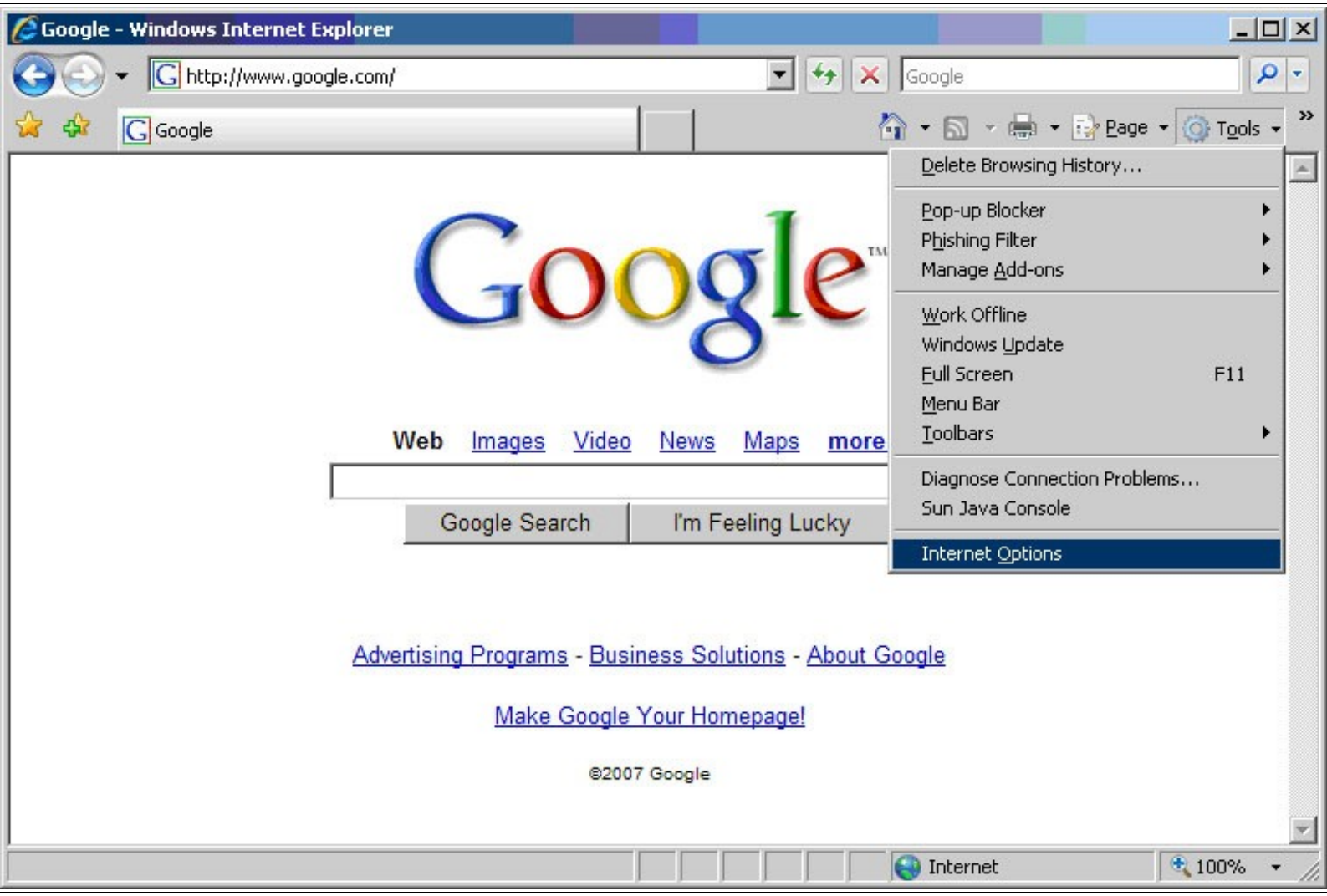

MBF 744

COMPUTER NETWORKS AND INTERNET

Course Guide

COURSE GUIDE

MBF744
COMPUTER NETWORKS AND INTERNET

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Introduction

MBF744: Computer Network and Internet is a semester course of three credit hours. It will be available for all students, taking the Masters Degree in Computer Science. The course consists of 15 units involving details found within the field of computer networks and data commu8nication. It involves introducing concepts that will help you achieve a more in-depth understanding of the often complex topic of data communications. The Course Guide tells you what the course MBF744 is all about, the materials you will be using and how to make use of the materials to ensure adequate success. Other information that are contained in the course include how to make use of your time, information on Tutor-Marked Questions. There will be tutorial classes. Full details concerning the tutorial classes will be conveyed to you at the appropriate time.

