City University of Hong Kong
Course Syllabus

offered by School of Data Science
with effect from Semester A 2019/20

Part I Course Overview

Course Title:	**Digital Trace Analytics**
Course Code:	**SDSC3010**
Course Duration:	**One Semester**
Credit Units:	**3**
Level:	**B3**
Proposed Area: *(for GE courses only)*	☐ Arts and Humanities ☐ Study of Societies, Social and Business Organisations ☐ Science and Technology
Medium of Instruction:	**English**
Medium of Assessment:	**English**
Prerequisites: *(Course Code and Title)*	**SDSC1001 Introduction to Data Science* and SDSC2001 Python for Data Science** *** Pre-requisite SDSC1001 will be exempted for students who are enrolled in Minor in Data Science**
Precursors: *(Course Code and Title)*	**Nil**
Equivalent Courses: *(Course Code and Title)*	**Nil**
Exclusive Courses: *(Course Code and Title)*	**Nil**

Part II Course Details

1. Abstract

(A 150-word description about the course)

This course provides students with an extensive exposure to the elements of opinion/behavioural data analytics. Topics include self-reported data, behavioural data, social science sampling, questionnaire design, offline surveys, online surveys, digital trace measurement, multi-source data analytics, and privacy protection.

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* (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	Explain clearly fundamental principles and methods of digital trace analytics	20%	√		
2.	Classify various types and properties of opinion and behavioural data	20%	√	√	
3.	Evaluate prevailing practices in digital trace analytics and seek ways to improve the existing practices	30%	√	√	√
4.	Apply appropriate methods to solve given problems in digital trace analytics	30%	√	√	√
		100%			

** If weighting is assigned to CILOs, they should add up to 100%.*

[#] Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

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.

3. Teaching and Learning Activities (TLAs)

(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.				Hours/week (if applicable)
		1	2	3	4	
Lecture	Learning through **teaching** is primarily based on lectures.	√	√	√	√	39 hours in total
Case studies	Describe and critique classic cases of digital trace analytics.		√	√	√	in or after classes
Take-home assignments	Learning through in-class or take-home assignments is primarily based on interactive problem solving and hands-on exercises allowing instant feedback.		√	√	√	in or after class

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: 40%						
Test	√	√	√	√	20-40%	Questions are designed for data collection methods of digital trace analytics to see how well the students have learned the fundamental concepts and methods, and applications in real world context.
Hands-in assignments			√	√	0-20%	These are skills based assessment to enable students to demonstrate the basic concepts, methods and algorithms of digital trace analytics, and applications of in real world context.
Examination: 60% (duration: 2 hours)	√	√	√	√	60%	Examination questions are designed to see how far students have achieved their intended learning outcomes.
**The weightings should add up to 100%.*					100%	

For a student to pass the course, at least 30% of the maximum mark for the examination must be obtained.

5. Assessment Rubrics

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

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Test	Ability to understand and apply key concepts, methods of digital trace analytics.	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Hands-in assignments	Ability to learn the basic concepts, apply methods and algorithms of digital trace analytics, and develop real world applications.	High	Significant	Moderate	Basic	Not even reaching marginal levels
3. Examination	Ability to solve learning tasks using digital trace analytics.	High	Significant	Moderate	Basic	Not even reaching marginal levels

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.)

Self-reported data, behavioural data, social science sampling, questionnaire design, offline surveys, online surveys, digital trace measurement, multi-source data analytics, privacy protection

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.	Analyzing political communication with digital trace data, by Andreas Jungherr, Springer, 2015

2.2. Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)