Course Title: **CSC-109-02 UNIX/Linux Operating System** Date: May 2019

Course Team: Doug Horton, Adjunct Professor – Karen Weil-Yates FT faculty reviewer

Expected Learning Outcomes:

- Choose appropriate UNIX/Linux operating system commands to make effective use of the environment to solve problems
- Understand and follow through written requirements
- Write efficient, effective scripts with documentation
- Research and present information and resources utilizing new commands

Assessment:

There are three take-home, application exams comprised of 40 to 50 questions that the students complete. The exams demonstrate their knowledge of Unix/Linux commands and the ability to apply critical thinking skills to all questions. They are encouraged to use their lecture notes, lab quizzes, our Linux server to verify exam answers, textbook and/or Internet research.

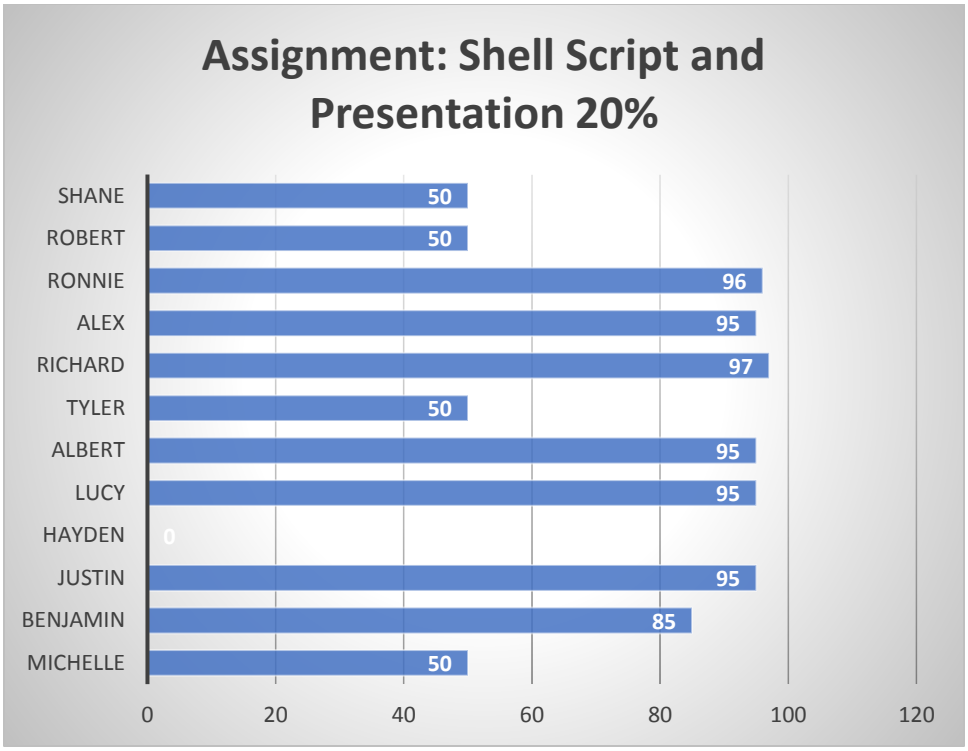
There are two instructors for this course in the spring (1 in the fall); the exams cover the same type of question but not the same wording. Filenames, options, scenarios were changed.

In looking at just the scores on the three exams, there is no huge difference in the percentage. I reason this to be the nature of the course. If students continually work on all projects, assignments, and do the hands-on in class, they will do well on the exam. If students 'pick and choose' the assignments they want to do, they consistently get lower scores. The average for the three the exams (Exam-1, Exam-2 and Final) are 74.58% - 84.74 and 86.92%. An upward trend like this is a good sign that the students that are there to learn are.

