## City University of Hong Kong Course Syllabus

# offered by Department of Media and Communication with effect from Semester B 2023/24

### Part I Course Overview

Course Title:	Social Network Analysis for Communication					
Course Code:	COM5506					
Course Duration:	One Semester					
Credit Units:	3					
Level:	P5					
Medium of Instruction:	English					
Medium of Assessment:	English					
Prerequisites: (Course Code and Title)	Nil					
Precursors: (Course Code and Title)	Nil					
<b>Equivalent Courses</b> : (Course Code and Title)	Nil					
Exclusive Courses: (Course Code and Title)	Nil					

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#### Part II Course Details

#### 1. 1. Abstract

The course aims to help students develop "networking perspectives" that views entities of communication processes (e.g., communicators, audiences, media organizations, information messages, news events, regulatory agencies, etc.) as "network nodes" interconnected through direct or indirect, formal and informal, explicit or hidden ways. The course covers basic theories and research methods of social network analysis, with a variety of applications for communication purposes. Specific topics include human interactions over online friendship networks (e.g., Facebook, Google+, etc.), information diffusion through microblogging websites (e.g., Twitter, Weibo, etc.), cross-national flow of media content (news, entertainment, advertising, etc.), word of mouth and viral marketing, contagious models for health communication, and etc. Through individual exercises, group projects, class discussions, quiz, test, and other activities, students will learn how to design social network analysis studies, how to collect, integrate, analyse, and visualize social network data, and how to apply networking perspectives to solve real life issues in communication context.

#### 2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs	Weighting		very-en	
		(if	curricu	ılum re	lated
		applicable)	learnir	ng outco	omes
			(please	e tick	where
			approp	oriate)	
			Al	A2	A3
1.	To describe and explain basic theoretical concepts and	30%	✓	<b>√</b>	
	research methods of social and complex networks				
2.	To collect, analyse, interpret, and visualize social network	25%	✓	<b>√</b>	<b>√</b>
	data for real life problems				
3.	To apply theoretical perspectives and methodological	25%	<b>√</b>	<b>√</b>	<b>√</b>
	approaches in social, business, or engineering contexts				
4.	To present research findings and case studies in	20%	<b>√</b>	<b>√</b>	<b>√</b>
	professional quality and style				
		100%		•	

#### A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

#### A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to self-life problems.

#### A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

Teaching and Learning Activities (TLAs) (TLAs designed to facilitate students' achievement of the CILOs.)

TLA	LA Brief Description		O No.			Hours/week
		1	2	3	4	(if applicable)
Demonstration lectures	The instructor will present key concepts, theories, methods, tools, and application cases of social networks.	<b>\</b>				
Hands-on Labs	Students develop and practice network research skills and software tools for social network analysis.		1			
Class Discussions	Students will engage in debates on and exploration of the issues in social network analysis.			1		
Group Work	Students work together to analyze research data and case studies that they have collected and present their findings in a collaboratively written report and in an oral presentation.				<b>√</b>	
Quiz and Test	Student will need to demonstrate understanding of the main concepts and theories introduced in lectures.	1	1	1	1	

### 4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.			Weighting	Remarks	
	1	2	3	4		
Continuous Assessment: 100%						
Quiz and Test	1				50%	
In-class Exercises		1			10%	
Research Project			1		30%	
Project Presentation				1	10%	
Examination: NA						
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100%

