Daffodil Polytechnic Institute, Institute Code: 50238

Lesson Plan

Marks	Grade Point	Letter Grade	Marks	Grade Point	Letter Grade
80>	4.00	A+	55-59	2.75	B-
75-79	3.75	A	50-54	2.50	C+
70-74	3.50	A-	45-49	2.25	C
65-69	3.25	B+	40-44	2.00	D
60-64	3.00	B	0-39	0.00	F

Subject Teacher : Muhammad Shahidul Islam,
Instructor Subject Name : Network Administration & Services
Subject Code 28572
Technology : Computer
Semester : 7th
BTEB Text Book Name : Network Administration & Services (Publisher: Hoque)
Reference Book Name :

1. Data communications and Networking – Behrouz A. Forouzan.
2. Fundamentals of Communication-M. Shamim Kaiser and associates
3. Data and Computer Communications-William Stallings
4. Local Area Networking – S. K Basandra.
5. MCSE Windows & Networking Essential – Joe Casad

Mark Distribution (for 200 Marks)			
Theory Marks		**Practical Marks**	
Midterm	30	PC	25
Class test	15	PF	25
Quiz test	15	-	-
Final	90	-	-
Total	**100**	**Total**	**50**

6. CCNA Routing and Switching – Todd Lammle.
7. How to Master CCNA- Rene Molenaar
8. Principles of Network and System Administration - Mark Burgess

Class Timing Distribution	
Particulars	**Time**
Greeting with students	05 Minutes
Previous Class Review	05 Minutes
Present Class Topic Discussion and Lecture Delivery	30 Minutes
Present Class Topics Review	05 Minutes

Google Class Room Code- svsmhrl (A)/ q7ge6m5 (B)

Subject Aims:

After completing this course, participants will be able to:

- To be able to design computer network system
- To be able to acquire the knowledge on Network Administration.
- To be able to provide the knowledge and to develop skill on Different routing protocol.
- To be able to acquire the knowledge on learning, forwarding and filtering decision.
- To be able to provide the knowledge and to develop skill on network Security.
- To be able to provide the knowledge and to develop skill on Router, Switch, NIC and Cabling.
- To be able to establish and implement Link Redundancy.

Subject Outcome:

Network Basics; Sub-netting, VLSM, Summarization; Internet Routing Protocol, Open Shortest Path First (OSPF), Enhanced Interior Gateway Routing Protocol (EIGRP), Spanning Tree Protocol (STP), VLANs and Inter-VLAN routing, network address translator (NAT), network security, Internet Protocol Version 6 (IPv6), Link and Gateway Redundancy.

Date	Lecture	Chapter/ Exam / Industrial Visit	Learning Area	Learning Outcome	Class/Lab Supporting Equipment's
16-01-2026	01	**1. Network theories. (Theory)**	1.1 Define Network Administration 1.2 Mention the Key Components of Network Administration	After the Class, Students will be able to: To know about OSI, TCP/IP model, collision, Ethernet cabling.	**1. Projector.** **2. Computer.** **YouTube link:** https://youtu.be/vv4y_uOneC0
10-01-2026	02	**1. ne twork theories. (Theory)**	1.3 Illustrate the role of network administrator 1.4 Describe Intranet, Extranet, Internet	After the Class, Students will be able to: To know about encapsulation of TCP/IP layer .	**1. Projector.** **2. Computer.** **YouTube link:** **https://www.youtube.com/watch?v=LX_b2M3IzN8**
12-01-2026	03	**1. ne twork theories. (Theory)**	1.5 Describe TCP/IP model 1.6 Define Data encapsulation of TCP/IP model. 1.7 Illustrate Network Hierarchical model – Two Tier, Three Tier, Spine Lea	After the Class, Students will be able to: To know about OSI, TCP/IP model, collision, Ethernet cabling.	**1. Projector.** **2. Computer.** **YouTube link:** **https://www.youtube.com/watch?v=LX_b2M3IzN8**
14-01-2026	03	1. Perform the Design, Develop and Simulation of Enhanced Interior Gateway Routing Protocol (EIGRP) (practical)	1.1 Design network diagram using packet tracer 1.2 Design proper IP address with network devices.	After the Class, Students will be able to: To know network diagram using packet tracer.	**1. Projector.** **2. Computer.** **3. Packet Tracer**
17-01-2026	04	Continue… 1. Perform the Design, Develop and Simulation of Enhanced Interior Gateway Routing Protocol (EIGRP) (practical)	1.3 Configure EIGRP as per requirement. 1.4 Ensure reachability	After the Class, Students will be able to know Configure EIGRP.	**1. Projector.** **2. Computer.**

