

# El Paso Community College

## Syllabus

### Part II

## Official Course Description

|                                 |  |
|---------------------------------|--|
| <b>SUBJECT AREA</b>             | <u>Information Technology Systems</u>                      |
| <b>COURSE RUBRIC AND NUMBER</b> | <u>ITSC 2325</u>   |
| <b>COURSE TITLE</b>             | <u>Advanced Linux</u>                                      |
| <b>COURSE CREDIT HOURS</b>      | <u>3      3      :      1</u><br>Credits      Lec      Lab |

### I. Catalog Description

Provides instruction in advanced open-source Linux operating system. Develop directory services for clients, support users remotely, and install and configure network services. **Prerequisite: ITSC 1316. (3:1). Lab fee.**

### II. Course Objectives

- A. Unit I. Web Services
  1. Install and configure an Apache web server for network implementation.
  2. Configure an Apache web server to use virtual hosts, Secure Sockets Layer (SSL), and customized file access.
  3. Install and configure a proxy server with access policies, authentication, and resource usage.
- B. Unit II. File and Service Sharing
  1. Set up a SAMBA server for client login.
  2. Set up a workgroup in which a server participates and define shared directories and printers.
  3. Export file systems using NFS.
  4. Mount an NFS file system on a client and secure NFS.
- C. Unit III. Network Client Management
  1. Configure a DHCP setting default and per client options.
  2. Configure a DHCP relay agent.
  3. Maintain the DHCP server.
  4. Configure PAM (Pluggable Authentication Module) authentication.
  5. Perform queries and updates to a LDAP (Lightweight Directory Access Protocol) server.
  6. Manage adding both items and users.
- D. Unit IV. E-Mail Services
  1. Install and configure a mail server using send mail.
  2. Configure e-mail aliases, e-mail quotas, and virtual e-mail domains.
  3. Implement client e-mail management software to filter, sort, and monitor incoming user e-mail.
  4. Install and configure POP and IMAP daemons.

E. Unit V. System Security

1. Configure a system to perform network address translation (NAT, IP masquerading).
2. Configure port redirection, manage filter rules, and avert attacks.
3. Configure an FTP server for anonymous use.
4. Configure user access.
5. Configure and secure an SSH daemon.
6. Configure TCP Wrapper.
7. Install, configure, and run intrusion detection systems
8. Apply security patches and bug fixes.

F. Unit VI. Troubleshooting

1. Identify boot stages and troubleshoot the cause of errors in loading and usage of boot loaders.
2. Identify and correct common boot and run time issues.
3. Identify, diagnose, and repair local system issues when using the command line.
4. Identify common local system and user environment configuration issues and common repair techniques.

**III. THECB Learning Outcomes (WECM)**

1. Install, administer, and manage advance network environment using a Linux system.
2. Demonstrate advance skills and proficiency with Linus utilities, configurations.
3. Deploy secure networks.
4. Integrate Linux networks with existing networks.

**IV. Evaluation**

- A. There will be three (3) skill-based examinations and one final exam.
- B. There will be six (6) hands-on lab assignments.

Final Grade

The final grade will be based on the percentage of the total points earned.

| Percentage | Final Letter Grade |
|------------|--------------------|
| 90% +      | A                  |
| 80% to 89% | B                  |
| 70% to 79% | C                  |
| 60% to 69% | D                  |
| 0% to 59%  | F                  |

**V. Disability Statement (Americans with Disabilities Act [ADA])**

EPCC offers a variety of services to persons with documented sensory, mental, physical, or temporary disabling conditions to promote success in classes. If you have a disability and believe you may need services, you are encouraged to contact the Center for Students with Disabilities to discuss your needs with a counselor. All discussions and documentation are kept confidential. Offices located: VV Rm C-112 (831-2426); TM Rm 1400 (831-5808); RG Rm B-201 (831-4198); NWC Rm M-54 (831-8815); and MDP Rm A-125 (831-7024).

## **VI. 6 Drop Rule**

Students who began attending Texas public institutions of higher education for the first time during the Fall 2007 semester or later are subject to a 6-Drop limit for all undergraduate classes. Developmental, ESL, Dual Credit and Early College High School classes are exempt from this rule. All students should consult with their instructor before dropping a class. Academic assistance is available. Students are encouraged to see Counseling Services if dropping because exemptions may apply. Refer to the EPCC catalog and website for additional information.

## **VII. Title IX and Sex Discrimination**

Title 9 (20 U.S.C. 1681 & 34 C.F.R. Part 106) states the following "No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any educational program or activity receiving Federal financial assistance." The Violence Against Women Act (VAWA) prohibits stalking, date violence, sexual violence, and domestic violence for all students, employees and visitors (male and female). If you have any concerns related to discrimination, harassment, or assault (of any type) you can contact the Assistant to the Vice President for Student and Enrollment Services at 915-831-2655. Employees can call the Manager of Employee Relations at 915-831-6458. Reports of sexual assault/violence may also be reported to EPCC Police at 915-831-2200.