

GREENVILLE TECHNICAL COLLEGE

Business and Technology Division Computer Technology Course Syllabus Linux Essentials IST 190

[Credit/Contact Hours](#)

[Prerequisite](#)

[Co-requisite](#)

[Course Description](#)

[Purpose of Course](#)

[Required Texts](#)

[Additional Materials](#)

[Course Outcomes](#)

[Program Student Learning Outcomes](#)

[Greenville Technical College Core Competencies](#)

[Instructional Agreement](#)

[Grading Scale](#)

[Course Policies](#)

Credit/Contact Hours:

3.0

Prerequisite:

CPT 257. Computer Technology students must obtain a minimum grade of "C" in all CPT and IST courses.

Co-requisite:

None

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 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.

GREENVILLE TECHNICAL COLLEGE

Required Texts:

1. The CPT Department at Greenville Technical College is a member of the Red Hat Academy. The curriculum content for IST 190 will be delivered online via the Red Hat Academy. Students in IST 190 will be given access to the online curriculum. Internet access is required for a student in IST 190 to complete this course. There are no other required textbooks. The Red Hat Academy is online at <https://rha.redhat.com>.
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.

Additional Materials:

The skills taught in this course are applicable to a wide range of careers including Linux system administration, network administration, and network security. This course will provide students with a basic understanding of the Red Hat distribution fork of Linux, including Fedora, Red Hat Enterprise Linux (RHEL) and CentOS Linux (Community ENTERprise Operating System). IST 190 is not a computer certification course, but students will gain training that will help them pass the CompTIA Linux+, Linux Professional Institute LPIC1 and LPIC2, and the Red Hat Certified System Administrator (RHCSA) certification exams. The final exam will consist of a written assessment and a skill-based hands-on assessment.

Additional recommended reference books on Red Hat Linux are posted online at <https://beausanders.org/IST190>.

Course Outcomes:

Students who successfully complete this course will have demonstrated the skills required to accomplish the following objectives with a minimum competence level of 70 percent.

1. Navigate and manage the Linux file system.
2. Administer Linux users and groups.

GREENVILLE TECHNICAL COLLEGE

3. Manage Linux file ownerships and permissions.
4. Execute commands in the Bash shell.
5. Manage a Linux server using basic administrative skills.

The outcomes of the IST 190 course are intended to meet the Computer Technology program level student learning outcomes.

Revised 7/17/2015

Program Student Learning Outcomes:

Upon successful completion of the Computer Technology Degree students will be able to:

1. Install computer and network hardware.
2. Install computer operating systems and application software.
3. Design, create and test computer programming solutions.
4. Demonstrate the ability to take initiative, assume responsibility, and work under pressure with minimum supervision by successfully completing "hands-on" computer assignments.
5. Analyze, troubleshoot, and correct computer related technical problems.

Revised August 2012

Greenville Technical College Core Competencies:

Communication Core Competency: Students will demonstrate effective written and oral communication skills to convey information, ideas, or opinions.

GREENVILLE TECHNICAL COLLEGE

- **Written Communication:** Students will demonstrate effective written communication skills to convey information, ideas, or opinions.
- **Oral Communication:** Students will demonstrate effective oral communication skills to convey information, ideas, or opinions.

Critical Thinking Core Competency: Students will demonstrate effective reasoning, problem solving, or quantitative skills to develop an opinion or conclusion.

- **Critical Reasoning:** Students will employ inquiry, analysis, and synthesis of information to formulate and/or evaluate an opinion or conclusion.
- **Problem Reasoning:** Students will design and formulate a strategy to answer a question or achieve a desired goal.
- **Quantitative Reasoning:** Students will be able to analyze numerical information or observable facts resulting in informed conclusions.

Information Literacy Core Competency: Students will be able to locate, evaluate, and use information effectively from diverse sources.

Professionalism Core Competency: Students will demonstrate conduct and etiquette appropriate to the community and chosen career.

- **Professionalism:** Students will display professional conduct and work habits.
- **Teamwork:** Students will collaborate with others to accomplish a shared goal.

Instructional Agreement:

This syllabus is an agreement between the student and instructor concerning course objectives, course content, grading and other policies and procedures particular to the course as well as any posted program, departmental, and divisional policies. It is also the student's responsibility to become familiar with the Student Handbook/College Catalog found in the Student Resource area of Blackboard.

Grading Scale:

Grades for this course will be calculated as follows:

Module Tests (Online Chapter Exams) 35 percent

Labs 35 percent

Final Examination

(Written and Hands-On Lab) 30 percent

Written Final Exam 35% and Hands-On Lab Final Exam 65%

GREENVILLE TECHNICAL COLLEGE

Final letter grades will be issued as follows:

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

Course Policies:

Assignments, tests, and labs must be submitted by students on or before the due date indicated in the Class Calendar in Blackboard and attached as Attachment 2 to this syllabus. Late submission points will be deducted for late assignments, tests, and labs per CPT Department Policies. Refer to the CPT Department policies attached as Attachment 2.

