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**Course Syllabus**

**Course Code:** ITE 231  **Course Title:** Fundamentals of System Administration

**Credit:** 4(4-0-8)  **Lecture Hours:** 12:30-16:30 (2206)

**Semester:** 3 **Practice Hours:**

**Academic Year:** 3\_2019 **Prerequisites:**

**Curriculum:** Undergraduate **Course status:** Professional Course

**Major instructor:** Ilogu Ikechukwu **Sec:** 01

1. **Course Description**

A study of principles of system administration that apply to Linux platforms with reference to CENT OS. A review of Linux basics followed with a study of topics including user account management, interoperability, Monitor system Resources, Administer Users and Groups, Manage Files, Virtual system administration, security and Secure Linux File Access.

1. **Course Behavioral Objectives (CBO)**

After successful completion of the course, students should:

1. Have a good overview understanding of system administration and good understanding of Linux Operating System.
2. Management and networking perspectives related to system administration.
3. Have sound understanding of LINUX CENTOS installation, maintenance, and support including backup and recovery processes.
4. Have basic knowledge of LINUX CENTOS networking Security especially data security as it concerns Confidentiality, Integrity and Availability.
5. Be able to Install, configure, Administer and deploy LINUX CENTOS in a production environment.
6. **Teaching Units**

3.1 An Overview of System Administration

3.2 Linux Graphical Environment

3.3 Managing Physical Storage

3.4 Linux Virtualization

3.5 Getting started with Command Line Environment

3.6 Managing Logical Volume

3.7 Secure Linux File Access

3.8 Monitor System Resources

3.9 Manage System Software

3.10 Security Issues related to System Administration

1. **Teaching and Learning Activities**

4.1 Lecture

4.2 Class Discussions

4.3 Individual Reports and Presentation

4.4 Assignments

4.5 Quiz

4.6 Labs

4.7 Guest Speaker

1. **Teaching Aids**

5.1 Power Point Presentations

5.2 Case Studies and hand outs

5.3 Textbook

5.4 eBook

5.5 Online Activities, Web sites

5.6 learning.stamford.edu

5.7 MOOC, YouTube Tutorials on LINUX CENT OS.

1. **Evaluation and Grading Standards**

6.1 Participation 10%

6.2 Assignments 20%

6.3 Term project (Group) 15%

6.4 Midterm Examination 25%

6.5 Final Examination 30%

1. **Grading Standards**

Weighted Total Course Grade

90-100 A

85-89 B+

80-84 B

75-79 C+

70-74 C

65-69 D+

60-64 D

0-59 F

1. **Teaching Schedule: Activities & Deliverables Descriptions**

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| --- | --- | --- |
| **Week** | **Topics**   * CBO **=** Course Behavioral Objectives | **Activities & Deliverables** |
| Week1: | **Overview of System Administration**  **Getting Started with GNOME Graphical Desktop**  **Linux CentOS Installation.**  **CBO: a** | Learning account  Lecture  Class discussion |
| Week2: | **Getting started with Command Line Environment**  **CBO: a, c** | Lecture  Class Discussion  Case Study |
| Week 3: | **Manage Physical Storage I**  Describe MBR, Primary, Extended and Logical Partitions.  List available Disk Devices.  **CBO: a, b, c** | Lecture  Class Discussion  Case Study  Lab Assignment  Homework1 |
| Week 4: | **Manage Logical Volumes.**  Removing a Physical Volume  Displaying Current LVM Usage  Extend a Logical Volume.  **CBO: a, b, d** | Lecture  Class Discussion  Case Study  Lab Assignment  Homework2 |
| Week 5: | **Monitor System Resources**  Understand Process, Priority and signal concepts  Monitor Processes by CPU or Memory Consumption  Monitor Disk Usage  **CBO: a, b, c, d** | Lecture  Class Discussion  Case Study  Lab Assignment  Review for Midterm Exam |
| Week 6: | **Manage System Software**  **Mid-Term Exams** |  |
| Week 7: | **Getting Help in a Textual Environment**  Read Documentation using man Page  Identify Relevant Man Pages by Keyword  Documentation in /usr/ share/ doc  **CBO: a, b, e** | Lecture  Class Discussion  Case Study  Lab Assignment |
| Week 8: | **Administer Users and Groups**  User and Group Administration  Adding and Deleting Users  **CBO: b, d, e** | Lecture  Class Discussion  Case Study  Homework3  Lab Assignment |
| Week 9: | **Manage files from Command Line.**  The Linux File System Hierarchy  Navigate with Absolute Path Names  Command Line management  **CBO: b, d, e** | Lecture  Class Discussion  Case Study  Lab Assignment |
| Week 10: | **Secure Linux File Access.**  User, Group, Other (UGO) Concepts  Manage Permissions Using GUI Tools  Manage Permissions from the Command Line  **CBO: b, c, d, e** | Lecture  Class Discussion  Case Study  Lab Assignment  Lab Exercise |
| Week 11: | **Manage Physical Storage II**  Examine file system Parameters  Delete an Existing partition  Swap space concepts  Managing swap Space  Case Studies  **CBO: a, c, d, e** | Lecture  Class Discussion  Case Study  Lab Assignment |
| Week 12: | **Manage Virtual Machines**  Introduction to KVM Virtualization  Configuring Guests to start at boot time  Installation of an OS in Guest KVM.    **CBO: a, c, e** | Lecture  Class Discussion  Case Study  All assignments due |
| Week 13: | **Final Exam:** |  |

* CBO = Course Behavioral Objectives (listed on page 1)

