



Bachelor of Management
 MGMT 2605
 Working with Data
 Fall 2020

RECOGNITION OF MI'KMAQ TERRITORY

Dalhousie University is located in Mi'kma'ki, the ancestral and unceded territory of the Mi'kmaq. We are all Treaty people.

The [Elders in Residence program](#) provides students with access to First Nations Elders for guidance, counsel and support. Visit the office in the Indigenous Student Centre, 1321 Edward Street, or email Elders@dal.ca.

Instructor:	Colin Conrad
Pronouns:	he/him
Office:	Kenneth C. Rowe Management Building, 4020
Telephone:	(902) 494-8378
E-mail	colin.conrad@dal.ca

How to get in touch with me: I check and respond to emails at least once daily between 9 and 10:30 am Atlantic time (though often more often) every weekday. I try hard to respond all emails within 48 hours. In addition, I will regularly check on MS Teams to answer questions and participate in the discussion. I will also regularly attend tutorial sessions, which will give you an opportunity to ask questions in a smaller group setting. If you would like to schedule a one-on-one meeting, please reserve a time using the MS Bookings app.

Office hours:	By appointment only (by selecting available times on MS Bookings, link here)
Course Website:	Course materials are provided on Brightspace and our MS Teams space.
Live Tutorials:	Wednesday 10:05-11:25 Wednesday 11:35-12:55 Wednesday 13:05-14:25 Thursday 8:25-9:55 (note: session cancelled) Thursday 10:05-11:25

Teaching Assistants:	Theresa Boulos: Theresa.Boulos@dal.ca
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About Your Instructor:



Colin Conrad, Ph.D., Assistant Professor
 School of Information Management, Dalhousie University

Website: <https://colinconrad.com>

Course Description:

People and organizations are grappling with increasing amounts of data. Modern employees and citizens are expected to collect, manage, evaluate, visualize, analyze, and apply data in a range of domains and challenges: in short, to be data literate. This course introduces this knowledge and skillset through lectures and hands-on labs. Students will learn to use a variety of tools to find, manage, assess, extract value from, and visualize raw data.

Pre-Requisites and Other Requirements:

Students are required to have taken MGMT 1302. Students must also have second year status or above. In order to complete this course, you must use a modern Windows or Mac computer which can run MS Office 365 programs and Tableau. I recommend that you have an internet connection with at least 100 Mb/s connection speed, and computer with an i5 processor or greater with at least 6 GB of RAM.

Learning Outcomes:

The overarching objective of this course is to equip students with broadly applicable data management skills. By the end of the course, the student should be able to:

1. Manipulate, assess, analyze, and share raw data of different types (including quantitative data, qualitative data, and GIS data)
2. Identify the nature and extent of data needed and collected for given managerial purposes
3. Locate, collect, and integrate data of multiple types from multiple sources
4. Use data to inform evidence-based decision-making
5. Understand the data lifecycle (including collection, management, analysis, and application)
6. Demonstrate critical evaluation at various stages of the data lifecycle
7. Assess data visualizations and analyses for accuracy, relevance, and objectivity
8. Employ a range of data skills to address diverse, real-world scenarios/problems in multiple sectors and disciplines
9. Use data ethically and with awareness of the capabilities and limitations of data analysis

Approach Taken:

This is a very hands-on course and students are expected to participate in weekly technical exercises as well as a series of weekly asynchronous lecture-style videos. Technical exercises will take around an hour to complete each week and you will be given around 40 minutes of pre-recorded lecture videos, plus supporting written materials. All together, you will regularly have around 3 hours of regular asynchronous course content to complete each week. All regular asynchronous course materials (e.g. labs, lectures) will be released on Mondays at 8:00 am.

In addition to the regular weekly asynchronous materials, you will also have the opportunity to attend (optional) synchronous tutorial sessions on Wednesdays and Thursdays where you can discuss the material with your teaching assistants and the professor. Though you have registered for tutorial groups, you are welcome to attend any of the sessions—these are just reserved times when the TA and professor will work with you to introduce and troubleshoot the content. These sessions can be great times to complete your lab materials for the week while being supported by either the TA or the instructor.

You may also find it helpful to understand that:

- We *will not have synchronous sessions on Tuesdays* as the academic timetable implies. Instead, all lectures are asynchronous, and (optional) weekly tutorial sessions are available.
- The course consists of successive modules; each builds on what you've previously learned.
- The course emphasizes using real data to explore current issues, which means that the topics in the course outline might change if something exciting and data-related is happening in the world.

