Capital University of Economics and Business
Overseas Chinese College
Course Syllabus

Year and Semester	2019 Spring (February 25, 2019 - June 14, 2019)
Course Name	Computer Networking
Course Code	MIS351
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	M: 15:30—17:30; W: 13:30—15:30; TH: 9:00—10:00; F: 9:00—10:00
Learning Centre	M: 18:00—20:00; F: 10:00—12:00
Grade/Section	2016CFA&FISC/Y02
Course Time/Place	T: 10:10—12:00 / B211; TH: 8:00—8:50 / B211

Textbook

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. In addition, you will also experience with (i) writing simple network applications and (ii) learning exactly what is going on inside the Internet by looking at frames/packets/segments and identifying each bit

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

1. http://www.xuetangx.com/courses/course-v1:SCUT+145036+sp/about

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 30 minutes in class.
Homework	15%	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. Hand-written assignments will not be accepted. 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	10%	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%	10%
Quizzes	5%	10%
Presentation		10%
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: April 29 - May 3, 2019;
Final Exam: June 17-21, 2019

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	Feb. 26	● Syllabus ● Chapter 1 • USES OF COMPUTER NETWORKS • NETWORK HARDWARE	——
	Feb. 28	● Chapter 1 • NETWORK SOFTWARE • REFERENCE MODELS	——
2	Mar. 5	● Chapter 1 • EXAMPLE NETWORKS • NETWORK STANDARDIZATION	——
	Mar. 7	● Chapter 1 • METRIC UNITS ● Exercises for Chapter 1	——
3	Mar. 12	● Chapter 2 • THE THEORETICAL BASIS FOR DATA COMMUNICATION • GUIDED TRANSMISSION MEDIA	——
	Mar. 14	● Chapter 2 • WIRELESS TRANSMISSION • COMMUNICATION SATELLITES	——
4	Mar. 19	● Chapter 2 • DIGITAL MODULATION AND MULTIPLEXING • THE PUBLIC SWITCHED TELEPHONE NETWORK	——
	Mar. 21	● Chapter 2 • THE MOBILE TELEPHONE SYSTEM • CABLE TELEVISION	——

		● Exercises for Chapter 2	
5	Mar. 26	● Chapter 3 • DATA LINK LAYER DESIGN ISSUES • ERROR DETECTION AND CORRECTION	——
	Mar. 28	● Chapter 3 • ELEMENTARY DATA LINK PROTOCOLS	——
6	April 2	● Chapter 3 • SLIDING WINDOW PROTOCOLS • EXAMPLE DATA LINK PROTOCOLS ● Exercises for Chapter 3	——
	April 4	● **Q**	——
7	April 9	● Chapter 4 • THE CHANNEL ALLOCATION PROBLEM • MULTIPLE ACCESS PROTOCOLS	——
	April 11	● Chapter 4 • ETHERNET • WIRELESS LANS	——
8	April 16	● Chapter 4 • BROADBAND WIRELESS • BLUETOOTH	——
	April 18	● Chapter 4 • RFID* • DATA LINK LAYER SWITCHING ● Exercises for Chapter 4	——
9	April 23	● Chapter 5 • NETWORK LAYER DESIGN ISSUES • ROUTING ALGORITHMS	——
	April 25	● Chapter 5 • CONGESTION CONTROL ALGORITHMS • QUALITY OF SERVICE	——
10	April 30	● Chapter 5 • INTERNETWORKING • THE NETWORK LAYER IN THE INTERNET ● Exercises for Chapter 5	——
	May 2	● **Midterm Test**	——
11	May 7	● Chapter 6 • THE TRANSPORT SERVICE • ELEMENTS OF TRANSPORT PROTOCOLS	——
	May 9	● Chapter 6 • CONGESTION CONTROL • THE INTERNET TRANSPORT PROTOCOLS: UDP	——
12	May 14	● Chapter 6 • THE INTERNET TRANSPORT PROTOCOLS: TCP • PERFORMANCE ISSUES	——
	May 16	● Chapter 6 • DELAY-TOLERANT NETWORKING ● Exercises for Chapter 6	——
13	May 21	● Chapter 7 • DNS—THE DOMAIN NAME SYSTEM • ELECTRONIC MAIL • THE WORLD WIDE WEB	——
	May 23	● Chapter 7	——

		• STREAMING AUDIO AND VIDEO	
14	May 28	● Chapter 7 • CONTENT DELIVERY ● Exercises for Chapter 7	——
	May 30	**• Q**	——
15	June 4	Presentation I	——
	June 6	Presentation II	——
16	June 11	Presentation III	——
	June 13	Final Review	——
17	June 17-21	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.*

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

Spring Semester, 2019	**February 25, 2019— July 14, 2019**
Feb.24	Registration
Feb.25	Classes Begin
April 5	Qingming Festival (tentative)
April 19	Spring Sports (tentative)
May 1	Labor Day Holiday (tentative)
June 7	Duanwu Festival (tentative)
June 17 - 21	Sophomore and Junior students' Final Exam
June 24 – July 14	Sophomore and Junior students' Social Practice
June 29-July 7	Revision and Final Exam Period
July 8-July 12	Freshmen's Final Exam
July 15	Summer Vacation Begins

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