2309 SE371 Course Outline

Subject Code	:	SE371
Subject Title	:	COMPUTER NETWORKS LABORATORY I
Course Type	:	Compulsory
Level	:	3
Credits	:	3
Teaching Activity	:	Experiment 45 hours
	:	
Prior Knowledge*	:	SE370: COMPUTER NETWORKS I
Class Schedule	:	

Class	Week	Time	Classroom	Date
D1	Fri	12:30-15:20	C404	2023/09/04-2023/12/17

Instructor	:	Li Xianfeng
Contact Number	:	(853)88973036
E-mail Address	:	xifli@must.edu.mo
Office	:	A317
Office Hour	:	Tuesday (16:30-18:30) Wednesday (10:00-14:00) Thursday (13:00-15:00) Friday (10:00-12:00)

COURSE DESCRIPTION

This subject aims to provide the experiment practice of computer network technologies for the course “COMPUTER NETWORKS I”. The students are expected to be able to understand the principles of communications in data networks, be familiar with packet capturing and analysis at different layers of the network stack, the routing algorithms and protocols, and be able to make basic router configurations and network troubleshooting.

TEXT BOOK

Required Text Book:

No recommended textbook, but the learning materials will be provided to students during the classes.

Reference Book:

1. Book title：Switching, Routing, and Wireless Essentials Companion Guide (CCNAv7) 1/e
   Author/Editor：N/A
   Edition：1
   ISBN：9780136729358
   Publisher：Cisco Press
   Date：2021

INTENDED LEARNING OUTCOMES

Upon successful completion of this subject, students will be able to:

1. Understand the principles of communications in data networks, including the reference models, the protocols and the technologies used in the data networks.
2. The ability to use network tools for packet capture and analysis at different layers of the network stack.
3. Explain the routing algorithms and protocols, including the categories of the routing algorithms and the specific routing protocols in each category.
4. An ability to make basic configurations on the routers according to the given requirement.
5. An ability to analyze the network problem and troubleshooting the network problem.
6. An ability to cooperate with other students as a team leader or a team member to complete a simple network implementation task.

Weekly Schedule

Week	Topic	Hours	Teaching Method
1	Network Devices	3	Experiment
2	Introduction to Python network programming.	3	Experiment
3	Get started with Wireshark	3	Experiment
4	Wireshark: HTTP	3	Experiment
5	Wireshark: DNS	3	Experiment
6	Wireshark: TCP	3	Experiment
7	Socket Programming (I)	3	Experiment
8	Socket Programming (II)	3	Experiment
9	Wireshark: IP	3	Experiment
10	ICMP + DHCP	3	Experiment
11	Network device configuration with Packet Tracer.	3	Experiment
12	OSPF configuration with Packet Tracer	3	Experiment
13	Wireshark: Ethernet and ARP	3	Experiment
14	Course Review	3	Experiment
15	Final exam with experiment	3	Experiment

ASSESSMENT APPROACH

Assessment method	% weight
1. Attendance (Class participation)	**10%**
2. Experiments	**70%**
3. Final Project	**20%**
Total	**100 %**

Guideline for Letter Grade:

Marks	Grade
93-100	A+
88-92	A
83-87	A-
78-82	B+
72-77	B
68-71	B-
63-67	C+
59-62	C
56-58	C-
53-55	D+
50-52	D
49-	F

Notes:
Students will be assessed on several assessment items (i.e. attendance, experiments, and final project.).
The attendance evaluates the student's participation of discussion in the classes.
The experiments help the students understand the theoretical aspects learned in SE370.
The final project evaluates the comprehensive ability of the students to apply the knowledge to solve practical problem of computer networks.

ADDITIONAL READINGS
none