Tamkang University Academic Year 112, 2nd Semester Course Syllabus

Course Title	INTRODUCTION TO COMPUTER NETWORK	Instructor	TZU-CHIA CHEN
Course Class	TKFXB1B DEPARTMENT OF ARTIFICIAL INTELLIGENCE, 1B	Details	◆ General Course ◆ Required ◆ One Semester
Relevance to SDGs	SDG9 Industry, Innovation, and Infrastructure		

Departmental Aim of Education

Ⅰ. Students may analyze problems in applied science based on the fundamental knowledge of programming, mathematics, and artificial intelligence.

Ⅱ. Students may plan and implement an AI system following the procedures of problem analysis, experiment testing, data visualizing, derivation and deduction.

Ⅲ. Educate the students to be AI engineers who may accomplish their missions indepedently and may collaborate with their colleagues in the workplace.

Ⅳ. Students may have basic skills and global competence for career diversification, and may keep lifelong learning.

Subject Departmental core competences

A. Professional analysis.(ratio:20.00)

B. Practical application.(ratio:30.00)

C. Professional attitude.(ratio:30.00)

D. Global Mobility.(ratio:20.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:15.00)

2. Information literacy. (ratio:20.00)

3. A vision for the future. (ratio:15.00)

4. Moral integrity. (ratio:20.00)

5. Independent thinking. (ratio:10.00)

6. A cheerful attitude and healthy lifestyle. (ratio:5.00)

7. A spirit of teamwork and dedication. (ratio:10.00)

8. A sense of aesthetic appreciation. (ratio:5.00)

Course Introduction	The purpose of this course is to introduce fundamental concepts of computer networks and communications, including media for network transmission, communication protocols, planning and establishment of local area networks (LANs), principles of LANs, communication protocols for the Internet such as IP protocol and transport layer protocols, and commonly used network commands.

The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.

Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.

I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.
II.Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.
III.Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.

No.	Teaching Objectives	objective methods
1	Understand the basic concepts of computer networks and communications and their underlying architectures.	Affective

The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCD	12345678	Lecture, Discussion	Testing, Study Assignments, Activity Participation

Course Schedule

Week	Date	Course Contents	Note
1	113/02/19 ~ 113/02/25	Introduction to Computer Network	
2	113/02/26 ~ 113/03/03	Concepts of Telecommunication I	
3	113/03/04 ~ 113/03/10	Concepts of Telecommunication II	
4	113/03/11 ~ 113/03/17	Network Media	
5	113/03/18 ~ 113/03/24	Telecommunication Protocols I	

6	113/03/25 ~ 113/03/31	Telecommunication Protocols II	
7	113/04/01 ~ 113/04/07	Network Design	
8	113/04/08 ~ 113/04/14	Network Implementation	
9	113/04/15 ~ 113/04/21	Midterm Exam Week	
10	113/04/22 ~ 113/04/28	Protocols of Local Area Network (Ethernet)	
11	113/04/29 ~ 113/05/05	Protocols of Local Area Network (Wireless LAN Specification)	
12	113/05/06 ~ 113/05/12	Internet Protocol I	
13	113/05/13 ~ 113/05/19	Internet Protocol II	
14	113/05/20 ~ 113/05/26	User Datagram Protocol（UDP）	
15	113/05/27 ~ 113/06/02	ARP(Address Resolution Protocol), RARP(Reverse Address Resolution Protocol), and ICMP(Internet Control Message Protocol)	
16	113/06/03 ~ 113/06/09	Routing and Network Security	
17	113/06/10 ~ 113/06/16	Final Exam Week (113/6/10: Dragon Boat Festival)	
18	113/06/17 ~ 113/06/23	AI week observational learning	

Key capabilities	self-directed learning Information Technology Problem solving
Interdisciplinary	STEAM course (S:Science, T:Technology, E:Engineering, M:Math, A field:Integration of Art and Humanist) Competency-based education 'competency exploration' sustained competency or global issues STEEP (Society, Technology, Economy, Environment, and Politics)
Distinctive teaching	Special/Problem-Based(PBL) Courses
Course Content	Computer programming or Computer language (students have hands-on experience in related projects) Logical Thinking AI application
Requirement	

Textbooks and Teaching Materials	Self-made teaching materials:Handouts
References	1.FitzGerald, J., Dennis A., & Durcikova, A. (2017). Business Data Communications and Networking (13th ed.): Wiley. 2. Computer Networking: A Top-Down Approach Featuring the Internet, Seventh Edition, James Kurose and Keith Ross, Addison Wesley, 2017
Grading Policy	◆ Attendance： 10.0 % ◆ Mark of Usual：30.0 % ◆ Midterm Exam： 30.0 % ◆ Final Exam： 30.0 % ◆ Other〈 〉： %
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at http://info.ais.tku.edu.tw/csp or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at http://www.acad.tku.edu.tw/CS/main.php . **※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.**