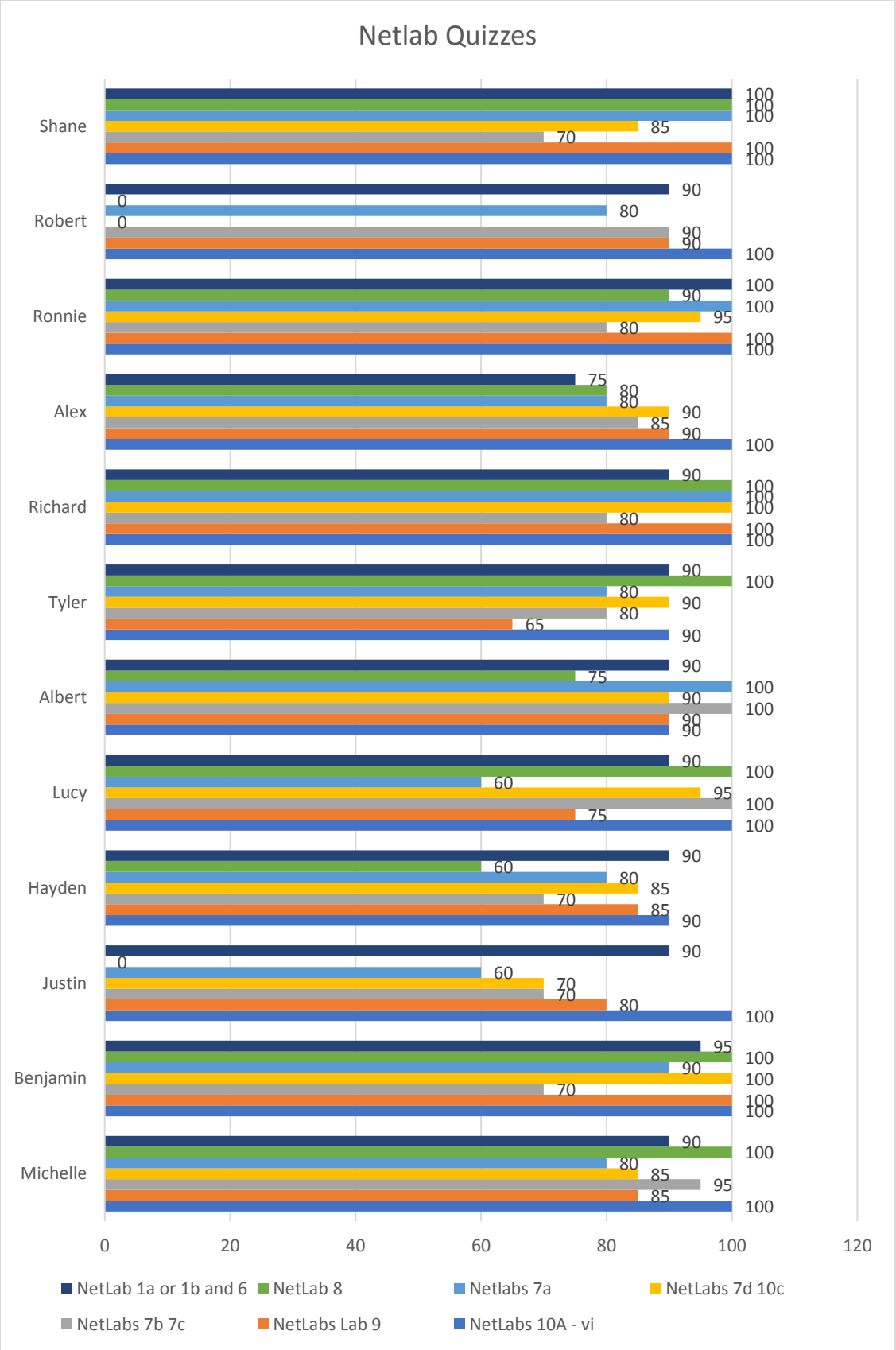
Attendance: The 2 students who did poorly in the course did not attend regularly and did not complete all assignments.

Shell script program: one student did not complete the script.

The majority of the shell scripts were excellent. I am proud of this portion of the grade as there are limited directions as to what they will attempt to accomplish. Students are given a list of requirements to be included in the shell script. Other than that, they are on their own, if they cannot come up with an idea for their shell program, I provide three possible options. The exceptional grades were students that completed all requirements: write up, well-formed shell script, it worked and submitted by the due date/time. Three of these were work related shell programs. The other submissions: that were below 70% - did not work, little effort, did not follow instructions and/or submitted late.



In 2019, Netlab continues to be a problem, if the students do not complete the Netlab course work prior to doing the quiz. They choose to seek the answers online, textbook, or guessing. The data shows that those students that completed the Netlab course work did better in the class. The instructor could tell students that did the Netlabs by checking specific commands used in Netlab quiz that were required answers in the course work. Considering this is a good way for students to get additional practice outside of class, I will continue to use the Netlab course work.


Netlab Quizzes
Shane
Robert
Ronnie
Alex
Richard
Tyler
Albert
Lucy
Hayden
Justin
Benjamin
Michelle
0
20
40
60
80
100
120
NetLab 1a or 1b and 6
NetLab 8
Netlabs 7a
NetLabs 7d 10c
NetLabs 7b 7c
NetLabs Lab 9
NetLabs 10A - vi

Validation

Continuing to use CompTIA Linux Certification Objectives with course content built around this national certification. The Linux Certification cannot be used as a capstone project because a minimum of 2 years work experience is suggested to pass the exam. In addition, there is limited system administration work completed in this course due to time constraints. The course is taught from a software engineering standpoint and not a system administrator. A UNIX/Linux System Administrator/Senior Software Engineer (US Coast Guard, Martinsburg, WV) was consulted in the design of this course. His suggestions are incorporated into the course and updated yearly.

Objectives of the course were mapped to the LPI exam I and were updated in fall 2017. There have been no changes since 2017. The mapping has not changed since the exam has not changed.

