

## Tamkang University Academic Year 114, 1st Semester Course Syllabus

Course Title	INTRODUCTION TO ARTIFICIAL INTELLIGENCE	Instructor	TASUPALLI CHANDRASHEKHAR
Course Class	TRJXB1A DEPARTMENT OF GLOBAL POLITICS AND ECONOMICS (ENGLISH-TAUGHT PROGRAM), 1A	Details	♦ General Course ♦ Required ♦ One Semester ♦ 1 Credits
Relevance to SDGs	SDG4 Quality education SDG5 Gender equality SDG8 Decent work and economic growth SDG9 Industry, Innovation, and Infrastructure		
D e p a r t m e n t a l   A i m   o f   E d u c a t i o n			
I . Develop students' basic literacy of information technology. II. Establish students' ability to apply information technology. III. Build students' information ethics. IV. Train students' reflections on information-related issues.			
Subject Schoolwide essential virtues			
1. A global perspective. (ratio:10.00) 2. Information literacy. (ratio:30.00) 3. A vision for the future. (ratio:10.00) 4. Moral integrity. (ratio:20.00) 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:5.00)			

Course Introduction	In this course, you will explore the exciting field of Artificial Intelligence and learn how to program using an AI-specific language. From understanding fundamental concepts to implementing machine learning algorithms and neural networks, you'll gain the skills needed to develop AI applications. Get ready for hands-on projects, debugging challenges, and discussions on ethical considerations. Join us on this journey of exploring AI and its impact on the world of programming. Let's dive in!			
<p><b>The correspondences between the course's instructional objectives and the cognitive, affective, and psychomotor objectives.</b></p> <p>Differentiate the various objective methods among the cognitive, affective and psychomotor domains of the course's instructional objectives.</p> <p>I. Cognitive : Emphasis upon the study of various kinds of knowledge in the cognition of the course's veracity, conception, procedures, outcomes, etc.</p> <p>II.Affective : Emphasis upon the study of various kinds of knowledge in the course's appeal, morals, attitude, conviction, values, etc.</p> <p>III.Psychomotor: Emphasis upon the study of the course's physical activity and technical manipulation.</p>				
No.	Teaching Objectives			objective methods
1	of the AI programming language, including its purpose, features, and applications. Familiarize them with the syntax, keywords, and conventions specific to the language.			Cognitive
2	Programming concepts: Teach fundamental programming concepts such as variables, data types, operators, control structures (e.g., loops, conditionals), functions, and object-oriented programming principles. Explain how these concepts apply to AI programming tasks.			Affective
3	Continuous learning: Instill a mindset of continuous learning by introducing students to additional resources, such as online tutorials, documentation, research papers, and relevant AI communities. Encourage them to stay updated with advancements in AI and explore further beyond the basics of the programming language.			Psychomotor
The correspondences of teaching objectives : core competences, essential virtues, teaching methods, and assessment				
No.	Core Competences	Essential Virtues	Teaching Methods	Assessment

1		12345678	Lecture, Discussion, Publication, Practicum, Experience, Imitation	Testing, Study Assignments, Discussion(including classroom and online), Practicum, Report(including oral and written), Activity Participation
2		12345678	Lecture, Discussion, Experience, Imitation	Testing, Report(including oral and written), Activity Participation
3		12345678	Lecture, Discussion, Experience, Imitation	Testing, Study Assignments, Discussion(including classroom and online), Activity Participation

Course Schedule				
Week	Date	Course Contents		Note
1	114/09/15 ~ 114/09/21	Introduction and History of AI		
2	114/09/22 ~ 114/09/28	Symbolic AI		
3	114/09/29 ~ 114/10/05	Knowledge Representation and Expert Systems		
4	114/10/06 ~ 114/10/12	Introduction to Neural Networks		
5	114/10/13 ~ 114/10/19	Multi-Layered Perceptron and Creating our own Framework		
6	114/10/20 ~ 114/10/26	Intro to Frameworks (PyTorch/TensorFlow) and Overfitting		
7	114/10/27 ~ 114/11/02	Computer vision		
8	114/11/03 ~ 114/11/09	Convolutional Neural Networks CNN Architectures		
9	114/11/10 ~ 114/11/16	AI Ethics and Responsible AI		
10	114/11/17 ~ 114/11/23			
11	114/11/24 ~ 114/11/30			
12	114/12/01 ~ 114/12/07			
13	114/12/08 ~ 114/12/14			
14	114/12/15 ~ 114/12/21			
15	114/12/22 ~ 114/12/28			
16	114/12/29 ~ 115/01/04			

17	115/01/05 ~ 115/01/11		
18	115/01/12 ~ 115/01/18		
Key capabilities	self-directed learning International mobility Information Technology Social Participation Problem solving Interdisciplinary		
Interdisciplinary	STEAM course (S:Science, T:Technology, E:Engineering, M:Math, A field:Integration of Art and Humanist)		
Distinctive teaching	Game-based learning courses Project implementation course Translation Teaching Course Collaborative teaching (multiple teachers and business teachers in the school) course		
Course Content	Computer programming or Computer language (students have hands-on experience in related projects) Intellectual Property (learning intellectual property) Gender Equality Education Logical Thinking AI application		
Requirement	Problem-solving skills with the weekly homework as 40% of the usual evaluation marks.		
Textbooks and Teaching Materials	Self-made teaching materials:Presentations, Handouts, Worksheets Using teaching materials from other writers:Textbooks, Presentations, Worksheets Name of teaching materials: starting out with python Fifth edition Tony Gaddis		
References			
Grading Policy	◆ Attendance : 10.0 %    ◆ Mark of Usual : 30.0 %    ◆ Midterm Exam : 30.0 % ◆ Final Exam : 30.0 % ◆ Other <   > :       %		
Note	This syllabus may be uploaded at the website of Course Syllabus Management System at <a href="https://web2.ais.tku.edu.tw/csp">https://web2.ais.tku.edu.tw/csp</a> or through the link of Course Syllabus Upload posted on the home page of TKU Office of Academic Affairs at <a href="http://www.acad.tku.edu.tw/CS/main.php">http://www.acad.tku.edu.tw/CS/main.php</a> . <b>※"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.</b>		