



ITIS 5408 A
Social Analytics
FALL 2023

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Office Hours: Monday 1:00 pm – 3:00 pm

Class Meeting: Wednesday 14:35 – 17:25, Nicol Building 4030, In-Person

Course Calendar Description from the [2023/2024 University calendar](#): *The process, tools and techniques necessary to acquire, clean, and analyze text that has been generated on social platforms. Social network analysis, sentiment analysis, topic extraction, and co-occurrence analysis.*

Course Prerequisites: ITIS 5401, MKTG 5200, BUSI 5801

Course Description: *In today's digitally interconnected world, understanding and harnessing the power of social data is crucial for businesses. In fact, a majority of data (80% to 90%, according to multiple analyst estimates) is unstructured, and it is growing much faster than structured data. This course delves into the dynamic realm of social data analysis, equipping students with the knowledge and skills needed to extract valuable insights from textual content and social networks. Students will embark on a comprehensive journey to explore various techniques, tools, and methodologies used to acquire, clean, and analyze text generated on social platforms. Additionally, students will learn how to conduct social network analysis and develop an understanding of emerging techniques in social analytics.*

Course Learning Objectives:

Upon completion of this course, students will:

1. have a comprehensive understanding of text analytics techniques and their applications within business contexts.
2. be ready to navigate the intricate landscape of social data, making informed decisions based on insights extracted from textual content and social network structures.
3. be able to perform social network analysis and text analytics, including text manipulation, sentiment analysis, topic modeling, cluster analysis, and text classification.
4. understand emerging trends and techniques in social analytics.

Required Materials:

Textbooks

- Brath, R., & Jonker, D. (2015). Graph analysis and visualization: discovering business opportunity in linked data. WILEY.
 - *Required; eBook available via Carleton Library; Free*

- Referred as SNA in course schedule
 - Struhl, S. (2015). Practical Text Analytics. Interpreting text and unstructured data for business intelligence. Kogan Page.
 - Required; Hard copy available via Carleton Library; Purchase available via Amazon, click [Here](#)
 - Referred as TA in course schedule
 - Cherven, K. (2015). Mastering Gephi Network Visualization (1st edition). Packt Publishing.
 - Optional; eBook available via Carleton Library; Free
- * Additional readings may be assigned throughout the term.

Cases

- Case #1: Who is the Right Influencer? A Social Network Analysis (Product #: 044SMU-PDF-ENG) (<https://hbsp.harvard.edu/product/044SMU-PDF-ENG?Ntt=social%20network%20analysis>)
 - Case #2: Understanding Text Mining and Sentiment Analysis in Hotel Booking (Product #: W19474-PDF-ENG) (<https://hbsp.harvard.edu/product/W19474-PDF-ENG?Ntt=understanding%20hotel%20booking>)
 - Case #3: Will be available later the semester.
- * Please note that the cases used in classroom sessions will be made available at no cost through the Ares link on the course website.

Device

- Students need to bring their own laptops for in-class exercises.

Software

- Gephi (Available from: <https://gephi.org/>; Compatible with Windows and MacOS; Cost: Free)
 - Orange (Available from: <https://orangedatamining.com/>; Runs on both Windows and MacOS; Cost: Free)
 - MS Excel
- * Other software may be required later at the discretion of the instructor.

Final Exam Date: *There is no final examination for this course.*

Drop Course Policy: The deadline for academic withdrawal is October 1st.

Grading Scheme:

In-class Exercises (8 × 2.5%)	20%
3 Individual Assignments	35%
Group Project	40%
Feedback to other group presentations	5%
TOTAL	
	100%

Each component of your grade will be assigned a percentage score. Your final course grade will be a weighted average of each of these components.

- **In-class exercises (20%):** *In many of the classes, you will spend approximately one hour working on a small task given to you during the session. You will be expected to complete the task in the allocated time and then hand in the work at the end of the session. You are required to bring a laptop to class to complete*

the assigned work.

