Tamkang University Academic Year 111, 2nd Semester Course Syllabus

Course Title	SOCIAL NETWORK ANALYSIS	Instructor	ISAAC YIHJIA TSAI
Course Class	TEIBM1A MASTER'S PROGRAM, DEPARTMENT OF COMPUTER SCIENCE AND INFORMATION ENGINEERING (ENGLISH-TAUGHT PROGRAM), 1A	Details	◆ General Course ◆ Selective ◆ One Semester
Relevance to SDGs	SDG4 Quality education		

Departmental Aim of Education

Ⅰ. Cultivate the ability to conduct independent research and problem solving.

Ⅱ. Strengthen creativity and research capacity.

Ⅲ. Build profound professional knowledge in computer science and information engineering.

Ⅳ. Engage in self-directed lifelong learning.

Subject Departmental core competences

A. Independent problem solving ability.(ratio:20.00)

B. Independent innovative thinking ability.(ratio:20.00)

C. Research paper writing and presentation ability.(ratio:20.00)

D. Research & development (R&D) ability in information engineering.(ratio:20.00)

E. Project execution and control ability.(ratio:10.00)

F. Lifelong self-directed learning ability.(ratio:10.00)

Subject Schoolwide essential virtues

1. A global perspective. (ratio:10.00)

2. Information literacy. (ratio:20.00)

3. A vision for the future. (ratio:10.00)

4. Moral integrity. (ratio:10.00)

5. Independent thinking. (ratio:20.00)

6. A cheerful attitude and healthy lifestyle. (ratio:10.00)

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

8. A sense of aesthetic appreciation. (ratio:10.00)

Course Introduction	In science, technology, and mathematics, a network is a system of interconnected objects. Social network analysis is part of the discipline of complex network analysis (CNA), which exploring quantitative relationships in the networks with non-trivial, irregular structure. The actual nature of the networks (social, semantic, transportation, communication, economic, and the like) doesn't matter, as long as their organization doesn't reveal any specific patterns. This course is an introductory to SNA for graduate students.

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	To introduce graduate students to the area of complex network analysis.	Cognitive

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

No.	Core Competences	Essential Virtues	Teaching Methods	Assessment
1	ABCDEF	12345678	Lecture, Discussion	Study Assignments, Report(including oral and written)

Course Schedule

Week	Date	Course Contents	Note
1	112/02/13 ~ 112/02/19	The Art of Seeing Networks	
2	112/02/20 ~ 112/02/26	Surveying the Tools of the Craft	
3	112/02/27 ~ 112/03/05	Introducing Tools	
4	112/03/06 ~ 112/03/12	Introducing Visualization Tools	
5	112/03/13 ~ 112/03/19	Case Study: Constructing a Network	

6	112/03/20 ~ 112/03/26	Understanding Social Networks	
7	112/03/27 ~ 112/04/02	Mastering Advanced Network Construction	
8	112/04/03 ~ 112/04/09	Measuring Networks	
9	112/04/10 ~ 112/04/16	Case Study	
10	112/04/17 ~ 112/04/23	Midterm exam	
11	112/04/24 ~ 112/04/30	Constructing Semantic and Product Networks	
12	112/05/01 ~ 112/05/07	Unearthing the Network Structure	
13	112/05/08 ~ 112/05/14	Case Study	
14	112/05/15 ~ 112/05/21	Case Study	
15	112/05/22 ~ 112/05/28	Similarity-Based Networks	
16	112/05/29 ~ 112/06/04	Case Study	
17	112/06/05 ~ 112/06/11	Harnessing Bipartite Networks	
18	112/06/12 ~ 112/06/18	Final	

Requirement	
Teaching Facility	Computer, Projector
Textbooks and Teaching Materials	Zinoviev, D. (2018). Complex Network Analysis in Python, The Pragmatic Bookshelf.
References	
Number of Assignment(s)	(Filled in by assignment instructor only)
Grading Policy	◆ Attendance： 30.0 % ◆ Mark of Usual：30.0 % ◆ Midterm Exam： % ◆ Final Exam： % ◆ Other〈Presentations〉：40.0 %
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.**