CPCS-473 Syllabus

Catalog Description

CPCS-473 Computer Networks Practice
Credit: 3 (Theory: 3, Lab: 0, Practical: 0)
Prerequisite: CPCS-371
Classification: Elective

The objective of this course is to explore topics related to the practical aspects of networks, thereby familiarizing students with the various network components. The course provides an understanding of the network design and analysis as well as network architecture, including requirements validation and traceability. Students will be introduced to analyzing, developing, and validating requirements regarding the network architecture, in addition to network management principles and performance evaluation.

Class Schedule

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

Lab/Tutorial 90 minutes 1 times/week

Textbook

McCabe, James Patrick, , "Network Analysis, Architecture, and Design", Elsevier; 3 edition (2010-07-26)

ISBN-13 9780080548753 **ISBN-10** 008054875X

Grade Distribution

Week	Assessment	Grade %
3	Quiz 1	3
5	Quiz 2	3
6	Exam 1	15
8	Quiz 3	3
11	Quiz 4	3
12	Exam 2	15
14	Quiz 5	3
15	Project (Individual)	10
15	Lab Exam	20
16	Comprehensive Final Exam	25

Last Articulated

March 5, 2017

Relationship to Student Outcomes

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

Course Learning Outcomes (CLO)

By completion of the course the students should be able to

1. **Demonstrate an understanding of differences between analysis, architecture and design (b)**
2. **Demonstrate an ability to categorized user, application, device and networks requirements into core, features, future and informational requirements. (b)**
3. Illustrate a good conceptual understanding of the requirement analysis process with the help of service metrics, behavior, and maps. (b)
4. **Demonstrate an understanding of traffic flows and flow specifications with the help of flow models. (b)**
5. Demonstrate an understanding of network architecture with the help of four key capabilities; 1) addressing & routing, 2) management, 3) performance, and 4) security & privacy (b)
6. Demonstrate an understanding of the addressing and routing architecture with the help of flows, protocols, workgroups and functional areas. (b)
7. Demonstrate an understanding of the network management architecture. (b)
8. **Illustrate a good conceptual understanding of network management mechanisms using SNMP and RMON. (b)**
9. Demonstrate an understanding of the performance architecture. (b)
10. Demonstrate an understanding of the security and privacy architecture using two steps: 1) threat analysis and 2) policy and procedures. (i)
11. **Identify tools and mechanisms for addressing, routing,network management, performance, security and privacy architectures. (b)**
12. Demonstrate an understanding of the network design process using two key steps: 1) Vendors, equipment and service providers evaluation, and 2) network layout e.g. blueprints (b)
13. Demonstrate an ability of developing a network design for any given scenario by applying all the techniques that student has learned in this course. (c)
14. Demonstrate the understanding about the differences between OSI management framework and internet management framework. (b)

Coordinator(s)

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Topics Coverage Durations

Topics	Weeks
Introduction	2
Requirements analysis: concepts	1
Requirements analysis: process	1
Flow Analysis	2
Network Architecture	1
Addressing and Routing Architecture	1
Network Management Architecture	1
Network Management framework	1
Network Management Protocols	1
Performance Architecture	1
Security and Privacy Architecture	1
Network Design	2

Coordinator(s)

Dr. Riaz Shaikh, Associate Professor