COM5508: MEDIA DATA ANALYTICS

Effective Term
Semester B 2024/25

Part I Course Overview

Course Title
Media Data Analytics

Subject Code
COM - Media and Communication
Course Number
5508

Academic Unit
Media and Communication (COM)

College/School
College of Liberal Arts and Social Sciences (CH)

Course Duration
One Semester

Credit Units
3

Level
P5, P6 - Postgraduate Degree

Medium of Instruction
English

Medium of Assessment
English

Prerequisites
Nil

Precursors
Nil

Equivalent Courses
Nil

Exclusive Courses
Nil

Part II Course Details

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.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Demonstrate the capacity for self-directed learning to understand the principles and procedure of analyzing and visualizing social media data.				x
2	Explain the basic methodologies and techniques of data analytics, to recognize the strengths and weaknesses of different computational approaches to social media analytics.			x	
3	Interpret numerical, textual, and visual data to systematically assess the characteristics and patterns of user generated content and behaviour on social media.		x	x	
4	Value ethical and socially responsible actions in data analysis and visualization.		x		
5	Demonstrate critical thinking skills in planning and implementing plans for studying social media content.		x	x	x

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 real-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.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures and tutorials	Explain key concepts, such as procedure and methods for data exploration, analysis and visualization.	1, 2, 3, 4, 5	3 hours/week

2	Individual exercises	Requires students to individually develop and test customized algorithms to analyse and visualize social media data.	1, 2, 3, 4, 5	2 hours/week for 8 weeks
3	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.	1, 2, 3, 4, 5	3 hours/week for 5 weeks

Additional Information for LTAs

Lectures and tutorials - CILO 2*,3*,5*
Individual exercises - CILO 1*,4*
Group projects - CILO 3*

* indirectly

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Class participation and tutorial tasks	1, 3, 4	30	
2	Individual exercises	2, 3, 5	40	
3	Group project and presentation	1, 2, 4, 5	30	

Continuous Assessment (%)

100

Assessment Rubrics (AR)

Assessment Task

Class participation and tutorial tasks (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Ability to replicate the procedure and methods of social media data analysis and visualization based on given examples

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal

(D) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task
Individual exercises (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion
Capacity for self-directed learning to understand the procedure and methods of social media data analytics

Excellent
(A+, A, A-) High

Good
(B+, B, B-) Significant

Fair
(C+, C, C-) Moderate

Marginal
(D) Basic

Failure
(F) Not even reaching marginal levels

Assessment Task
Group project and presentation (for students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion
Ability to demonstrate and explain with technical details, accuracy and clarity, the process and results of analyzing and visualizing social media data

Excellent
(A+, A, A-) High

Good
(B+, B, B-) Significant

Fair
(C+, C, C-) Moderate

Marginal
(D) Basic

Failure
(F) Not even reaching marginal levels

Assessment Task
Class participation and tutorial tasks (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
Ability to replicate the procedure and methods of social media data analysis and visualization based on given examples

Excellent

(A+, A, A-) Actively participate in the lecture sessions, and fully complete all the tutorial tasks

Good
(B+, B) Attend the lecture sessions, and complete the basic tutorial tasks

Marginal
(B-, C+, C) Attend most of the lecture sessions, and complete most of the tutorial tasks

Failure
(F) Do not attend the lecture sessions, or do not hand in tutorial tasks

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Assessment Task
Individual exercises (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
Capacity for self-directed learning to understand the procedure and methods of social media data analytics

Excellent
(A+, A, A-) Actively seeking knowledge outside class

Good
(B+, B) Able to look for online information

Marginal
(B-, C+, C) Able to learn from others

Failure
(F) Fail to learn independently

Assessment Task
Group project and presentation (for students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion
Ability to demonstrate and explain with technical details, accuracy and clarity, the process and results of analyzing and visualizing social media data

Excellent
(A+, A, A-) Demonstrate creativity in applying knowledge learnt in class and outside class in the project

Good
(B+, B) Able to apply knowledge learnt in the class to the project

Marginal
(B-, C+, C) Able to deliver a project with some technical elements

Failure
(F) Fail to use the knowledge taught in the course in the project

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Part III Other Information

Keyword Syllabus

Computational social science, web analytics, data mining, machine learning, supervised learning, unsupervised learning, prediction, classification, clustering, recommender systems, data visualization, data dashboard

Reading List

Compulsory Readings

	Title
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]

Additional Readings

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