

3KE3
Management of Enterprise Data Analytics
Winter 2019 Course Outline

Information Systems
DeGroote School of Business
McMaster University

COURSE OBJECTIVE

The goal of data analytics is to gain knowledge and communicate conclusions drawn from data. This course aims to provide students with in-depth look at specific underlying technologies, statistics and real-world issues related to firm value generation. The course provides several opportunities to explore and understand management of enterprise data analytics through the analysis of case examples and in-class discussions.

INSTRUCTOR AND CONTACT

Dr. Maryam Ghasemaghaei
 Course Instructor
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 Office: DSB- A203
 Office Hours: by appointment

Mohsen Javdan
 Teaching Assistant
Javdanm@mcmaster.ca
 Office: DSB- A211
 Office Hours: by appointment

Class Meeting Times & Location		
Days	Times	Location
Tuesday	2:30pm — 5:20pm	BSB B103

Course Website: <http://avenue.mcmaster.ca>

COURSE ELEMENTS

Credit Value:	3	Leadership:	Yes	IT skills:	Yes	Global view:	Yes
Avenue:	Yes	Ethics:	Yes	Numeracy:	Yes	Written skills:	Yes
Participation:	Yes	Innovation:	Yes	Group work:	Yes	Oral skills:	Yes
Evidence-based:	Yes	Experiential:	Yes	Final Exam:	Yes	Guest speaker(s):	Yes

COURSE DESCRIPTION

Data Analytics allow organizations to build competitive strategies around data-driven insights and derive value from data. This course provides students with an overview of enterprise data analytics and an introduction to the concepts which underlie its effective deployment and management. The course addresses some of the basic procedures and controls of Big Data which provide management with a basis for deriving maximum value from analytics projects. This course incorporates a variety of teaching and learning methods including lectures, assignments, case studies, group work, presentations, and readings. The course encompasses managerial, technical and statistical perspectives, showing how each area is dependent on the other to make enterprise analytics work.

LEARNING OUTCOMES

Upon completion of this course, students will be able to complete the following key tasks:

- Understand the concepts of descriptive, predictive, and prescriptive analytics.
- Describe popular data analysis software tools and their applicability, strengths and weaknesses.
- Be knowledgeable about up-to-date procedures, techniques, and standards to an ongoing data analytics projects.
- Understand the concept of Big Data and its characteristics.
- Understand issues related to the management of enterprise data analytics, such as privacy, and security concerns.

REQUIRED COURSE MATERIALS AND READINGS

From Titles bookstore:	
<ul style="list-style-type: none"> • Sharda, Delen & Turban, “<i>Business Intelligence, Analytics, and Data Science: A Managerial Perspective, 4/e</i>” Pearson Canada, 2018 	\$139.25

EVALUATION

Learning in this course results primarily from assigned readings, class lectures, group works, assignments, and tests. For group work, all team members share the same grade

Components and Weights

The components of the course grade will be calculated as follows:

Component	%
Assignment #1	15%
Assignment #2	15%
Midterm Exam	20%
Final Exam	25%
Group presentation	10%
Class participation	15%
	100%

Grade Conversion

At the end of the course your overall percentage grade will be converted to your letter grade in accordance with the following conversion scheme.

... please note that the Commerce grade conversion is ...

LETTER GRADE	PERCENT	LETTER GRADE	PERCENT
A+	90 - 100	C+	67 - 69
A	85 - 89	C	63 - 66
A-	80 - 84	C-	60 - 62
B+	77 - 79	D+	57 - 59
B	73 - 76	D	53 - 56
B-	70 - 72	D-	50 - 52
		F	00 - 49

COMMUNICATION AND FEEDBACK

Students who are uncomfortable in directly approaching an instructor regarding a course concern may send a confidential email to the respective Area Chair (detlorb@mcmaster.ca) or the Associate Dean (adbusac@mcmaster.ca).

