**BIT 2205 System Administration (3 CU)**

(a) **Course Description:** This course addresses both the technology of computer systems and the users of the technology on an equal basis. It is about putting together a network of computers, getting them running and then keeping them running in spite of the activities of users who tend to cause the systems to fail**.**

(b) **Aims**: A student that undertakes this course should:

• Be able to use Windows and Linux operating systems.

• Be able to perform basic administration under Windows and Linux.

• Be able to design a network which is logical and efficient.

• Be able to deploy large numbers of machines which can be easily upgraded later.

• Be able to decide what services are needed.

• Be able to plan and implement adequate security.

• Be able to provide a comfortable environment for users.

• Be able to develop ways of fixing errors and problems which occur.

• Be able to provide a general company description for the student’s start-up business.

• Be able to keep track of and understand how to use the enormous amount of knowledge which increases every year.

(c) **Learning outcomes:** On completion of this course unit, the students will be able to:

• Demonstrate understanding of computer networking, computing models, and basic network services.

• Recognize and describe logical and physical network topologies in terms of the media and network hardware.

• Demonstrate understanding of computer networking, computing models, and basic network services.

• Compare current network technologies in terms of speed, access method, operation, topology, and media.

• Describe basic principles of Unix/Linux multi-user System Administration

• Plan, Install, Maintain and Run a Unix/Linux System as used in a TCP/IP networked environment

• Manage system resources, services and applications

• Write shell scripts to assist management functions

• Perform upgrades, backup, recovery and virus protection operations

• Test and configure services such as DNS, email, and cross platform file sharing

(d) **Teaching and learning pattern**: The teaching style will be FACILITATOR with students being broken up into discussion groups after each major topic

(e) **Indicative content**:

• Manage system resources including processes, memory and disk space

• Maintain and interpret log files

• Configure and manage a DNS service

• Create and manage user accounts

• Configure and manage an email system

• Install and manage shared applications

• Use shell scripts to automate procedures

• Understand and manage cross-platform file services

• Understand and manage Windows/Unix/Linux printing systems

• Monitor, analyze and tune system performance

• Manage and configure virus protection strategies

• Implement any other security measures

• Perform system upgrades and version management

• Perform system backup and recovery procedures

(f) **Assessment method**: Assessment will be in terms of tests and practical exercises (40 %)

and a final examination (60%) (g) **Reference books**:

(i) Mark Burgess (2004) Principles of Network and System Administration. . Published by

Wiley and Sons 2nd Edition. ISBN 0-470-86807-4

(ii) [www.tldp.org](http://www.tldp.org/)