

Assessment Report

Program Title: Computer Systems Technology CTCSTC

Department: ELE
Preparer: William Reichert
Division: Business
Department Chair: Gary Downen
Division Dean: Rosemary Wilson
Academic Year: 2003-2004

Submission Date: 10-10-03

Review: Assessment Overview and Summary: Actually the assessment consists of two phases. Student Learning is only half the picture. The other portion of this assessment deals with whether the material taught is actually meeting the Objectives of the course, which in this case is the Networking Plus Objectives. Both parts of this assessment have been completed and are outlined below:

A. Overview: - Assessment of Student Learning- Network Plus Objectives:

This evaluation includes four separate 7-12 weeks sessions of ELE225, with class sizes ranging between 16 and 20 each. Seven tests are administered throughout the 7-1/2 week period, with approximately 16-22 questions per test for a total of 135 questions. Note that the number of students changes between tests, and indeed, within a test. There are four reasons for this: Absenteeism, forgetting to do a summary sheet for a test, and not using a test (test 7 only) are three reasons for changes between tests. Also, I added additional questions to some of the tests at different times, which actually changed the total number of students, even within a test.

Each question of the 130 plus questions asked on the tests throughout the course were evaluated as to student performance. There are 40 some pages showing these results. The results are set up in the form showing the Network Plus Objective being tested for each question, number of students tested for each question, the number of students having the right answer, and the percentage having the right answer. An explanation is then given evaluating each question whether it is ok as it is, whether it needs to be changed, etc.

An important point needs to be made concerning this explanation. The overall average for all tests and all questions hovers around 79%. Therefore I have established the acceptable range for student performance to be 75% to 85%. This is an important note. When I write the questions, I don't care or think about percentages. I write the question to address important networking concepts, and the establishment of good wrong answers is as important to me as the correct answer, such that when a student gets the question right, I feel confident that he does in fact have an understanding of that principle. To be honest, I would be much happier if the average was 90% rather than 80%, or even 95%. An average of 70% (the politically correct average) would make me very, very unhappy. My job has only been done effectively if the percentage was 100%!! I would not think the questions too easy if this were indeed the case, I would feel that all students understood the basic networking concepts/objectives that I was trying to get across. However, as you will see by the explanation box associated with each question, that some adjustments need to be made to some of the questions. This is addressed in the summary below.

Most Important Points Concerning the Objectives: As you will see when reviewing the summary on meeting the Objectives, some of the most important objectives are met in the Laboratory Projects which make up a significant part of this course, and which really give the students hands-on experience. Every student must complete every lab and turn in quite a number of important concept questions concerning that particular project!!!! For example, we have virtually a whole lab project on using the TCP/IP utilities for troubleshooting, which is an important Network Plus Objective, but which, to this point, has not been addressed in the actual written testing, although will be as detailed in the Objectives Summary.

Also, it should be pointed out that the Network Plus Objectives have been revised this year (the Objectives are attached), and this certainly has been an influence on my decisions concerning about one quarter of the questions.

B. Summary: Assessment of Student Learning: As mentioned above, the overall average during the four sessions of this course was approximately 79%. Some questions varied significantly by class, which means generally inconsistency on my part as to how I present the material. (For example, if one class has only three people missing a question, while another class has thirteen, my emphasis on a particular point was obviously much greater with the class that had only three people missing the question.) Below is a statistical breakdown of the percentage range of right answers for all the

questions.

Percentage of Student Correct Answers within Each Percentage Range Number of Questions falling

90-100	33
80-89	35
70-79	36
60-69	17
50-59	9
40-49	6
30-39	0
20-29	0
10-19	0
0-9	0

136 Questions Overall Average ~79%

The important part of the assessment of student performance lies in the comment section in the right hand box opposite each question. Here lies my assessment of the question itself based not only on student performance, but whether or not it meets the Network + Objectives (the second part is addressed in the section below).

a. With some questions, no matter what the result was high or low - they are not going to be changed at all the concept is right on, as well as the question and answers. The questions meet the Network + Objectives, are absolutely essential to the understanding of networking, etc.

b. With some questions, partial changes need to be made. The question's concept itself is OK, however the way it is worded, the 'right' and 'wrong' answers, etc. may not be clear, subject to other (wrong) interpretation, or some other problem.

c. With other questions, a complete question change needs to be made. This decision in some cases is based on the student performance on the question, at least as providing an influence on the decision. However, the decision to change a question completely, (throwing out the old, and bringing in new), is largely based on the following. The question either does not meeting the Network + Objectives, meets the Objectives in name only, meets the old Network + Objectives, but not the newly revised ones, or just is obsolete technology which no longer needs to be emphasized to the extent that I emphasized it.

