UNIVERSITI TEKNOLOGI MARA

ECE541: DATA NETWORK I

Course Name (English)	DATA NETWORK I APPROVED
Course Code	ECE541

MQF Credit	3

Course Description	Data communications is the science of sending information from one place to another reliably whilst conforming to user requirements. The general issues associated with data communications and computer networks are transmission, network topologies, protocols, and addressing

Transferable Skills	Protocol concepts, device configuration and network performance

Teaching Methodologies	Lectures, Blended Learning, Lab Work, Tutorial

CLO	CLO1 Describe basic networking concepts CLO2 Design and evaluate enterprise networks CLO3 Analyse and troubleshoot data networks using specific network tools

Pre-Requisite Courses	No course recommendations

Topics
1. Introduction To Basic Data Communication Concepts 1.1) Introduction of basic data networks. OSI network model. TCP/IP network model. Networking devices and data networks.
2. Higher layer Protocols 2.1) Application, Transport and Network Layer Protocols. Private and public IP addressing schemes. Introduction to classful and classless IP.
3. LAN Switching Concepts 3.1) Switched-based LAN, Network Configuration and operation, LAN Protocols, LAN Performance, Data link, and physical layer. Common LAN media, LAN topologies, and transmission medium. Media Access Control protocol. Ethernet technologies and ARP protocol. Basic LAN configuration and testing.
4. LAN Technologies 4.1) VLAN operation and configuration. Virtual trunking protocol and Inter-VLAN routing, WLAN standards, topologies, and security
5. Recent Technologies in Networking 5.1) relevant technologies in networking

Assessment Breakdown	%
Continuous Assessment	50.00%
Final Assessment	50.00%

Details of Continuous Assessment	Assessment Type	Assessment Description	% of Total Mark	CLO
	Assignment	Practical	20%	CLO3
	Test	Written test	15%	CLO1
	Test	Online test	15%	CLO2

Reading List	Recommended Text	• **Wendell Odom 2013,** *CCENT/CCNA ICND1 100-101 Official Cert Guide*, **Cisco Press** • **2020,** *Introduction to Networks Companion Guide (CCNAv7)*, **Cisco Press [ISBN: 978-0-13-6633]**
Article/Paper List	This Course does not have any article/paper resources	
Other References	• **website** *CCNA Routing and Switching* **http://www.netacad.com**	