Networking Systems Administration Department
Business/Public Service Division
GREENVILLE TECHNICAL COLLEGE

COURSE SYLLABUS

Course Title: Linux Essentials
Course Number: IST 190

Lecture hours per week: 3.0 **Lab/Clinic Hours:** **Semester credit hours:** 3.0

Prerequisite: CPT 257

Corequisite: None

Catalog Course Description: This course will provide students with the fundamental knowledge and concepts of the Linux operating system including command line functions, file systems, user and group administration, process management, text editors, and network applications.

Purpose of the Course: Students will learn to be effective users of Linux systems acquiring skills and understanding of command line functions, file systems, users and groups, bash shell, process management, text editors, network applications, searching and organizing data, and graphical applications.

Required text(s) or other materials:

1. Lab Pack: Red Hat Academy RHA030 v5.0 Workbooks 1 through 11, published by the Red Hat Academy;
   only available through the Greenville Tech Bookstore or online in the Red Hat Academy.
2. NOTE: Students in traditional classes must access Blackboard for course-related information. Students in hybrid and online classes will access their online content through Blackboard.

COLLEGE-WIDE STUDENT LEARNING OUTCOMES

1. Communication – Students will demonstrate the ability to use active reading and listening skills and to produce effective written and oral communication for varying audiences.

2. Information Technology and Technological Literacy – Students will demonstrate competency in using computer technology within a field of study.

3. Critical Thinking/Reasoning – Students will demonstrate the ability to apply the scientific method, mathematical processes, and research skills to analyze and solve problems/issues by using reflection and reasoning to justify conclusions.

4. Professional and Personal Responsibility – Students will demonstrate the ability to exhibit conduct, attitudes, and etiquette appropriate to the student's community and chosen career. Students will demonstrate the ability to manage time, to use effective interpersonal skills, and to display responsible behavior.

5. Diversity – Students will demonstrate the ability to recognize diversity and to demonstrate respectful conduct and attitudes toward all. Students will demonstrate the ability to explain how global issues impact life, work, and opportunities.

Approved March 26, 2009

NETWORKING SYSTEMS ADMINISTRATION PROGRAM STUDENT LEARNING OUTCOMES

Upon successful completion of the Network Administration program, the graduate will be able to:

1. Set up, maintain, and troubleshoot computer and network hardware.

2. Install, maintain, and troubleshoot operating system and application software.

3. Construct and configure local area networks according to specification.

4. Administer and troubleshoot network operating systems.

5. Design and develop programming solutions to prescribed problems

Approved August 2009

IST 190 COURSE OUTCOMES

Students who successfully complete this course will have demonstrated a level of correct answers on the course assessment(s) that will be at least 80 percent for 80 percent of the course outcomes.

1. The student will be able to navigate and manage the Linux file system.

2. The student will be able to administer Linux users and groups.

3. The student will be able to manage Linux file ownerships and permissions.

4. The student will be able to execute commands in the Bash shell.

5. The student will be able to manage a Red Hat Enterprise Linux server using basic administrative skills.

The outcomes of the IST 190 course are intended to meet the Network Systems Administration program outcomes numbered 2and 4 above.

Revised 1/2009

Main Topics

Week 1 and Week 2:

Introduction to Course (Curriculum Tour)
Workbook 1 – Quick Tour
The Kernel, Programs, and Processes
Running Commands and Terminals

Week 3:

Workbook 2 – Filesystem Basics
Navigation
Managing Files and Directories
Workbook 1 Test

Week 4:

Workbook 3 – Users and Groups
Linux Users and the /etc/passwd File
Linux Groups and the /etc/group File
Workbook 2 Test

Week 5:

Workbook 4 – File Ownerships and Permissions
Regular File Ownerships and Permissions
Directory Ownerships and Permissions
Workbook 3 Test

Week 6:

Workbook 5 – The Linux File System
Disks, Filesystems, and Mounting
Locating, Compressing, and Archiving Files
Workbook 4 Test

Week 7:

Workbook 6 – The Bash Shell
Command Lists and Scripts
Bash Variables
Workbook 5 Test

Week 8:

Workbook 7 – Standard I/O and Pipes
Standard In, Standard Out, and Standard Error
Pipes
Workbook 6 Test

