FAKULTI TEKNOLOGI DAN KEJURUTERAAN

PROGRAM	**Diploma in Computer Network**
COURSE NAME	**Network Design**
COURSE CODE	**DNC 5153**
CREDIT HOUR	**3**
SYNOPSIS	A course introducing to how designed a basic networking. Define the steps, concepts and most important requirement needed during designed the networking. Describe the System Approach. Covers the good documentation skills for build simple networking planning.
COURSE STRUCTURE	
CHAPTER	**TOPICS**
1	**Introduction** 1.1 Introduction to network design 1.2 General Considerations & Realities 1.3 Common Goals Fundamentals 1.4 Overview of case Network Design Project
2	**Requirements Gathering** 2.1 Systems and network services 2.2 Service Characteristics Levels
3	**Identifying Network Design Requirements** 3.1 Analyzing existing networks 3.2 Network analysis tools 3.4 Characterizing network traffic & flows

4	**Logical Network** 4.1 Network architecture overview 4.2 Core networks: logical design considerations
5	**Distribution & Access Network design** 5.1 Introduction 5.2 Develop Planning 5. 3 Documentation report
6	**Addressing and Routing Architecture Considerations** 6.1 Analyze requirement 6.2 IP addressing classes 6.3 Subnetting
7	**Network Security Considerations** 7.1 Network managements considerations 7.2 Problem case study Importance
8	**Controlling & Security** 8.1 Method of treat Basic Control Category 8.2 Prevention Control 8.2.1 Detective Control 8.2.2 Improvement Control 8.3 Cause of the Error 8.4 Develop a preliminary work sheet
9	**Physical Network design processes** 9.1 Simulations processes 9.2 Designing services 9.3 Documentation report

10	**Configuration designed** 10.1 Introduction 10.2 Configuration LAN Designed 10.3 LAN Topology 10.4 IEEE Standard 802 – LAN 10.5 IEEE 802.3 (Ethernet LAN) 10.5.1 10base5 10.5.2 10base2 10.5.3 10base-T 10.5.4 10base-F 10.6 IEEE 802.3u 10.7 Token Passing LAN 10.8 IEEE 802.4 (Token Bas) 10.9 IEEE 802.5 (Token Ring) 10.10 Configuration MAN/WAN designed 10.11 MAN 10.12 WAN - Computer modeling technique 10.13 Designed Phase
11	**Software, hardware & cost** 11.1 Software - Evaluate the suitable software chosen 11.1.1 Protocol software 11.1.2 Designed software 11.2 Hardware 11.2.1 Transmission Media Server 11.2.2 Internetworking device 11.3 Repeater 11.4 Bridges 11.5 Routers 11.6 Gateway

12	**Implementation & analysis of network performance** 12.1 Network Implementation Approach 12.2 Implementation Plan 12.3 Network Performance 12.4 Performance Factor 12.5 SNMP and SNMPv2 12.6 LAN Analyzer 12.7 Segment Monitor 12.8 Documentation Report
References:	1. Doug Lowe. (2018). Networking all-in-one for dummies. 7th ed. Hoboken, New Jersey: John Wiley & Sons, Incorporated. 2. Igor Faynberg (2016). Cloud computing: business trends and technologies, Chichester, West **3.** Stallings, William. (2016). Wireless communication networks and systems. Boston: Pearson. Sussex: John Wiley & Sons, Ltd.