

Tamkang University Academic Year 106, 2nd Semester Course Syllabus

Course Title	THEORY AND APPLICATIONS IN INTERNET OF THINGS	Instructor	WU, CHIA-CHI
Course Class	TLQXM2A MASTER'S PROGRAM IN BUSINESS AND MANAGEMENT (ENGLISH-TAUGHT PROGRAM), 2A	Details	<ul style="list-style-type: none"> ◆ 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			
<p>I . Develop a business and management perspective for students.</p> <p>II . Train the professionals in the integrated fields of business and management.</p> <p>III . Cultivate the talents with both theory and practices in business and management.</p>			
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			
<p>A . Provide the basic knowledge of both theory and practices.</p> <p>B . Enhance the practical training for the current trends.</p> <p>C . Cultivate the ethics in business and management.</p> <p>D . Obtain the ability of analyzing industrial and business problems.</p>			
Course Introduction	<p>In this course, we will review core technologies of IoT and its applications in different fields. We will also introduce important machine learning technologies and big data analyzing tools which enable IoT applications and various smart services. By means of paper discussion and small project, students will be aware of the state-of-the-art research topics and applications related to IoT.</p>		

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-Charaterizing, 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	Understand IOT related issues, technologies, and research topics / Use Machine learning technologies and tools to make applications.	C3	ABD

Teaching Objectives, Teaching Methods and Assessment

No.	Teaching Objectives	Teaching Methods	Assessment
1	Understand IOT related issues, technologies, and research topics / Use Machine learning technologies and tools to make applications.	Lecture, Discussion, Practicum	Written test, Report, Participation

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	107/02/26~ 107/03/04	Introduction	
2	107/03/05~ 107/03/11	IoT core technologies and big data applications	
3	107/03/12~ 107/03/18	IoT core technologies and big data applications	
4	107/03/19~ 107/03/25	Frequent pattern algorithms and tools	
5	107/03/26~ 107/04/01	Supervised learning algorithms and tools	
6	107/04/02~ 107/04/08	(Holiday) Tomb Sweeping Day	
7	107/04/09~ 107/04/15	Supervised learning algorithms and tools	
8	107/04/16~ 107/04/22	Supervised learning algorithms and tools	
9	107/04/23~ 107/04/29	Supervised learning algorithms and tools	
10	107/04/30~ 107/05/06	Midterm Exam	
11	107/05/07~ 107/05/13	Unsupervised Learning algorithms and tools	
12	107/05/14~ 107/05/20	(Shifted to 5/19) The 2018 International Conference in Management Sciences and Decision Making	

13	107/05/21 ~ 107/05/27	Project proposal & discussion	
14	107/05/28 ~ 107/06/03	Paper presentation & discussion	
15	107/06/04 ~ 107/06/10	Paper presentation & discussion	
16	107/06/11 ~ 107/06/17	Network analysis technologies and tools	
17	107/06/18 ~ 107/06/24	Network analysis technologies and tools	
18	107/06/25 ~ 107/07/01	Project presentation	
Requirement	The current syllabus is a temporary version, the final version will be provided in the first week of this class.		
Teaching Facility	Computer		
Textbook(s)	Powerpoint and selected journal papers		
Reference(s)	Timothy Chou, Precision: Principles, Practices and Solutions for the Internet of Things		
Number of Assignment(s)	(Filled in by assignment instructor only)		
Grading Policy	◆ Attendance : 10.0 % ◆ Mark of Usual : % ◆ Midterm Exam : 30.0 % ◆ Final Exam : % ◆ Other 〈Team reports〉 : 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.		