Course Title: IST/CSC109 UNIX/Linux Operating System   3 credits

Course Leader: Trudy Gift

Expected Learning Outcomes for Course

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

Assessment
(How do students demonstrate achievement of these outcomes?)
There are three take-home, application exams comprised of 50 questions that the students complete. The exams demonstrate their knowledge of Unix/Linux commands and critical thinking skills. Since there are two instructors for this course, the exams are similar (different files, same command) are used. The one instructor is a Unix System Administrator for the US Coast Guard and his input is used heavily in the creation of the exams.

The exams cannot be posted or added to this report as the report is available to the public. See the instructor if you need this information.

Fall 20134, the course was updated to reflect more scripting applications as requested from the IST Advisory committee. Previously, students create a script file (utilizing commands learned during the semester and one new command found on the Internet that was not presented in class) to achieve a desired script of their own design. The script file is graded on a rubric developed by the instructor and a professional working in the field. This is still used; however, additional, smaller scripts are also created/updated/improved by the students were added to the course.

All script files are reviewed by the instructor for accuracy, professionalism, application of commands, and creativity and graded based on a rubric. There is still a final script that is 20% of the final grade and contains specific requirements. The student presents their final script to the class explaining how the script works, demonstrating it, and then reviewing the coding of the script and answering any questions. The presentation is also graded on a rubric. In the Spring of 2015, selected students will be presenting their script to the IST Advisory Committee.

Students research a Linux command/topic and a vi command not presented in class and present their findings to the class. They must include a hands-on activity for the class, a handout, and PowerPoint presentation. The commands presented will appear on two of the three exams. The presentation is graded on a rubric.

A new module was included in the Fall 2014—Netlabs. This gives students the opportunity to work on VM (Virtual Machine). They have more access to system administrator that were previously denied by our Linux Administrator. Results show that students are not using the training modules as designed. Rather than working through the tutorial, they are research the web for the answers on the quiz. In the Spring of 2015, the instructors will be checking the access dates and times prior to grading the quiz. If they did not complete the training, they will not receive credit for the quiz.

Validation
(What methods are used to validate your assessment?)
Using CompTIA Linux Certification Objectives, course content was built around this national certification. The Linux Certification is not used as a capstone project because a minimum of 2 years work experience is required to pass the exam. A UNIX/Linux System Administrator was also consulted in the design of the course. His suggestions were incorporated into the course.

In the Fall 2013, the objectives of the course were mapped to the LPI exam I and were updated in Fall 2014. The results can be found in the IST SLOA .5 folder on Drive Y.

Results
(What does the data show?)
The course continues to be more hands-on and less demonstration. Students are actively involved in all phases of the class. They are asked to read chapters prior to coming to class. Activities formerly used as a homework assignment are now completed in class (implementing flip classroom technology). There is improved class participation. Students are encouraged to work together to solve error messages (which is a reflection of what they will have to do on the job).

Every question on the exam is an application/critical thinking question. This correlates directly to Outcome 1: Choose appropriate UNIX/Linux operating system commands to make effective use of the environment to solve problems. Therefore, the three exam results reflect the success or failure of the outcome.
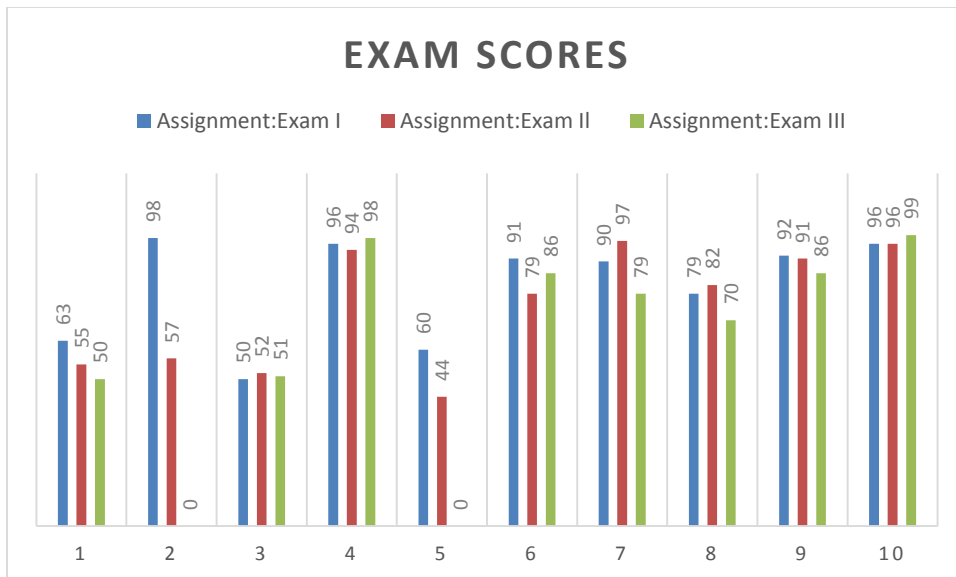
Scripting continues to be a problem. The overall average 79.7 was for Fall 2014. Some students continue to use the sample template which means they can only get a 70%. They do not have the logic background to create more complex. Those students who have programming in their background are creating outstanding scripts. Notice two student choose not to do the script. They did not pass the course.

Script Results

80	90	70	95	0	90	100	82	90	100	0
1	2	3	4	5	6	7	8	9	10	11
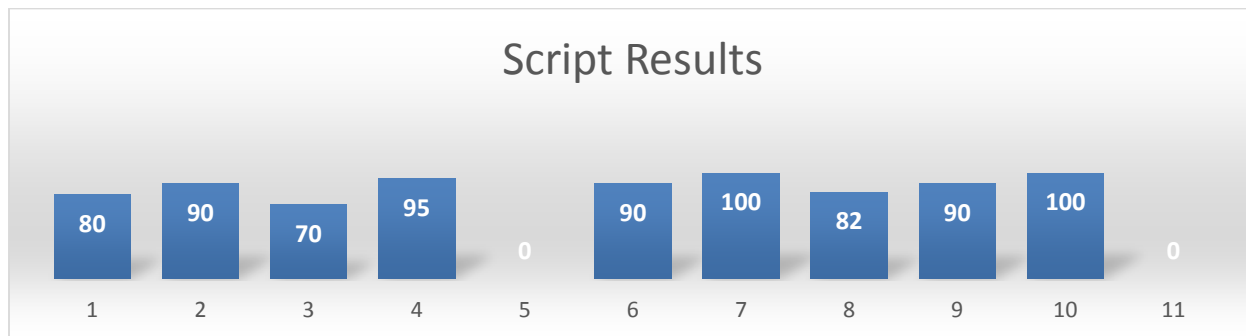
They are not ready to take LPI since one of the recommendations is two years' work experience.

Follow-up
(How have you used the data to improve student learning?)
The new textbook and format seem to be working well but the classroom instruction continues to need improvement. More follow will be found in Spring 2015 results.

Budget Justification
(What resources are necessary to improve student learning?)
Currently no budget request items are needed.