CARLETON UNIVERSITY
BUSI 4408 A
FALL 2023
SOCIAL ANALYTICS

Instructor: Qi Deng, Ph.D.
Office: 6031 Nicol Building
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TA: To be determined
Office Hours: Insert here
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Modality: In-Person

Pre-requisites & precluded Courses:
Third year standing, BUSI 1401 or BUSI 2400, and BUSI 2208, and STAT 2601 or STAT 2606. Restricted to students enrolled in B.Com, BIB, and the B.Econ Economic Data Science Concentration.

Course Calendar description from the 2023/2024 University calendar:
Covers the process, tool and techniques necessary to acquire, clean and analyze text that has been generated on social platforms. Social network analysis, sentiment analysis, topic extraction, co-occurrence analysis.

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.

Learning Outcomes:
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.

Reading(s)/Textbook(s)/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.*

Course Norms:

Use of Brightspace: This course uses Brightspace, Carleton's new learning management system. To access your courses on Brightspace go to https://brightspace.carleton.ca/.

For help and support, go to https://carleton.ca/brightspace/students/. Any unresolved questions can be directed to Computing and Communication Services (CCS) by phone at 613-520-3700 or via email at its.service.desk@carleton.ca.

The course Brightspace website contains all the pertinent course information. This site will be the primary source for course announcements and distribution of materials including assignments, supplemental readings, etc.

Grades will be posted to Brightspace as soon as they become available. In line with Sprott policy, it is your responsibility to check your grades by clicking on 'Grades.'

Email Policy: The best way to contact the professor is to send an email. Please be sure to indicate "BUSI 4408" in your email's subject line, so that I will know which of the classes I'm teaching you are taking. In keeping with Carleton University policy, your @cmail accounts must be used for any inquiries which involve confidential student information (e.g., about grades or health issues). The professor will endeavor to answer your emails within 24 hours; you should not expect an immediate response.

Course Material Sharing Policy: Student or professor materials created for this course (including presentations and posted notes/slides, 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).

Recording or Videotaping Policy: Students are NOT permitted to audio or video record any portion of the class lectures, nor are you permitted to make digital images of the lecture slides. If you feel you require this form of accommodation, please contact the Paul Menton Centre to formally request accommodation.

Course Requirements & Methods of Evaluation (including due dates):

Activity	Weight
In-class Exercises (8 × 2.5%)	20%
Individual Assignments • Assignment 1 • Assignment 2 • Assignment 3	10% 10% 15%
Group Project (40%) • Project Proposal • Project Presentation • Project Report	5% 10% 25%
Feedback to other group presentations	5%
Total	**100%**

* 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.

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

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 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.0

- Project proposal. 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.

- Project presentation. 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.
- Project report. 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.

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 11	Course overview	
2 / Sept 18	Social Network Analysis I / ICE 1	SNA Ch. 1 & 2
3 / Sept 25	Social Network Analysis II / ICE 2; Group formed	SNA Ch. 3, 4 & 5
4 / Oct 2	Social Network Analysis III / ICE 3	SNA Ch. 9 & 11, Case #1
	Assignment 1 due: 11:59 pm, Oct 6	
5 / Oct 16	Text Analytics I: Explore and manipulate text / ICE 4	TA Ch. 1 & 2
	October 23-27, 2023: Fall break, no classes.	
6 / Oct 30	Text Analytics II: Topic extraction, cluster analysis / ICE 5	TA Ch. 3 & 4
	Assignment 2 due: 11:59 pm, Nov 3	
7 / Nov 6	Text Analytics III: Sentiment analysis, dictionary / ICE 6	TA Ch. 5, Case #2
8 / Nov 13	Text Analytics IV: Analyzing text using machine learning / ICE 7	TA Ch. 6 & 7
	Group Project Proposal due: 11:59 pm, Nov 17	
9 / Nov 20	Text Analytics V: A real-world case / ICE 8	Case #3
	Assignment 3 due: 11:59 pm, Nov 24	
10 / Nov 27	Emerging trends and techniques in social analytics & Project Roundtable	
11 / Dec 4	Course Wrap-Up	
12 / Dec 8	Group Presentation / Group Project Report due: 11:59 pm, December 8	

Contribution to Learning Goals of the Program (BCom, BIB):

Program Learning Goal	Competencies Not Covered	Competencies Introduced (only)	Competencies Taught But Not Assessed	Competencies Taught and Assessed
BC1 Knowledge *Graduates will be skilled in applying foundational business knowledge to appropriate business contexts.*			X	
BC2 Collaboration *Graduates will be collaborative and effective contributors in team environments that respect the experience, expertise and interest of all members.*				X
BC3 Critical Thinking *Graduates will be discerning critical thinkers, able to discuss different viewpoints, challenge biases and assumptions, and draw conclusions based on analysis and evaluation.*			X	
BC4 Communication *Graduates will be effective and persuasive in their communications.*				X
BI5 Global Awareness (BIB ONLY) *Graduates will be globally-minded.*	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).

Required calculator in BUSI course 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 in the school for several reasons. They provide you with opportunities to develop and enhance interpersonal, communication, leadership, follower-ship and other group skills. Group assignments are also good for learning integrative skills for putting together a complex task. Your professor may assign one or more group tasks/assignments/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.

Grading
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
A = 85-89	B = 73-76	C = 63-66	D = 53-56
A - = 80-84	B - = 70-72	C - = 60-62	D - = 50-52
F = Below 50			

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 Accommodation

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: **carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf**

Religious obligation
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: **carleton.ca/equity/wp-content/uploads/Student-Guide-to-Academic-Accommodation.pdf**

Academic Accommodations for 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. **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: **carleton.ca/sexual-violence-support**

Accommodation for Student Activities
Carleton University recognizes the substantial benefits, both to the individual student and for the university, that result from a student participating in activities beyond the classroom experience. Reasonable accommodation must 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: **students.carleton.ca/course-outline**

Academic Integrity

Violations of academic integrity are a serious academic offence. 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 – weaken the quality of the degree and will not be tolerated.

Process: If an alleged violation occurs, all relevant documentation will be forwarded to the Dean. If the allegation proves true, the 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. **For a first offence, at a minimum, the penalty assigned will normally be a <u>zero on the submitted work and at least a minimum full grade reduction of the final course grade. For a second offence, at a minimum, the penalty assigned will normally lead to a suspension from studies.</u>**

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/.

Sprott Student Services
The Sprott Undergraduate Student Services Office offers program advising and overall student success support. Our team is available to discuss your academic goals and your program progression plans. We can also work with you to develop strategies for success, including study skills for Business. If you experience any difficulty this term or if you would like to access support, please contact our team at bcom@sprott.carleton.ca or at bib@sprott.carleton.ca.

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: carleton.ca/csas.

Important Information:
- Students must always retain a 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 may wish to do so by visiting **https://carleton.ca/its/get-started/new-students-2/**