Students who wish to correspond with instructors or TAs directly via email must send messages that originate from their official McMaster University email account. This protects the confidentiality and sensitivity of information as well as confirms the identity of the student. Emails regarding course issues should NOT be sent to the Area Administrative Assistants.

Instructors are required to provide evaluation feedback for at least 10% of the final grade to students prior to Week #8 in the term.

Instructors may conduct an informal course review with students by Week #4 to allow time for modifications in curriculum delivery.

Students who wish to have a course component re-evaluated must complete the following form:

http://www.mcmaster.ca/policy/Students-AcademicStudies/Form_A.pdf

In order for the component to be re-read:

- the component must be worth 10% or more of the final grade in the course
- students pay a fee of \$50 in Gilmour Hall #209 (receipt is then brought to APO)
- the Area Chair will seek out an independent adjudicator to re-grade the component

- an adjustment to the grade for the component will be made if a grade change of three points or greater on the 12 point scale (equivalent to 10 marks out of 100) has been suggested by the adjudicator as assigned by the Area Chair
- if a grade change is made, the student fee will be refunded

Tests

There will be two written tests: (1) a midterm exam, and (2) a final exam. Both exams cover concepts from BOTH lectures and the assigned readings and they both are closed-book exams.

Assignments

Two assignments have been devised to help you better understand the related concepts given in the lectures and/or textbook. Details of each assignment will be described in class.

All answers to assignments must be uploaded to Avenue account, as per instruction provided on the assignments.

Assignments will be accepted after the due date but **a late penalty will apply where 20% will be deducted off the assignment for each day late**. It is each student's responsibility to submit the assignment in advance of the deadline. Note that work-in-progress can be uploaded to AVENUE – the last version uploaded only will be marked.

Group Presentation

Teams of 5-6 students will prepare a group presentation. For the presentation, students have two options: The first option is that a group can select a dataset from JMP sample data library (JMP → Help → Sample Data Library), use that dataset to find interesting results and present them in the class. The second option is that a group can select one of the topics suggested by the instructor and present it in the class. Suggested topics will be posted on Avenue.

Presentations should take no more than 10 minutes in addition to 5 minutes allowed for questions and answers. Students are expected to make effective use of material discussed in class as well as other resources available from the Web or specialized relevant references. The mark of the team presentation will be based on how professional and comprehensive the presentation is, and how well the Q&A period was handled by the team. PowerPoint presentations are expected. The evaluation form used in assessing group presentations is available on the course Website.

Group presentation slides must be handed in electronically through the course website before the beginning of class on the day of the group presentations¹.

In order to achieve the full benefits expected from working in a team and to be fair to fellow team members, all members are expected to contribute equally to team work. One negative aspect of

¹ Please note that your group presentation slides may be used as a sample for students in future deliveries of this course (after removing any identifying information of the authors). If you object to this, simply let me know and I will make sure it is not shared.

working in teams is that conflict may arise among team members. Such conflict could negatively impact the progress of the team towards achieving its objectives. Hence, every effort should be made, by all team members to be reasonable and to avoid conflicts. Any team issues should be brought to the attention of the instructor as early as possible.

In-Class Participation

Students are encouraged to engage actively in class discussions related to the material being presented by the instructor. The instructor and the TA will feel free to cold-call on anyone at any time. Hence, it is very important that you prepare for each class. Debate and challenge are important activities that help in the learning process and the willingness of students to engage in such activities with their classmates is appreciated. Opportunities for in-class participation include:

- Taking part in discussions during the lecture part of class by:
 - Engaging in class exercises
 - Asking questions
 - Responding to questions posed by the instructor or other students
 - Making relevant comments on material covered

Name cards and class pictures are used to help give credit for your participation. You must have a name card with your **full first and last name** clearly written and displayed in front of you for every class. If you are absent from any class for a legitimate reason, you should indicate that to the instructor through e-mail so that you are not penalized for lack of participation during that class. Participation marks will be based on both the quantity and quality of your in-class contributions. **Mere attendance in class without participation does not earn you any participation marks. The instructor will strive to give all students equal contribution chances but you have to show interest in participating by raising your hand.**

