Tamkang University Academic Year 114, 1st Semester Course Syllabus

Course Title	ARTIFICIAL INTELLIGENCE APPLICATION EXPERIMENT (II)	Instructor	TENG YU KUANG
Course Class	TKFXB2D DEPARTMENT OF ARTIFICIAL INTELLIGENCE, 2D	Details	◆ General Course ◆ Required ◆ One Semester ◆ 1 Credits
Relevance to SDGs	SDG4 Quality education SDG8 Decent work and economic growth SDG9 Industry, Innovation, and Infrastructure SDG17 Partnerships for the goals		

Departmental Aim of Education

Ⅰ. Students may analyze problems in applied science based on the fundamental knowledge of programming, mathematics, and artificial intelligence.

Ⅱ. Students may plan and implement an AI system following the procedures of problem analysis, experiment testing, data visualizing, derivation and deduction.

Ⅲ. Educate the students to be AI engineers who may accomplish their missions indepedently and may collaborate with their colleagues in the workplace.

Ⅳ. Students may have basic skills and global competence for career diversification, and may keep lifelong learning.

Subject Departmental core competences

A. Professional analysis.(ratio:30.00)

B. Practical application.(ratio:30.00)

C. Professional attitude.(ratio:30.00)

D. Global Mobility.(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:5.00)

5. Independent thinking. (ratio:30.00)

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:5.00)

Course Introduction	This course allows students to understand and familiarize themselves with important programming languages, tools and functions, as well as development platforms and packages of artificial intelligence through hands-on experiments. Through these development platforms and packages, students are also allowed to implement important procedures such as program development, data collection, data cleaning, data storage, and data analysis.

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 can understand the grammatical structure of Python, write complete programs, and have the ability to debug. Students have logical thinking skills, can analyze problem-solving methods, and solve problems through programs.	Psychomotor

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCD	12345678	Lecture, Practicum, Experience, Imitation	Testing, Discussion(including classroom and online), Practicum

Course Schedule

Week	Date	Course Contents	Note
1	114/09/15 ~ 114/09/21	Machine Learing Environment Deployment (機器學習環境建置)	
2	114/09/22 ~ 114/09/28	Data Preprocessing(資料前處理)	
3	114/09/29 ~ 114/10/05	Machine Learning Model Construction and Training	

4	114/10/06 ~ 114/10/12	Data visualization	
5	114/10/13 ~ 114/10/19	Open Data (1)	
6	114/10/20 ~ 114/10/26	Open Data (2)	
7	114/10/27 ~ 114/11/02	Open Data (3)	
8	114/11/03 ~ 114/11/09	Open Data (4)	
9	114/11/10 ~ 114/11/16	Midterm Exam/Midterm Assessment Week (teachers can adjust the week as needed)	
10	114/11/17 ~ 114/11/23	IOT Real Time Data(1)	
11	114/11/24 ~ 114/11/30	IOT Real Time Data(2)	
12	114/12/01 ~ 114/12/07	Social Network Data(1)	
13	114/12/08 ~ 114/12/14	Social Network Data(2)	
14	114/12/15 ~ 114/12/21	Comercial Data(1)	
15	114/12/22 ~ 114/12/28	Comercial Data(2)	
16	114/12/29 ~ 115/01/04	Final Week of Diverse Assessments	
17	115/01/05 ~ 115/01/11	Final Week of Diverse Assessments/Flexible Teaching Week for Teachers	
18	115/01/12 ~ 115/01/18	Flexible Teaching Week for Teachers	

Key capabilities	Information Technology Problem solving
Interdisciplinary	Competency-based education 'competency exploration' sustained competency or global issues STEEP (Society, Technology, Economy, Environment, and Politics)
Distinctive teaching	Project implementation course Special/Problem-Based(PBL) Courses
Course Content	Computer programming or Computer language (students have hands-on experience in related projects) AI application

Requirement	
Textbooks and Teaching Materials	Self-made teaching materials:Handouts Using teaching materials from other writers:Handouts
References	Python 官方網站：http://www.python.org/ The Python Tutorial: http://docs.python.org/tutorial/ GitHub repository: https://github.com/AllenDowney/ThinkPython2/tree/master/code
Grading Policy	◆ Attendance： 10.0 % ◆ Mark of Usual：20.0 % ◆ Midterm Exam： 20.0 % ◆ Final Exam： 30.0 % ◆ Other〈實作〉：20.0 %
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.