No	Course Information (2019-2020)	
1	Unit name:	Computer Networking
2	Code:	EcE-61015
3	Classification:	Engineering subject
4	Credit value:	3 (2-0-2)
5	Semester/ Year Offered:	1/6
6	Pre-requisite:	Communication Principles, Computer Communication, Digital Communication, Wireless and Mobile Communication
7	Mode of delivery:	Lecture, Presentation, Practical
8	Assessment system and breakdown of marks:	Tutorial, Assignment, Lab Report, Exam
	Tutorial and Assignment	10%
	Practical	20%
	Mid-term/ final Examination	70%
9	Academic staff teaching unit:	Department of Electronic Engineering
10	Course outcomes of unit: In this course students will be able to 1. Explain basic concepts of computer networking, application layer protocols, transport layer protocols, network layer protocols and their associated applications 2. Calculate delay, throughput, fragmentation, IP addressing and routing algorithms 3. Design a computer network for specific application 4. Design and analyze routed networks using packet tracer and Wireshark software and implement the network design using Mikrotik Routers	
11	**Synopsis of unit:** This course covers the basic network components, network layering and their basic protocols. This course introduces to the students access and switching techniques, performance of packet switches and network security attacks. This course also includes virtual circuits, datagram networks and routing algorithms. Successful completion of this course will allow students to study more advanced topics in the area of networking.	
	Topic: **Chapter** **Title** **1** **Computer Networks and the Internet** 1.1 What Is the Internet? 1.2 The Network Edge 1.3 The Network Core 1.4 Delay, Loss, and Throughput in Packet-Switched Networks 1.5 Protocol Layers and Their Service Models 1.6 Networks Under Attack	

		1.7 History of Computer Networking and the Internet 1.8 Summary
	2	**Application Layer** 2.1 Principles of Network Applications 2.2 The Web and HTTP 2.3 File Transfer: FTP 2.4 Electronic Mail in the Internet 2.5 DNS—The Internet's Directory Service 2.6 Peer-to-Peer Applications 2.7 Socket Programming: Creating Network Applications 2.8 Summary
	3	**Transport Layer** 3.1 Introduction and Transport-Layer Services 3.2 Multiplexing and Demultiplexing 3.3 Connectionless Transport: UDP 3.4 Principles of Reliable Data Transfer 3.5 Connection-Oriented Transport: TCP 3.6 Principles of Congestion Control 3.7 TCP Congestion Control 3.8 Summary
	4	**The Network Layer** 4.1 Introduction 4.2 Virtual Circuit and Datagram Networks 4.3 What's Inside a Router? 4.4 The Internet Protocol (IP): Forwarding and Addressing in the Internet 4.5 Routing Algorithms 4.6 Routing in the Internet 4.7 Broadcast and Multicast Routing 4.8 Summary
14	**Main references:** ICTTI advance training course from network class	
15	CCNA Routing and Switching, ICND2 200-105, Official Cert Guide, Academic Edition, WENDELL ODOM, CCIE No. 1624 with contributing author SCOTT HOGG, CCIE No. 5133	