21-01-2026	05	**Class Test-01**	Examination Topic: Chapter 01 Examination mark: 10		**1. Anser Script** **2.Projectors**
			Passing Mark: 04		
24-01-2026	06	**2.Understand Sub-netting, VLSMs, Summarization. (Theory)**	2.1. Define Sub-netting Basics. 2.2. Define Classless inter domain routing (CIDR), including class A, class B, class C. 2.3. Define Variable length sub netmask (VLSMs)	After the Class, Students will be able to: To know Sub-netting OSH, CIDR.	**1. Projector.** **2. Computer.** **YouTube link:** https://www.youtube.com/watch?v=POPoAjWFkGg
28-01-2026	07	**Continue…** **2.Understand Sub-netting, VLSMs, Summarization. (Theory)**	2.4. Describe VLSM design and implementing VLSM Network 2.5. Define Summarization	After the Class, Students will be able to: To know OSH, Perform Power and Network Cable Wiring.	**1. Projector.** **2. Computer.** **YouTube link:** https://www.youtube.com/watch?v=f4EFQFelG8k
5-12-2026	08	2. Perform the Design, Develop and Simulation of Open Shortest Path Routing Protocol (OSPF) (Practical)	2.1 Design network diagram using packet tracer 2.2 Design proper IP address with network devices.	After the Class, Students will be able to: To know network diagram using packet tracer.	**1. Projector.** **2. Computer.**
08-12-2026	09	2. Perform the Design, Develop and Simulation of Open Shortest Path Routing Protocol (OSPF) (Practical)	2.3 Configure OSPF as per Instruction. 2.4 Ensure reachability	After the Class, Students will be able to: To know OSPF.	**1. Projector.** **2. Computer.**

12-12-2026	10	**Review class**	**Chapter:2** **(**Regarding students problem)	**Find out important Topic and Question**	**1. Projector.** **2. Computer.**

15-12-2026	11	**Quiz Test 01**	Examination Topic: Chapter 2 Examination mark: 10 Passing Mark: 04		**1.Anser Script** **2.Projectors**
19-02-2026	02	**3.Understand Internet Protocol Routing. (Theory)**	3.1. Define Routing basics 3.2. Configure IP Routing in network. 3.3. Define Static routing	After the Class, Students will be able to: To Know about Routing.	**1. Projector.** **2. Computer.** **<u>YouTube link:</u>** **https://www.youtube.com/watch?v=3eO29WBKg2E**
22-02-2026	13	**Continue….** **3.Understand Internet Protocol Routing. (Theory)**	3.4. Define default routing. 3.5. Define dynamic routing 3.6. Describe Routing information protocol.	After the Class, Students will be able to: To Know about Routing,protocal.	**1. Projector.** **2. Computer.**
26-02-2026	14	3. Perform the Design, Develop and Simulation of Virtual Link. functions.(Practical)	3.1. Design network diagram using packet tracer 3.2. Design proper IP address with network devices.	After the Class, Students will be able to: To know network diagram using packet tracer	**1. Projector.** **2. Computer.**
02-01-2026	15	3. Perform the Design, Develop and Simulation of Virtual Link. .(Practical)	3.3. Configure Virtual Link as per Instruction. 3.4. Ensure reachability	After the Class, Students will be able to: To Configure Virtual Link.	**1. Projector.** **2. Computer.**

05-01-2026	16	**Review class**	**Chapter:3** **(**Regarding students problem)	**Find out important Topic and Question**	**1. Projector.** **2. Computer.**
09-01-2026	17	**Class Test-02**	Examination Topic: Chapter 3 Examination mark: 10 Passing Mark: 04		**1. Anser Script** **2.Projectors**

