

Tamkang University Academic Year 103, 1st Semester Course Syllabus

Course Title	INTRODUCTION TO ARTIFICIAL INTELLIGENCE AND EXPERT SYSTEMS	Instructor	CHEN, DUEN-KAI
Course Class	TQIAB3A DIVISION OF SOFTWARE ENGINEERING, DEPARTMENT OF INNOVATIVE INFORMATION AND TECHNOLOGY, 3A	Details	♦ Selective ♦ One Semester ♦ 3 Credits
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			
Cultivate professional talents in developing and applying information system in various fields.			
D e p a r t m e n t a l c o r e c o m p e t e n c e s			
A. Capability of computer program coding, process planning, and problem solving B. Capability of applying basic mathematics and information technology related mathematics C. Capability of applying knowledge of internet structure and protocol in communication system D. Capability of developing information system E. Capability of integrating information system			
Course Introduction	This class is aimed to provide introduction to efforts from wide range of artificial intelligence research, including symbolic approach, such as Expert Systems, as well as numerical approach, such as artificial neural networks, genetic algorithms.		

The Relevance among Teaching Objectives, Objective Levels and Departmental core competences

I.Objective Levels (select applicable ones) :

- (i) Cognitive Domain : C1-Remembering, C2-Understanding, C3-Applying,
C4-Analyzing, C5-Evaluating, C6-Creating
- (ii) Psychomotor Domain : P1-Imitation, P2-Mechanism, P3-Independent Operation,
P4-Linked Operation, P5-Automation, P6-Origination
- (iii) Affective Domain : A1-Receiving, A2-Responding, A3-Valuing,
A4-Organizing, A5-Characterizing, A6-Implementing

II.The Relevance among Teaching Objectives, Objective Levels and Departmental core competences :

- (i) Determine the objective level(s) in any one of the three learning domains (cognitive, psychomotor, and affective) corresponding to the teaching objective. Each objective should correspond to the objective level(s) of ONLY ONE of the three domains.
- (ii) If more than one objective levels are applicable for each learning domain, select the highest one only. (For example, if the objective levels for Cognitive Domain include C3,C5,and C6, select C6 only and fill it in the boxes below. The same rule applies to Psychomotor Domain and Affective Domain.)
- (iii) Determine the Departmental core competences that correspond to each teaching objective. Each objective may correspond to one or more Departmental core competences at a time. (For example, if one objective corresponds to three Departmental core competences: A,AD, and BEF, list all of the three in the box.)

No.	Teaching Objectives	Relevance	
		Objective Levels	Departmental core competences
1	Introduce variety of technologies and applications of AI to students.	C4	E

Teaching Objectives, Teaching Methods and Assessment

No.	Teaching Objectives	Teaching Methods	Assessment
1	Introduce variety of technologies and applications of AI to students.	Lecture, Discussion, Practicum, Problem solving	Written test, Practicum, Report, Participation, project

This course has been designed to cultivate the following essential qualities in TKU students			
Essential Qualities of TKU Students		Description	
◆ A global perspective		Helping students develop a broader perspective from which to understand international affairs and global development.	
◆ Information literacy		Becoming adept at using information technology and learning the proper way to process information.	
◇ A vision for the future		Understanding self-growth, social change, and technological development so as to gain the skills necessary to bring about one's future vision.	
◇ Moral integrity		Learning how to interact with others, practicing empathy and caring for others, and constructing moral principles with which to solve ethical problems.	
◇ Independent thinking		Encouraging students to keenly observe and seek out the source of their problems, and to think logically and critically.	
◆ A cheerful attitude and healthy lifestyle		Raising an awareness of the fine balance between one's body and soul and the environment; helping students live a meaningful life.	
◇ A spirit of teamwork and dedication		Improving one's ability to communicate and cooperate so as to integrate resources, collaborate with others, and solve problems.	
◇ A sense of aesthetic appreciation		Equipping students with the ability to sense and appreciate aesthetic beauty, to express themselves clearly, and to enjoy the creative process.	
Course Schedule			
Week	Date	Subject/Topics	Note
1	103/09/15 ~ 103/09/21	Overview of this course	
2	103/09/22 ~ 103/09/28	Brief History of Artificial Intelligence	
3	103/09/29 ~ 103/10/05	Brief History of Artificial Intelligence	
4	103/10/06 ~ 103/10/12	Uses and Limitations. Introduction to AI applications.	
5	103/10/13 ~ 103/10/19	Introduction to AI applications.	
6	103/10/20 ~ 103/10/26	Knowledge Representation	
7	103/10/27 ~ 103/11/02	Term project proposal presentation	
8	103/11/03 ~ 103/11/09	Search Methodologies and Game Playing	
9	103/11/10 ~ 103/11/16	Search Methodologies and Game Playing	
10	103/11/17 ~ 103/11/23	Midterm Exam Week	
11	103/11/24 ~ 103/11/30	Expert systems and Rule-based systems	
12	103/12/01 ~ 103/12/07	Expert systems and Rule-based systems	

13	103/12/08 ~ 103/12/14	Expert systems and Rule-based systems	
14	103/12/15 ~ 103/12/21	Introduction to Machine Learning	
15	103/12/22 ~ 103/12/28	Introduction to Machine Learning	
16	103/12/29 ~ 104/01/04	Introduction to Machine Learning	
17	104/01/05 ~ 104/01/11	Term project presentation	
18	104/01/12 ~ 104/01/18	Final Exam Week	
Requirement	Details of grading policy and how course project works will be announce in first class. Lecturer remain the right to adjust grading policy. 成績計算方式及專題執行細節將於課堂上說明，且授課教師保留調整計算方式的彈性。		
Teaching Facility	Computer, Projector		
Textbook(s)	Artificial Intelligence Illuminated, Ben Coppin, Jones & Bartlett Publishers (March 2004), ISBN-13: 978-0763732301		
Reference(s)	Artificial Intelligence: a guide to intelligent systems 2nd Edition by Michael Negnevitsky, Addison Wesley		
Number of Assignment(s)	(Filled in by assignment instructor only)		
Grading Policy	◆ Attendance : % ◆ Mark of Usual : 20.0 % ◆ Midterm Exam : 10.0 % ◆ Final Exam : 10.0 % ◆ Other 〈course project〉 : 60.0 %		
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.		