Course Contents

The course content consist of computer network and data communication concepts, fundamental of data and signals, transmission media, data communication interfaces, multiplexing and compression, error detection and control, LANs, MANs, WANs, routing and network congestion, network security, the Internet, and finally world wide web.

Course Aims

The aims of this course is to expose you to the detail concept underlying computer networks and data communication. The aims will be achieved by:

- Defining the basic terminology and recognize the individual components of computer network.
- Identifying the transmission, interfacing, link control, and multiplexing techniques for data exchange between two directly connected devices.
- Describing the internal mechanism and technologies that have been developed to support multimedia services.
- Highlighting communication architecture and protocols for exchange of data between computers, workstations, servers, and other data processing devices.
- Identifying transmission media, topologies, and medium access control protocols that are the key ingredients of a LAN design.

Objectives

At the end of the course, you should be able to:

- Define the basic terminology and recognize the individual components of computer network.
- Identify the transmission, interfacing, link control, and multiplexing techniques for data exchange between two directly connected devices.
- Describe the internal mechanism and technologies that have been developed to support multimedia services.
- Explain communication architecture and protocols for exchange of data between computers, workstations, servers, and other data processing devices.
- Identify transmission media, topologies, and medium access control protocols that are the key ingredients of a LAN design.

Course Materials

- Course guide
- Study units
- Text books
- Assignment guide.

Study Units

There are 15 units in this course which should be studied carefully. The units are as follows:

Module 1

Unit 1	Introduction to Computer Network and Data Communication
Unit 2	Fundamentals of Data and Signals
Unit 3	Transmission Media
Unit 4	Data Communication Interfaces
Unit 5	Multiplexing and Compression

Module 2

Unit 1	Error Detection
Unit 2	Error Control
Unit 3	LAN: The Basics
Unit 4	Medium Access Control
Unit 5	LAN: Internetworking

Module 3

Unit 1 Introduction to MANs and WANs
Unit 2 Routing and Network Congestion
Unit 3 Network Security
Unit 4 The Internet
Unit 5 The World Wide Web

The first seven units are to give you an idea of how data is exchanged between two directly connected devices. Units 8 to 10 explore the quite different technologies and architectures that have been developed for networking over shorter distances. Five units, Module 3, Units 1 to 5 examine the internal mechanisms and technologies that have been developed to support various services and also some materials that relates to the TCP/IP protocol suite. Each study will take at least two hours and it includes the introductions, objectives, main content, exercises, conclusion, and summary. You are expected to study the materials, reflect and do the exercises.

The Modules

The course is divided into three modules. The first module have the first five units, second module have five units, while the third module have five units also. The first module treats concept underlying the exchange of data between two directly-connected devices. Within this restricted scope, the key aspects of transmission, interfacing, link control and multiplexing are examine. The second module examined the technologies and architectures that have been developed for networking over shorter distances. The topologies, the medium access control protocols which are key ingredients of a LAN design are explored. The last module examines the internal mechanisms and technologies that have been developed to support data, voice, and multimedia communications over long-distance networks. The technologies examined include circuit switching, packet switching, and frame relay. Also this module explores both the architectural principles and mechanisms required for exchange of data among computers, workstations, servers, and other data processing devices. Part of the materials in this module relate to the TCP/IP.

Assignments

In this course, there are 15 assignments, one per unit. You are expected to do all of them.

Assessments

Tutor-Marked Assignment

In doing the tutor-marked assignments, you are expected to apply what you have learnt in the contents of the study units. These assignment which are 15 in number are expected to be turn in to your tutor for grading. They constitute 40% of the total score.

Final Written Examination

At the end of the course, you will write the final examination. It will attract the remaining 60%. This makes total final score to be 100%.

Summary

Course MBF744 (Computer Network and Internet) exposes you further to the principles underlying the exchange of data between two or more computers that are directly or indirectly connected over shorter or longer distances. On the successful completion of this course, you would have been armed with principles necessary for efficient and effective management of computer communication network.