IST 190 – MAIN TOPICS

(RH124) Red Hat System Administration I

- Accessing the Command Line
 - Accessing the Command Line Using the Local Console
 - Accessing the Command Line Using the Desktop
 - Executing Commands Using the Bash Shell
- Managing Files From the Command Line
 - The Linux File System Hierarchy
 - Locating Files by Name
 - Managing Files Using Command-Line Tools
 - Matching File Names Using Path Name Expansion
- Getting Help in Red Hat Enterprise Linux
 - Reading Documentation Using **man** Command
 - Reading Documentation Using **pinfo** Command
 - Reading Documentation in **/usr/share/doc**
 - Getting Help From Red Hat
- Creating, Viewing, and Editing Text Files
 - Redirecting Output to a File or Program

GREENVILLE TECHNICAL COLLEGE

- Editing Text Files from the Shell Prompt
- Editing Text Files with a Graphical Editor
- Managing Local Linux Users and Groups
 - Users and Groups
 - Gaining Superuser Access
 - Managing Local User Accounts
 - Managing Local Group Accounts
 - Managing User Passwords
- Controlling Access to Files with Linux File System Permissions
 - Linux File System Permissions
 - Managing File System Permissions from the Command Line
 - Managing Default Permissions and File Access
- Monitoring and Managing Linux Processes
 - Processes
 - Controlling Jobs
 - Killing Processes
 - Monitoring Process Activity
- Controlling Services and Daemons
 - Identifying Automatically Started System Processes
 - Controlling System Services
 - Using **systemctl** to Manage Services
- Configuring and Securing OpenSSH Service
 - Accessing the Remote Command Line with SSH
 - Configuring SSH Key-based Authentication
 - Customizing SSH Service Configuration
- Analyzing and Storing Logs
 - System Log Architecture
 - Reviewing Syslog Files
 - Reviewing **systemd** Journal Entries
 - Preserving the **systemd** Journal
 - Maintaining Accurate Time
- Managing Red Hat Enterprise Linux Networking
 - Networking Concepts
 - Validating Network Configuration
 - Configuring Networking with **nmcli**
 - Editing Network Configuration Files
 - Configuring Host Names and Name Resolution
- Archiving and Copying Files Between Systems
 - Managing Compressed tar Archives
 - Copying Files Between Systems Securely
 - Synchronizing Files Between Systems Securely

GREENVILLE TECHNICAL COLLEGE

- Installing and Updating Software Packages
 - Attaching Systems to Subscriptions for Software Updates
 - RPM Software Packages and Yum
 - Managing Software Updates with yum
 - Enabling yum Software Repositories
 - Examining RPM Package Files
- Accessing Linux File Systems
 - Identifying File Systems and Devices
 - Mounting and Unmounting File Systems
 - Making Links Between Files
 - Locating Files on the System
- Using Virtualized Systems
 - Managing a Local Virtualization Host
 - Installing a New Virtual Machine

The instructor reserves the right to modify the Plan of Instruction by changing the sequence of text material or testing content. Refer to attachment one for more details about this class.

Disabilities Information

Students with disabilities, including those who were served in Special Education (resource or tutorial), should contact Student Disability Services (SDS) to discuss their need for services and accommodations. The main SDS office is located on the Barton Campus in the Student Center Building 105, office 113.

Staff can be reached by phone at 864 250-8202 or via email to DisabilityServices@gvltec.edu . Appointments are available at all satellite campus locations. Please check the GTC website for more information concerning Student Disability Services: <http://gvltec.edu/disability-services/>

Efforts have been made to ensure all materials presented in an electronic format are accessible for students with disabilities and the college is committed to this obligation. However, if you experience any difficulty accessing these materials please notify

GREENVILLE TECHNICAL COLLEGE

your instructor immediately so a solution can be provided. You may also contact Student Disability Services directly at 864-250-8202 or by email at DisabilityServices@gvltec.edu.

Students who need a PDF reader for accessibility of course documents presented in PDF format may download a free reader at <https://acrobat.adobe.com/us/en/products/pdf-reader.html>

Starfish

We care about your success! Greenville Technical College is proud to offer Starfish, a software tool designed to promote student success through coordination and communication between students, instructors and support staff.

When you set up your profile in Starfish, you can connect with services, faculty and staff at Greenville Technical College. The link to Starfish is located in Blackboard. Throughout the term, you may receive emails regarding your attendance, course grades or academic performance.

To benefit from this software, it is important that you check your Greenville Technical College Gmail regularly and read the Starfish alerts. If your academic performance begins to drop, you may also be contacted directly by a Success Coach or the Student Success Center.

Start, Stay, Succeed!