

NOVA COLLEGE-WIDE COURSE CONTENT SUMMARY ITN 171 – UNIX I (3 CR.)

Course Description

Provides an introduction to UNIX operating systems. Teaches login procedures, file creation, UNIX file structure, input/output control, and the UNIX shell. Lecture 3 hours per week.

General Course Purpose

UNIX and all derivatives of Unix/Linux like operating system (OS) such as Linux are increasingly becoming popular given their robust features, functionality, and GNU licensing. Students will cover and gain administrative understating of the environment and how it is used in a computer network environment.

Course Prerequisites/Corequisites

Prerequisite: ITE 115

Course Objectives

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

- a) Perform basic UNIX OS tasks
- b) Read-understand-write short scripts in a Unix shell
- c) Use the Unix file system utilities
- d) Use Unix programming tools: compilers, Make utility, debugger, profiler, version control
- e) Understand the concepts, design, and structure of the UNIX operating system

Major Topics to be Included

- a) The advantages and disadvantage UNIX
- b) Differences between UNIX (Solaris) and LINUX
- c) File structure
- d) Commands
- e) Redirection
- f) Access permissions
- g) Stringing commands together
- h) File creation and editing
- i) Command execution
- j) Scripts
- k) Virtualization
- l) Oracle "Solaris" Operating System
- m) Cloud

Student Learning Outcomes

The advantages and disadvantage UNIX

1. Comparison to Intel platforms
2. Programs using Unix
3. Programs using Unix
4. Different version of Unix (Distro)
5. Different version of Linux (Distro)

Differences between UNIX and LINUX

1. User Interface (UI)
2. File Structure
3. CPU (Processor Architecture)
4. Licensing

File Structure

1. Structure Size
2. File Architecture types
3. Partitions

Commands

1. Variables
2. "Man" Pages

Redirection

1. File redirection
2. Folder redirection

Access permissions

1. Files
2. Users
3. Password Recovery

Stringing commands together

- Using Pipe function

File creation and editing

1. Creating
2. Deleting
3. Moving
4. Editing (Editors)

Command execution

1. Installing patches
2. Executing applications

Scripts

1. Basic administrative python scripts
2. Script structure

Virtualization

1. Hypervisors (OS vs Bare Metal)
2. Containers
3. VM Administrations

Oracle "Solaris" Operating System

1. Supported Servers
2. Operating System (Solaris 10) Installation
3. User Interface
4. File Structure

Cloud

1. SDN/NFV Overview
2. Openstack Overview

3. Private Cloud Overview

Required Time Allocation per Topic

In order to standardize the core topics of ITE 171 so that a course taught at one campus is equivalent to the same course taught at another campus, the following student contact hours per topic are required. Each syllabus should be created to adhere as closely as possible to these allocations. Of course, the topics cannot be followed sequentially. Many topics are taught best as an integrated whole, often revisiting the topic several times, each time at a higher level. There are normally 45 student contact hours per semester for a three credit course. (This includes 15 weeks of instruction and does not include the final exam week so $15 * 3 = 45$ hours. Sections of the course that are given in alternative formats from the standard 16 week section still meet for the same number of contact hours.) The final exam time is not included in the time table. The category, (Other optional content), leaves ample time for an instructor to tailor the course to special needs or resources.

Topic	Hours	Percent
The advantages and disadvantage UNIX	2	4.4
Differences between UNIX and LINUX	1	2
Logon and Logoff	1	2
File structure	1	2
Commands	3	6
Redirection	1	2
Access permissions	1	2
Stringing commands together	1	2
File creation and editing	1	2
Command execution	2	4
Scripts	1	2
Virtualization	9	20
Oracle "Solaris" Operating System	7	16.6
Cloud	9	20
Quizzes and Exams	5	11
	45	100