Learning Materials:

In addition to weekly readings which will be provided on Brightspace, this class uses one e-textbook which can be purchased for a price ranging from \$0 to \$10.00 (recommended):

- Leek, J. (2015). *The Elements of Data Analytic Style. A guide for people who want to analyze data*. Leanpub.

We will extensively use two software packages for this course:

1. *Microsoft Excel* - Microsoft Office (including Excel) is available at no cost during your time as a Dalhousie student and is required to complete many of the course exercises..
2. *Tableau (Public Edition)* – This is available to you at no cost to you and is required to complete many of the course exercises. A link to software requirements for Tableau is provided [here](#).

Method of Evaluation:

Grading Scheme	Due date	Percentage
Weekly lab submissions	Monday at 8:00 am (7 days following initial release)	20%
Online quizzes (4 x 5%)	Monday at 8:00 am (7 days following initial release)	20%
Mid-Term Assignment	Monday November 2 nd , 8:00 am	30%
Capstone lab projects (4 x 7.5%)	Monday at 8:00 am (7 days following initial release)	30%
<u>Total</u>		<u>100%</u>

All course deliverables are to be completed individually. In order to simplify assignment due dates and organization, all assignments for MGMT 2605 are due on a Monday at 8:00 am, and will be clearly denoted in Brightspace.

The abstract content from the asynchronous material (i.e. videos, readings, abstract lab concepts) will be primarily examined in the course quizzes and mid-term assignment. The hands-on “technical know-how” content will be examined primarily through the capstone lab projects and weekly lab assignments.

Up to two (no questions asked) accommodations will be granted so long as the [Student Declaration of Absence form](#) (SDA) is submitted on Brightspace prior to the deadline. Declared late assignments will be graded normally. Extensions deliverables paired with an SDA that are worth less than 10% of the final grade (i.e. lab exercises, quizzes) will simply be ignored when calculating the final grade. One-week extensions will be given for individual deliverables worth at least 10% of the grade (i.e. mid-term assignment, capstone labs).

Accreditation:

As an AACSB (Association to Advance Collegiate Schools of Business) accredited university, Dalhousie University’s business programs are subject to Assurance of Learning (AOL) standards. During the semester anonymous data may be collected to assess if AOL goals and objectives are being met. The data collected will be used for program improvement purposes only and will not impact nor be associated with student grades

Drop dates:

Last day to add/drop classes – September 18, 2020

Last day to drop without a “W” – October 2, 2020

Last day to drop with a “W” – November 2, 2020

Other important dates

Course-specific policies:

If you have concerns about this course, please contact me using any of the ways described in this syllabus so we can have a conversation. Giving constructive feedback is a valuable skill, so you should always thoughtfully complete any course feedback surveys, student ratings of instruction, and other opportunities to provide input.

If your issue is not resolved, you can follow up with an academic advisor in the Undergraduate Advising Office by emailing uao@dal.ca

Ground rules:

- *Extensions* - Up to two (no questions asked) accommodations will be granted so long as the [Student Declaration of Absence form](#) (SDA) is submitted on Brightspace prior to the deadline. Declared late assignments will be graded normally. Extensions deliverables paired with an SDA that are worth less than 10% of the final grade (i.e. lab exercises, quizzes) will simply be ignored when calculating the final grade. One-week extensions will be given for individual deliverables worth at least 10% of the grade (i.e. mid-term assignment, capstone labs).
- *Attendance norms* - Though you can do most of the course content for MGMT 2605 on your own and in your own time, many people find this very isolating. You are encouraged, but not required, to contribute to conversation over MS Teams either during the live video sessions for your lab or using the asynchronous chat. You are not necessarily expected to be formal on these forums, though (it should go without saying), common decency towards you, your peers, and your instructional team is expected.
- *Recording* - You are welcome to record the synchronous sessions if you choose. This said, if you have concerns about being recorded, please turn off your cameras and refrain from contributing to the in-session chat. We have made use of captions to help make the asynchronous sessions more accessible.

Final Exam:

There is no final examination for this course.