02-01-2026	18	**4. Open Shortest Path First (OSPF). (Theory)**	4.1. Define OSPF basics 4.2. Describe OSPF terminology. 4.3. Define OSPF operation	After the Class, Students will be able to Capable to install and monitoring through single Visit.	**1.Projector.** **2.Computer** **YouTube link: https://www.youtube.com/watch?v=kfvJ8QVJscc**
16-01-2026	19	**4. Open Shortest Path First (OSPF). (Theory)**	4.4. Describe Loopback interface 4.5. Describe OSPF areas 4.6. Describe virtual link	After the Class, Students will be able to Use BNC connectors, Connect all the cables to multiple cameras,	**1. Projector.** **2. Computer**
19-01-2026	20	4. Perform the Design, Develop and Simulation of Routing Information Protocol (RIP) (Practical)	4.1. Design network diagram using packet tracer 4.2. Design proper IP address with network devices.	After the Class, Students will be able to To Know the weather proof Cable.	**1. Projector.** **2. Computer**
23-01-2026	21	4. Perform the Design, Develop and Simulation of Routing Information Protocol (RIP) (Practical)	4.3. Configure RIP as per requirement. 4.4. Ensure reachability	After the Class, Students will be able to know RIP.	**1. Projector.** **2. Computer**
26-01-2026	22	**Review class**	**Chapter:4** **(**Regarding students problem)	**Find out important Topic and Question**	**1. Projector.** **2. Computer.**

30-01-2026	23	**Quiz Test-02**	Examination Topic: Chapter 4 Examination mark: 10 Passing Mark: 04		**1. Anser Script** **2.Projectors**
06-02-2026	24	**5. Enhanced Interior Gateway Routing Protocol (EIGRP)**	5.1. Define Introduction to EIGRP 5.2. State the configuration of EIGRP 5.3. State EIGRP Neighbor Adjacency	After the Class, Students will be able to To Know EIGRP.	**1.Projector.** **2.Computer** **YouTube link:** https://www.youtube.com/watch?v=QyymlFWDEgM
		(Theory)			
09-02-2026	25-26	**5. Enhanced Interior Gateway Routing Protocol (EIGRP) (Theory)**	5.4. Describe EIGRP Neighbor and topology table 5.5. Describe EIGRP Unequal Cost Load Balancing 5.6. State EIGRP K values	After the Class, Students will be able to To Know EIGRP.	**1. Projector.** **2. Computer**
13-02-2026	27	**Review class**	**Chapter:5** **(**Regarding students problem)	**Find out important Topic and Question**	**1. Projector.** **2. Computer.**
16-02-2026	28	**Class Test-03**	Examination Topic: Chapter 5 Examination mark: 10 Passing Mark: 04		**1. Anser Script** **2.Projectors**
Mid Term Exam(Chapter 1-5);Marks-20;Pass Marks-8 (From 16-22 October)					
20-02-2026	30	5. Perform the Design, Develop and Simulation of Static Routing (Practical)	5.1. Design network diagram using packet tracer 5.2. Design proper IP address with network devices.	After the Class, Students will be able to To Know network diagram using packet tracer.	**1. Projector.** **2. Computer**

23-02-2026	31	5. Perform the Design, Develop and Simulation of Static Routing (Practical)	5.3. Configure Static Routing as per requirement. 5.4. Ensure reach ability.	After the Class, Students will be able to To Know network diagram using packet tracer.	**1. Projector.** **2. Computer**
27-02-2026		Industrial Visit	Bangladesh submarine cable company (BCCL) with 5th or 7th Semester		
27-02-2019	32	**6. Understand Spanning Tree Protocol (STP). (Theory)**	6.1. Define Spanning Tree. 6.2. Describe Spanning Tree cost calculation. 6.3. Define Spanning Tree port states	After the Class, Students will be able to To Know Spanning Tree, Spanning Tree port.	**1. Projector.** **2. Computer** **YouTube link:**
			6.4. Define Spanning Tree port fast 6.5. Define Rapid Spanning Tree.		https://www.youtube.com/watch?v=WnBWYW4nQEk
06-03-2026	33	**Continue….** **6. Understand Spanning Tree Protocol (STP). (Theory)**	6.6. Define Spanning Tree BPDU Guard. 6.7. Define Spanning Tree BPDUFilter 6.8. Define Spanning Tree Rootguard. 6.9. Define Ether-channel	After the Class, Students will be able to To Know Spanning Tree, Spanning Tree port, BPDU Guard.	**1. Projector.** **2. Computer** **YouTube link: https://www.youtube.com/watch?v=WnBWYW4nQEk**
09-03-2026	34	**Review class**	**Chapter:6** **(**Regarding students problem)	**Find out important Topic and Question**	**1. Projector.** **2. Computer**
13-03-2026	35	**Class Test-03**	Examination Topic: Chapter 6 Examination mark: 10 Passing Mark: 04		**1. Anser Script** **2.Projectors**
16-03-2026	36	6. Perform the Design, Develop and Simulation of Default Routing (Practical)	6.1. Design network diagram using packet tracer 6.2. Design proper IP address with network devices.	After the Class, Students will be able to To Know Design proper IP address.	**1. Projector.** **2. Computer**

