Capital University of Economics and Business
Overseas Chinese College
Course Syllabus

Year and Semester	2020 Fall (August 31, 2020 - January 3, 2021)
Course Name	Computer Networking
Course Code	MIS225
Course Type	☐ General Education (Required) ☐ General Education (Elective) ☑ Professional Course (Required) ☐ Professional Course (Elective) ☐ Basic Disciplinary Course
Course Credits	3
Course Hours	48
Prerequisites	MIS111 Introduction to computer Technology
Instructor	Xin Zhang (Helen Zhang)
Contact Information	Office: C217 Tele: (010)83951082 Email: zhangxin@cueb.edu.cn
Office Hour	T: 15:30—17:30; W: 10:00—11:00; W: 14:30—15:30; TH: 9:00—10:00; F: 10:00—11:00
Learning Centre	T: 18:00—20:00; W: 14:30—16:30
Grade/Section	2019IT/Y03
Course Time/Place	W: 8:00—09:50 / E302B; F: 8:00—08:50 / B216

Textbook

Kurose & Ross, *Computer Networking A top-down approach*, 7th edition*;* ISBN: 9780134312804

Reference Book

ANDREW S. TANENBAUM, DAVID J. WETHERALL. *COMPUTER NETWORKS, FIFTH EDITION.* Pearson Edition Press, NJ, ISBN-13 978-0-13-212695-3.

Course Description

This course is an introductory course on computer networks. This course introduces the underlying concepts and principles of modern computer networks with emphasis on protocols, architectures, and implementation issues. The main goal of this course is to understand layering in computer networks, understand different protocol stacks (OSI), understand functions and protocols within a layer, understand how layers fit together and finally understand how the network works.

Student Learning Objectives

After completing this course, students will be able to:

⬧ Understand the structure and organization of computer networks; including the division into network layers, role of each layer, and relationships between the layers.

⬧ Understand the basic concepts of application layer protocol design; including client/server models, peer to peer models, and network naming.

⬧ Understanding of transport layer concepts and protocol design; including connection oriented and connection-less models, techniques to provide reliable data delivery, and algorithms for congestion control

and flow control.

 ⬧ Understanding of network layer concepts and protocol design; including virtual circuit and datagram network designs, datagram forwarding, routing algorithms, and network interconnections.

 ⬧ Understand the basic concepts of data link layer properties; including error-detection and correction techniques, multiple access protocols, point to pint protocols, and characteristics of link layer media (including wireless links).

 ⬧ Understand the basic concepts of physical layer concepts and protocol design; including guided transmission media, wireless transmission, telephone and mobile network.

 ⬧ Understand the basic concepts of network security concepts, including authentication, integrity, key distribution, and system security design challenges.

Website Source
https://next.xuetangx.com/course/SCUT08091000715/4227198?fromArray=learn_title

Teaching Methods
This course contains lectures, class discussions, homework, quizzes, presentation and exams. Textbook content will be introduced first. Then real case and practice questions will be delivered to students as a way to test their understanding of the knowledge. This will require individual or group assignment in or after class.

Grade Criterion

Component	Weight	Description
Final Exam	20%	A cumulative final examination will be given based on all of the contents of the class. The exam paper may be composed of multiple-choice questions, short answer questions, essay questions. Students should rely primarily on homework assignments and class exercise as reference for exams.
Mid-Term Test	20%	A cumulative midterm test will be given based on all of the contents that have been taught in class. The test paper may be mainly composed of multiple-choice questions and short answer questions. It should be completed within 50 minutes in class.
Homework	10%	Most of the assigned homework is taken from the Exercises in the textbook. Assignments will be collected at the clearly stated date. Late assignments will not be accepted. In general, each assignment should be prepared in Office software as appropriate. The graded assignments will be kept by instructor for reference and won't be returned to students.
Quizzes	15%	There will be at least 2 quizzes during the semester. Quizzes may or may not be announced in advance. It may also be used as a way to check the attendance. Quizzes will test your knowledge of both concepts and the application of those concepts.
Presentation	15%	The students will be divided into several groups to prepare a presentation. Each student is required to be involved in the presentation. Each member of the group will receive the group grade with certain weight of his/her contribution. The topics can be selected from the textbook or lectures.

		Each group need to finish a PPT or report related to the topic which is given and hand in the related resources to the teacher before the presentation.
Participation	10%	Individuals will be asked to participate individually in a question and answer at least 5 times during the semester. The performances should be counted in their participation.
Attendance	10%	Refer to attendance policy listed below
Total	100%	

Detailed Grade Computation

	Before Midterm	After Midterm
Attendance	5%	5%
Participation	5%	5%
Homework	5%	5%
Quizzes	5%	10%
Presentation		15%
Midterm test	20%	
Final exam		20%
Total	40%	60%

Grading Policy

A+ 97-100	A 93-96	A- 90–92	B+ 87-89	B 83-86	B- 80–82
C+ 75-79	C 70-74	C- 67–69	D+ 63–66	D 62-60	F 0- 59

Exam Schedule

Midterm Test: October 26-30, 2020

Final Exam: December 23, 2020 - January 1, 2021

Assessment of Student Performance

☞ *Self-Study and Reading ability Practice*

Instructor will give out the chapters or the reference books to read and use class hours to have discussion; students should be able to show a proactive attitude and ability for self-study and reading. Knowledge and oral English will be elements of homework or presentation score.

☞ *Homework*

Students should finish their homework by themselves. Copying from others will be treated as cheating and the homework scores will be lowered. Students should hand in all assignments on time. Late assignments will be accepted at the discretion of the instructor (i.e., when the student was ill or had an excused absence). Late assignments without reasonable proof will be reduced in score by 50%.

