Tamkang University Academic Year 112, 1st Semester Course Syllabus

Course Title	FRESHMAN AI LABORATORY	Instructor	TENG YU KUANG
Course Class	TKFXB1A DEPARTMENT OF ARTIFICIAL INTELLIGENCE, 1A	Details	◆ General Course ◆ Required ◆ One Semester
Relevance to SDGs	SDG4 Quality education SDG8 Decent work and economic growth SDG9 Industry, Innovation, and Infrastructure		

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:35.00)

B. Practical application.(ratio:30.00)

C. Professional attitude.(ratio:30.00)

D. Global Mobility.(ratio:5.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:5.00)

2. Information literacy. (ratio:30.00)

3. A vision for the future. (ratio:5.00)

4. Moral integrity. (ratio:5.00)

5. Independent thinking. (ratio:10.00)

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

7. A spirit of teamwork and dedication. (ratio:10.00)

8. A sense of aesthetic appreciation. (ratio:30.00)

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.	Cognitive

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	112/09/11 ~ 112/09/17	設定網頁開發環境：Visual Studio	
2	112/09/18 ~ 112/09/24	網頁：HTML、CSS	
3	112/09/25 ~ 112/10/01	網頁：HTML、CSS	
4	112/10/02 ~ 112/10/08	網頁：HTML、CSS + 交代作業	

5	112/10/09 ~ 112/10/15	網頁：JavaScript	
6	112/10/16 ~ 112/10/22	網頁：JavaScript	
7	112/10/23 ~ 112/10/29	網頁：JavaScript	
8	112/10/30 ~ 112/11/05	網頁：JavaScript	
9	112/11/06 ~ 112/11/12	Midterm Exam Week	
10	112/11/13 ~ 112/11/19	Numpy	
11	112/11/20 ~ 112/11/26	Numpy 函式與基本運算	
12	112/11/27 ~ 112/12/03	Numpy多軸陣列、Brocast	
13	112/12/04 ~ 112/12/10	Matplotlib資料視覺處理	
14	112/12/11 ~ 112/12/17	Pandas 套件 – Series 操作	
15	112/12/18 ~ 112/12/24	第十五週　　Pandas 套件 – DataFrame操作	
16	112/12/25 ~ 112/12/31	Pandas 套件 讀取與資料清洗	
17	113/01/01 ~ 113/01/07	Final Exam Week	
18	113/01/08 ~ 113/01/14	Flex week, learning activities should be arranged.	

Key capabilities	Information Technology Problem solving
Interdisciplinary	In addition to teaching content of the teacher's professional field, integrate other subjects or invite experts and scholars in other fields to share knowledge or teaching
Distinctive teaching	Project implementation course Special/Problem-Based(PBL) Courses Learning technologies (such as AR/VR,etc.) incorporated to physical courses
Course Content	Computer programming or Computer language (students have hands-on experience in related projects) Logical Thinking AI application
Requirement	

Textbooks and Teaching Materials	Self-made teaching materials:Presentations Using teaching materials from other writers:Presentations
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： % ◆ Mark of Usual：20.0 % ◆ Midterm Exam： 20.0 % ◆ Final Exam： 40.0 % ◆ Other〈實作〉：20.0 %
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 . **※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.**