CPIT-470 Syllabus

Catalog Description

CPIT-470 Networks Administration
Credit: 3 (Theory: 3, Lab: 0, Practical: 1)
Prerequisite: CPIT-370
Classification: Department Required

The objective of this course is to explore the principles of network administration. Topics include network OSI layers and CISCO IOS configuring devices, IP addressing and subnetting, introduction to routing, static routing, default routing, dynamic routing, RIP1 and RIP2, troubleshooting, routing table lookup process, OSPF, switching & switch configuration, switch security, VLANs, spanning tree protocol, VTP, inter VLAN routing, and network troubleshooting.

Class Schedule

Meet 50 minutes 3 times/week or 80 minutes 2 times/week

Lab/Tutorial 90 minutes 1 times/week

Textbook

Rick Graziani, Allan Johnson, , "Routing Protocols and Concepts, CCNA Exploration Companion Guide", Cisco Press;(2007-12-06)

ISBN-13 9780132877527 **ISBN-10** 013287752X

Grade Distribution

Week	Assessment	Grade %
3	Quiz 1	1
3	Graded Lab Work 1	1
4	Graded Lab Work 2	1
5	Graded Lab Work 3	1
6	Quiz 2	1
7	Exam 1	20
7	Graded Lab Work 4	1
8	Graded Lab Work 5	1
9	Quiz 3	1
10	Graded Lab Work 6	1
11	Graded Lab Work 7	1
12	Exam 2	20
12	Quiz 4	1
12	Graded Lab Work 8	1
13	Graded Lab Work 9	1
14	Project (Individual)	10
14	Graded Lab Work 10	1
15	Lab Exam	10
15	Quiz 5	1
16	Exam	25

Last Articulated

December 18, 2017

Relationship to Student Outcomes

a	b	c	d	e	f	g	h	i	j	k	l	m	n
		x							x	x	x		

Course Learning Outcomes (CLO)

By completion of the course the students should be able to

1. Compute IPv4 and IPv6 addresses for the given network topology using VLSM subnetting (c)
2. Design network topology using layer based switched architecture (c)
3. Explain various switching methods and Secure the ports of switches in switched networks from security threats (c)
4. **Create Virtual LANs in a switched network topology and evaluate for possible errors to rectify (c)**
5. Discuss the routing process involved in the information transfer, from one network to another (j)
6. **Implement the Inter-VLAN routing in a given switched network topology and solve for routing problems (l)**
7. **Configure the network topology with appropriate combination of static, default summary routes and troubleshoot for routing issues (c)**
8. Classify dynamic routing protocols and compare their features (j)
9. Develop a small, fully operational network topology using RIP and RIPng routing protocols (c)
10. **Apply OSPF routing protocol variants in a given network topology (c)**
11. **Apply network security by implementing suitable access control list in the routers (c)**
12. Integrate Network Address Translation in the network topology on appropriate routers (c)
13. Select the appropriate categories of routers and switches, for hierarchical network design model topology (j)
14. Explain Spanning Tree Protocol convergence process and implement it in a topology with redundant links (k)
15. Configure the link aggregation with Etherchannel in a switched LAN environment and evaluate the network to solve any link problem (c)

Coordinator(s)

Mr. Baker Soubani, Lecturer

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Topics Coverage Durations

Topics	Weeks
IP addressing and Subnetting for IPv4 and IPv6	1
Introduction to Switched Networks	1
Basic Switching Concepts and Configuration	1
VLANs	1
Routing Concepts	1
Inter VLAN Routing	1
Static Routing	1
Routing Dynamically	1
Single area OSPF	1
Access Control Lists	1
Network Address Translation for IP v4	1
Introduction to Scaling Networks	1
LAN redundance and Spaning Tree Protocol	1
Multi area OSPF	1
Link Aggregation	1