- **Individual assignments (35%):** *Throughout the term, you will do three individual assignments (10% + 10% + 15%) covering social network analysis and text analytics. In these assignments, you will analyze common business data and provide solutions to the problems faced by businesses. The objective of individual assignments is to help students build the linkages between data analysis skills and real-world problems.*
- **Group project (40%):** *You are expected to form a group of 4 - 6 members in this course and apply the text analytics skills learned in this class in analyzing real-world data. The purpose of the project is for you to develop an understanding of how text analytics skills can be employed to answer business-related questions and create value for individuals, organizations, or even society. In this group project, you can select a field of interest, develop a series of questions, find online data or collect your own data, clean and analyze the data, and develop findings. The group project is subject to the instructor's approval and includes three components described below: (1) Project proposal (5%). Your group will submit a formal 2-page project proposal outlining the field and questions of interest, briefly describing the data sets you hope to use and explaining how you will apply the text analytics in answering your questions. This proposal is meant to guide your group to a successful project and will be graded out of 5 marks based on completeness, ambition, feasibility, and clarity. (2) Project presentation (10%). Your group will present your findings in the last class at the end of the semester. Each team's presentation should be 10 minutes, followed by a 2-minute Q&A session. (3) Project report (25%). Your group will submit a professionally looking report that describes the chosen field and proposed questions, datasets, analysis process, findings, and implications of the findings. At the end of the report, you also need to give a detailed discussion on the limitations of your project/findings and potential future improvements. The length of the report should be within 20 single-spaced pages (including charts, graphs, tables, appendices, etc., but excluding references). Note: Peer evaluation will be used for all group works. Details will be available later the semester.*
- **Feedback to other group presentations (5%):** *You will provide the 'rated feedback' to the other groups' presentations in terms of given criteria. The format of feedback will be available later the semester. The instructor will partially incorporate this peer-evaluated rated-feedback into the grades of the group project presentation.*

Late Assignments:

To ensure fairness for all students, penalties will be applied to late assignments: Late submission will be penalized 10% of the deliverable grade per day (e.g., an assignment graded 8 marks will be penalized 0.8 marks per day). No late deliverables will be accepted after one week past the stated deadline. Missing deliverable will receive a mark of zero. Requests for extension will be considered in cases of illness, family emergency, or other exceptional circumstances. You must discuss these circumstances with your instructor at least 24 hours before the assignment due date (Note: Discussing the situation is not the same as merely informing your instructor).

Preparation and Participation:

- *Although this course is less theory-intense, students are still expected to complete the required readings before attending weekly classes.*
- *This course relies heavily on hands-on exercises; students are expected to be prepared for the learning-*

by-doing style.

- Please keep an electronic copy for every exercise and assignment you submit.

Contribution to Program Learning Goals ([MBA](#)):

MBA Learning Goal	Not Covered	Introduced	Taught but Not Assessed	Taught <u>and</u> Assessed
MB1 Leadership and Collaboration <i>Graduates will be equipped for leadership and collaboration.</i>	X			
MB2 Communication <i>Graduates will be effective communicators</i>				X
MB3 Critical Thinking and Problem Solving <i>Graduates will be skilled in critical thinking and problem solving.</i>			X	
MB4 Functional Knowledge <i>Graduates will have functional knowledge of all areas of business.</i>		X		
MB5 Global Business <i>Graduates will have an appreciation of the global environment of business.</i>		X		
MB6 Ethical Reasoning <i>Graduates will be skilled in ethical reasoning and decision-making.</i>		X		

ADDITIONAL INFORMATION

Course Sharing Websites:

Materials created for this course (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the author(s). They are intended for personal use and may not be reproduced or redistributed without prior written consent of the author(s).

Recommended Calculator for Examinations:

If you are purchasing a calculator, we recommend any one of the following options: Texas Instruments BA II Plus (including Pro Model), Hewlett Packard HP 12C (including Platinum model), Staples Financial Calculator, Sharp EL-738C & Hewlett Packard HP 10bII

Group Work:

The Sprott School of Business encourages group assignments. They provide you with opportunities to develop and enhance interpersonal, communication, leadership, followership and other group skills. Group assignments are also an effective way to learn integrative skills for putting together a complex task. Your professor may assign one or more group tasks, assignments, or projects in this course. Before embarking on a specific problem as a group, it is your responsibility to ensure that the problem is meant to be a group assignment and not an individual one.

If peer evaluation will be used as an input when assigning grades to group work, specify the procedure. See the example below:

Peer Evaluation for Group Work

To deter social loafing and ensure fairness in grading, you will be asked to assess the contribution of your fellow group members. This information will be used when assigning the grade for the final project. The procedure is as follows: Each student should take 100 points and allocate those points to the various members of the group (including him/her/themself) to reflect the contributions made by each member. For instance, if there are four members in a group and everyone contributed equally, each individual would receive 25 points. Conversely, if an individual contributed relatively little, the remaining group members might allocate few points to that member. To ensure that these peer evaluation scores are reasonable and free from personal bias, you will be asked to provide a detailed written explanation for your point allocation.

