Second Semester LETURE PLAN for 19 periods
(6 Jun to 10 Oct,2020)

No.	Chapter	Period	Ref:(netacad.com)
	CCNA-3 Scaling	**11**	
	Chapter 1 LAN Design	**1**	
	1.1 Campus wired LAN Design		
	1.2 Selecting Network Devices		
	Chapter 2 Scaling VLANs	**1**	
	2.1 VTP, DTP		
	2.2 Troubleshoot Multi VLANs Issues		
	2.3 Layer 3 Switching		
	Chapter 3 STP	**2**	
	3.1 Spanning Tree Concepts		
	3.2 Varieties of STP		
	3.3 STP Configurations		
	Chapter 4 Ether channel and HSRP	**1**	
	4.1 Link Aggregation Concepts		
	4.2 Link Aggregation Configurations		
	4.3 FHRP		
	Chapter 5 Dynamic Routing	**1**	
	5.1 Dynamic Routing Protocols		
	5.2 Distance Vector Dynamic Routing		
	5.3 Link State Dynamic Routing		
	Chapter 6 EIGRP	**1**	
	6.1 EIGRP Characteristics		
	6.2 Implement EIGRP for IPv4		
	6.3 EIGRP Operation		
	Chapter 7 EIGRP Tuning and Troubleshooting	**1**	
	7.1 Tune EIGRP		
	7.2 Troubleshoot EIGRP		
	Chapter 8 Single-Area OSPF	**1**	
	8.1 OSPF characteristics		
	8.2 Single-Area OSPFv2		
	8.4 Single-Area OSPFv3		
	Chapter 9 Multi Area OSPF	**1**	
	9.1 Multi Area OSPF Operation		
	9.2 Configuring Multi Area OSPF		
	Chapter 10 OSPF Tuning and Troubleshooting	**1**	

	10.1	Advanced Single-Area OSPF configurations		
	10.2	Troubleshooting Single-Area OSPF		
	CCNA-4	**Connecting**	**8**	
	Chapter 1	WAN Concepts	**1**	
	1.1	WAN Technologies Overview		
	1.2	Selecting a WAN Technology		
	Chapter 2	**Point-to-Point Connection**	**1**	
	2.1	PPP Operation		
	2.2	PPP Implementation		
	2.3	Troubleshoot WAN Connectivity		
	Chapter 3	**Branch Connection**	**1**	
	3.1	Remote Access Connection		
	3.2	PPPoE		
	3.3	VPNs		
	3.4	GRE		
	3.5	eBGP		
	Chapter 4	**Access Control Lists**	**1**	
	4.1	Standard ACL Opeartion and Configuration Review		
	4.2	Extended IPV4 Acl		
	4.3	IPv6 ACLs		
	4.4	Troubleshoot ACLS		
	Chapter 5	**Network Security and Monitoring**	**1**	
	5.1	LAN Security		
	5.2	SNMP		
	5.3	Cisco Switch Port Analyzer		
	Chapter 6	**Quality of Service**	**1**	
	6.1	QoS Overview		
	6.2	QoS Mechanism		
	Chapter 7	**Network Evolution**	**1**	
	7.1	IoT		
	7.2	Cloud and Virtualization		
	7.3	Network Programming		
	Chapter 8	**Network Troubleshooting**	**1**	
	8.1	Troubleshooting Methodology		
	8.2	Troubleshooting Scenarios		

CST-313	**:**	**Networking II- Second Semester**
Reference	**:**	CISCO networking academy courses https://www.netacad.com/ :
Period	**:**	**19** periods for 19 weeks (1 periods/week) (Lecture + Lab/pkt)

Course Description

Cisco Networking Academy Program series are designed to prepare students for careers in the exciting networking field. The course contains the combination of **ccna3 (scaling) and ccna4 (connecting)** courses. Scaling Networks composed of chapters that describe the architecture, components, and operations of routers and switches in a large and complex network. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement DHCP and DNS operations in a network. Connecting Networks also provides and discusses the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students also develop the knowledge and skills needed to implement IPSec and virtual private network (VPN) operations in a complex network. Students can get supplemental aids to assist in studying:

1) Begins with a review chapter on the OSI Reference Model and routing
2) Chapter Objectives and Summaries provide references to the concepts covered for focused study on key topics
3) Extensive Glossary lists all the key terms and definitions in one place
4) References to the lab activities found in the course and these labs allow to make a connection between theory and practice.

Course Objectives

The main objectives of the courses are :

- To learn how to configure routers and switches for advanced functionality.
- To understand, configure, and troubleshoot wireless routers and wireless clients
- To understand LAN and WAN concepts for campus and enterprise network application designs
- To get opportunity for the learners who are seeking entry-level jobs in the Information Communications Technology (ICT) industry or wish to keep pace with fast paced implementation of ICT in their industry.

- To be prepared to take the Cisco CCENT certification exam after completing a set of two courses and the CCNA Routing and Switching certification exam after completing a set of four courses

Assessment Plan for the Course

Paper Exam:	60%
Attendance:	10%
Tutorial/ Quiz:	20%
Lab:	10%

CCNA-3: Scaling Networks

This course describes the architecture, components, and operations of routers and switches in larger and more complex networks. Students can a chance to learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, and STP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement a WLAN in a small-to-medium network. The course also describes the architecture, components, and operations of routers and switches in a large and complex network. Students learn how to configure routers and switches for advanced functionality. By the end of this course, students will be able to configure and troubleshoot routers and switches and resolve common issues with OSPF, EIGRP, STP, and VTP in both IPv4 and IPv6 networks. Students will also develop the knowledge and skills needed to implement DHCP and DNS operations in a network. Students will learn the following chapters in the scaling course.

Chapter	Introduction to Networks
1	LAN Design
2	Scaling VLANs
3	STP
4	Ether channel and HSRP
5	Dynamic Routing
6	EIGRP
7	EIGRP Tuning and Troubleshooting
8	Single Area OSPF
9	Multi Area OSPF
10	OSPF Tuning and Troubleshooting

CCNA-4: Connecting Networks

This course discusses the WAN technologies and net work services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students will also develop the knowledge and skills needed to implement virtual private network (VPN) operations in a complex network.

This course also discusses the WAN technologies and network services required by converged applications in a complex network. The course enables students to understand the selection criteria of network devices and WAN technologies to meet network requirements. Students learn how to configure and troubleshoot network devices and resolve common issues with data link protocols. Students also develop the knowledge and skills needed to implement IPSec and virtual private network (VPN) operations in a complex network. Get the knowledge and skills you need to install, configure, operate, and troubleshoot a small enterprise network. The table below describes the chapter in connecting network course.

Chapter	Introduction to Networks
1	WAN Concepts
2	Point-to-Point Connection
3	Branch Connection
4	ACL
5	Network Security and Monitoring
6	QoS
7	Network Evolution
8	Network Troubleshooting