

## COURSE SYLLABUS

### CPCS371 - COMPUTER NETWORKS 1

Course Information			
<b>Type</b>	Required	<b>Prerequisite(s)</b>	CPCS214
<b>Credit Hours</b>	3	<b>Contact Hours</b>	4

#### Course Description

The objective of this course is to provide an introduction to computer networks and the ISO- layers reference model, which includes necessary protocols. This course also includes a detailed discussion of protocols in selected layers, such as data link layer, transport layer, network layer, application layer.

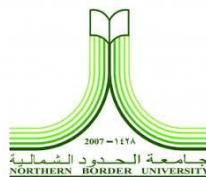
#### Course Learning Outcomes (CLOs)

By the completion of the course the students should be able to:

1. Identify principle components of data networks and internet, and list layers for ISO reference model and Internet model.
2. List and elaborate steps of commonly used application layer protocols.
3. Differentiate between connectionless and connection oriented transport protocols.
4. List and elaborate the services provided by Network Layer.
5. List and elaborate the services provided by Link Layer.
6. Use network simulator tools to create some topology, configure devices and analyze network traffic using simulation mode.
7. Identify the course of action, given a scenario, which is in-line with their professional, ethical, legal and social responsibilities.
8. Classify a stated impact of computing related to computer networks as a local or global impact on individuals, organizations and society.

Textbook(s)			
<b>Title</b>	Computer Networks: Principles, Technologies and Protocols for Network Design		
<b>Author(s)</b>	Natalia Olifer , Victor Olifer	<b>Publisher</b>	Wiley
<b>Edition</b>	1 <sup>st</sup>	<b>Year</b>	2006

References	
Book	Website
1. F. Kurose and Keith W. Ross , Computer Networking: A Top-Down Approach", 6th edition	
2. Computers Networks, Andrew Tanenbaum, Fourth Edition.	
3. W. Stallings, "Data and Computer Communications", 7th Ed., Prentice Hall, 2003.	



Evaluation	
Assessment Tools	Marks
Class participation	5%
Assignments & Discussions	10%
Quizzes	5%
Labs	20%
Mid Term Exam	20%
Final Exam	40%

Tentative Topics Covered		
Week No	Topic	Lab Titles
1	Computer Networks and the Internet	
2	Network Core	Study the different cables used in the networking-Part 1
3	Protocols, Layers and Service Models	Study the different cables used in the networking- Part 2
4	Application Layer	Networking Devices: Practice on Each device to understand how the devices Works.
5	Application Layer	Networking Devices: Practice on Each device to understand how the devices Works.
6	Transport Layer	Network IP Addressing Scheme and Creation of LAN
7	Transport Layer	Study of Basic Networking commands and Network Configuration Commands
8	Transport Layer	Learn to Use Packet Tracer Software
9	The Network Layer	Configure a Network topology using packet tracer Configure a Network using Different Protocols
10	The Network Layer	How to setup the IP Address Manual and Automatic and how to configure DHCP
11	Link Layer	Configure a Local Area Network (Practical Work)
12	Link Layer	To understand Wide Area Concepts (Practical Work)
13	Wireless and Mobile Networks	File Sharing on Wired and Wireless Networks
14	Wireless and Mobile Networks	Building an advanced Switched Network and Controlling an unauthorized access.
15	Wireless and Mobile Networks	Lab Evaluation