Letter Grades:

In accordance with the Carleton University Undergraduate Calendar (p. 34), the letter grades assigned in this course will have the following percentage equivalents:

A+ = 90-100	B+ = 77-79	C+ = 67-69	D+ = 57-59	F = Below 50
A = 85-89	B = 73-76	C = 63-66	D = 53-56	
A - = 80-84	B - = 70-72	C - = 60-62	D - = 50-52	

Grades entered by Registrar:

WDN = Withdrawn from the course
DEF = Deferred

Academic Regulations:

University rules regarding registration, withdrawal, appealing marks, and most anything else you might need to know can be found on the university's website, here:

<http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/>

Requests for Academic Accommodation:

You may need special arrangements to meet your academic obligations during the term. For an accommodation request, the processes are as follows:

- **Pregnancy**

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: <https://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf>

- **Religious Obligations**

Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details, visit the Equity Services website: <https://carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf>

- **Students with Disabilities**

If you have a documented disability requiring academic accommodations in this course, please contact the Paul Menton Centre for Students with Disabilities (PMC) at 613-520-6608 or pmc@carleton.ca for a formal evaluation or contact your PMC coordinator to send your instructor your Letter of Accommodation at the beginning of the term. You must also contact the PMC no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with your instructor as soon as possible to ensure accommodation arrangements are made. <https://carleton.ca/pmc/>

- **Survivors of Sexual Violence**

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and its survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: <https://carleton.ca/sexual-violence-support/>

- **Student Activities**

Carleton University recognizes the substantial benefits, to both the individual student and the university, that result from participating in activities beyond the classroom experience. Reasonable accommodation will be provided to students who compete or perform at the national or international level. Please contact your instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist.

<https://carleton.ca/senate/wp-content/uploads/Accommodation-for-Student-Activities-1.pdf>

For more information on academic accommodation, please contact the departmental administrator or visit: <https://students.carleton.ca/course-outline/>

Academic Integrity:

Violations of academic integrity—presenting another’s ideas, arguments, words or images as your own, using unauthorized material, misrepresentation, fabricating or misrepresenting research data, unauthorized co-operation or collaboration or completing work for another student—are a serious academic offence, weaken the quality of the degree, and will not be tolerated. Penalties may include; a grade of Failure on the submitted work and/or course; academic probation; a refusal of permission to continue or to register in a specific degree program; suspension from full-time studies; suspension from all studies at Carleton; expulsion from Carleton, amongst others. Students are expected to familiarize themselves with and follow the Carleton University Student Academic Integrity Policy which is available, along with resources for compliance at: <https://carleton.ca/registrar/academic-integrity/>

Centre for Student Academic Support:

The Centre for Student Academic Support (CSAS) is a centralized collection of learning support services designed to help students achieve their goals and improve their learning both inside and outside the classroom. CSAS offers academic assistance with course content, academic writing and skills development. Visit CSAS on the 4th floor of MacOdrum Library or online at: <https://carleton.ca/csas/>

Other Important Information:

- Students must always retain a hard copy of all work that is submitted.
- All final grades are subject to the Dean’s approval.
- For us to respond to your emails, we need to see your full name, CU ID, and the email must be written from your valid CARLETON address. Therefore, in order to respond to your inquiries, please send all email from your Carleton cmail account. If you do not have or have yet to activate this account, you can do so by visiting <https://carleton.ca/its/get-started/new-students-2/>

COURSE SCHEDULE

NOTE: While every attempt will be made to keep to the schedule listed below, unforeseen circumstances may necessitate modifications throughout the semester.

Session / Date	Topic / ICE & Assignments	Reading
1 / Sept 6	Course overview	
2 / Sept 13	Social Network Analysis I / ICE 1	SNA Ch. 1 & 2
3 / Sept 20	Social Network Analysis II / ICE 2; Group formed	SNA Ch. 3, 4 & 5
4 / Sept 27	Social Network Analysis III / ICE 3	SNA Ch. 9 & 11, Case #1
	Assignment 1 due: 11:59 pm, Oct 3	
5 / Oct 4	Text Analytics I: Explore and manipulate text / ICE 4	TA Ch. 1 & 2
6 / Oct 11	Text Analytics II: Topic extraction, cluster analysis / ICE 5	TA Ch. 3 & 4
	Assignment 2 due: 11:59 pm, Oct 17	

7 / Oct 18	Text Analytics III: Sentiment analysis, dictionary / ICE 6	TA Ch. 5, Case #2
	October 23-27, 2023: Fall break, no classes.	
8 / Nov 1	Text Analytics IV: Analyzing text using machine learning / ICE 7	TA Ch. 6 & 7
9 / Nov 8	Text Analytics V: A real-world case / ICE 8	Case #3
	Group Project Proposal due: 11:59 pm, Nov 10	
10 / Nov 15	Emerging trends and techniques in social analytics	
	Assignment 3 due: 11:59 pm, Nov 20	
11 / Nov 22	Course Wrap-Up & Project Roundtable	
12 / Nov 29	Group Presentation	
	Group Project Report due: 11:59 pm, December 8	