☞ *Attendance*

Because the course covers a great deal of material, attending every class session is very important for performing well.

- Being late for 15 minutes or more is considered an absence.
- Five hours or above of unexcused absences will result in the lower level of the final grade by one

grade band (e.g. from C – to D +). Any excused absence must be discussed directly with the teacher.

⬧ Absence which is more than 1/3 of the total teaching hours will cause an F (a failing grade) directly. but students are welcome to continue attending classes.

⬧ An incomplete grade (I) will be considered in case of medical or family emergencies.

☞ *Participation*

⬧ Students should participate in classes actively. Half of participation grade is determined by their presentation in class. They are encouraged to ask questions relevant to the subject and express their own opinions. Every student should respect the ideas, opinions, and questions of their classmates.

⬧ Students should also use office hours to ask questions or talk with the instructor for good communication and effective learning.

⬧ Frequent visiting the instructor and chatting in English during office hours is highly recommended.

⬧ Any misbehavior and non-class related activities in class will result in the lower level of the participation grade, including ringing cell phones.

⬧ All above behaviors will be solely evaluated by the instructor for scoring.

☞ *Textbook*

Students must bring the textbook to class.

Topical Course Outline

Week	Date	Topics	Homework
1	Sep. 2	● Course Introduction and Syllabus ● Course Overview Chapter 1 ● 1.1 What Is the Internet? ● 1.2 The Network Edge	——
	Sep. 3	● 1.3 The Network Core	——
2	Sep. 9	● 1.4 Delay, Loss, and Throughput in Packet-Switched Networks ● 1.5 Protocol Layers and Their Service Models	——
	Sep. 11	● 1.6 Networks Under Attack	——
3	Sep. 16	● EXE or LAB Chapter 5 ● 5.1 Introduction to the Link Layer ● 5.2 Error-Detection and –Correction	——
	Sep. 18	● 5.2 Error-Detection and –Correction	——
4	Sep. 23	● 5.3 Multiple Access Links and Protocols ● 5.4 Switched Local Area Networks	——
	Sep. 25	● 5.5 Link Virtualization: A Network as a Link	——
5	Sep. 30	● EXE or LAB ● Quiz	——
	Oct. 2	Chapter 4 ● 4.1 Introduction	——
6	Oct. 7	● 4.2 Virtual Circuit and Datagram Networks ● 4.3 What's Inside a Router?	——
	Oct. 9	● 4.4 The Internet Protocol (IP): Forwarding and Addressing in the Internet	
7	Oct. 14	● 4.4 The Internet Protocol (IP): Forwarding and Addressing in the Internet ● 4.5 Routing	——

	Oct. 16	● 4.5 Routing	———
8	Oct. 21	● 4.6 Routing in the Internet	———
	Oct. 23	● EXE or LAB	
9	Oct. 28	● MID Chapter 3 ● 3.1 Introduction and Transport-Layer Services ● 3.2 Multiplexing and Demultiplexing	———
	Oct. 30	● 3.3 Connectionless Transport: UDP	———
10	Nov. 4	● 3.4 Principles of Reliable Data Transfer ● 3.5 Connection-Oriented Transport: TCP	———
	Nov. 6	● 3.6 Principles of Congestion Control ● 3.7 TCP Congestion Control	———
11	Nov. 11	● EXE or LAB Chapter 2 ● 2.1 Principles of Network Applications ● 2.2 The Web and HTTP	———
	Nov. 13	● 2.3 File Transfer: FTP	———
12	Nov. 18	● 2.4 Electronic Mail in the Internet ● 2.5 DNS—The Internet's Directory Service	———
	Nov. 20	● 2.6 Peer-to-Peer Applications	———
13	Nov. 25	● EXE or LAB	———
	Nov. 27	● Quiz	———
14	Dec. 2	Presentation	———
	Dec. 4	Presentation	———
15	Dec. 9	Presentation	———
	Dec. 11	Presentation	———
16	Dec. 16	Final Review	———
	Dec. 18	Final Review	———
17-18	Dec. 23	Final Exam	———
	Jan. 1	Final Exam	

Note: Some chapters or sections may leave for self-study, this is the students' duty to learn and understand, they may also be included in the quizzes or exams (Mark with *).

A review in Chinese may be held during L.C. and O.H. in the semester.

Teacher's Office Hour

- The instructor's office hour is shown in the front of the office door.
- Students are suggested to use the instructor's office hour and learning center to ask questions or talk with the instructor once at least per week for good communication and effective learning, which is recorded in the students' participation.
- The time can be scheduled by instructors or students, or both.

Cheating and Plagiarism

Cheating is not tolerated. Any student caught cheating on a quiz; test or exam will be given a mark of zero (0) for the particular work. At the beginning of the semester the definition of plagiarism will be carefully explained, when any thoughts or writings of another person are used, they must be clearly identified (usually one uses quotation marks) and the source notes. **If any student is caught cheating on any homework assignment, the highest score the student can earn in that course is a "C".**

Important Dates

Fall Semester, 2020	**August 31, 2020—January 10, 2021**
August 29	Registration
August 31	Classes Begin
August 28	Classes Begin（Freshmen）
October 26- November 6	MID Test
December 23 – January 1	Final Exam
January 4	Winter Holiday

Note: *This syllabus is tentative and may be changed or modified throughout the semester. All students will be notified and a new syllabus will be given.*

Instructor: Xin Zhang   Department Head: Jingning Li

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