

ULI101 Skills - Portion of Course Outline - Winter 2015

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Learning Outcomes:

1. Use ssh, and sftp commands to access data contained on remote servers
2. Explain the role of an operating system.
- 3. Explain the role of the Linux shell, use elementary Bash shell scripting concepts to improve working efficiency, and customize a Unix login account using environment variables, and start-up scripts.**
4. Describe the directory layout of a typical Linux system, and maintain and secure Unix directories and files.
5. Use basic Linux commands.
- 6. Use Linux pipes and file redirection efficiently to manipulate data.**
7. Use common editors to edit text files.
8. Form simple regular expressions to define patterns with various - Linux commands.
9. Perform decimal, binary, octal and hexadecimal numbering conversions.
- 10. Create and run simple Bash shell scripts.**

Topic Outline:

- Introduction to Unix and Linux - 20%
 - The role of an Operating System
 - Unix and Linux history
 - Software licensing
 - Account maintenance
 - User interface
 - Window managers
 - Common GUI applications
 - The terminal window
 - Basic commands
 - Text editing
 - Linux distributions
 - Running your own Linux
- Common Utilities - 10%
 - **Filters**
 - Command aids (file, which, find)
 - **Useful commands (echo, date)**
 - Online system information (man)
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Topic Outline / continued:

- Unix File System - 20%
 - File hierarchy
 - Managing files and directories (ls, cat, more, less, rm, cd, cp, mv, mkdir, rmdir)
 - Kinds of files (directory, ordinary, linked)
 - Filenames (hidden files)
 - **Absolute and relative pathnames** (pwd)
 - Access permissions (**chmod**, umask)
 - Remote login and file transfer through SSH (**ssh**, scp, sftp)
- Data Representation - 5%
 - Data representation concepts
 - Numbering system conversions
- Shell Basics - 25%
 - Common shells
 - Command execution
 - Command line editing (correcting mistakes, recalling commands)
 - Process management
 - **Standard input and output**
 - **File redirection and piping (<, >, >>, |)**
 - Ambiguous file references (?, *, [])
 - **Quoting special characters**
 - **Common environment variables**
 - Startup files
 - **Introduction to scripting concepts**
 - **Command execution via scripts**
 - **Script arguments**
- Regular Expressions – 20%
 - **Basic regular expressions**
 - Using regular expressions with vi
 - **Using regular expressions with grep, sed, and awk**

Topic Frequency (labs 1-8):

Topic	I1	I2	I3	I4	I5	I6	I7	I8
Useful commands (echo, date)								
Absolute and relative pathnames (pwd)								
Access permissions (chmod, umask)								
Remote login and file transfer through SSH (ssh, scp, sftp)								
File redirection and piping (<, >, >>,)								
Ambiguous file references (?, *, [])								
Quoting special characters								
Common environment variables								
Introduction to scripting concepts								
Command execution via scripts								
Script arguments								
Basic regular expressions								
Using regular expressions with grep, sed, and awk								