BIT 2105 / CSB2101 Computer Networks & Data Communication

By: Mr. MUSANA EDDIE 0701691198

eddiemusana@gmail.com

Course Code: BIT 2105 Course Title: Computer Networks & Data Communication

Course Description

This is one the foundations for IT professionals. It introduces students to theoretical concepts governing computer networks and data communications.

Course Objectives

This course unit is meant:

- To introduce basic terminologies used in computer networks and data communications.
- To enable student understand mechanisms/operations of networks

Expected Learning Outcome

On successful completion of this course unit, the students should be able:

- To explain basic terms used in data communication and computer networks
- To articulate how computer networks and data communications operate. **Course Duration**

(Hours)	**Credit Units**	**Year when offered**
45 Hours	3 CU	Two

Methods of Delivery

Lectures, Class Discussions, Class demonstrations, Hand on (Practicals), Case Studies, Independent study and Class presentations

Methods of Assessment

NO	Assessment	Marks %
1	Test (two tests) - 6th and 12th weeks	15 %
2	Individual Course work – 4th week	15 %
3	Class Presentations	10%
4	End of Semester close book Examination	60 %
	Final Mark	**100**

Available Resources

Text books, Desk top computers, Projectors and Smart interactive white board.

Available Infrastructure

One computer laboratory and one lecture room, net worked computers.

Other Information

Availability of highly trained man power

Detailed Content

Topic	Sub-Topic	Contact Hours
1	Introduction to Networks: definition, advantages, Topologies, configurations;	3
2	The OSI/ISO reference model;	6
3	Network Access Protocols; LAN standards:802.3 (Ethernet), 802.4 (token bus), 802.5 (token ring);	6

	Transmission media: magnetic media, twisted pair, coaxial, fiber-optics; Digital versus Analog transmission;	6
4	Network Devices (Switches, Routers & Bridges)	6
5	(Ethernet, Asynchronous Transfer Mode, FSDN, Frame Relay	6
6	Types of Networks, (Data Networks, Voice Networks, Multimedia Networks, Internet, Intranets),	6
7	Network Planning Considerations, (Needs Analysis, Electrical Consideration, Ventilation & Air Conditioning, Site wiring, Estimating Power Requirements),	9
8	Internetworking (Network Types, Signal Characteristics, Data Representation)	6
9	Computer Network security, Active and Passive Attacks;	6
Total contact Hours		**60 Hours**

References

i. Peterson Larry L. & Davie Bruce S (2000), *Computer Networks*, 2nd Ed., Morgan Kaufmann

ii. Fourouzan, Behrouz (1998), *Introduction to Data Communications and Networking,*

McGraw Hill

iii. Halsall, Fred (1995), *Data Communications, Computer Networks and Open Systems*, 4th

Ed., Addison Wesley, New York iv. Tanenbaum, Andrew S (1996), *Computer*

Networks, 3rd Ed., Prentice Hall, New Jersey