
> **Measure:** Hands-On Skills Exam | **Student Learning Outcome:** Configure WAN protocols including PPP, Frame Relay, and HDLC.
> | Create a security scheme that incorporates ACLs and NAT.

Continue to create more individual learning opportunities.

I believe the success of having more individual lab and homework assignments is having a more positive effect on student improvement rather than having more group-oriented assignments that sometimes causes weaker students to rely too much on the stronger students. Although the limited amount of networking equipment requires that some activities will have to be done in groups, there are possibly more places where a student could be given the opportunity to do even more on their own, which I have found is increasing confidence in their own abilities and skills. My plan is to continue to add more individual assignments and observe if the success rate can continue to improve or if I need to find other improvements in other areas.

Established in Cycle: 2015-2016
Implementation Status: Planned
Priority: High

Relationships (Measure | Student Learning Outcome):
> **Measure:** Hands-On Skills Exam | **Student Learning Outcome:** Configure WAN protocols including PPP, Frame Relay, and HDLC.

Continue to create more individual learning opportunities.

I believe the success of having more individual lab and homework assignments is having a more positive effect on student improvement rather than having more group-oriented assignments that sometimes causes weaker students to rely too much on the stronger students. Although the limited amount of networking equipment requires that some activities will have to be done in groups, there are possibly more places where a student could be given the opportunity to do even more on their own, which I have found is increasing confidence in their own abilities and skills. My plan is to continue to add more individual assignments and observe if the success rate can continue to improve or if I need to find other improvements in other areas.

Established in Cycle: 2015-2016
Implementation Status: Planned
Priority: High

Relationships (Measure | Student Learning Outcome):
> **Measure:** Hands-On Skills Exam | **Student Learning Outcome:** Create a security scheme that incorporates ACLs and NAT.

More focus on network security.

Students in the network design project lab had more difficulties with networking security, especially in the areas of access control lists and protocol authentication. Therefore, my plan is add more homework or lab assignments to give students more practice in these areas and put them in the place of other assignments where students are having little or no difficulties. It is my hope that this extra focus will see improved averages on the project lab the next time the CAPS 1277 course is offered.

Established in Cycle: 2015-2016
Implementation Status: Planned
Priority: High

Relationships (Measure | Student Learning Outcome):
> **Measure:** Network Design Lab | **Student Learning Outcome:** Design network topology that includes LAN and WAN devices and connectivity.

Analysis Questions and Analysis Answers

What strengths and weaknesses did your assessment results show? In addition, please describe 2 to 3 significant improvements or continuous improvement measures you'll put in place as a result of your assessment findings.

I believe that the analysis for this CAPS 1277 course shows that we are making improvements, especially in the students' skills in working with real computer networking equipment. The emphasis on having more individual success over working with groups is strengthening the class as each student relies more on themselves and strengthens their own skills rather than rely on classmates to cover their own weaknesses. The weakness of this course is that students still need to improve more on their computer networking security skills and a renewed focus on security topics will be implemented to address this issue. Overall, I'm very encouraged by the continued improvement of the program, and I'm eager to see more success in future courses.