### 5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

### Applicable to students admitted in Semester A 2022/23 and thereafter

Assessment Task			Good	Marginal	Failure
		(A+, A, A-)	(B+, B)	(B-, C+, C)	(F)
1. Quiz and Test	Ability to analyse and	Demonstrated	Demonstrated good	Demonstrated basic	Lack of ability to
	critique key conceptual,	excellent ability to	ability to analyse and	ability to analyse and	analyse and critique
	empirical, and application	analyse and critique	critique key	critique key	key conceptual,
	issues of social network	key conceptual,	conceptual, empirical,	conceptual, empirical,	empirical, and
	analysis based on readings,	empirical, and	and application issues	and application issues	application issues of
	lectures, and other	application issues of	of social network	of social network	social network
	assignments	social network	analysis based on	analysis based on	analysis based on
		analysis based on	readings, lectures, and	readings, lectures, and	readings, lectures, and
		readings, lectures, and	other assignments	other assignments	other assignments
		other assignments			
2. In-class	Collecting social network	Demonstrated excellent	Demonstrated good	Demonstrated basic	Lack of ability to
Exercises	data from various online	ability to collect	ability to collect	ability to collect	collect social network
	data sources, performing	social network data	social network data	social network data	data from various
	network analysis of the	from various online	from various online	from various online	online data sources,
	collected data, and	data sources,	data sources,	data sources,	performing network
	visualizing the analysis	performing network	performing network	performing network	analysis of the
	results	analysis of the	analysis of the	analysis of the	collected data, and
		collected data, and	collected data, and	collected data, and	visualizing the
		visualizing the	visualizing the	visualizing the	analysis results
		analysis results	analysis results	analysis results	
3. Research Project	Based on individual or	Demonstrated excellent	Demonstrated good	Demonstrated basic	Lack of ability to
	group research project on an	ability to conduct a	ability to conduct a	ability to conduct a	conduct a research
	approved topic using	research project on an	research project on an	research project on an	project on an
	appropriate methods(s),	approved topic using	approved topic using	approved topic using	approved topic using
	following the appropriate	appropriate	appropriate	appropriate	appropriate
	academic style and	methods(s), following	methods(s), following	methods(s), following	methods(s), following
	requirements, with attention	the appropriate	the appropriate	the appropriate	the appropriate
	paid to the quality of	academic style and	academic style and	academic style and	academic style and
	writing, including the	requirements, with	requirements, with	requirements, with	requirements, with

	spelling, syntax, and	<u> </u>	_	attention paid to the	
	grammatical structure of the	quality of writing,	quality of writing,	quality of writing,	quality of writing,
	paper	including the spelling,	including the spelling,	including the spelling,	including the spelling,
		syntax, and	syntax, and	syntax, and	syntax, and
		grammatical structure	grammatical structure	grammatical structure	grammatical structure
		of the paper	of the paper	of the paper	of the paper
4. Project	Each student (group) is	Demonstrated excellent	Demonstrated good	Demonstrated basic	Lack of ability to
Presentation	expected to present a	ability to present a	ability to present a	ability to present a	present a research
	research project and	research project and	research project and	research project and	project and findings
	findings to the class	findings to the class	findings to the class	findings to the class	to the class

### Applicable to students admitted before Semester A 2022/23

Assessment	Criterion	Excellent	Good	Fair	Marginal	Failure
Task		(A+, A, A-)	(B+, B, B-)	(C+, C, C-)	(D)	(F)
1. Discussions	Focusing on key	Demonstrated	Demonstrated good	Demonstrated basic	Demonstrated	Lack of ability
and Quizzes	conceptual, empirical,	excellent ability	ability to analyse and	ability to analyse	poor ability to	to analyse and
	and application issues	to analyse and	critique key	and critique key	analyse and	critique key
	of social network	critique key	conceptual, empirical,	conceptual,	critique key	conceptual,
	analysis based on	conceptual,	and application issues	empirical, and	conceptual,	empirical, and
	readings, lectures, and	empirical, and	of social network	application issues of	empirical, and	application
	other assignments	application	analysis based on	social network	application issues	issues of social
		issues of social	readings, lectures,	analysis based on	of social network	network
		network analysis	and other assignments	readings, lectures,	analysis based on	analysis based
		based on	_	and other	readings, lectures,	on readings,
		readings,		assignments	and other	lectures, and
		lectures, and		_	assignments	other
		other			_	assignments
		assignments				
2. Hands-on	Collecting social	Demonstrated	Demonstrated good	Demonstrated basic	Demonstrated	Lack of ability to
Exercises	network data from	excellent ability to	ability to collect	ability to collect	poor ability to	collect social
	various online data	collect social	social network data	social network data	collect social	network data
	sources, performing	network data	from various online	from various online	network data from	from various
	network analysis of	from various	data sources,	data sources,	various online data	online data
	the collected data, and	online data	performing network	performing network	sources,	sources,
	visualizing the	sources,	analysis of the	analysis of the	performing	performing

