
COMP 105 Introduction to Data Communication

MODULE DETAILS

Course Location	: Freetown, Sierra Leone
Examiner	: Sulaiman kalokoh
Contact details (email)	: sulaiman.kalokoh@limkokwing.edu.sl
Co-Examiner	: Oluwatosin
Credits Amount	: 3 credits
Status	: Core
Contact hours per week	: 3 hours (1.5 hour lecture + 1.5 hours tutorial)
No. of weeks	: 12 weeks contact + 1 non-contact week + 2 week final examination
No. Lab Exercise tutorials	: 2
No. of written exams	: 1 Class Test + 1 Final Examination

Prepared by:

Signature :

Date:

Approved by:

Signature:

Date:



This document comprises the following:

- Essential Information
- Specific Module Information
- Module Rules & Regulations
- Grades
- Plagiarism
- Module Introduction
- Module Aims & Objectives
- Learning Outcome
- Specific Generic Learning Skills
- Syllabus + Lecture Outline
- References
- Assignment Schedule
- Assessment Criteria
- Specific Criteria

Other documents as follows will be issued to you on an ongoing basis throughout the semester:

- Handouts for Tutorials
- Submission Requirements + Guidelines

1.0 ESSENTIAL INFORMATION

- All modules other than electives are '**significant modules**'.
- As an indicator of workload one credit carries and additional 2 hours of self-study per week. For example, a module worth 3 credits require that the student spends an additional 6 hours per week, either reading, completing the assignment or doing self-directed research for that module.
- Submission of ALL assignment work is compulsory in this module. A student cannot pass this module without having to submit ALL assignment work by the due date or an approved extension of that date.
- All assignments are to be handed on time on the due date. Students will be penalized 10 percent for the first day and 5 percent per day thereafter for late submission (a weekend or a public holiday counts as one day). Late submission, after the date Board of Studies meeting will not be accepted.
- Due dates, compulsory assignment requirements and submission requirements may only be altered with the consent of the majority of students enrolled in this module at the beginning/early in the program.
- Extensions of time for submission of assignment work may be granted if a medical certificate accompanies the application for extension.
- Overseas travel is not an acceptable reason for seeking a change in the examination schedule.
- Only the Head of Faculty can grant approval for extension of submission beyond the assignment deadline.
- Re-submission of work can only receive a 50% maximum pass rate.
- Supplementary exams can only be granted if the level of work is satisfactory **AND** the semester work has been completed.
- Harvard referencing and plagiarism policy will apply on all written assignments.

2.0 SPECIFIC MODULE INFORMATION

- Attendance rate of 80% is mandatory for passing module at the end of the semester.
- All grades are subject to attendance and participation.
- Absenteeism at any scheduled presentations will result in zero mark for that presentation.
- Visual presentation work in drawn and model form must be the original work of the student.
- The attached semester program is subject to change at short notice.

3.0 MODULE RULES AND REGULATIONS

Assessment procedure:

- These rules and regulations are to be read in conjunction with the UNIT AIMS AND OBJECTIVES
- All assignments/projects must be completed and presented for marking by the due date.
- Marks will be deducted for late work and invalid reasons.
- The student in person must deliver all assignments to the lecturer concerned. No other lecturer is allowed to accept students' assignments.
- All tests/examinations are compulsory.
- Students must sit the test/examination on the notified date.
- Students are expected to familiarize themselves with the test/examination timetable.
- Students who miss a test/examination will not be allowed to pass.
- Students who miss TESTS or ASSIGNMENTS without a genuine reason WILL NOT be allowed to sit for the EXAMINATION, resulting in them repeating the module.
- Any scheduling of tutorials, both during and after lecture hours, is TOTALLY the responsibility of each student. Appointments are to be proposed, arranged, confirmed, and kept, by each student. Failure to do so in a professional manner may result in penalty of grades. Tutorials WITHOUT appointments will also NOT be entertained.
- Note that every assignment is given an ample time frame for completion. This, together with advanced information pertaining deadlines gives you NO EXCUSE not to submit assignments on time.

4.0 GRADES

In the assessment of all student works, the grading system is standardized for all subjects in all programmes. The grading system used is as follows;

Marks	Grade	Grade Points	Description
80 – 100	A	4.00	Pass with Distinction
75 – 79	A-	3.67	
70 – 74	B+	3.33	Pass with Merit
65 – 69	B	3.00	
60 – 64	B-	2.67	
55 – 59	C+	2.33	Pass
50 – 54	C	2.00	
45 – 49	C-	1.67	
40 – 44	D	1.00	
0 – 39	F	0.00	Fail
	S	0.00	Pending Supplementary Assessment
	DNC	0.00	Did not complete
	GNS	0.00	Grade Not Submit
	EXP	-	Exempted
	DEF	-	Deferred

5.0 PLAGIARISM, COPYRIGHT, PATENTS, AND OWNERSHIP OF WORK: STUDENT MAJOR PROJECT, THESES & WORKS

- See LIMKOKWING, HIGH FLYERS HANDOUT, pg. 6.

