CS 181.23B Course Outline as of Fall 2022

CATALOG INFORMATION

Dept and Nbr: CS 181.23B   Title: LINUX ADMINISTRATION 2
Full Title: Linux Administration 2
Last Reviewed: 2/14/2022

Units		Course Hours per Week		Nbr of Weeks	Course Hours Total	
Maximum	3.00	Lecture Scheduled	3.00	17.5	Lecture Scheduled	52.50
Minimum	3.00	Lab Scheduled	0	8	Lab Scheduled	0
		Contact DHR	0		Contact DHR	0
		Contact Total	3.00		Contact Total	52.50
		Non-contact DHR	0		Non-contact DHR	0

Total Out of Class Hours: 105.00   Total Student Learning Hours: 157.50

Title 5 Category: AA Degree Applicable
Grading: Grade or P/NP
Repeatability: 00 - Two Repeats if Grade was D, F, NC, or NP
Also Listed As:
Formerly:

Catalog Description:
In this course, students will prepare for the Linux Professional Institute LPIC-1 certification. This course prepares students for the exam objectives aligned to the second half of the Linux Professional Institute (www.LPI.org) LPIC-1 Linux Administrator first certification exam. Students who successfully complete this course will understand shells, scripting, data management, interfaces and desktops, administrative tasks, essential system services, network fundamentals and system security. Linux has been around since the mid-'90s and is widely adopted across products, markets and industries. Mastering Linux installation, configuring and maintenance is key to securing an IT administrator job.

Prerequisites/Corequisites:
Course Completion of CS 181.2 (or CS 181.23A)

Recommended Preparation:
Eligibility for ENGL 100 or ESL 100

Limits on Enrollment:

Schedule of Classes Information:
Description: In this course, students will prepare for the Linux Professional Institute LPIC-1

certification. This course prepares students for the exam objectives aligned to the second half of the Linux Professional Institute (www.LPI.org) LPIC-1 Linux Administrator first certification exam. Students who successfully complete this course will understand shells, scripting, data management, interfaces and desktops, administrative tasks, essential system services, network fundamentals and system security. Linux has been around since the mid-'90s and is widely adopted across products, markets and industries. Mastering Linux installation, configuring and maintenance is key to securing an IT administrator job. (Grade or P/NP)
Prerequisites/Corequisites: Course Completion of CS 181.2 (or CS 181.23A)
Recommended: Eligibility for ENGL 100 or ESL 100
Limits on Enrollment:
Transfer Credit:
Repeatability: Two Repeats if Grade was D, F, NC, or NP

ARTICULATION, MAJOR, and CERTIFICATION INFORMATION:

AS Degree:	**Area**		Effective:	Inactive:
CSU GE:	**Transfer Area**		Effective:	Inactive:
IGETC:	**Transfer Area**		Effective:	Inactive:
CSU Transfer:		Effective:	Inactive:	
UC Transfer:		Effective:	Inactive:	

CID:

Certificate/Major Applicable:
Not Certificate/Major Applicable

Approval and Dates

Version:	01	Course Created/Approved:	2/14/2022
Version Created:	11/2/2021	Course Last Modified:	2/28/2024
Submitter:	Michael McKeever	Course last full review:	2/14/2022
Version Status:	Approved New Course (First Version)	Prereq Created/Approved:	2/14/2022
Version Status Date:	2/14/2022	Semester Last Taught:	Spring 2023
Version Term Effective:	Fall 2022	Term Inactive:	Fall 2025

COURSE CONTENT

Student Learning Outcomes:
At the conclusion of this course, the student should be able to:
1. Use current best pratice encryption methods to secure data and communications.
2. Configure basic network services, using virtual machines running Linux.
3. Demonstrate knowledge and awareness of accessibility technologies.

Objectives:
At the conclusion of this course, the student should be able to:
1. Configure and implement general networking methods and security policies.
2. Maintain the system time and synchronize the clock via Network Time Protocol (NTP).
3. Perform basic forward and alias configuration on a client host using Mail Transfer Agent

(MTA) programs.