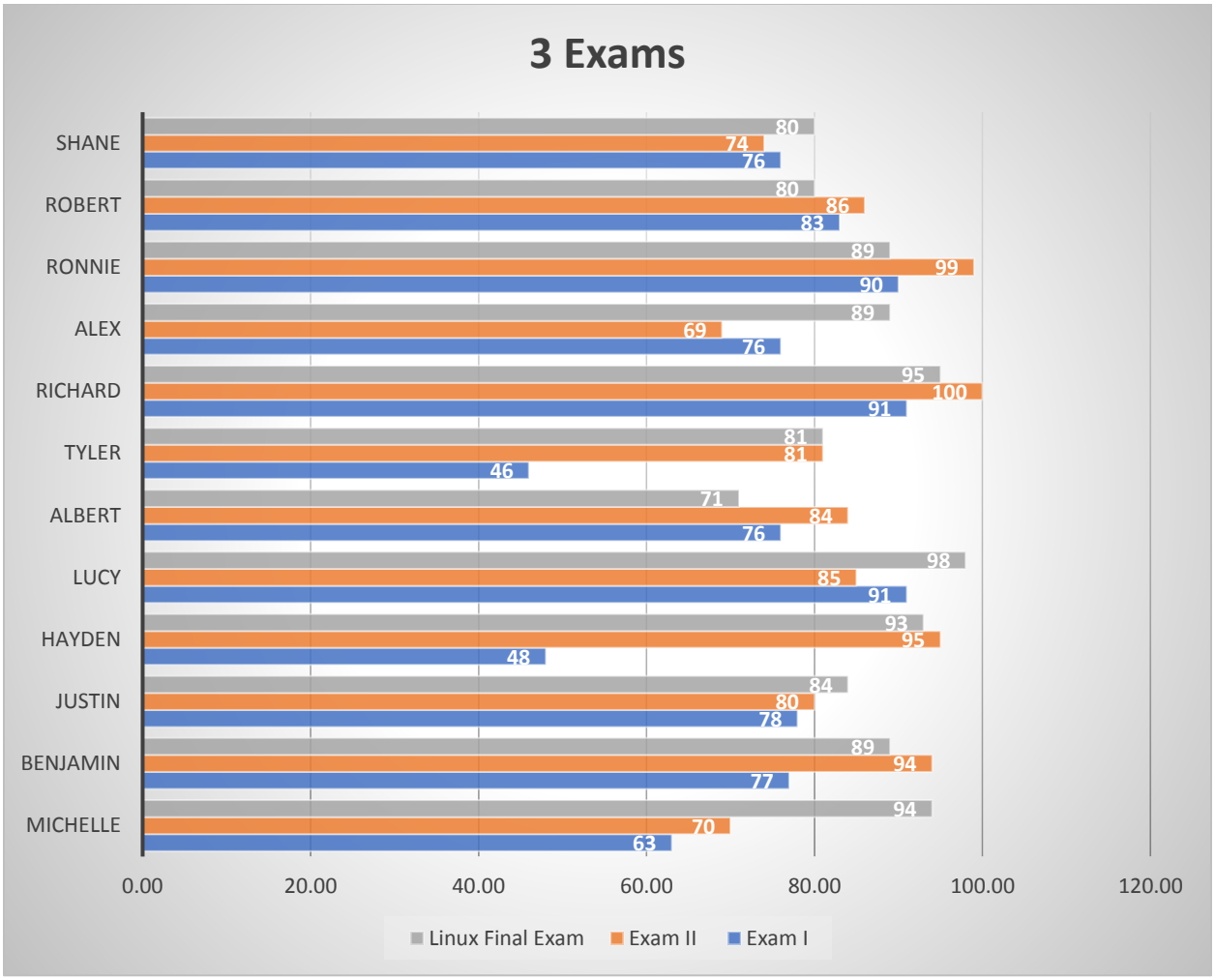
Results

The course continues to be more hands-on and learning by example/demonstration by the instructor. Students are actively involved in all phases of the class. If they do not participate in the class lecture note activities, they are lost when it comes to the quizzes and exams. They are asked to go over the lecture notes, the Netlab course work and follow along in the on-line textbook. And if the students followed along in class, they did will in the course. If they choose to 'surf' and/or play with their cell-phone, they struggled.

Starting in Spring of 2019, David Grimes from the Learning Support Center provided an instructional support person for IST/CSC/CYB. At least 6 students from the CSC-109-02 section took advantage of the additional help throughout the semester. David provided a weekly PDF document with the student's name and time that was spent with the individual student. This is a very valuable information for the instructor.

We are using an online textbook which did not cause any problem.

Every question on the exam is an application/critical thinking question. This correlates directly to the Expected Learning Outcomes. Therefore, the three exam results reflect the success or failure of the outcome. The instructor has the means to verify how much on-line the student spends on he HCC Linux server outside of class – for example the week of an exam a student that wants to learn and make the grade may spend 4 hours on-line completing the exam, where the other students may only spend 15 minutes.



Follow-up

The textbook and format seem to be working well. We will continue to use Netlabs, the instructor would like to be able to query the students that use Netlab throughout the semester (accumulated time on-line). The lab quizzes and Exams will continue to be take-home with the final script presentation as their final week activity.

Budget Justification

Continue with the part-time learning assistant for the Learning Resource Center (David Grimes).