CPIS-370 Syllabus

Catalog Description

CPIS-370   Fundamentals of Data Networks
Credit: 3 (Theory: 3, Lab: 1, Practical: 1)
Prerequisite: CPIS-210 , CPCS-204
Classification: Department Required

The objective of this course is to provide an introduction to IT infrastructure issues for students majoring in Information Systems. It covers topics related to both computer and systems architecture and communication networks, with an overall focus on the services and capabilities that IT infrastructure solutions enable in an organizational context. It gives the students the knowledge and skills that they need for communicating effectively with professionals whose special focus is on hardware and systems software technology and for designing organizational processes and software solutions that require in-depth understanding of the IT infrastructure capabilities and limitations. It also prepares the students for organizational roles that require interaction with external vendors of IT infrastructure components and solutions. The course focuses strongly on Internet-based solutions, computer and network security, business continuity, and the role of infrastructure in regulatory compliance.

Class Schedule

Lab/Tutorial 90 minutes 1 times/week

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

Textbook

Behrouz A. Forouzan, , "Data Communications and Networking", McGraw-Hill Education; 2 edition (2012-02-17)

ISBN-13 9780073376226   **ISBN-10** 0073376221

Grade Distribution

Week	Assessment	Grade %
8	Exam 1	10
12	Exam 2	20
13	Graded Lab Work	10
15	Group Project	20
16	Exam	40

Last Articulated

April 17, 2018

Relationship to Student Outcomes

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

Course Learning Outcomes (CLO)

By completion of the course the students should be able to

1. Define key componentes and types of networks (b)
2. Describe history and current state of networks and internet (b)
3. Explain principles underlying OSI layered architecture of the network. (c)
4. Describe TCP/IP protocol suit. (b)
5. Explain different types and applications of guided and unguided media (c)
6. **Apply core concepts of IP networks to design simple networks (a)**
7. **Design subnets and supernets (c)**
8. Appraise different components of wired LAN (ethernet) (b)
9. Describe components and addressing schemes in wireless networks (a)
10. **Choose network devices at different layers (a)**
11. **Examine different algorithms for detection of errors in data transmission (b)**
12. Explain different algorithms for correction of errors in data transmission (a)
13. **Appraise random access models of multiple network access (b)**
14. Appraise random controlled models of multiple network access (c)

Coordinator(s)

Prof. Farrukh Nadeem, Professor

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Topics Coverage Durations

Topics	Weeks
Introduction to computer networks	2
Network Fundamentals	2
Transmission media	1
IP Addressing	2
Wired LANs	2
Wireless LANs	1
Connecting LANs and Backbones	1
Error detection and correction	1
Data Link Layer and Multiple Access	2