Questions Being Left As is 84

Questions Basically Staying the Same but requiring Alterations as mentioned above. 29

Questions Requiring a complete Replacement (See objectives below for what will be replacing them). 23

C. Overview Assessment of Meeting Network Plus Objectives.

As you can see from the thirty-eight page summary sheet, an objective has been tied to every test question, however, in some cases, the principles involved, as stated above are 'old technology', and the questions require a complete change. The newly 'revised' objectives tend in some cases to emphasize completely different concepts/ideas than the old objectives. Many things which were objectives now are being 'taken for granted' that the student will know, which is not necessarily the case, particularly in a beginning network course. First, let's look at our summary of meeting the objectives, the some final conclusions will be drawn.

All the actual Networking Plus Objectives with complete descriptions are shown next on the pages following. In our summary below, only the Objective number is shown for the Objectives which are covered by less than ten questions throughout all the tests. The second column shows the Number of Times a test question referred to a particular objective area. A brief summary description then shown for objectives which were not covered at all in the written tests, (although many, as pointed out below, were met with the lab projects), as well as those which are highly covered (over ten test questions). Again, in the last column, the really important explanation is shown - why an objective was covered a lot or not at all. Again, all the actual objectives are described and listed on the subsequent pages.

Objective Number Number of Times Objectives Covered in Testing
Summary
of Networking Plus Objective Not Being Covered /Covered More Than Ten

Times in the actual written tests used in ELE225 ñ (Note ñ most are being covered in LABS) Explanation of Objectives being addressed more than 10 times and objectives not being covered by test questions.

1.15

1.216 Specify main features of 802.2/802.3, etc. Important Basic Concepts ñ This is a Basic Course ñ Objective covers a large area.

1.315 Specify characteristics of Media, topology Important Basic Concepts ñ This is a Basic Course ñ Objective covers a large area

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2.218 Identify Seven layers of OSI model. Important Basic Concepts ñ This is a Basic Course ñ Objective covers a large area

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2.40 Identify layer where hardware is used. Covered in Lecture ñ Should be Covered in Testing ñ am going to replace questions described to be replaced in testing summary with questions concerning this area.

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2.70 Purpose of DHCP, DNS, NAT, WINS, SNMP Too advanced for this course ñ Covered in Cisco and Windows Courses.

2.80 Identify IP addresses and subnet masks. Covered verbally, and covered extensively in Lab Projects, however questions from this objective will be used to replace questions described to be replaced in the testing summary.

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2.10 3

2.11 0 Identify WAN technologies. Covered in Cisco/Windows ñ Due to time, etc. staying with LAN in ELE225

2.12 0 Define Remote Access Protocols and Services

Covered in

Cisco/Windows ñ Due to time, stayed with more basic networking objective.

2.13 0 Identify Security Protocols, SSL, Kerberos Covered in Cisco/Windows ñ Due to time, stayed with more basic networking objective

3.114 Basic Client/Server Relationships, O.S. is Important Basic Concepts ñ This is a Basic Course ñ Objective covers a large area

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3.30 Identify VLANS. Covered in Cisco ñ Due to time, stayed with more basic networking objective

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3.80 Benefits and Purposes of Firewall Covered in Cisco/Windows ñ Due to time, stayed with more basic networking objective

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3.10 2

3.11 4

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The following chart summarizes by total numbers the objectives being met/not being met.

Number of Objectives n Total 42 Explanation of Coverage.

20 Objectives being addressed by testing. n less than 10 questions.

5 Objectives being addressed by testing n more than 10 questions

8 Objectives which are addressed extensively in Lecture/Lab but not addressed in the present written testing but which will have test questions replacing other questions as outlined on summary sheets.

2 Objectives which are addressed extensively in Lecture/Lab but not addressed in the present written testing and won't be addressed on future written tests

7 Objectives which are too advanced for this networking course because of the compressed time frame and because of the nature of this being an introductory course.