ACADEMIC DISHONESTY

It is the student's responsibility to understand what constitutes academic dishonesty. Please refer to the University Senate Academic Integrity Policy at the following URL:

<http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf>

This policy describes the responsibilities, procedures, and guidelines for students and faculty should a case of academic dishonesty arise. Academic dishonesty is defined as to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. Please refer to the policy for a list of examples. The policy also provides faculty with procedures to follow in cases of academic dishonesty as well as general guidelines for penalties. For further information related to the policy, please refer to the Office of Academic Integrity at:

<http://www.mcmaster.ca/academicintegrity>

REQUESTING RELIEF FOR MISSED ACADEMIC WORK

Students may request relief from a regularly scheduled midterm, test, assignment or other course components. Please refer to the policy and procedure on the DeGroot website at the link below;

<http://ug.degroote.mcmaster.ca/forms-and-resources/missed-course-work-policy/>

STUDENT ACCESSIBILITY SERVICES

Students who require academic accommodation must contact Student Accessibility Services (SAS) to make arrangements with a Program Coordinator. Academic accommodations must be arranged for each term of study. Student Accessibility Services can be contacted by phone 905-525-9140 ext. 28652 or e-mail sas@mcmaster.ca. For further information, consult McMaster University's Policy for Academic Accommodation of Students with Disabilities:

<http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicAccommodation-StudentsWithDisabilities.pdf>

ACADEMIC ACCOMMODATION FOR RELIGIOUS, INDIGENOUS OR SPIRITUAL OBSERVANCES (RISO)

Students requiring academic accommodation based on religious, indigenous or spiritual observances should follow the procedures set out in the RISO policy. Students requiring a RISO accommodation should submit their request, including the dates/times needing to be accommodated and the courses which will be impacted, to their Faculty Office normally within 10 days of the beginning of term or to the Registrar's Office prior to their examinations. Students should also contact their instructors as soon as possible to make alternative arrangements for classes, assignments, and tests.

POTENTIAL MODIFICATIONS TO THE COURSE

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

PLACES TO GET HELP WITH YOUR WORK

- For help with course content, your instructor is the best source for help. Feel free to ask these professor for explanation of any topic covered in the course. Be sure to read the assigned materials before contacting the course instructor. The best way to interact with your instructor is face-to-face, but she also welcome e-mail and voice mail.
- For help with assignments, it is best to first talk to the Teaching Assistant for the course (contact information can be found above).

TENTATIVE COURSE SCHEDULE

**Management of Enterprise Data Analytics
Winter 2019 Course Schedule**

Week	Date	Topic covered	Readings/Assignments
1	Jan. 8	Introduction to the course Introduction to class members Class photos & group formation An Overview of Business Intelligence, Analytics, and Data Science	Ch. 1
2	Jan. 15	Descriptive Analytics I	Ch. 1 & 2
3	Jan. 22	Descriptive Analytics II	Ch. 2 & 3
4	Jan. 29	Predictive Analytics I	Ch. 3 & 4
5	Feb. 5	JMP tutorial: descriptive and predictive analyses JMP assignment overview	Ch. 4 Assignment #1 released
6	Feb. 12	Predictive Analytics II	Ch. 5 Chapter Review for Midterm Deadline for uploading Assignment #1: Feb 15 at 2:00 PM (14:00).
Feb. 19-22 NO CLASSES – MIDTERM RECESS			
7	Feb. 26	Midterm exam	
8	March 5	Prescriptive Analytics: Optimization and Simulation	Ch. 5 & 6
9	March 12	Excel tutorial: Prescriptive analysis Excel assignment overview	Ch. 6 Assignment #2 released
10	March 19	Big Data Concepts and Tools	Ch. 7
11	March 26	Future Trends, Privacy and Managerial Considerations in Analytics	Ch. 8 Deadline for uploading Assignment #2: March 26 at 2:00 PM (14:00). Chapter Review for Final exam
12	April 2	Group Presentations	