Tamkang University Academic Year 113, 2nd Semester Course Syllabus

Course Title	COMPUTER SECURITY FORENSIC AND INVESTIGATION	Instructor	
Course Class	TEIBM1A MASTER'S PROGRAM, DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION ENGINEERING (ENGLISH-TAUGHT PROGRAM), 1A	Details	◆ General Course ◆ Selective ◆ One Semester ◆ 2 Credits
Relevance to SDGs	SDG9 Industry, Innovation, and Infrastructure		

Departmental Aim of Education

Ⅰ. Cultivate the ability to conduct independent research and problem solving.

Ⅱ. Strengthen creativity and research capacity.

Ⅲ. Build profound professional knowledge in computer science and information engineering.

Ⅳ. Engage in self-directed lifelong learning.

Subject Departmental core competences

A. Independent problem solving ability.(ratio:20.00)

B. Independent innovative thinking ability.(ratio:20.00)

C. Research paper writing and presentation ability.(ratio:20.00)

D. Research & development (R&D) ability in information engineering.(ratio:20.00)

E. Project execution and control ability.(ratio:10.00)

F. Lifelong self-directed learning ability.(ratio:10.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:15.00)

2. Information literacy. (ratio:20.00)

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

4. Moral integrity. (ratio:15.00)

5. Independent thinking. (ratio:15.00)

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

7. A spirit of teamwork and dedication. (ratio:15.00)

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

Course Introduction	This course provides an overview of computer forensic and investigation process. This course starts with the basic concepts of investigation process, including pre-investigation phase, investigation phase, and post-investigation phase. The hard disk structures and file systems for the various operating systems are then introduced. This course also describes the anti-forensic techniques and countermeasures. Moreover, the project presentation encourages students to actively participate in this course and establishes their ability of self-directed learning.

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 will learn the basic concepts of computer forensic and investigation process.	Cognitive
2	Students will learn the hard disk structures and file system for the various operating systems.	Cognitive
3	Student will learn the anti-forensic techniques and possible solutions.	Cognitive

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCDEF	12345678	Lecture, Discussion	Discussion(including classroom and online), Report(including oral and written)
2	ABCDEF	12345678	Lecture, Discussion	Discussion(including classroom and online), Report(including oral and written)
3	ABCDEF	12345678	Lecture, Discussion	Discussion(including classroom and online), Report(including oral and written)

Course Schedule			
Week	Date	Course Contents	Note
1	114/02/17 ~ 114/02/23	Brief introduction to computer forensics and investigation	
2	114/02/24 ~ 114/03/02	Conducting a computer forensic laboratory	
3	114/03/03 ~ 114/03/09	Understanding computer investigation process	
4	114/03/10 ~ 114/03/16	Understanding computer investigation process	
5	114/03/17 ~ 114/03/23	Hard disk structures and file systems	
6	114/03/24 ~ 114/03/30	Hard disk structures and file systems	
7	114/03/31 ~ 114/04/06	Children’ s day holiday	
8	114/04/07 ~ 114/04/13	Hard disk structures and file systems	
9	114/04/14 ~ 114/04/20	Midterm presentation	
10	114/04/21 ~ 114/04/27	Data acquisition	
11	114/04/28 ~ 114/05/04	Addressing computer forensic challenges	
12	114/05/05 ~ 114/05/11	Addressing computer forensic challenges	
13	114/05/12 ~ 114/05/18	Computer forensic methodology	
14	114/05/19 ~ 114/05/25	Computer forensic methodology	
15	114/05/26 ~ 114/06/01	Computer forensic methodology	
16	114/06/02 ~ 114/06/08	Final presentation	
17	114/06/09 ~ 114/06/15	Final presentation	
18	114/06/16 ~ 114/06/22	Flexible teaching week	
Key capabilities		self-directed learning Problem solving	
Interdisciplinary			

Distinctive teaching	
Course Content	Logical Thinking
Requirement	1. The presentation time and grouping are determined based on the number of participants. 2. The presentation topics include but are not limited to: computer forensic techniques, computer forensic management, computer forensic applications, computer forensic tools, and other computer forensic related topics. 3. Please present an overview of the selected topic in the midterm exam week (the 9th week). The overview should provide the presentation title, a brief introduction, and the expected results or your findings. 4. In the final presentation (the 16th & 17th weeks), you should prepare qualified presentation slides, and tell the audiences the motivations and details of the selected topic and the results or your findings. 5. The respective midterm and final presentation slides must be provided at least before one week of your presentation. The violator will have 10 points deducted from the presentation score. 6. All group members must attend the presentation except the acts of God. The violator will get a goose egg for the presentation. A leave request must be accompanied by proof, and the applicant' s score will be a 10% discount of the group' s presentation score.
Textbooks and Teaching Materials	Self-made teaching materials:Presentations
References	1. Guide to computer forensics and investigations, B. Nelson, A. Phillips, and C. Steuart, Sixth edition, Cengage Learning, Inc., 2018. 2. CISSP Certified Information Systems Security Professional, Official Study Guide, M. Chapple, J.M. Stewart, and D. Gibson, Ninth Edition, John Wiley & Sons, Inc., 2021.
Grading Policy	◆ Attendance： 20.0 %　◆ Mark of Usual： %　◆ Midterm Exam： 30.0 % ◆ Final Exam： 50.0 % ◆ 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.**