20-03-2026	37	6. Perform the Design, Develop and Simulation of Default Routing (Practical)	6.3. Configure Default Routing as per requirement. 6.4. Ensure reach ability	After the Class, Students will be able to To Know Configure Default Routing.	**1. Projector.** **2. Computer**
23-03-2026	38	**7.Understand VLANs and Inter-VLAN routing. (Theory)**	7.1. Define VLANs 7.2. State802.1Q and ISL Encapsulation 7.3. Define Trunk link	After the Class, Students will be able to To Know VLANs, State802.1Q, ISL Encapsulation	**1. Projector.** **2. Computer** **YouTube link: https://www.youtube.com/watch?v=oo-hejIq3iQ**
27-03-2026	39	**7.Understand VLANs and**	7.4. Describe Router on a Stick. 7.5. Describe Inter-Vlan routing by multilayer switch	After the Class, Students will be able to To Know VLANs, State802.1Q, ISL Encapsulation	**1. Projector.** **2. Computer** **YouTube link:**

		Inter-VLAN routing. (Theory)	7.6. State the configuration of Vlan Trunking protocol (VTP)		**https://www.youtube.com/watch?v=oo-hejIq3iQ**
30-03-2026	40	7. Perform the Design, Develop and Simulation ofHot Standard Router Protocol (HSRP) (Practical)	6.1Define data transmission media 6.2 Describe various wired media- Coaxial Cables, Twisted-pair cable transmission. 6.3 Explain Control signal circuits of transmission media	After the Class, Students will be able to To Know transmission media.	**1. Projector.** **2. Computer**

03-04-2026	41	7. Perform the Design, Develop and Simulation ofHot Standard Router Protocol (HSRP) (Practical)	7.3 Configure HSRP as per requirement. 7.4 Ensure reachability	After the Class, Students will be able to To Know Configure HSRP.	**1. Projector.** **2. Computer**
06-04-2026	42	**8.Understand the network address translator (NAT). (Theory)**	8.1. State Network Address Translator (NAT). 8.2. Distinguish static and Dynamic NAT. 8.3. Demonstrate PAT (overloading).	After the Class, Students will be able to To Know Configure HSRP.	**1. Projector.** **2. Computer** **YouTube link: https://www.youtube.com/watch?v=FTUV0t6JaDA**
10-04-2026	43	8. Perform the Design, Develop and Simulation of Virtual Router Redundancy Protocol (VRRP) **(Practical)**	8.1 Design network diagram using packet tracer 8.2 Design proper IP address with network devices.	After the Class, Students will be able to To Know Configure HSRP.	**1. Projector.** **2. Computer**

13-04-2026	44	8. Perform the Design, Develop and Simulation of Virtual Router Redundancy Protocol (VRRP) **(Practical)**	8.3 Configure VRRP as per requirement. 8.4 Ensure reachability	After the Class, Students will be able to To Know Configure HSRP.	**1. Projector.** **2. Computer**
17-04-2026		Programming Contest	Programming Contest for all semester Responsible Teacher: Johir sir and Shahidul sir		
20-04-2026	45	**Review class**	**Chapter:8** **(**Regarding students problem)	**Find out important Topic and Question**	**1. Projector.** **2. Computer**

