**Unix/Linux BASIC SYLLABUS**

**Module 1 – Introduction to the Linux Operating System**

* Getting started navigating the file system
* The file system structure
* Directories and files
* Pathnames
* Navigating the file system
* Exercise: Logging on to the system
* Exercise: Navigating the file system

**Module 2 – Basic Commands**

* Command line syntax
* Basic file handling commands (mv, cp, ln, rm etc...)
* Basic Directory handling commands (mkdir, rmdir, etc...)
* Exercise: Manipulating files and directories

**Module 3 – File Permissions and Access Control**

* Users and user groups
* File access permissions
* Changing file attributes
* Switching users and user groups
* Linking files
* Exercise: Setting and access permissions

**Module 4 – Redirection and Pipes**

* Input redirection
* Output redirection
* Pipes
* Exercise: Using redirection and pipe facilities

**Module 5 – Introduction to the vi Editor**

* Overview of the vi editor
* Basic functions
* Switching to input mode
* Other useful commands
* Exercises: Using the vi editor

**Module 6 – Searching Text**

* Searching for text with grep
* Linking files
* Exercises: Searching and Replacing Text

**Module 7 – Processes**

* What is a process?
* Monitoring processes
* Killing processes
* Background processes
* Job Control
* Grouping commands
* Exercise: Monitoring and controlling processes

**Module 8 – More Basic Commands**

* The wc (word count) command
* The find command
* The cut command
* The sort command
* The finger command
* Exercise: Using file handling commands

**Module 9 – The User Environment**

* Customizing the .bash\_profile file
* Customizing the .bashrc file
* Exercise: Setting up an environment

**Unix Shell Script Basic**

**Module 1 – Getting Started**

* What is a shell script?
* Development guidelines
* Creating and editing shell scripts
* Naming and storing shell scripts
* Executing shell scripts
* Exercise: Write a simple shell script

**Module 2 – Using Variables**

* Environment variables
* Local variables
* Arrays
* Assigning values to variables
* Assessing variable values
* Using quotes
* Delimiting variable names
* Echo control sequences
* Exercise: Add variables to a script

**Module 3 – Integer Arithmetic**

* Using the expr command
* Using the (( )) notation
* Exercise: Add integer arithmetic to a shell script

**Module 4 – Handling Run Time Data**

* The read command
* Command line arguments
* Exercise: Writing a generic shell script
* Exercise: Writing an interactive shell script

**Module 5 – Condition Execution**

* The if statement
* The test command
* Other test notations
* Switch case
* Default and substitute variables
* Exit status codes
* Exercise: Adding validation to previous scripts

**Module 6 – Loop Constructs**

* The while loop
* The until loop
* The for loop
* The while true and until false loops
* Loop control commands
* select loop
* Exercise: Enhancing the previously written scripts

**Module 7 – Multi-Branch Decisions**

* The case statement

**Module 8 – Functions**

* What is a function?
* Syntax
* Examples
* Exercise: Add a function to a script

**Advanced Unix Shell Scripting**

**Module 1 – The Stream Editor (SED)**

* Introduction and command line syntax
* The sed program structure
* sed program processing
* Use sed commands
* sed addresses
* sed instructions
* Exercises: SessionSimple text processing with sed
* Exercises: SessionCreate sed scripts to edit files

**Module 2 – Pattern Scanning Utility (AWK)**

* Introduction to The Pattern Scanning Utility - awk
* Introduction and command line syntax
* The awk program structure
* Use regular expressions
* Operators
* Simple patterns
* Extended patterns
* Comments
* Special patterns (BEGIN and END)
* Program variables
* Built-in variables
* Mathematical operators
* Enhanced printing
* Handling user variables
* Exercises: Create simple awk scripts
* Exercises: Create a simple awk script using variables