Tamkang University Academic Year 114, 2nd Semester Course Syllabus

Course Title	NETWORK SECURITY	Instructor	FU-YI HUNG
Course Class	TEIDB4A DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION ENGINEERING (ENGLISH-TAUGHT PROGRAM), 4A	Details	◆ General Course ◆ Selective ◆ One Semester ◆ 2 Credits
Relevance to SDGs	SDG4 Quality education		

Departmental Aim of Education

Ⅰ. Comprehend professional knowledge.

Ⅱ. Acquire mastery of Practical Skills.

Ⅲ. Establish creative achievement.

Subject Departmental core competences

A. Programming and application ability.(ratio:10.00)

B. Mathematical reasoning ability.(ratio:30.00)

C. Implementing computer systems ability.(ratio:30.00)

D. Computer networking application skills.(ratio:10.00)

E. Professional skills for information technology (IT) industry.(ratio:20.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:10.00)

2. Information literacy. (ratio:20.00)

3. A vision for the future. (ratio:10.00)

4. Moral integrity. (ratio:20.00)

5. Independent thinking. (ratio:10.00)

6. A cheerful attitude and healthy lifestyle. (ratio:10.00)

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

8. A sense of aesthetic appreciation. (ratio:10.00)

Course Introduction	The goal of this course is to explore the principles and practices of network security. In the first part, we focus on foundational topics such as cryptography and key network security technologies. In the second part, we delve into the practical aspects of network security, examining real-world applications that are currently deployed to ensure secure networks, including internet security and wireless network protection.

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	Students should be able to understand and apply the fundamental security technology and principle	Cognitive
2	Students should be able to understand and apply the cryptographic algorithms	Cognitive
3	Students should be able to understand and apply the security management architecture	Cognitive

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCDE	12345678	Lecture	Testing
2	ABCDE	12345678	Lecture	Testing
3	ABCDE	12345678	Lecture	Testing

Course Schedule

Week	Date	Course Contents	Note
1	115/02/23 ~ 115/03/01	Introduction	

2	115/03/02 ~ 115/03/08	Cryptographic Technologies	
3	115/03/09 ~ 115/03/15	Application Layer Threats and Defense Overview	
4	115/03/16 ~ 115/03/22	Web Application Security	
5	115/03/23 ~ 115/03/29	Secure Email and DNS Protocols	
6	115/03/30 ~ 115/04/05	Secure Protocols	
7	115/04/06 ~ 115/04/12	Transport Layer Attacks and Protection	
8	115/04/13 ~ 115/04/19	Network Layer Security	
9	115/04/20 ~ 115/04/26	Midterm Exam/Midterm Assessment Week (teachers can adjust the week as needed)	
10	115/04/27 ~ 115/05/03	Link Layer Attacks	
11	115/05/04 ~ 115/05/10	Network Access Control and Switch Security	
12	115/05/11 ~ 115/05/17	Physical Layer Threats	
13	115/05/18 ~ 115/05/24	Wireless Security	
14	115/05/25 ~ 115/05/31	Final Week of Diverse Assessments for Graduating Class Courses	
15	115/06/01 ~ 115/06/07		
16	115/06/08 ~ 115/06/14		
17	115/06/15 ~ 115/06/21		
18	115/06/22 ~ 115/06/28		

Key capabilities	Information Technology
Interdisciplinary	STEAM course (S:Science, T:Technology, E:Engineering, M:Math, A field:Integration of Art and Humanist)
Distinctive teaching	

Course Content	Computer programming or Computer language (students have hands-on experience in related projects)
Requirement	Cheating or plagiarism will receive a semester grade of zero for this course. 作弊或抄襲者學期總成績為零分。
Textbooks and Teaching Materials	Using teaching materials from other writers:Textbooks Name of teaching materials: Cryptography and Network Security: Principles and Practice, 8th ed, William Stallings, Pearson, 2024
References	Cryptography and Network Security, 1st ed, Behrouz Forouzan, McGraw-Hill Education, 2007 Computer Security: Principles and Practice, 5th ed, William Stallings and Lawrie Brown, Pearson, 2023 Introduction to Computer Security, 1st ed, Michael Goodrich and Roberto Tamassia, Pearson 2010 CompTIA Security+ Study Guide: Exam SY0-501, 1st ed, Emmett Dulaney and Chuck Easttom, Sybex, 2017
Grading Policy	◆ Attendance： % ◆ Mark of Usual：30.0 % ◆ Midterm Exam： 30.0 % ◆ Final Exam： 30.0 % ◆ Other〈ClassroomPerformance〉：10.0 %
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at https://web2.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. ※"Adhere to the concept of intellectual property rights" and "Do not illegally photocopy, download, or distribute." Using original textbooks is advised. It is a crime to improperly photocopy others' publications.