**System Administration**

**Sem II 2018/2019**

**Lecturers Info**

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| **Lecturer’s Name** | Rina Azlin Binti Razali |
| **Room No.** | Bw-3-C40 |
| **Office Tel. No.** | 03-89212020 ext 3311 |
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| **Time Table** | Lecturer - Monday (2.00-4.00pm) BM-2-004  Lab - Wednesday ( 11.00am – 1.00pm)BL-3-010 |
| **Consultation Hours** | Wednesday 10am- 11.00am  Friday 11am-12pm |

**Course Info**

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| **Aims/Objectives:** | This course aims to:   1. Provide an overview of operating systems and the architecture. 2. Provide an overview of the tasks involved in operating systems’ installation, configuration and maintenance. 3. Provide an overview of system administration tasks. 4. Teach some basic knowledge of shell scripts (scripting language). |
| **Learning/Course Outcomes:** | At the end of the course, the student should be able to:   1. Describe concepts and tasks related to system administration Perform installation and basic administration of Unix/Linux operating systems. 2. Perform basic system administration tasks such as operating system installation, configuration and troubleshooting. 3. Write simple Unix/Linux shell scripts. |

**Course Content and Weekly activity**

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| **Week** | **Topic** | **Activities** |
| Week 1 | Chapter 1: **Introduction to System Administration**   * Define the system administrator’s position * Know the administrator’s roles and privileges * Able to explain the skills required to be a system administrator * Discover the UNIX architecture that includes the kernel and shell * Virtualization * Log in to root * Understand the usage of **su** command |  |
| Week 2 | Chapter 2: **User Management**   * Examine /etc/group and /etc/passwd * Create, modify, and delete user accounts with useradd, usermod, and userdel |  |
| Week 3 & 4 | Chapter 3: **Maintaining Security**   * Use chmod to change file permissions in an absolute manner * Learn how the administrator uses three basic file permissions bits * Use chown and chgrp to change the owner and group owner of files * Restrict a user’s activities with the restricted shell | Quiz 1 |
| Week 5 | Chapter 4: **Booting and Shutdown**   * Understand the concept of run levels and their role in startup and shutdown operations | Quiz 2 |
| Week 6 | **Semester Break** |  |
| Week 7 | Chapter 5: **Common Linux Services**   * Overview of operating system services * Common services in a Linux server * Managing common Linux services | Midterm Exam |
| Week 8 | Chapter 6: **File Systems**   * Understand the initial categorization of files into ordinary, directory and device * Learn the hierarchical structure of file system * Become aware of the significance of absolute and relative pathnames | Assignment 1 |
| Week 9 | Chapter 6: File Systems   * Understand the four components of file systems * Mount and unmount file systems with mount and unmount |  |
| Week 10 | Chapter 7: **Backup Tool And Installing Program**   * Types and method of Backup * tar as backup tool * Create archives comprising multiple files with tar * apt as package manager * Managing program using apt * dpkg as advance package manager |  |
| Week 11 &12 | Chapter 8: **The Shell**   * Gain an overview of the shell’s interpretive cycle * Learn the significance of metacharacters and their use in wild wards for matching multiple filenames * Learn the difference between the use of double and single quotes * Implementation of pipelines * Use the man command to browse the UNIX documentation * Understand the organization of the documentation * Understand shell variables * Basic Linux command | Quiz 3 |
| Week 13 &14 | Chapter 9: **Shell Programming**   * Discover how shell scripts are executed and the role of the interpreter line * Make shell scripts interactive using read * Use positional parameters to read command-line arguments * Understand the significance of the exit status and the exit statement * Learn comprehensive decision making with the if conditional * Use a for loop to iterate with each element of a list * Use a while loop to repeatedly execute a set of commands | Assignment 2 |
| Week 15 | Chapter 10: **Introduction to New Technology**   * Cloud Computing * Windows Azure as a cloud server | Quiz 4 |
| Week 16 | FINAL EXAM WEEKS | |
| Week 17 |

**Text Book**

Wale Soyinka (2015) Linux Administration: A Beginner’s Guide, Seventh Edition 7th Edition.McGraw-Hill Education

**Lecture Notes & Announcement**

The Lecture Notes can be downloaded from the following website:

Announcement & important notices will be done *via* ***Class Notice (email).***

**Assessment**

Midterm 20%

Quizzes [2-4] 10%

Assignments [1-2] 10%

Lab 20%

Project 40%

Total 100%

**Class Policies:**

1. Dress in proper attire corresponding to Universiti Tenaga Nasional dress code.

2. Attendance is compulsory and will be taken regularly.

• Attendance for less than 80% of the lectures will result in students being barred from taking the Final Exam.

3. If you are absent from lecture due to

• Sickness : MC is required

• Emergency : letter of guardian is required

Any MC or letter should be given to the lecturer on the next day.

FAILURE TO DO SO WILL RESULT TO NO MAKE UP FOR ANY QUIZZES OR EXAM.

4. The lecturer reserves the right to give pop-quizzes whenever deemed appropriate. Latecomers will not get extended time.

5. Cheating and any attempt thereto will not be tolerated and penalized according to the seriousness of the offense.

6. All assignments must be submitted on time. Deducted of 25% of marks or ZERO mark will be given for the late submitter (based on case by case basis).