Week 9 and Week 10:

Workbook 8 – String Processing Tools
Text Encoding and Word Counting
Finding Text with grep
Sorting, Extracting and Assembling, Tracking, Translating, and Formatting Text
Workbook 7 Test

Week 11 and Week 12:

Workbook 9 – Managing Processes
Process States
Process Scheduling
Signals and Job Control
Workbook 8 Test

Week 13 and Week 14:

Workbook 10 – Network Applications
TCP/IP Networking in Linux
Linux Printing
Network Diagnostic Applications
Workbook 9 Test

Week 15:

Workbook 11 – Supplements
Advanced Shell Scripting
The RPM Package
Workbook 10 Test
Review and Practice for Final Exam

FINAL WRITTEN EXAM – COMPREHENSIVE – COVERS ALL WORKBOOKS AND LECTURES
FINAL HANDS-ON SKILLS-BASED EXAM – COVERS ALL HANDS-ON LAB MATERIAL

IST 190 – Course Specific Requirements

The Red Hat Academy curriculum is available at the web site **http://academy.redhat.com**. The text is a printed version of the online curriculum. The online curriculum and tests can be accessed with your user name and password. To receive full benefit from the online curriculum, be sure to visit links recommended.

SPECIAL NOTE TO ONLINE STUDENTS: Online students will be REQUIRED to come to the Barton Campus to complete hands-on labs. The number of required on-campus meetings will vary from class to class. Students should plan on at least 2 to 3 meetings. Online students will be required to complete the labs to satisfactorily complete the course. Also, the final examination for online students will be administered on the Barton Campus. The final examination will be scheduled at a time determined by the administration.

IST 190 – EVALUATION AND GRADING INFORMATION

Grading Policy

A numeric grade will be given for each of the following items:

Workbook Tests (Red Hat Online Tests)	**50 percent**
Labs	**15 percent**
Workbook Assignments	**10 percent**
Final Examination	**25 percent**
(Written Final Exam 65% and Skill-Based Assessment 35%)	

Notebooks should be maintained containing notes from the Red Hat curriculum, the text, lectures, and labs.

There are 11 online tests. The tests are intended for the Red Hat Certified Technician (RHCT) exam preparation. The final exam will consist of a written assessment and a skill-based assessment.

- All assignments (i.e., labs, projects, research papers, etc.) for this course must be completed and submitted to the instructor by the due date established in order to receive full credit for the assignment.
- Assignments not submitted by the due date can receive up to a maximum of 80 percent credit if it is submitted within one week of the due date.
- Assignments submitted after one week of the due date will have a zero (0) grade recorded for the assignment.
- In the event that an assignment is made less than one week prior to the end of the course, the assignment must be submitted by the last day of class prior to the beginning of the final exam period and will not be accepted late.

NOTE: ALL GRADED TESTS AND EXAMS ARE RETAINED BY THE INSTRUCTOR.

Final letter grades will be issued as follows:

A	=	90 - 100	points
B	=	80 - 89	points
C	=	70 - 79	points
D	=	60 - 69	points
F	=	0 - 59	points

READ THIS SYLLABUS CAREFULLY

You should read this syllabus carefully and ask your instructor about *any* aspects that you do not understand. The syllabus is an agreement between you and your instructor concerning course objectives, course content, grading, and other policies and procedures particular to this course. The above information is specific to the course. Three additional documents are provided as attachments and *are considered a part of this syllabus*:

Attachment I:

Each instructor will provide a supplement to this syllabus. The supplement will include: a week-by-week plan of instruction based on the section in which you are enrolled; your instructor's name, office hours and/or office location; and your instructor's contact information and recommended best methods to contact your instructor.

Attachment 2:

The Department responsible for developing and teaching has policies and procedures in place to assure quality instruction for all students. These are attached as "Departmental Policies and Procedures."

Attachment 3:

Please note that it is your responsibility to read the current Student Handbook included in Greenville Technical College's Catalog. (See website.) The Student Handbook addresses specific academic and student conduct policies and procedures. Excerpts from the Student Handbook representing the policies and procedures most often referred to in working with students are provided for your convenience as "Attachment 3."

Approved by: _____

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13 Aug 10
Date

This syllabus will remain in effect until revised or reviewed no later than August 2011.