Tamkang University Academic Year 114, 1st Semester Course Syllabus

Course Title	MULTI-MEDIA TECHNOLOGY AND APPLICATION	Instructor	CHENG SHIAN LIN
Course Class	TEIBM1A MASTER'S PROGRAM, DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION ENGINEERING (ENGLISH-TAUGHT PROGRAM),	Details	◆ General Course ◆ Selective ◆ One Semester ◆ 3 Credits
Relevance to SDGs	1A 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:15.00)

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

E. Project execution and control ability.(ratio:15.00)

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

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:10.00)

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:20.00)

	Course Introduction	This course primarily covers topics ranging from image fundamentals, spatial and frequency domain image processing, to image compression and video fundamentals, delving deep into multimedia technologies and systems. Students will learn fundamental image processing, image compression techniques, and basic video compression methods, while gaining insights into the applications of multimedia systems.

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 updated definitions and operations on image and video.	Cognitive
2	Students will learn implementations related algorithms on solving multimedia(image/video) tasks.	Cognitive
3	Students will survey updated journal papers of related issues and make presentations.	Cognitive
4	Students will learn how to comment pro and con of academic papers.	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	Study Assignments, Discussion(including classroom and online)
2	ABD	12345	Lecture, Discussion	Study Assignments, Discussion(including classroom and online)
3	ABCD	12345	Lecture, Discussion	Study Assignments, Discussion(including classroom and online)

4	ABC	12345	Lecture, Discussion	Study Assignments, Discussion(including classroom and online)

		Course Schedule		

Week	Date	Course Contents		Note
1	114/09/15～114/09/21	Introduction to image processing and applications		
2	114/09/22～114/09/28	Image Fundamentals		
3	114/09/29～114/10/05	Image Processing —Spatial Domain（Ⅰ）		
4	114/10/06～114/10/12	Image Processing —Spatial Domain (Ⅱ)		
5	114/10/13～114/10/19	Image Processing — Frequency Domain（Ⅰ）		
6	114/10/20～114/10/26	Image Processing — Frequency Domain (Ⅱ)		
7	114/10/27～114/11/02	Still image compression compression（Ⅰ）		
8	114/11/03～114/11/09	Still image compression compression (Ⅱ)		
9	114/11/10～114/11/16	Video Fundamentals		
10	114/11/17～114/11/23	Midterm Report		
11	114/11/24～114/11/30	Video Fundamentals		
12	114/12/01～114/12/07	Case study discussion (1)		
13	114/12/08～114/12/14	Case study discussion (2)		
14	114/12/15～114/12/21	Case study discussion (3)		
15	114/12/22～114/12/28	Case study discussion (4)		
16	114/12/29～115/01/04	Case study discussion (5)		
17	115/01/05～115/01/11	Final Report		
18	115/01/12～115/01/18	Final Report		
Key capabilities		Information Technology		
Interdisciplinary		STEAM course (S:Science, T:Technology, E:Engineering, M:Math, A field:Integration of Art and Humanist)		

Distinctive teaching	Special/Problem-Based(PBL) Courses
Course Content	Computer programming or Computer language (students have hands-on experience in related projects)
Requirement	
Textbooks and Teaching Materials	Self-made teaching materials:Presentations, Handouts
References	
Grading Policy	◆ Attendance： 15.0 %　◆ Mark of Usual：35.0 %　◆ Midterm Exam： % ◆ Final Exam： % ◆ Other〈Midterm&Final Report〉：50.0 %
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.