Introduction to PC Operating Systems (ITSC 1305)

Credit: 3 semester credit hours (3 hours lecture)

Prerequisite/Co-requisite: None

Course Description

Introduction to personal computer operating systems including installation, configuration, file management, memory and storage management, control of peripheral devices, and use of utilities.

Required Textbook and Materials

1. *Linux Operations and Administration, 1st Edition*
2. ISBN 13: 9781111035303
3. Personal storage device for course work, USB drive, Cloud Storage, FTP, HDD
4. Internet access

Course Objectives

Upon completion of this course, the student will be able to:

1. Install, configure, and maintain the operating system.
2. Perform basic file management operations.
3. Organize and allocate primary and secondary storage.
4. Access and control peripheral devices; and run utilities.

Course Outline

A. Intro to Linux Operating System
   1. Overview
   2. History
   3. Architecture

B. Installing Open SUSE
   1. System Configuration
   2. Installation Methods and Virtual Machines
   3. Installation
   4. Virtual Machines
   5. GNOME
   6. KDE

C. Managing Files & Directories
   1. Linux Directory Structure
   2. Managing Files & Directories

D. Creating & Editing Files with Text Editors
   1. Linux Text Editors
   2. Vim Editor

E. Creating Shell Scripts & Displaying File Contents
   1. Overview of File Permissions
   2. Creating Shell Scripts
   3. Displaying Contents of a Text File

F. Managing Data: Backup & Recovery Processes
   1. System Backups
   2. Compression
   3. Scheduling Backups

G. Managing Users & Groups
   1. Managing Users
   2. Managing Groups
   3. Managing User & Group Accounts with YaST

H. Network Communications
   1. Intro to TCP/IP

   2. Working with IP Addresses
   3. Configuring Network Interface Cards

I. Installing Software Packages
   1. Working with RPM Software Packages
   2. OpenSUSE Software Packages

J. Apache Web Server
   1. Installing Apache
   2. Configuring Apache
   3. Web Page Creation

K. Domain System
   1. Intro to Domain Name System
   2. Configuring BIND

L. Mail Server
   1. Linux Mail System
   2. Mail Server Configuration

M. Network File Systems
   1. Overview of Network File Systems
   2. Importing & Exporting

N. Installation Planning
   1. Analyzing Hardware
   2. Installation Checklist
   3. Automating OpenSUSE Installation

O. System Management & Administration
   1. Overview of the File System
   2. Administering File Systems
   3. Management Tasks

P. Managing Resources
   1. X Window System Overview
   2. Display Manager

Q. Networking in a Linux Environment
   1. Network Information Services
   2. Managing other Network Services

R. Using Samba for Interoperating Linux & Windows
   1. Using Samba

S. Securing Linux
   1. System Security
   2. Securing Data from the Command Line

T. Advanced Linux Administration
   1. Working with the Linux Kernel
   2. System Monitoring
   3. Tuning
   4. Problem Solving
   5. Troubleshooting

Grade Scale

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

Course Evaluation

Final grades will be calculated according to the following criteria:

1. Daily work	35%
2. Home work	35%
3. Quizzes & Test	30%

Course Requirements

1. Demonstrate proper System Life Cycle documentation
2. Properly create ER diagrams
3. Properly install Linux, Windows, and Mac operating system
4. Detect and removal of malicious software from Virtual Machine

Course Policies

1. No food, drinks, or use of tobacco products in class.
2. Cellphones, MP3 players, tablets, notebook/netbook(s) and any other electronic devices must be turned off while in class.
3. Do not bring children to class.
4. No late assignments will be accepted. Any assignment submitted after the Blackboard cut-off time will result in a '0'.
5. **Tests**. Students that miss a test are not allowed to make up the test. Students that miss a test will receive a grade of '0'.
6. If you wish to drop a course, the student is responsible for initiating and completing the drop process. If you stop coming to class and fail to drop the course, you will earn an 'F' in the course.
7. A grade of 'C' or better must be earned in this course for credit toward degree requirement
8. All assignments will be completed using Blackboard. Assignment may not be submitted via email.
9. **Attendance**: Students should be present and punctual for all classes. Any assignment missed due to absence will result in a zero.
10. **Tardiness**: If tardy, enter quietly and do not disturb the class. Students that are tardy or miss a class are responsible for all work and/or discussion missed. The student is responsible to obtain missed material from a classmate. **Do not expect your instructor to repeat a lecture & do not interrupt your instructor.**
11. Do not talk, type, or print while the instructor is talking to the class or when a student is asking a question that pertains to the class.
12. Refrain from "surfing" the Web during class, unless directed by your instructor.

Disabilities Statement

The Americans with Disabilities Act of 1992 and Section 504 of the Rehabilitation Act of 1973 are federal anti-discrimination statutes that provide comprehensive civil rights for persons with disabilities. Among other things, these statutes require that all students with documented disabilities be guaranteed a learning environment that provides for reasonable accommodations for their disabilities. If you believe you have a disability requiring an accommodation, please contact the Special Populations Coordinator at (409) 880-1737 or visit the office in Student Services, Cecil Beeson Building.

Course Schedule

Refer to Blackboard for actual assignments and due date

Week of	Topic	Reference
Week 1	Computer System Overview	Chapter 1
Week 2	Operating System Overview	Chapter 2
Week 3	Process Description and Control	Chapter 3

Week of	Topic	Reference
Week 4	Threads	Chapter 4
Week 5	Concurrency: Mutual Exclusion and Synchronization	Chapter 5
Week 6	Concurrency: Deadlock and Starvation	Chapter 6
Week 7	Memory Management	Chapter 7
Week 8	Virtual Memory	Chapter 8
Week 9	Uniprocessor Scheduling	Chapter 9
Week 10	Multiprocessor and Real-Time Scheduling	Chapter 10
Week 11	I/O Management and Disk Scheduling	Chapter 11
Week 12	File Management	Chapter 12
Week 13	Embedded Operating Systems	Chapter 13
Week 14	Computer Security Threats	Chapter 14
Week 15	Computer Security Techniques	Chapter 15
Week 16	Distributed Processing, Client/Server, and Clusters	Chapter 16

Contact Information:

Varies by Instructor