1.	**Course Title**	**Computer Networks**		
2.	**Course Code**	**CNET3513**		
3.	**Status**	Major		
4.	**Credit Hour**	3 (2+1) 2 for lecture (2 hours per week x 14 weeks) 1 for lab (2 hours per week x 14 weeks)		
5.	**Semester/Year**	2/3		
6.	**Prerequisites**	CNET2513 Data Communication & Telecommunication System		
7.	**Teaching method:**	Distance Learning (Electronic)		
8.	**Evaluation**	**Assessment and Marking Percentage:** Participation 5% Quizzes 15% Project 15% Mid Sem Exam 15% Final Examination 50%		
9.	**Lecturer**			
10.	**Objective of the Subject**	This subject is designed to enable students to: • Explain the importance of data networks and the Internet in supporting business communications and everyday activities • Explain how communication works in data networks and the Internet • Recognize the devices and services that are used to support communications across an Internetworking • Use network protocol models to explain the layers of communications in data networks • Explain the role of protocols in data networks		
11.	**Learning Outcomes**	Upon completion of this subject, students should be able to: • Build simple LAN topologies by applying basic principles of cabling, performing basic configurations of network devices such as routers and switches, and implementing IP addressing schemes. • Apply the concept of networking to facilitate the organizations. • Identify the current networking technology in industry • Help the organization to develop networking infrastructure that is of high quality and consistent with organizational business goals.		
12.	**Synopsis**	This course introduces the architecture, structure, functions, components, and models of the Internet and other computer networks. It uses the OSI and TCP layered models to examine the nature and roles of protocols and services at the application, network, data link, and physical layers. The principles and structure of IP addressing and the fundamentals of Ethernet concepts, media, and operations are introduced to provide a foundation for the curriculum. Labs use a "model Internet" to allow students to analyze real data without affecting production networks. Packet Tracer (PT) activities help students analyze protocol and network operation and build small networks in a simulated environment.		
13.	**Topics**	Details	Lecture (Hrs)	Tutorial (Hrs)
	Topic 1	**Fundamental Concepts** • Communicating in a Network-Centric World • Communication – An Essential Part of Our Lives • The Network as a Platform • The Architecture of the Internet • Trends in Networking	4	4
	Topic 2	**Communications Over the Networks** • The Platform for Communications • LANs, WANs and Internetworks • Protocols • Using Layered Models	4	4

		• Networking Addressing		
	Topic 3	**OSI Application Layer Functionality** • Applications – The Interface Between the Networks • Making Provisions for Applications and Services • Application Layer Protocols and Services Examples	4	4
	Topic 4	**OSI Transport Layer / Network Layer** • Roles of the Transport Layer • The TCP Protocol – Communicating with Reliability • Managing TCP Sessions • The UDP Protocol – Communicating with Low Overhead • IPv4 • Networks – Dividing Devices into Groups • Routing – How Our Data Packets are Handled • Routing Processes: How Routes are Learned	4	4
	Topic 5	**Addressing the Network – IPv4** • IPv4 Addresses • Addresses for Different • Purposes Assigning Addresses • Is It On My Network? • Calculating Addresses Testing the Network Layer	4	4
	Topic 6	**Data Link Layer** • Data Link Layer – Accessing the media • Media Access Control Techniques • Media Access Control Addressing and Framing Data • Putting it All Together	4	4
	Topic 7	**OSI Physical Layer** • The Physical Layer - Communication Signals • Physical Signaling and Encoding: Representing • Physical Media – Connecting Communication **Ethernet** • Overview of Ethernet • Ethernet - Communication through the LAN • The Ethernet Frame • Ethernet Media Access Control	4	4
		Total contact hours	28	28
		Equivalent lecture hours	28	14
		Total lecture hours	42	
		Credit hours	3	
14.	**Main reference:**	**Networking Fundamental CCNA 1**, Cisco Press, 2007		
15.	**Additional References:**	1. W.Stalling, **Data and Computer Communication**, 6th Ed., Prentice Hall, 2000 2. Behrouz A. Forouzan, **Data Communications and Networking**, 2nd Ed. Mc Graw Hill, 2001 3. **Cisco Networking Academy Program**. First Year Companion Guide. Cisco Press,2001 4. Fred Halsall, **Data Communications, Computer Networks and Open System**, 4th Ed., Addison Wesley, 1997. 5. William A. Shay, **Understanding Data Communication and Networks**, 2nd Ed., ITP, 1999. 6. Gerd Keiser, **Local Area Networks**, 2nd Ed, McGraw Hill, 2002		
	Other Materials:	All other materials will be available to students online		