General Sir John Kotelawala Defence University
Department of Electrical Electronic & Telecommunication Engineering
Module Descriptor - Communication Networks

Module Code	ET 3102	**Module Title**	**Communication Networks**			
Credits	2	**Hours/ Semester**	**Lectures**	24	**Prerequisites**	ET1202
GPA/ NGPA	GPA*		**Continuous Assessments/ Tutorials**	12		
Module Objectives	To provide the students with the knowledge of Communication Networks					
Learning Outcomes	After the completion of this module, the learner will be able to, **LO1: Describe** the basis and structure of an abstract layered protocol model **LO2: Describe** analyze and compare functions and applications of OSI layers. **LO3: Analyze** of network layers within the simulate networking environment					
Contents	**Overview on ISO/OSI reference model for open systems, packet and distributed systems and Topologies.** Introductory remarks, type of networks (private and public), types of distributed systems and network topologies.					**LO1**
	Physical and Data Link Layers Physical characteristics of interfaces and media. Representation of bits, transmission rate, transmission of bits, link configuration, physical topology and transmission mode. Introduction to Forward Error Correction (FEC) and Feedback Error Control procedures. Framing, Physical addressing, Flow control. MAC: Medium Access Control, scheduling methods, ALOHA protocols, carrier-sensing-methods.					**LO2 LO3**
	Network (IP) and Transport Layers (TCP/UDP) Routing, IP addressing: IPv4 and IPv6, IP sub-networking, Internet Protocol, TCP: Transmission Control Protocol, UDP: User Datagram Protocol, segmentation and reassembling, Service point addressing, Flow control and congestion control, error control schemes. Overview of Mobile IP and Mobility management					**LO2 LO3**
	Session Layer, Presentation and Application Layer Dialog control and synchronization, Translation, encryption and compression, SMTP, FTP, HTTP, DNS, Telnet.					**LO2 LO3**
	Local Area Network and Wide Area Networks WAN, MAN, PAN, IEEE 802.11x: Infrastructure, Standards and Technologies for wired and wireless networks. (Bluetooth, Wifi, Ethernet)					**LO2 LO3**
Laboratory/ Practical Sessions	• Simulating TCP/ UDP networks • Packet Analysis using Wireshark					**LO1-3**
Method of Assessment	Continuous assessments : 30% End semester examination : 70%					
References	1. Nevio Benvenuto and Michele Zorzi, ISBN:9781119978589, (2011). Principles of Communications Networks and Systems, John Wiley. 2. Thomas Robertazzi, ISBN-13 : 978-1461421030, (2011). Basics of Computer Networking (Springer Briefs in Electrical and Computer Engineering), SpringeR. 3. Applications in Communication Networks, Wiley, ISBN.					

		Programme Outcomes											
		PO1	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**
Linkage between Learning Outcomes (LOs)	**LO1**	M	M	M	L	H		L	L	M	M		M
	LO2	M	H	H	L	H		L	L	H	H		M
	LO3	L	L	L	L	L	L	L		L	L		L