Information on Lab Practical (EcE-61015 Computer Networking) 2019-2020

Lab	Activity
1	**Experiment I: Making Straight-Through and Cross-Over Cable** **Objectives:** ➢ To apply twisted-pair cables ➢ To implement the straight-through cable and cross-over cable **Equipment Required:** ➢ Shielded/unshielded twisted pair cable (CAT 5e or CAT 6), Crimping tool, RJ 45 connectors , Cable Tester
2	**Experiment II: Configuration of Wired and Wireless network** **Objectives:** ➢ To be able to configure wired and wireless network **Equipment Required:** ➢ Computers, switch, wireless router, wireless devices, network cables, Packet tracer software
3	**Experiment III: Configuration of DHCP, FTP, DNS, WEB and E-MAIL Services** **Objectives:** ➢ To configure servers ➢ To upload and download files Equipment Required: Computers, Switches, Network cables, servers, Packet tracer software
4	**Experiment IV: Configuration of DHCP Service for Different Networks** **Objectives:** ➢ To assign IP addresses using DHCP **Equipment Required:** Computers, Switches, Router, Network cables, Packet tracer software
5	**Experiment V: Configuration of VLAN** **Objectives:** ➢ To configure VLAN **Equipment Required:** Computers, Switche, Network cables, Packet tracer software
6	**Experiment VI: Configuration of Router on a Stick** **Objectives:** ➢ To configure VLAN using switch and router **Equipment Required:** ➢ Computers, Switche, Router, Network cables, Packet tracer software
7	**Experiment VII: Configuration of Complex Routed Network** **Objectives:** ➢ To study the routing functions **Equipment Required:** ➢ Computers, Switches, Router, Network cables, Packet tracer software

8	**Experiment VIII: Configuration of Complex Routed Network using RIP** **Objectives:** ➢ To study the routing functions and routing protocols **Equipment Required:** ➢ Computers, Switches, Router, Network cables
9	**Experiment IX: Configuration of Complex Routed Network using OSPF** **Objectives:** ➢ To study the routing functions and routing protocols **Equipment Required:** Computers, Switches, Router, Network cables
10	**Experiment X:** Packet analysis using Wireshark **Objectives:** ➢ To sniff and analyze packets Equipment Required: ➢ Computers, Wireshark software

No	Course Information (2019-2020)	
1	Unit name:	Humanities and Social Science
2	Code:	HSS-61011
3	Classification:	Compulsory
4	Credit value:	3 (3-0-0)
5	Semester/ Year Offered:	1/6
6	Pre-requisite:	NA
7	Mode of delivery:	Lecture, Group Work, Discussion, Case studies, Assignment, Presentation
8	Assessment system and breakdown of marks:	
	Exam	40%
	Group Work, Discussion, Case studies, Assignment, Presentation, Activity	60%
9	Academic staff teaching unit:	
10	Course outcome of unit: In this course, students will be able (i) To recognize the role and importance of social science subjects and describe relationships between personal interests and humanities subjects (ii) To apply the ethical framework to everyday ethical decisions (iii)To identify and discuss how people are affected by the environment, development, economics and health (iv) To apply knowledge and skills to contemporary problems and issues	
11	Synopsis of unit: The course introduces students to the study of various topics in humanity and social science. Course covers the society development studies, study on impact of economics on society development, safety and public health consideration, environmental science and engineers, engineering ethic and importance of international relations.	
12	Topic: 1. Social Science and Humanities 1.1 Society	

	1.2 What is Social Science? 1.3 What are the Humanities? 2. Philosophy and Ethics 2.1 What is Philosophy? 2.2 Epistemology 2.3 Ethics 2.4 Philosophies from around the World 3. The Environment 3.1 What is the Environment? 3.2 Maintaining a Balance in Nature – Cause and Effect 3.3 Resources 3.4 Human Impacts on the Environment 4. Economics 4.1 What Is Economics? 4.2 Microeconomics 4.3 Macroeconomics 4.4 Economic Indicators 4.5 Taxes and Fiscal Policy 4.6 International Trade 5. The Development 5.1 What is Development? 5.2 Economic Development 5.3 Ideas about Development 5.4 Criticisms of Development 5.5 Measuring Development 5.6 Measuring Poverty 5.7 Sustainable Development, the SDGs and the MDGs 5.8 Environmental and Social Impacts of Development 6. Public Health 6.1 Health 6.2 Public Health 6.3 Public Health Policy

14	Main references: 1. Social Science and the Humanities ; an introductory course for Myanmar citizens by Mote Oo Education
15	Additional references: 1. Activities for Social Science Teaching by Mote Oo Education 2. http://www.philosophybasics.com/branch_empiricism.html 3. http://www.iep.utm.edu 4. Engineering Ethic, Myanmar Engineering Council

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