4. Localize a system in a language different than English.

5. Review and modify system configuration to ensure host security in accordance with local security policies.

6. Customize existing scripts or write simple new Bash scripts.

7. Add, remove, suspend and change user accounts in accordance with local security policies.

Topics and Scope:

I. Advanced Shell Features
    A. Shell scripts
    B. Bash scripts

II. Administering the Display
    A. X window
    B. Graphical desktops
    C. Accessibility

III. User and System Administration
    A. User and group accounts
    B. Scheduling jobs
    C. Localization

IV. System Services
    A. System time
    B. System logging
    C. Email configuration
    D. Printer management

V. Networking
    A. Network fundamentals
    B. Network configuration
    C. Network troubleshooting

VI. System Security
    A. Account security
    B. Host security
    C. Encryption, including public & private keys

Assignment:

Reading assignments include:
    1. Online research of Linux programming methods
    2. Approximately 30 pages per week from the curriculum

Homework problems include:
    1. Weekly online discussion thread participation
    2. Hands-on exercises and class performances to demonstrate proficiency with topics
    3. Online exams (10-20)
    4. Computer configuration assignments using the Linux operating system

Other assignments include:

1. Skills demonstration examinations
2. Classroom scenario-based exercises
3. Midterm
4. Final exam

Methods of Evaluation/Basis of Grade:

Writing: Assessment tools that demonstrate writing skills and/or require students to select, organize and explain ideas in writing.

Weekly written online discussions	Writing 5 - 10%

Problem Solving: Assessment tools, other than exams, that demonstrate competence in computational or non-computational problem solving skills.

Homework problems, assignments for Linux configuration	Problem solving 15 - 30%

Skill Demonstrations: All skill-based and physical demonstrations used for assessment purposes including skill performance exams.

Class performance of Linux configuration and skills demonstration examinations	Skill Demonstrations 20 - 30%

Exams: All forms of formal testing, other than skill performance exams.

Exams, Midterm, Final Exam and skill demonstration examinations	Exams 20 - 30%

Other: Includes any assessment tools that do not logically fit into the above categories.

Attendance and participation in scenario-based exercises	Other Category 5 - 20%

Representative Textbooks and Materials:
UNIX and Linux System Administration Handbook. 5th ed. Nemeth, Evi; Snyder, Garth; Hein, Trent R.; Whaley, Ben; Mackin, Dan. Addison-Wesley Professional. 2017 (classic)
Linux Bible. 10th ed. Negus, Christopher. Wiley Press. 2020
Linux Administration: The Linux Operating System and Command Line Guide for Linux Administrators. Cannon, Jason. CreateSpace Independent Publishing Platform. 2016 (classic)

OTHER REQUIRED ELEMENTS

STUDENT PREPARATION

Matric Assessment Required:	E	Requires English Assessment
Prerequisites-generate description:	A	Auto-Generated Text
Advisories-generate description:	A	Auto-Generated Text
Prereq-provisional:	N	NO
Prereq/coreq-registration check:	Y	Prerequisite Rules Exist
Requires instructor signature:	N	Instructor's Signature Not Required

BASIC INFORMATION, HOURS/UNITS & REPEATABILITY

Method of instruction:	02	Lecture
	71	Internet-Based, Simultaneous Interaction
	72	Internet-Based, Delayed Interaction
Area department:	CS	Computer Studies
Division:	72	Arts & Humanities
Special topic course:	N	Not a Special Topic Course
Program status:	2	Not Certificate/Major Applicable
Repeatability:	00	Two Repeats if Grade was D, F, NC, or NP
Repeat group id:		

SCHEDULING

Audit allowed:	N	Not Auditable
Open entry/exit:	N	Not Open Entry/Open Exit
Credit by exam:	N	Credit by examination not allowed
Budget code: Program:	0000	Unrestricted
Budget code: Activity:	0701	Computer & Information Science

OTHER CODES

Discipline:	Computer Information Systems	
Basic skills:	N	Not a Basic Skills Course
Level below transfer:	Y	Not Applicable
CVU/CVC status:	Y	Distance Ed, Not CVU/CVC Developed
Distance Ed Approved:	Y	Either online or hybrid, as determined by instructor
Emergency Distance Ed Approved:	N	None
Credit for Prior Learning:	N	Agency Exam
	N	CBE
	N	Industry Credentials
	N	Portfolio
Non-credit category:	Y	Not Applicable, Credit Course
Classification:	Y	Career-Technical Education
SAM classification:	C	Clearly Occupational
TOP code:	0708.00	Computer Infrastructure and Support
Work-based learning:	N	Does Not Include Work-Based Learning
DSPS course:	N	Not a DSPS Course
In-service:	N	Not an in-Service Course