Course Schedule:

Week/Date of Class	Topics/Assignments
Week of Sep 7 th	<u>Data / information / knowledge</u> : the importance of data across sectors and disciplines, trends in data, how <i>not</i> to interpret data. <u>Readings</u> : No readings this week. <u>Lab</u> : Excel Review
Week of Sep 14 th	<u>Data Collection</u> : discovering data, sources of data, types of data, open data. <u>Readings</u> : <i>Analytic Style</i> , ch. 1-2. <u>Lab</u> : Open Data Treasure Hunt
Week of Sep 21 st	<u>Data Preparation</u> : data quality, data cleaning, data merging, critical assessment of data, data bias. <u>Readings</u> : <i>Analytic Style</i> ch. 3-4. <i>Quiz #1</i> <u>Lab</u> : Data Cleaning in Excel

Week of Sep 28 th	<p><u>Data Analysis</u>: Data exploration. Summarization. Descriptive, predictive, and prescriptive analytics. Business intelligence. <u>Readings</u>: <i>Analytic Style</i> ch. 5.</p> <p><u>Lab</u>: Data Analysis in Excel</p>
Week of Oct 5 th	<p><u>Data Visualization</u>: Gestalt principles. Human perception. Telling a story. Creating effective visuals. Critical assessment of visual data. <u>Readings</u>: <i>Analytic Style</i>, ch. 9-10.</p> <p><u>Lab</u>: Data Visualization in Excel and Tableau</p>
Week of Oct 12 th	<p><u>Data Management</u>: Organizing and storing data. Metadata. Enterprise Resource Planning. Databases. Relational databases. <u>Readings</u>: KahnAcademy SQL tutorials.</p> <p>Quiz #2</p> <p><u>Lab</u>: Introduction to SQL and Business Intelligence with Tableau</p>
Week of Oct 19 th	<p><u>Data in Organizations</u>: data culture, data sharing, data ethics, data breaches, data law, data justice. <u>Readings</u>: Olavsrud, T. (September 2, 2014). 11 steps attackers took to crack Target. <i>CIO Magazine</i>. Retrieved from: https://www.cio.com/article/2600345/11-steps-attackers-took-to-crack-target.html; World's biggest data breaches & hacks. <i>Information is Beautiful</i>. Retrieved from: https://www.informationisbeautiful.net/visualizations/worlds-biggest-data-breaches-hacks/</p> <p><u>Lab</u>: Working with Qualitative Data</p>
Week of Oct 26 th	<p><u>Geospatial and Spatiotemporal Data</u>: Unique challenges & tools. <u>Readings</u>: No readings this week.</p> <p>Mid-Term Assignment due</p> <p><u>Lab</u>: Practice Capstone Exercise: Analyzing the economic impact of lobster in rural Nova Scotia</p>
Week of Nov 2 nd	<p><u>Big Data</u>: : The social and technical factors that created Big Data. Strategies for dealing with Big Data. <u>Readings</u>: World Economic Forum (2016, March 7). What is big data? Retrieved from: https://www.youtube.com/watch?v=eVSfJhssXUA; Grassegger & Krogerus (2017). The data that turned the world upside down. <i>Vice</i>. Retrieved from: https://www.vice.com/en_us/article/mg9vvn/how-our-likes-helped-trump-win ;</p> <p><u>Lab</u>: Capstone Lab Project 1</p>
Week of Nov 9 th	FALL STUDY BREAK (NO CLASS)

Week of Nov 16th

Advanced Data Management: Data Management: data lifecycle, data curation & preservation, data management tools, Intro to data mining and data modelling.

Quiz #3

Lab: Capstone Lab Project 2

Week of Nov 23rd

Evaluating Evidence in a World of A.I.: How to think critically about information and data in a world of artificial intelligence. Readings: Jabrils (2019). What is artificial intelligence? Crash Course AI #1 *CrashCourse*. Retrieved from: https://www.youtube.com/watch?v=a0_lo_GDcFw&list=PL8dPuuaLjXtO65LeD2p4_Sb5XQ51par_b&t=2s

Lab: Capstone Lab Project 3

Week of Nov 30th

The Future of Data and You: How to plan your career with respect to data trends and course debrief.

Quiz #4

Lab: Capstone Lab Project 4

[Dalhousie is scent free](#) - Thank you for helping us all breathe easier!

