City University of Hong Kong
Course Syllabus

offered by College/School/Department of COM
with effect from Semester A, 2016 /17

Part I   Course Overview

Course Title:	**Media Data Analytics**
Course Code:	**COM5508**
Course Duration:	**1 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**
Equivalent Courses: *(Course Code and Title)*	**Nil**
Exclusive Courses: *(Course Code and Title)*	**Nil**

Part II   Course Details

1. **Abstract**
    The course trains students of communication and new media to analyze and visualize numeric, text, and visual data from social media using computational social science methods, tools, and algorithms. Special emphasis will be placed on building, validating, and applying predictive models for user behaviour on social media. Through interactive learning sessions including hands-on tutorials, individual exercises, group-based projects, etc., the students are expected to become proficient to select the appropriate and efficient methods to explore, analyse, validate, and visualize big data from social media for a variety of basic and applied research purposes such as theory-driven studies, data-driven reporting, news visualization, social media user recommender systems, and etc. Issues of policy and research ethics such as privacy protection, data integrity, and open access will also be explored along with technical challenges and solutions.

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.	Demonstrate the capacity for self-directed learning to understand the principles and procedure of analyzing and visualizing social media data.				√
2.	Explain the basic methodologies and techniques of data analytics, to recognize the strengths and weaknesses of different computational approaches to social media analytics.			√	
3.	Interpret numerical, textual, and visual data to systematically assess the characteristics and patterns of user generated content and behaviour on social media.		√	√	
4.	Value ethical and socially responsible actions in data analysis and visualization.		√		
5.	Demonstrate critical thinking skills in planning and implementing plans for studying social media content.		√	√	√
		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.

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	5		
Lectures and tutorials	Explain key concepts, such as procedure and methods for data exploration, analysis and visualization.	√	√*	√*	√	√*		3 hours/week
Individual exercises	Requires students to individually develop and test customized algorithms to analyse and visualize social media data.	√*	√	√	√*	√		2 hours/week for 8 weeks
Group projects	Students work in teams to explore, analyse, and visualize social media data and present their findings in data product and an oral presentation.	√	√	√*	√	√		3 hours/week for 5 weeks

√* indirectly

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	5			
Continuous Assessment: 100%								
Class participation and tutorial tasks	√		√	√			30%	
Individual exercises		√	√		√		40%	
Group project and presentation	√	√		√	√		30%	
							100%	

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-)	Adequate (C+, C, C-)	Marginal (D)	Failure (F)
1. Class participation and tutorial tasks	Ability to replicate the procedure and methods of social media data analysis and visualization based on given examples	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Individual exercises	Capacity for self-directed learning to understand the procedure and methods of social media data analytics	High	Significant	Moderate	Basic	Not even reaching marginal levels
3. Group project and presentation	Ability to demonstrate and explain with technical details, accuracy and clarity, the process and results of analyzing and visualizing social media data	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.)
    Computational social science, web analytics, data mining, machine learning, supervised learning, unsupervised learning, prediction, classification, clustering, recommender systems, data visualization, data dashboard

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.	Hal Daume III (2015). *A course in machine learning*. [http://ciml.info/]
2.	Russell, M. A. (2013). *Mining the social web*. O'Reilly. [http://shop.oreilly.com/product/0636920030195.do]
3.	Wes McKinney (2013). *Python for data analysis.* O'Reilly. [http://shop.oreilly.com/product/0636920023784.do]
4.	
5.	

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

1.	Trevor Hastie, Robert Tibshirani, and Jerome Friedman (2008). *The elements of statistical learning, 2e*. Springer-Verlag, [http://statweb.stanford.edu/~tibs/ElemStatLearn/]
2.	
3.	