Capital University of Economics and Business
Overseas Chinese College
Course Syllabus

Computer Networking

Course Syllabus

SYLLABUS OF MIS351

Semester and Year	2018 Spring (March 5, 2018— July 20, 2018)
Course Title	Computer Networking
Course Code	**MIS 351**
Course Credits	3
Teaching Hours	**42 hours**
Prerequisite Course	**MIS111, MIS112**
Instructor	**Prof. Amy Ru**
Contact Information	Office: C217, Email: prichru@163.com
Office Hour	**Tue: 15:30-16:30; Fri: 11:00-12:00**
	Wed: 9:00-10:00, 14:30-16:30; Thurs.: 11:00-12:00
Learning Center Hour	**Mon: 18-20; Tue: 8:00-10:00**
Time/Place	**Y01: Mon 13:30-15:20 & Wed 08:00-08:50; B311**
Reference book	**James F. Kurose**, Computer Networking A top-down approach, ISBN 978-988-232-270-7

Course Description

This course is an introductory course on computer networks. Using the Internet as a vehicle, 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 and TCP/IP), understand functions and protocols within a layer, understand how layers fit together and finally understand how the Internet 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.

Capital University of Economics and Business
Overseas Chinese College
Course Syllabus

Learning Objectives

Upon completion of this course, students will be able to:

1. Understand the structure and organization of computer networks; including the division into network layers, role of each layer, and relationships between the layers.
2. Understand the basic concepts of application layer protocol design; including client/server models, peer to peer models, and network naming.
3. In depth 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.
4. In depth understanding of network layer concepts and protocol design; including virtual circuit and datagram network designs, datagram forwarding, routing algorithms, and network interconnections.
5. Understand the basic concepts of 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).
6. Understand the basic concepts of network security concepts, including authentication, integrity, key distribution, and system security design challenges.

Teaching methods

This course consists of lectures, in class discussions, exercises, after class labs and student presentations. Students must be prepared to discuss the assigned chapters during 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. A minimum of 25% of the exam (5 of the 20%) will consist of questions utilizing the application of critical thinking.
Mid-Term Test	20%	A cumulative midterm test will be given based on all of the contents of the first half of the class. A minimum of 25% of the test (5 of the 20%) will consist of questions utilizing the application of critical thinking.
Assignments	10%	Homework problems will be assigned throughout the term, including but not limited to: terminologies, research project, and reading assignments.

Presentation	20%	Students will be assigned specific topics to present what have been covered.
Quiz	10%	There will be pop up quizzes during the semester. The purpose of the quizzes is to ensure that students keep up with the pace.
Participation	10%	Students will be assigned in- class exercises; Individuals will be asked questions during the courses. Frequently visiting instructors and **ask questions in English** is highly recommended.
Attendance	10%	Refer to attendance policy listed below.
Total	100%	

Detailed Grade Information

	Before midterm	**After midterm**
Attendance	5%	5%
Participation	5%	5%
Assignment	5%	5%
Quiz	5%	5%
Presentation		20%
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: May 7 - May 11, 2018; Final Exam: June 25 - 29, 2018

Assessment of student performance

- **Homework**
  - If any student is caught cheating on any homework assignment, the highest score the student can earn in that course is a "C".
  - Students should finish their homework (except for group projects) by themselves. Copying from others will be treated as cheating. Students' homework scored will be lowered. Students should hand in all assignments promptly and on time. Late assignment will be accepted at the discretion of the

instructor (i.e., when the student was ill or had an excused absence). Assignment turned in late without proof of illness or had an excused absence will be reduced in score by 50%.

- Assignment should be printed out with a headline to declare the honesty. Anything that cannot be read will be marked wrong. Printing requirements are as followed: single space between lines, double space between paragraphs, font size is 12 (maximum). Grammar error can reduce 20% of your score.

- **Attendance**: Attendance in class is required for all students taking courses at the Capital University of Economics and Business, Overseas Chinese College.
  - Being late for 15 minutes or more is considered an absence.
  - Five hours or above of unexcused absences will result in the lowering of the final grade by one grade band (e.g. from C – to D +). Any excused absence must be discussed directly with the teacher.
  - 1/3 of any kind of absences will result in a failing grade (F), 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 hour to ask questions or talk with the instructor for good communication and effective learning. Any misbehavior and non-class related activities in class would result in the lowering of the participation grade, including ringing beepers and cell phones.
  - Instructors will solely evaluate all the above behaviors for scoring.

- **Topical Course Outline**

Week	Topics
1	**Course Overview** **Chapter 1 Computer Networks and the Internet** 1.1 What Is the Internet? 1.2 The Network Edge 1.3 The Network Core
2	1.4 Delay, Loss, and Throughput in Packet-Switched Networks 1.5 Protocol Layers and Their Service Models
3	**Wireshark Lab** 1.6 Networks Under Attack
4	**Chapter 2 Application Layer**

	2.1 Principles of Network Applications 2.2 The Web and HTTP 2.3 File Transfer: FTP
5	2.4 Electronic Mail in the Internet 2.5 DNS—The Internet's Directory Service
6	2.6 Peer-to-Peer Applications **Wireshark Labs: HTTP, DNS**
7	**Quiz I** **Chapter 3 Transport Layer** 3.1 Introduction and Transport-Layer Services
8	3.2 Multiplexing and Demultiplexing 3.3 Connectionless Transport: UDP
9	Midterm Review
10	**Midterm**
11	3.5 Connection-Oriented Transport: TCP **Wireshark Labs: TCP, UDP**
12	**Chapter 4 The Network Layer** 4.1 Introduction 4.2 Virtual Circuit and Datagram Networks 4.3 What's Inside a Router?
13	4.4 The Internet Protocol (IP): Forwarding and Addressing in the Internet 4.6 Routing in the Internet 4.7 Broadcast and Multicast Routing
14	Presentation (groups)
15	Presentation (groups)
16	Final Exam Review
17	**Final Exam**
18	Social Practice
19	Social Practice
20	Social Practice

Note: Week 9 and 16: Chinese Review Session during L.C. and O.H.

Teacher's Office Hour

The instructor's office hour is shown in the front of the office door. Students are required to use the instructor's office hour 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.

Withdrawal Policy

Students can drop the class in the first week of the semester without leaving any marks to the final grade. Students can withdraw from any class before **March 16th, 2018,** and get a W for withdrawal. However anyone with 12 absences automatically receives an F.

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".

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.*

Important Dates

Spring Semester, 2018	**March 4, 2018— July 20, 2018**
Mar.4	Registration
Mar.5	Classes Begin
Mar.16	Last Day to Drop or Add a Course
Apr.5	Qingming Festival (tentative)
Apr.20	Spring Sports (tentative)
May 1	Labor Day Holiday (tentative)
May.7 -11	**Midterm Test**
May 14-18	Summer School Registration (tentative)
June 18	Duanwu Festival (tentative)
June 25-29	**Sophomore and Junior Students' Final Exam**
July 2-20	Sophomore and Junior Students' Social Practice，Summer School
July 16-20	Revision and Final Exam Period
July 23	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: Prof. Amy Ru **Department Head：Prof. Jingning Li**