	analysis results	performing network analysis of the collected	collected data, and visualizing the analysis results	collected data, and visualizing the analysis results	network analysis of the collected data, and	network analysis of the collected data,
		data, and visualizing the analysis results			visualizing the analysis results	and visualizing the analysis results
3. Research Paper	Based on individual or group research project on an approved topic using appropriate methods(s), following the appropriate academic style and requirements, with attention paid to the quality of writing, including the spelling, syntax, and grammatical structure of the paper	Demonstrated excellent ability to conduct a research project on an approved topic using appropriate methods(s), following the appropriate academic style and requirements, with attention paid to the quality of writing, including the spelling, syntax, and grammatical structure of the paper	Demonstrated good ability to conduct a research project on an approved topic using appropriate methods(s), following the appropriate academic style and requirements, with attention paid to the quality of writing, including the spelling, syntax, and grammatical structure of the paper	ability to conduct a research project on an approved topic using appropriate	Demonstrated poor ability to conduct a research project on an approved topic using appropriate methods(s), following the appropriate academic style and requirements, with attention paid to the quality of writing, including the spelling, syntax, and grammatical structure of the paper	Lack of ability to conduct a research project on an approved topic using appropriate methods(s), following the appropriate academic style and requirements, with attention paid to the quality of writing, including the spelling, syntax, and grammatical structure of the paper
4. Class Presentation	Each student (group) is expected to present a research project and findings to the class	Demonstrated excellent ability to present a research project and findings to the class	Demonstrated good ability to present a research project and findings to the class	Demonstrated basic ability to present a research project and findings to the class	Demonstrated poor ability to present a research project and findings to the class	Lack of ability to present a research project and findings to the class

### Class assignments and Presentation (example as follows):

- Quiz and Test: focusing on key conceptual, empirical, and application issues of social network analysis based on readings, lectures, and other assignments.
- In-class exercises: collecting social network data from various online data sources, performing network analysis of the collected data, and visualizing the analysis results
- Research project: based on individual or group research project on an approved topic using appropriate methods(s), following the appropriate academic style and requirements, with attention paid to the quality of writing, including the spelling, syntax, and grammatical structure of the paper.
- Project presentation: Each student (group) is expected to present a research project and findings to the class.

Specific grading criteria for selected assessment tasks/activities are as follows (example as follows): Research paper and presentation:

- Quality of the ideas originality, significance, etc.
- Appropriateness, logical coherence and clarity of the arguments and hypotheses
- Appropriateness of research method and clear description

Appropriateness of the analysis and the presentations of the results

- Thought-provoking discussions of the research findings and the significance of the study
- Format, style, writing and length of paper
- Presentational skills

Weighting of the different criteria and other details will be announced on the course website.

### Part III Other Information (more details can be provided separately in the teaching plan)

### 1. Keyword Syllabus

(An indication of the key topics of the course.)

Social networks, social media, social computing, big data, Web 2.0, user generated content, crowdsourcing, collective wisdom, online communities, information cascading, news diffusion, small world networks, scale free networks, power-law distribution, human dynamics, semantic networks, epidemic networks, health communication, social collaboration

### **Tentative Weekly Topics:**

- 1 Introduction to networking perspectives
- 2 Node centrality and power
- 3 Random graph
- 4 Small world networks
- 5 Scale-free networks
- 6 Strength of weak ties
- 7 Community detection
- 8 Co-occurrence networks
- 9 Network data hypothesis testing
- 10 Data collection and visualization

#### 2. Reading List

#### 2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

1.	David Easley and Jon Kleinberg (2010). <i>Networks, crowds, and markets: Reasoning about a highly connected world</i> . Cambridge University Press.
2.	Robert A. Hanneman and Mark Riddle (2005). Introduction to Social Network Methods. Riverside, CA: University of California, Riverside.
3.	Maksim Tsvetovat and Alexander Kouznetsov (2011). Social network analysis for startups. O'Reilly.
4.	Wes McKinney (2013). Python for data analysis. O'Reilly