

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

COURSE SYLLABUS

Course Title: Linux System Administration

Course Number: IST 191

Lecture hours per week: 3.0

Lab/Clinic Hours:

Semester credit hours: 3.0

Prerequisite: IST 190

Catalog Course Description: This course will provide students with the skills necessary to administer a Linux system including hardware/software configuration, user and group administration, Linux network configuration, and file system management.

Purpose of the Course: Students will learn to install and configure Linux, manage the Linux filesystem, understand the Linux boot process, administer Linux users and groups, and become familiar with various Linux administrative tools.

Required text(s) or other materials:

1. Lab Pack: Red Hat Academy RHA130 v5.0 Workbooks 1 through 10, 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
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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 191 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 install Red Hat Enterprise Linux.
2. The student will be able to troubleshoot the Linux boot process.
3. The student will be able to add, modify, and delete Linux users and groups.
4. The student will be able to use Linux System Administration tools to administer a Linux server.
5. The student will be able to configure Linux kernel services.

The outcomes of the IST 191 course are intended to meet the Network Systems Administration program outcomes numbered 2 and 4 above.

Revised 1/2009

IST 191 – Main Topics

The following is a tentative schedule for the course. The instructor reserves the right to make schedule changes based on the needs of the students in the class.

Tutoring is now available in the Business Division Student Lab located on the Barton Campus in the Engineering Building (#103), Room 115. The hours for tutoring are posted in the lab (ET 115); no appointment is necessary. There are no fees required for this service.

Week 1 and Week 2:

- Introduction to Course (Curriculum Tour)
- Workbook 1 – Red Hat Enterprise Linux Installation
- Anaconda
- Network Based Installations
- Using Kickstart to Automate Installations

Week 3 and Week 4:

- Workbook 2 – Hardware and Device Configuration
- Installing Various Devices
- Performance Monitoring
- Workbook 1 Test**

Week 5:

- Workbook 3 – Linux Filesystem Management
- Disk Recognition and Partitioning
- Creating and Managing Filesystems
- SELinux: Secure Linux
- Workbook 2 Test**

Week 6 and Week 7:

- Workbook 4 – System Initialization and Services
- The Boot Sequence and the GRUB Bootloader
- Linux Run Levels
- Workbook 3 Test**

Week 8:

- Workbook 5 – User and Group Administration
- Adding, Modifying, and Deleting Users
- Managing Passwords
- Adding, Modifying, and Deleting Groups
- Workbook 4 Test**

Week 9:

- Workbook 6 – Network Configuration
- Managing Network Interfaces
- Basic IP Routing and Gateways
- Workbook 5 Test**

Week 10 and Week 11:

Workbook 7 – System Administration Tools

The CUPS Print System

System Logging

Automated System Maintenance

Workbook 6 Test

Week 12:

Workbook 8 – The Red Hat Package Manager

RPM: Installing and Removing Software

RPM Queries and Verification

Workbook 7 Test

Week 13:

Workbook 9 – Kernel Services and Configuration

Kernel Modules and Updating Kernels

The Network File System (NFS)

The Automounter

Software RAID

Workbook 8 Test

Week 14 and Week 15:

Workbook 10 – The X Windowing System

X Server Configuration

X Startup Configuration

Workbook 9 Test

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 191 – Course Specific Requirements

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 191 – EVALUATION AND GRADING INFORMATION

The Red Hat Academy curriculum is available at the website 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.

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 1:

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.

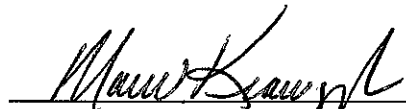
Attachment 2:

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:



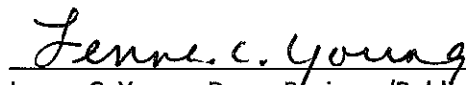
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13 Aug 10
Date

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