APPENDIX

UNIVERSITY POLICIES, STATEMENTS, GUIDELINES and RESOURCES for SUPPORT

This course is governed by the academic rules and regulations set forth in the University Calendar and the Senate ([University Regulations](#), [Academic Regulations](#))

Grade Scale and Definitions

Grade	Grade Point Value		Definition	
A+	4.30	90-100	Excellent	Considerable evidence of original thinking; demonstrated outstanding capacity to analyze and synthesize; outstanding grasp of subject matter; evidence of extensive knowledge base.
A	4.00	85-89		
A-	3.70	80-84		
B+	3.30	77-79	Good	Evidence of grasp of subject matter, some evidence of critical capacity and analytical ability; reasonable understanding of relevant issues; evidence of familiarity with the literature.
B	3.00	73-76		
B-	2.70	70-72		
C+	2.30	65-69	Satisfactory	Evidence of some understanding of the subject matter; ability to develop solutions to simple problems; benefitting from his/her university experience.
C	2.00	60-64		
C-	1.70	55-59		
D	1.00	50-54	Marginal Pass	Evidence of minimally acceptable familiarity with subject matter, critical and analytical skills (except in programs where a minimum grade of "C" or "C+" is required).
F	0.00	0-49.9	Inadequate	Insufficient evidence of understanding of the subject matter; weakness in critical and analytical skills; limited or

irrelevant use of the literature.

INC 0.00 Incomplete

W Neutral and
no credit
obtained Withdrew after
deadline

ILL Neutral and
no credit
obtained Compassionate
reasons, illness

P Neutral Pass

TR Neutral Transfer credit on
admission

Pending
(PND) Neutral Grade not reported

University Policies to Highlight:

- The [Grading Practices Policy](#) outlines the university's commitment and professors' responsibilities on how grading will be achieved. The policy applies to all credit-bearing courses at both the undergraduate and graduate levels at the university.
- Information on [Appealing Regulations and Grades](#)
- [Sexualized Violence Policy](#)

Missed or Late Academic Requirements due to Student Absence:

Dalhousie students are asked to take responsibility for their own short-term absences (3 days or less) by contacting their instructor by phone or email prior to the academic requirement deadline or scheduled time **AND** by submitting a completed Student Declaration of Absence form to their instructor in case of missed or late academic requirements. Only two (2) separate Student Declaration of Absence forms may be submitted per course during a term (note: faculty, college, school, instructor or course-specific guidelines may set a lower maximum).

The submission of the form **does not guarantee accommodations, or provide an automatic exemption**, from any academic requirements that were missed or late during an absence. Any alternate coursework arrangements for missed or late academic requirements are at the discretion of individual course instructor(s).

Students who experience recurring short-term or long-term absences are strongly encouraged to meet with their Academic Advisor (uao@dal.ca).

Click [here](#) for further information.

Standard Citation Style:

The Bachelor of Management Program uses APA as its standard citation style (unless otherwise indicated by your professor). Please use APA style in your assignments to briefly identify (cite) other people's ideas and information and to indicate the sources of these citations in the References list at the end of your assignment.

For more information on APA style, consult Dalhousie Library website at <https://libraries.dal.ca/help/style-guides.html> or consult the [Frequently Asked Questions about APA](#)

Academic Integrity:

At Dalhousie University, we are guided in all of our work by the values of academic integrity: honesty, trust, fairness, responsibility and respect (The center for Academic Integrity, Duke University, 1999). As a student, you are required to demonstrate these values in all of the work you do. The University provides policies and procedures that every member of the university community is required to follow to ensure academic integrity.

In general:

The commitment of the Faculty of Management is to graduate future leaders of business, government and civil society who manage with integrity and get things done. This is non-negotiable in our community and it starts with your first class at Dalhousie University. So, when you submit any work for evaluation in this course or any other, please ensure that you are familiar with your obligations under the Faculty of Management's Academic Integrity Policies and that you understand where to go for help and advice in living up to our standards. You should be familiar with the [Faculty of Management Professor and Student Contract on Academic Integrity](#), and it is your responsibility to ask questions if there is anything you do not understand.

Dalhousie offers many ways to learn about academic writing and presentations so that all members of the University community may acknowledge the intellectual property of others. Knowing how to find, evaluate, select, synthesize and cite information for use in assignments is called being "information literate". Information literacy is taught by Dalhousie University Librarians in classes and through Dalhousie Libraries' online [Citing & Writing](#) tutorials.

Do not plagiarize any materials for this course. For further guidance on what constitutes plagiarism, how to avoid it, and proper methods for attributing sources, please consult the University Secretariat's [Academic Integrity](#) page.