6.0 MODULE INTRODUCTION

This course is to introduce computer practical principles in general concepts to the students and equip them with the techniques of manipulating computer technologies and to provide a clear picture of the way networks work from hardware technology up through the most popular network application in general computing.

7.0 MODULE AIMS AND OBJECTIVES

Even if you're an absolute beginner student in this module will enable you to create future proof and manipulating computer technologies that not only look great in all modern computers, but are also accessible to wide variety of audiences across a range of platforms on everyday computers to those accessing the latest emerging networks and communication devices

8.0 LEARNING OUTCOME

At the end of the semester, student will be able to:

- Familiarization with computer network hardware and its concept
- Define concepts, and computer network security principles;

- Use network application and network ready for wired and wireless communication;
- Basic networks troubleshooting techniques in terms of a security breach
- Investigate different types of networks
- Build a range of practical network scenarios suited for air tight industry networks;
- Identify network design and implement appropriate research strategies and evaluate source
- Enhance career potential as Network administrator and Network Engineer

9.0 SPECIFIC GENERIC LEARNING SKILLS

The students will be able to apply technical skills to produce a coherent and accurate work; use these skills to become successful IT skilled.

10.0 SYLLABUS + LECTURE OUTLINE:

Week: 1

LECTURE 1: INTRODUCTION TO THE MODULE AND TECHNOLOGY BEHIND DATA COMMUNICATION

Lecture Synopsis:

1. Introduction & definition to common terms
2. Classifications of computer networks
3. Geographical span
4. Inter connectivity
5. Administration
6. Architecture
7. Network application

Handout:

**Module Outline
Tutorial #1**

Week: 2

LECTURE 2: TYPES OF COMPUTER NETWORKS

Lecture Synopsis:

1. Personal Area Network
2. Local Area Network
3. Metropolitan Area Networks
4. Wide Area Networks
5. Internetwork

Handout:

**Issuing of Assignment 1
Tutorial #2**

Week: 3

LECTURE 3: COMPUTER NETWORK TOPOLOGY

Lecture Synopsis:

1. Point-Point
2. Bus Topology
3. Star Topology
4. Ring Topology
5. Mesh Topology
6. Tree Topology

7. Hybrid Topology

Handout:

Tutorial #3

Week:

4

LECTURE 4:

COMPUTER NETWORK MODEL

Lecture Synopsis:

1. Layered Tasks
2. OSI Model
3. Internet Model



Handout:

**Submission of assignments
Issuing of Final Project**

Week:

5

LECTURE 5:

PHYSICAL LAYER INTRODUCTION

Lecture Synopsis:

1. Signals
2. Transmission Impairment
3. Transmission Media
4. Channel Capacity
5. Multiplexing
6. Switching

Handout:

**Tutorial #5
Exercise**

Week:

6

LECTURE 6:

NETWORK LAN TECHNOLOGIES

Lecture Synopsis:

1. Ethernet
2. Fast Ethernet
3. Giga Ethernet
4. Virtual LAN

Handout:

Tutorial #6

Week:

7

MID SEMESTER TEST

Week:

8

MID SEMESTER BREAK

Week:
LECTURE 7:
Lecture Synopsis:

**9
WIRELESS TRANSMISSION**

1. Radio Transmission
2. Microwave Transmission
3. Infrared Transmission
4. Light Transmission
5. Analog Transmission
6. Digital-Analog Conversion
7. Analog-Analog Conversion



Handout: **Tutorial #7**

Week:

10

LECTURE 8:
Lecture Synopsis:

NETWORK LAYER: INTERNET PROTOCOLS

1. Unicast Routing
2. Broadcast Routing
3. Multicast Routing
4. Any cast Routing
5. Unicast Routing Protocol
6. Multicast Routing Protocols
7. Routing Algorithms

Handout: **Tutorial #8**

Week:
LECTURE 9:
Lecture Synopsis:

**11
APPLICATION LAYER**

1. Domain Name Systems
2. Simple Mail Transfer Protocol
3. File Transfer Protocol
4. Post Office Protocol (POP)
5. Hyper Text Transfer Protocol
6. Processing Orders on the Internet

Handout: **Tutorial #10**

Week:
LECTURE 10:
Lecture Synopsis:

**12
SECURITY**

1. Secret Key Encryption
2. Public Key Encryption
3. Message Digest

CONSULTATION

Week: 13

GROUP PROJECT PRESENTATION

Week: 14

REVISION WEEK

Week: 15 / 16

FINAL EXAMINATION WEEK



11.0 REFERENCES

- Ulysses Black (2011), Introduction to Computer Networks: Concepts and Techniques Enhanced Edition.
- James F Kurose, Keith W Ross, Computer Networking: A Top-down Approach Featuring the Internet, 3rd Edition, Addison Wesley, 2005
- Natalie Omar, Victor Olifer, Computer Networks: Principles, Technologies & Protocols for Network Design, John Wiley, 2004
- Andrew S. Tanenbaum, Computer Networks, 4th Edition, Prentice Hall, 2002
- E Ramos, A Schroeder & A Beheler, Computer Networking Concepts, Macmillan, 2001
- Jerry Fitzgerald & Alan Dennis, Business Data Communication And Networking, 8th Edition, John Wiley & Sons, 2005
- Behrouz A. Forouzan, Data Communications and Networking, 4TH Edition, McGraw-Hill, 2004
- Natalia Olifer & Victor Olifer, Computer Networks: Principles, Technologies and Protocols for Network Design, John Wiley & Sons, 2000

