

Tamkang University Academic Year 103, 1st Semester Course Syllabus

Course Title	CRYPTOGRAPHY AND NETWORK SECURITY	Instructor	CHEN-CHI SHING
Course Class	TEIBM1A ENGLISH MASTER'S PROGRAM, DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION ENGINEERING, 1A	Details	<ul style="list-style-type: none"> ◆ Selective ◆ One Semester ◆ 3 Credits
D e p a r t m e n t a l A i m o f E d u c a t i o n			
<p>I . Cultivate the ability to conduct independent research and problem solving.</p> <p>II . Strengthen creativity and research capacity.</p> <p>III . Build profound professional knowledge in computer science and information engineering.</p> <p>IV . Engage in self-directed lifelong learning.</p>			
D e p a r t m e n t a l c o r e c o m p e t e n c e s			
<p>A. Independent problem solving ability.</p> <p>B. Independent innovative thinking ability.</p> <p>C. Research paper writing and presentation ability.</p> <p>D. Research & development (R&D) ability in information engineering.</p> <p>E. Project execution and control ability.</p> <p>F. Lifelong self-directed learning ability.</p>			
Course Introduction	<p>This course introduces the practical survey of both the principles and practice of cryptography and network security. In the first part of the course, the basic issues to be addressed by a network security capability are explored by providing a tutorial and survey of cryptography and network security technology. The second part of this course deals with the practice of network security: practical applications that have been implemented and are in use to provide network security. The subject of this course draws on a variety of disciplines.</p>		

The Relevance among Teaching Objectives, Objective Levels and Departmental core competences

I.Objective Levels (select applicable ones) :

- (i) Cognitive Domain : C1-Remembering, C2-Understanding, C3-Applying,
C4-Analyzing, C5-Evaluating, C6-Creating
- (ii) Psychomotor Domain : P1-Imitation, P2-Mechanism, P3-Independent Operation,
P4-Linked Operation, P5-Automation, P6-Origination
- (iii) Affective Domain : A1-Receiving, A2-Responding, A3-Valuing,
A4-Organizing, A5-Charaterizing, A6-Implementing

II.The Relevance among Teaching Objectives, Objective Levels and Departmental core competences :

- (i) Determine the objective level(s) in any one of the three learning domains (cognitive, psychomotor, and affective) corresponding to the teaching objective. Each objective should correspond to the objective level(s) of ONLY ONE of the three domains.
- (ii) If more than one objective levels are applicable for each learning domain, select the highest one only. (For example, if the objective levels for Cognitive Domain include C3,C5,and C6, select C6 only and fill it in the boxes below. The same rule applies to Psychomotor Domain and Affective Domain.)
- (iii) Determine the Departmental core competences that correspond to each teaching objective. Each objective may correspond to one or more Departmental core competences at a time. (For example, if one objective corresponds to three Departmental core competences: A,AD, and BEF, list all of the three in the box.)

No.	Teaching Objectives	Relevance	
		Objective Levels	Departmental core competences
1	C6	C6	ABCDEF
2	C6	C6	ABCDEF

Teaching Objectives, Teaching Methods and Assessment

No.	Teaching Objectives	Teaching Methods	Assessment
1	C6	Lecture, Discussion, Practicum, Problem solving	Written test, Report, Participation
2	C6	Lecture, Discussion, Appreciation, Practicum, Problem solving	Written test, Report, Participation

This course has been designed to cultivate the following essential qualities in TKU students

Essential Qualities of TKU Students	Description
◇ A global perspective	Helping students develop a broader perspective from which to understand international affairs and global development.
◇ Information literacy	Becoming adept at using information technology and learning the proper way to process information.
◇ A vision for the future	Understanding self-growth, social change, and technological development so as to gain the skills necessary to bring about one's future vision.
◇ Moral integrity	Learning how to interact with others, practicing empathy and caring for others, and constructing moral principles with which to solve ethical problems.
◇ Independent thinking	Encouraging students to keenly observe and seek out the source of their problems, and to think logically and critically.
◇ A cheerful attitude and healthy lifestyle	Raising an awareness of the fine balance between one's body and soul and the environment; helping students live a meaningful life.
◇ A spirit of teamwork and dedication	Improving one's ability to communicate and cooperate so as to integrate resources, collaborate with others, and solve problems.
◇ A sense of aesthetic appreciation	Equipping students with the ability to sense and appreciate aesthetic beauty, to express themselves clearly, and to enjoy the creative process.

Course Schedule

Week	Date	Subject/Topics	Note
1	103/09/15 ~ 103/09/21	Security Goals and Fundamentals	
2	103/09/22 ~ 103/09/28	Security Goals and Fundamentals	
3	103/09/29 ~ 103/10/05	•Personnel and physical security	
4	103/10/06 ~ 103/10/12	•Personnel and physical security	
5	103/10/13 ~ 103/10/19	Administering security	
6	103/10/20 ~ 103/10/26	Administering security	
7	103/10/27 ~ 103/11/02	Fundamentals of Application security	
8	103/11/03 ~ 103/11/09	Fundamentals of Application security	
9	103/11/10 ~ 103/11/16	Cryptography fundamentals	
10	103/11/17 ~ 103/11/23	Cryptography fundamentals	
11	103/11/24 ~ 103/11/30	Fundamentals of Network security	
12	103/12/01 ~ 103/12/07	Fundamentals of Network security	

13	103/12/08 ~ 103/12/14	Privacy and legal issues	
14	103/12/15 ~ 103/12/21	Privacy and legal issues	
15	103/12/22 ~ 103/12/28	Ethics	
16	103/12/29 ~ 104/01/04	Ethics	
17	104/01/05 ~ 104/01/11	Introduction to Digital Forensics.	
18	104/01/12 ~ 104/01/18	Introduction to Digital Forensics.	
Requirement	Write a research paper report and make presentation		
Teaching Facility	Computer, Projector		
Textbook(s)	Cryptography and Network security: William Stallings (6th edition), ISBN 978-0-273-79335-9		
Reference(s)	<ul style="list-style-type: none"> Security in Computing: Pfleeger and Pfleeger (3rd edition), ISBN 978-0-132-39077-4 		
Number of Assignment(s)	3 (Filled in by assignment instructor only)		
Grading Policy	<p>◆ Attendance : 25.0 % ◆ Mark of Usual : % ◆ Midterm Exam : 25.0 %</p> <p>◆ Final Exam : 25.0 %</p> <p>◆ Other (Participation) : 25.0 %</p>		
Note	<p>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 .</p> <p>※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</p>		