Course Title	MULTIMEDIA PROCESSING AND APPLICATIONS	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
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:10.00)

B. Independent innovative thinking ability.(ratio:10.00)

D. Research & development (R&D) ability in information engineering.(ratio:70.00)

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

Subject Schoolwide essential virtues

2. Information literacy. (ratio:90.00)

5. Independent thinking. (ratio:10.00)

Course Introduction	In this course, in addition to introducing basic multimedia processing methods, we will also focus on discussing and developing core technologies/algorithms for exploring the latest research topics in multimedia and related fields.

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 multimedia (image/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	ABDE	25	Lecture, Discussion	Study Assignments, Discussion(including classroom and online)
2	ABDE	25	Lecture, Discussion	Study Assignments, Discussion(including classroom and online)
3	ABDE	25	Lecture, Discussion	Study Assignments, Discussion(including classroom and online)
4	ABDE	25	Lecture, Discussion	Study Assignments, Discussion(including classroom and online)

Course Schedule

Week	Date	Course Contents	Note
1	110/02/22 ~ 110/02/28	Introduction to multimedia processing and applications	
2	110/03/01 ~ 110/03/07	Introduction to Python Programming	
3	110/03/08 ~ 110/03/14	Introduction to Numpy package	

4	110/03/15～ 110/03/21	Introduction to Pandas package	
5	110/03/22～ 110/03/28	Introduction to Image processing libraries	Python Imaging Library (PIL), scikit-image
6	110/03/29～ 110/04/04	Still image compression	
7	110/04/05～ 110/04/11	Still image compression	
8	110/04/12～ 110/04/18	Video compression	
9	110/04/19～ 110/04/25	Video compression	
10	110/04/26～ 110/05/02	Midterm Report	
11	110/05/03～ 110/05/09	Image/Video content analysis	Filters and Features
12	110/05/10～ 110/05/16	Image/Video content analysis	video feature analysis
13	110/05/17～ 110/05/23	Case study discussion (1)	Image/video completion
14	110/05/24～ 110/05/30	Case study discussion (2)	Image/video completion
15	110/05/31～ 110/06/06	Case study discussion (3)	Image/video forgery detection
16	110/06/07～ 110/06/13	Case study discussion (2)	Image/video forgery detection
17	110/06/14～ 110/06/20	Final Report	
18	110/06/21～ 110/06/27	Final Report	

Requirement	
Teaching Facility	Computer, Projector
Textbooks and Teaching Materials	Self compiling teaching material
References	
Number of Assignment(s)	(Filled in by assignment instructor only)
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 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 .
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