12.0 ASSIGNMENT SCHEDULE

DESCRIPTION	ISSUE DATE	DUE DATE	%
Assignment 1	Week 2	Week 4	10%
Exercise	Week 5	Week 5	10%
Class Test	Week 7	Week 7	15%
Final Project	Week 3	Week 13	25%
Attendance	Week 1	Week 14	5%
Final Examination	Week 15	Week 16	35%
TOTAL			100%

13.0 ASSESSMENT CRITERIA

Process of grading and criteria used to determine the grades, passes and high distinctions.

- **80-100, A, Publishable, Outstanding Work.** Assignment is of sufficient substance and style to be submitted to a referred journal for publication or public presentation. Superior understanding of the subject matter. Evidence of original thinking and an extensive knowledge base. Careful, concise, critical analysis with

a clear and well-argued hypothesis based on the material. Shows a capacity to analyze, synthesize, and evaluate material. Shows a grasp of all the scholarly issues involved. Shows evidence of learning being extended beyond the initial learning situation. Clear thesis and conclusion. Well-researched and documented. Stylistically flawless.

- **75-79, A-, Excellent.** Solid understanding of the subject matter. Good analysis and some critical reasoning. Reasonable understanding of relevant issues and familiarity with the material. Demonstrates a solid understanding of the relationship or connections among the basic concepts. Needs to be more concise or precise in details and more careful in forming arguments. Stylistically sound.
- **70-74, B+, Good.** Generally accurate account of the subject matter with acceptable analysis and some critical reasoning. Some interaction with relevant material. Demonstrates some understanding of the relationship or connection among the basic concepts. Needs more precision and attention to details and greater precision in the use of arguments. Some careless stylistic errors.
- **65-69, B, Fine.** Generally accurate description of the subject matter and an adequate grasp of the critical issues and ideas involved. Demonstrates rudimentary understanding of the relationship or connection among the basic concepts. Needs more attention to detail and better use of arguments. Some careless stylistic errors.
- **60-64, B-, Average.** Acceptable treatment of the subject matter. Demonstrates an understanding of the basic facts, vocabulary, details, and elemental concepts. Shows an ability to deal with simple issues arising out of the material. Needs to explore the subject matter more fully and formulate ideas more clearly. Closer attention should be given to stylistic elements including sentence structure and paragraph organization.
- **55-59, C+, Adequate.** Generally acceptable treatment of the subject matter and issues. Demonstrates an awareness of the basic facts, vocabulary, details, and elemental concepts. Impressionistic or vague at points. Shows that the learning experience was profitable. Lacks clarity in formulating the issues and shows little or no evidence of critical reflection on the issues or data. Closer attention should be given to grammar, spelling, and punctuation.
- **50-54, C, Minimally Acceptable.** Adequate understanding and treatment of the data and issues, but imprecise, impressionistic or vague. Lacks clarity in expressing the issues and shows no evidence of critical reflection on the issues or data. Major problems related to issues of style.
- **45-49, C-, Low.** Lack in understanding and treatment of the data and issues, failed to show ability to analyse or in expressing the issues.
- **40-44, D, Very Low.** Does not carry evidence of understanding to the overall objectives of the assessment. Miscarried the intended analysis, information, and data.
- **0-39, F, Inadequate.** Sloppy, imprecise or careless discussion of the material with little or no evidence of critical reflection. Stylistically flawed.
- **S Grade,** In the case of a student who is granted supplementary work/s submission by the faculty, a grade S should be entered. An S grade is an interim grade until the supplementary work/s is/are submitted and assessed at the earliest possible timeframe. After a student has passed the supplementary work/s, the student shall be awarded with a normal grade. This is limited to 'C' band.
- **DNC (Did Not Complete),** In the case of a student who has registered, is on a class list, has attended some classes, but has not submitted any work, a grade of DNC should be entered. A 0.00 grade point is attached to this grade.
- **GNS (Grade Not Submitted),** In the case of an emergency or unforeseen circumstances and grade/s is/are yet to be submitted at time of Senate e.g waiting for Internship to be completed, a GNS should be entered.

- **DEF (Deferred)**, In the case of a student who has registered, is on a class list, but has decided to drop the module after the approved dropped date ie. Week 4, a grade of DEF should be entered. There is no grade point attached to this grade.
- **EXP (Exempted)**, Refer to Section Exemption of Modules or Advance Standing and Credit Transfer in Academic Quality Assurance Manual.

14.0 SPECIFIC CRITERIA

- Each assignment will be handed out with the project brief and will vary, depending on the teaching and learning objectives of the specific assignment.
- Each student will receive a completed assessment sheet back with their marks, thereby giving student feedback on each set criterion and the project as a whole.
- All submission must be made directly to the lecturer-in-charge.