

Tamkang University Academic Year 111, 1st Semester Course Syllabus

Course Title	SOFT COMPUTING	Instructor	TRAN, HUU KHOA
Course Class	TLMXM1A MASTER'S PROGRAM, DEPARTMENT OF INFORMATION MANAGEMENT, 1A	Details	<ul style="list-style-type: none"> ◆ General Course ◆ Selective ◆ One Semester
Relevance to SDGs	SDG4 Quality education		
Departmental Aim of Education			
Devoting to the integration and research of information technology and business management knowledge, and cultivating, for the society, middle and higher level managers with both information capabilities and modern management skills.			
Subject Departmental core competences			
<ul style="list-style-type: none"> A. Use of modern management knowledge.(ratio:5.00) B. Logical thinking.(ratio:20.00) C. Critical analysis.(ratio:10.00) D. Integration of information technology and business management.(ratio:10.00) E. Research and innovation.(ratio:20.00) F. Theory and applications of data analysis.(ratio:20.00) G. Information and communication security management.(ratio:10.00) H. Verbal and Writing Communication skills.(ratio:5.00) 			
Subject Schoolwide essential virtues			
<ul style="list-style-type: none"> 1. A global perspective. (ratio:20.00) 2. Information literacy. (ratio:30.00) 3. A vision for the future. (ratio:10.00) 4. Moral integrity. (ratio:5.00) 5. Independent thinking. (ratio:5.00) 6. A cheerful attitude and healthy lifestyle. (ratio:5.00) 7. A spirit of teamwork and dedication. (ratio:20.00) 8. A sense of aesthetic appreciation. (ratio:5.00) 			

Course Introduction	<p>The course will discuss the theory and applications of the following methodologies and algorithms:</p> <ol style="list-style-type: none"> 1. Fuzzy Logic 2. Neuron Network 3. Meta-heuristic algorithms, such as: Simulated annealing, Genetic algorithms, Particle swarm intelligence and Ant-colony system
------------------------	--

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	Inspiring students interest in learning Soft Computing (SC) or Computational Intelligence (CI) and cultivating their basic core competence of SC so as to make it reality in daily lives.	Cognitive
2	Keeping abreast of the developments and applications of information communication and technology.	Affective
3	Guiding students SC and/or CI skills with diverse examples so that they can apply what they have learned in their live and work	Psychomotor

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCDEFGH	12345678	Lecture, Discussion	Discussion(including classroom and online), Report(including oral and written)
2	ABCDEFGH	12345678	Lecture, Discussion	Discussion(including classroom and online), Report(including oral and written)

3	ABCDEFGH	12345678	Lecture, Discussion	Discussion(including classroom and online), Report(including oral and written)
Course Schedule				
Week	Date	Course Contents		Note
1	111/09/05 ~ 111/09/11	Introduction. Overview and motivation.		
2	111/09/12 ~ 111/09/18	Fuzzy Set and Fuzzy Logic		
3	111/09/19 ~ 111/09/25	Fuzzy type I and type II		
4	111/09/26 ~ 111/10/02	Fuzzy in applications		
5	111/10/03 ~ 111/10/09	Neuron networks		
6	111/10/10 ~ 111/10/16	Neuron networks II		
7	111/10/17 ~ 111/10/23	Neuron Networks in applications		
8	111/10/24 ~ 111/10/30	ANFIS system		
9	111/10/31 ~ 111/11/06	Programming language		
10	111/11/07 ~ 111/11/13	Midterm Exam week		
11	111/11/14 ~ 111/11/20	Simulated Annealing		
12	111/11/21 ~ 111/11/27	Genetic Algorithms		
13	111/11/28 ~ 111/12/04	Particle Swarm Intelligence		
14	111/12/05 ~ 111/12/11	Ant Colony System		
15	111/12/12 ~ 111/12/18	New Meta-heuristic Algorithms		
16	111/12/19 ~ 111/12/25	Project Presentations		
17	111/12/26 ~ 112/01/01	Project Presentations		
18	112/01/02 ~ 112/01/08	Final Exam week		
Requirement				
Teaching Facility		Computer, Projector		
Textbooks and Teaching Materials		- Textbook "Soft Computing and Its Applications" , Ray Kumar S., Apple Academic Press, c2015.		

References	Journal papers
Number of Assignment(s)	1 (Filled in by assignment instructor only)
Grading Policy	<ul style="list-style-type: none"> ◆ Attendance : 10.0 % ◆ Mark of Usual : % ◆ Midterm Exam : % ◆ Final Exam : % ◆ Other (Project presentation) : 90.0 %
Note	<p>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.</p> <p>※ Unauthorized photocopying is illegal. Using original textbooks is advised. It is a crime to improperly photocopy others' publications.</p>