Please note that Dalhousie subscribes to a plagiarism detection software that checks for originality in submitted papers. Any paper submitted by a student at Dalhousie University may be checked for originality to confirm that the student has not plagiarized from other sources. Plagiarism is considered a very serious academic offence that may lead to loss of credit, suspension or expulsion from the University, or even the revocation of a degree. It is essential that there be correct attribution of authorities from which facts and opinions have been derived. At Dalhousie, there

are University Regulations which deal with plagiarism and, prior to submitting any paper in a course; students should read the Policy on [Intellectual Honesty](#) contained in the Calendar.

Furthermore the University's Senate has affirmed the right of any instructor to require that student assignments be submitted in both written and computer readable format, e.g.: a text file or as an email attachment, and to submit any paper to a check such as that performed by the plagiarism detection software. As a student in this class, you are to keep an electronic copy of any paper you submit, and the course instructor may require you to submit that electronic copy on demand. Use of third-party originality checking software does not preclude instructor use of alternate means to identify lapses in originality and attribution. The result of such assessment may be used as evidence in any disciplinary action taken by the Senate.

Finally:

If you suspect cheating by colleagues or lapses in standards by a professor, you may use the confidential email: managementintegrity@dal.ca which is read only by the Assistant Academic Integrity Officer.

Faculty of Management clarification on plagiarism versus collaboration:

There are many forms of plagiarism, for instance, copying on exams and assignments. There is a clear line between group work on assignments when explicitly authorised by the professor and copying solutions from others. It is permissible to work on assignments with your friends but only when the professor gives you permission in the specific context of the assignment. University rules clearly stipulate that all assignments should be undertaken individually unless specifically authorised.

Specific examples of plagiarism include, but are not limited to, the following:

- **Copying a computer file from another student, and using it as a template for your own solution**
- **Copying text written by another student**
- **Submitting the work of someone else, including that of a tutor as your own**

An example of acceptable collaboration includes the following:

- **When authorised by the professor, discussing the issues and underlying factors of a case with fellow students, and then each of the students writing up their submissions individually, from start to finish.**

ACCESSIBILITY

The Student Accessibility Centre (Halifax Campus) and the Student Success Centre (Agricultural Campus) are Dalhousie's centres of expertise on student access, inclusion, and accommodation support. We work collaboratively with students, faculty, and staff to create an inclusive educational environment for students.

If there are aspects of the design, instruction, and/or experiences within this course that result in barriers to your inclusion please contact the [Student Accessibility Centre](http://dal.ca/access) (dal.ca/access) and/or make arrangements to discuss with the instructor.

Please note that your classroom may contain accessible furniture and equipment. It is important that these items remain in the classroom, undisturbed, so that students who require their use will be able to fully participate.

STUDENT CODE OF CONDUCT

Everyone at Dalhousie is expected to treat others with dignity and respect. The Code of Student Conduct allows Dalhousie to take disciplinary action if students don't follow this community expectation. When appropriate, violations of the code can be resolved in a reasonable and informal manner—perhaps through a restorative justice process. If an informal resolution can't be reached, or would be inappropriate, procedures exist for formal dispute resolution.

[DIVERSITY AND INCLUSION – Culture of Respect](#)

Every person at Dalhousie has a right to be respected and safe. We believe inclusiveness is fundamental to education. We stand for equality. Dalhousie is strengthened in our diversity. We are a respectful and inclusive community. We are committed to being a place where everyone feels welcome and supported, which is why our Strategic Direction prioritizes fostering a culture of diversity and inclusiveness (Strategic Priority 5.2).

[FAIR DEALING POLICY](#)

The Dalhousie University Fair Dealing Policy provides guidance for the limited use of copyright protected material without the risk of infringement and without having to seek the permission of copyright owners. It is intended to provide a balance between the rights of creators and the rights of users at Dalhousie.

Learning and Support Resources:

- [Undergraduate Advising Office](#)
- [Writing Centre](#)
- [Studying for Success Program](#)
- [Indigenous Student Centre](#)
- [Black Student Advising Centre](#)
- [International Centre](#)
- [LGBTQ2SIA+ Collaborative](#)
- [Student Health & Wellness](#)
- [Human Rights and Equity Services](#)
- [Dalhousie Student Advocacy Services](#)
- [Dalhousie Ombudsperson](#)
- [Dalhousie University Libraries](#)
- [Copyright Office](#)