1. **Textbook**

**REDHAT System Administration. I:** Hacker, Taylor, Bonneville and Howson (Red Hat Inc., 20111).

**UNIX and Linux System Administration Handbook**: Nemeth, Snyder, Hein and Whaley, 4th Edition, (Prentice Hall, 2010).

**The Practice of Cloud System Administration**: Limoncelli, Chalup, and Hogan (Addison-Wesley, 2015).

**The Practice of System and Network Administration**: Limoncelli, Hogan, and Chalup (Addison Wesley, 2007)

1. **Instructor**

Ajarn Ilogu Ikechukwu, [ikechukwu.ilogu@stamford.edu](mailto:ikechukwu.ilogu@stamford.edu),

Office Hours: Please call or Email for an appointment

**Course Regulation**

## Class Format

This class requires four hours thirty minutes a week of in-class learning. Topics related to Linux technologies and information systems that will be discussed in class and also case studies will be assigned as in-class work or homework. A practical session will also be conducted after the lecture session each meeting. During the class session, you are encouraged to participate as a member of the team or working individually during the lecture sessions and practical sessions. You are expected to come prepared for topic discussions in the class and should complete your homework on due date.

## Attendance Policy

Thailand Ministry of Education stipulates that students must attend 80% of class meetings to qualify for taking the final course examination. Thus, if a student misses more than 20% of class meetings, **for any reason**, a student will not be allowed to take the final exam. In case a student is late or absent*,* it is the student’s responsibility to get the class materials and handouts. In nearly every case, class handouts will be available on the elearning.stamford.edu web site. No make-up work will be accepted.

## Tardiness policy

Arriving at class on time is not only a good chance to practice professional courtesy, it is also a vital ingredient in educational success. Consequently, Stamford International University has set out the following policy on student tardiness:

1. A student who arrives in class up to 15 minutes late is counted as being tardy.

2. Three occasions of tardiness are counted as the equivalent of one absence.

3. A student who arrives in class more than 15 minutes late is counted as absent. The student may attend the remainder of the class as long as his/her arrival and presence are not disruptive to the education of the other members of the class.

## Student Class Conduct Policy

Any acts of classroom disruption that go beyond the normal rights of students to question and discuss with instructors the educational process relative to subject content will not be tolerated. This includes using your workstation, laptop or mobile phone for personal communication and/or entertainment during the class period. Remember, your inconsiderate actions will affect your classmates’ learning.

## Electronic Devices in Class Policy

Cell phones, Audio and MP3 players, and similar devices must be **turned off** in the classroom. Laptop computers may be used in lecture for the purpose of taking notes, completing class assignments and doing research for your project.

**English in Class**

Since this is an international university where the language of instruction is English, we will use only English in class. Please be courteous and inclusive by speaking only English.

**Examination Policy**

See the STIU Student Handbook.

## Appeals Policy

To appeal a grade on an assignment, send an e-mail to your instructor's e-mail address within one week of the grade having been received. Overdue appeals will not be considered. The course grade may be appealed during the Grade Recheck period in the first two weeks of next term.

**Incomplete Policy**

A student will not be given an incomplete grade in the course without sound reason and documented evidence as described in the Student Handbook. In any case, to receive an incomplete, a student must be passing and must have completed a significant portion of the course.

**Cheating Policy**

A student is expected to uphold Stamford International University’s standard of conduct relating to academic honesty as described in the Student Handbook. A student assumes full responsibility for the content and integrity of the academic work he/she submits. The guiding principle of academic integrity shall be that a student's individual course deliverables, examinations, reports, and projects must be that of the student's own work. A student shall be guilty of violating the honor code if he/she:

1. Plagiarizes, i.e. represents the work of others as his/her own.
2. Uses or obtains unauthorized assistance in any academic work, including exams
3. Gives unauthorized assistance to other students, including exams
4. Modifies, without instructor approval, an examination, paper, record, program, or report for the purpose of obtaining additional credit.
5. Misrepresents the content of submitted work.

**Plagiarism policy**

Credit for any work belongs to the person who does the work. Passing off the work of another person as your own is plagiarism. Plagiarism is wrong and will be punished.

To avoid plagiarism:

Do not copy and paste the work of others.

Do not retype the work of others.

Do not steal another person's PowerPoint.

Do not submit work that was written by another person.

The penalty for violating the university's honor code is severe. Any student violating the honor code is subject to receive a failing grade for the assignment or the course and will be reported to the Office of Student Affairs. Cheating on the midterm or final exam results in immediate failure in all registered courses for the current term.

For this class, it is permissible to assist classmates in general discussions of computing techniques. General advice and interaction are encouraged. Each person, however, must develop his or her own solutions to the assigned projects, assignments, and tasks. In other words, students may not "work together" on assignments labeled ***individual***. Unauthorized collaboration constitutes cheating. A student may not use or copy (by any means) another's work (or portions of it) and represent it as his/her own. If student needs help with an assignment, Ajarn Ilogu Ikechukwu can be contacted by email or set an appointment to meet in person by calling the university telephone number (ext.2212).

1. **Projects/Activities in this course**

Guest Speaker: Topic: Computer System Administration related topics that are covered in class by TBA (To be announced later).

1. **Teaching and Project/Activities Integration**

Activities in class and outside of the class room related to Computer System Administration that will provide students opportunities to work with and understand more about available technologies and the trends of upcoming System Administration. Students will become more familiar with computer system administration of the components of computer systems which include hardware, software, networks, and databases and will provide hands-on experiences with these technologies. A team project toward the second half of the term will allow students to work together in groups and focus on the topics related to what they will learn in class.

During the semester, students are encouraged to attend any events or participate in any activities related to Computer System Administration.

Reviewed and approved:

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Lecturer

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Discipline Head

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Dean for Faculty of Business Administration