

# CS373 Syllabus

## I. General Information

<b>Course Title</b>	Computer Networks Laboratory II		
<b>Course Code</b>	CS373		
<b>Level</b>	3		
<b>Credits</b>	1		
<b>Course Type</b>	Core		
<b>Semester</b>	VI		
<b>Course Structure</b>	<b>Theory</b>		<b>Practical</b>
	<b>Lecture</b>	<b>Tutorial</b>	<b>Laboratory</b>
	-	-	15 hours
<b>Course Instructor</b>	CHEANG Chak Fong		

## II. Course Overview

This subject aims to provide the experiment practice of computer network technologies for the course “COMPUTER NETWORKS II”. The students are expected to be able to understand the advanced technologies of computer networks, and capable of designing and implementing a typical modern network, and analyzing the network problem.

## III. Course Prerequisites

<b>Course Code</b>	<b>Course Title</b>	<b>Semester</b>
CS371	Computer Networks LABORATORY I	V

## IV. Course Prerequisites by Topics

<b>Thorough Understanding of:</b>
<ul style="list-style-type: none"><li>• LAN and WAN technologies.</li></ul>
<b>Basic Understanding of:</b>
<ul style="list-style-type: none"><li>• Trouble shooting commands for networking.</li></ul>
<b>Exposure to:</b>
<ul style="list-style-type: none"><li>• Network simulation.</li></ul>

## V. Course Objectives

Students will try to learn:

I	Understand the varieties of technologies of computer networks, such as LAN technologies, WAN technologies, addressing technologies, network security, network management and etc.
II	An ability to apply the knowledge in designing and implementing a typical computer network.
III	An ability to analyze the network problem and troubleshooting the network problem.
IV	An ability to make basic configurations on the typical network devices, such as routers, switches and servers according to the given requirement.
V	An ability to cooperate with other students as a team leader or a team member to complete a task of network design.

## VI. Course Outcomes (COs)

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

CO1	Design the network using the LANs and WANs technologies.
CO2	Design the network using the Security, Management and other advanced technologies.
CO3	Analyze the practical network problem and troubleshoot the problem.
CO4	Cooperate with other students to complete a teamwork configuration.

## VII. Program Outcomes (POs)

Upon successful completion of the program, students will be able to:

a	Apply knowledge of mathematics, science, and computer science to solve problems.
b	Apply knowledge of a computing specialization, and domain knowledge appropriate for the computing specialization to the abstraction and conceptualization of computing models.
c	Analyze a problem, and identify and define the computing requirements appropriate to its solution.
d	Design, implement, and evaluate a computer-based system, process, component, or program to meet desired needs with appropriate consideration for public health and safety, social and environmental considerations.
e	Function effectively on teams to accomplish a common goal.
f	Understand professional, ethical, legal, security and social issues and responsibilities.
g	Communicate effectively with a range of audiences.
h	Analyze the local and global impact of computing on individuals, organizations, and society.
i	Recognize the need for and an ability to engage in continuing professional development.
j	Use current techniques, skills, and tools necessary for computing practice with an understanding of the limitations.

## VIII. Mapping of Course Outcomes (COs) to Program Outcomes (POs): T – Teach, P – Practice, M – Measured. (M – Measured will be determined by the Assessment Committee annually.)

Course Outcomes	Program Outcomes									
	a	b	c	d	e	f	g	h	i	j
CO1				TP						
CO2				TP						
CO3			TP							TP
CO4					P					

## IX. Textbook and References

<b>Textbook (T)</b>	No recommended textbook, but the learning materials will be provided to students during the classes.
<b>Reference 1 (R1)</b>	Book title : Scaling Networks Companion Guide Author/Editor : N/A Edition : 1 ISBN : 9781587133282 Publisher : Cisco Press Date : 2014
<b>Reference 2 (R2)</b>	Book title : Switching, Routing, and Wireless Essentials Companion Guide (CCNAv7) Author/Editor : N/A Edition : 7 ISBN : 9780136729358 Publisher : Cisco Press Date : 2021

## X. Course Plan

No.	Topics to be covered	COs	References (Sections)
Explanation of Course Outcomes and Assessment Approaches			
1	In the beginning of the first lecture, we will explain the course objectives, course outcomes, program outcomes, mapping of course outcomes and program outcomes as well as assessment approaches.		
Content Delivery (Theory)			
Content Delivery (Practical)			
3	Lab 1.LANs Technologies - 1.1 Switched LANs - 1.2 Virtual LANs - 1.3 Wireless LANs	CO1,3,4	Lab slides: 1.1, 1.2, 1.3
6	Lab 2.Addressing Technologies - 2.1 DHCP - 2.2 NAT - 2.3 IPv6 transition	CO1,3,4	Lab slides: 2.1, 2.2, 2.3
9	Lab 3.WANs Technologies - 3.1 Dedicated Network - 3.2 Circuit-switched Network - 3.3 Packet-switched Network	CO1,3,4	Lab slides: 3.1, 3.2, 3.3
12	Lab 4.Security Technologies - 4.1 Secure Tunnel - 4.2 Access Control	CO2,3,4	Lab slides: 4.1, 4.2
15	Lab Exam	CO1,2,3	-
Problem Solving/Case Studies			

## XI. Assessment Approaches

No.	Approach	Weighting	COs to be addressed	Description of Assessment Tasks
1	Class participation	10%	----	The attendance evaluates the student's participation of discussion in the classes.
2	Assignment	40%	1-2-3	The assignment evaluates the student's practical skills to implement the network configurations.
3	Lab Exam	50%	1-2-3	The final exam evaluates the student's overall practical skills to implement and troubleshoot the network configurations.

## XII. Assessment Rubrics:

Course Outcomes	Excellent	Good	Satisfactory	Marginal Pass	Fail
CO1	Able to design the network using the LANs and WANs technologies correctly.	Able to design the network using the LANs and WANs technologies with a few mistakes.	Able to design the network using the LANs and WANs technologies	Able to design the network using the LANs and WANs technologies with lots of mistakes.	Failed to design the network using the LANs and WANs technologies.

			with some mistakes.		
CO2	Able to design the network using the Security, Management and other advanced technologies correctly.	Able to design the network using the Security, Management and other advanced technologies with a few mistakes.	Able to design the network using the Security, Management and other advanced technologies with some mistakes.	Able to design the network using the Security, Management and other advanced technologies with lots of mistakes.	Failed to design the network using the Security, Management and other advanced technologies.
CO3	Able to analyze the practical network problem and troubleshoot the problem correctly.	Able to analyze the practical network problem and troubleshoot the problem with a few mistakes.	Able to analyze the practical network problem and troubleshoot the problem with some mistakes.	Able to analyze the practical network problem and troubleshoot the problem with lots of mistakes.	Failed to analyze the practical network problem and troubleshoot the problem.
CO4	Able to cooperate with other students to complete a teamwork configuration correctly.	Able to cooperate with other students to complete a teamwork configuration with a few mistakes.	Able to cooperate with other students to complete a teamwork configuration with some mistakes.	Able to cooperate with other students to complete a teamwork configuration with lots of mistakes.	Failed to cooperate with other students to complete a teamwork configuration.

### XIII. Assessment Metrics

Assessment metrics will be determined by the Assessment Committee.

### XIV. Guideline for Letter Grades

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
0-49	F

Remark: There is no E grade in the grading system and D is the passing grade.

Revised on 2025-01-10