24-04-2026	46	**Quiz Test-04**	Examination Topic: Chapter 8 Examination mark: 10 Passing Mark: 04		**1. Answer Script** **2.Projectors**
27-04-2026	47	**9.Understand the network security (Theory)**	9.1. Define User security level, login security (SSH, Telnet). 9.2. Demonstrate standard Access list. 9.3. Define Extended Access list.	After the Class, Students will be able to To Know Configure HSRP.	**1. Projector.** **2. Computer** **<u>YouTube</u> link: https://www.youtube.com/watch?v=PfkUJ6j0oW4**
01-05-2026	48	**9.Understand the network security (Theory)**	9.4. State Port Security. 9.5. State Protected port. 9.6. Demonstrate DHCP Snooping	After the Class, Students will be able to To Know Port Security.	**1. Projector.** **2. Computer** **<u>YouTube</u> link: https://www.youtube.com/watch?v=PfkUJ6j0oW4**
04-05-2026	49	9. Perform the Design, Develop and Simulation ofNetwork Address Translator (NAT) (Practical)	9.1 Design network diagram using packet tracer 9.2 Design proper IP address with network devices.	After the Class, Students will be able to To Know Design network diagram.	**1. Projector.** **2. Computer**
08-05-2026	50	9. Perform the Design, Develop and Simulation of Network Address Translator (NAT) (Practical)	9.3 Configure NAT as per requirement. 9.4 Ensure reachability	After the Class, Students will be able to To Know Configure NAT.	**1. Projector.** **2. Computer**
11-05-2026	51	**Review class**	**Chapter:9** **(**Regarding students problem)	**Find out important Topic and Question**	**1. Projector.** **2. Computer**

15-05-2026	52	Quiz Test -4	Examination Topic: Chapter 9 Examination mark: 10 Passing Mark: 04		**1. Anser Script** **2.Projectors**
18-05-2026	53	**10.Understand Internet Protocol Version 6 (IPv6). (Theory)**	10.1 Describe the benefits and uses of IPv6 10.2 Define IPv6 addressing and expression	After the Class, Students will be able to To Know benefits and uses of IPv6.	**1. Projector.** **2. Computer** **YouTube link: https://www.youtube.com/watch?v=8npT9AALbrI**
22-05-2026	54	**10. Understand Internet Protocol Version 6 (IPv6). (Theory)**	10.3 State how IPv6 works in an Inter-network. 10.4 Define IPv6 Routing protocol (RIP, EIGRP, OSPF).	After the Class, Students will be able to To Know how IPv6 works.	**1. Projector.** **2. Computer** **YouTube link:** https://www.youtube.com/watch?v=8npT9AALbrI
25-05-2026	55	10. Perform the Design, Develop and Simulation of Standard Access List (ACL) (Practical)	10.1 Design network diagram using packet tracer 10.2 Design proper IP address with network devices. 10.3 Configure ACL as per requirement. 10.4 Ensure reachability	After the Class, Students will be able to To Know Configure ACL.	**1. Projector.** **2. Computer**

29-05-2026	56	**11.UnderstandLink and Gateway Redundancy (Theory)**	11.1. Define Redundancy 11.2. StateStatic Routing Redundancy 11.3. Define Hot Standby Router Protocol (HSRP)	After the Class, Students will be able to To Know Configure HSRP.	**1. Projector.** **2. Computer** **YouTube link: https://www.youtube.com/watch?v=sT9T0hla9qQ**
05-06-2026	57	**11.UnderstandLink and Gateway Redundancy (Theory)**	11.4. Define Virtual Router Redundancy Protocol (VRRP) 11.5. Demonstrate Gateway Load Balancing Protocol (GLBP).	After the Class, Students will be able to To Know VRRP, GLBP.	**1. Projector.** **2. Computer** **YouTube link: https://www.youtube.com/watch?v=sT9T0hla9qQ**

08-06-2026	58	**Project:**	19. Establish a Computer Physical Network and Demonstrate Administrative Operation and Services (EIGRP, OSPF, NAT, Inter-Vlan Routing, Portfast).	After the Class, Students will be able to To Establish a Computer Physical Network.	**1. Projector.** **2. Computer**
12-06-2026	59	**Review Class**	All Chapter	**Find out important Topic and Question**	**1. Projector.** **2. Computer**