Summarizing the important points concerning the assessment of meeting the objectives:

a. Objectives being addressed with more than 10 questions are generally very basic and very expansive objectives covering a lot of important information which, in particular, people new to networking must become familiar with to have a solid foundation.

b. Many objectives not covered by the testing are covered extensively in the lecture and in the lab. Most of these should have questions on the test. This will be done, with new questions replacing the 23 questions which are being eliminated due to obsolescence, or changes in the revised Networking Plus Objectives.

c. Some objective concepts are too advanced for this basic introductory course (particularly because of its time frame), but are addressed extensively in the following networking Cisco and Microsoft courses.

d. A few objectives will continue to be met only by Lecture/Lab activities, as they are relatively unsuited for test questions.

As a final summary then:

1. Approximately 3/5 of the test questions meet the present, revised objectives and do not have to be altered.

2. Approximately 1/5 basically meet the objectives but must be slightly changed to reflect new conditions and/or provide better clarity to the question or possible answers.

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4. It should be noted, that basically, with the exception of the seven objectives left for the subsequent courses, all of the Networking Plus Objectives are being met in some manner throughout the ELE225 course program.

Reflect: Assessment Overview and Summary: Actually the assessment consists of two phases n Student Learning is only half the picture n the other portion of this assessment deals with whether the material taught is actually meeting the Objectives of the course, which in this case is the Networking Plus Objectives. Both parts of this assessment have been completed and are outlined below:

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Respond (Changes to)

Master Syllabi: Syllabi objectives presently cover all components of the course with the exception of wireless networking and routing. These changes will be made shortly as the course is now under revision

Curriculum: 2.4 0 Identify layer where hardware is used.

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Instructional Design: The design of the course - the lecture/lab type of setup has proven effective and will continue to be used.

Assessment Instruments: This type of testing throughout the semester has proven effective and will continue to be used.

Timeline: Most of the changes have already been implemented within the course, however, we are now revising the course by combining two - ELE225A and ELE216A with the emphasis on ELE225A Networking which will be expanded to include Wireless and Routing, but will also include components of the present ELE216A such as Internal and External Modem installation. We will be submitting these changes as part of the overall CTSC program changes, and want to have all this in place for FALL 2004

Support (Additional Resources Required)

Operational Funding: Computers specifically set aside for the networking course.

Administration (staffing):

Travel:

Other:

From: <kchatas@wccnet.org>
Date: Sun Oct 12, 2003 9:28:05 AM America/Detroit
To: <kwilli@wccnet.org>
Subject: Fwd: Fwd: Submission from the Assessment Program Form

Forwarded From: Tom Reed <tomreed@wccnet.edu>

Begin forwarded message:

From: reichert@wccnet.org
Date: Fri Oct 10, 2003 2:11:01 PM America/Detroit
To: tomreed@wccnet.edu
Subject: Submission from the Assessment Program Form
Reply-To: reichert@wccnet.org

Submitter Name: William Reichert
Submitter E-mail: reichert@wccnet.org

Submission Date: 10-10-03

Program Information

Program Title: Computer Networking Operating Systems I CVCNO
Department: CNT
Preparer: William Reichert
Division: Business
Department Chair: Gary Downen
Division Dean: Rosemary Wilson
Academic Year: 2003-2004

Program Objective (Outcomes): On the Server, Student shall be able to add users and Groups, configure user properties and rights -and test user access from a Workstation

Direct Measures:

Capstone Experience: 1
Portfolio Assessment:
Licensure/Certification Test:
Juried Competition:
Comprehensive Project:
Externally Reviewed Performance or Exhibit:
External Evaluation of Performance (Internship/Coop/Placement):
Other:

Indirect Measures

Employer Surveys:
Transfer Follow-up Study:
Exit Interviews/Focus Group:
Other:

Student Sample of Population

Entering Students:
Continuing Students:
Withdrawing Students:
Graduating Students: 1
Alumni:
Employers:
Students in Selected Courses:
Samples Across Sections:
All Enrolled in Program:
Other:

Timeline (when will you assess this objective?)

The end of the four-course series - The last night of the final course, a practical exam will be given with 10 Windows configuration tasks to be done in a three hour period.

Who will perform the assessment for this Program Objective?

William R. Reichert

Tom Reed
Washenaw Community College
Director of Web Services