Commerce 3KE3
Management of Enterprise Data Analytics
Fall 2023 Tentative Course Outline

Information Systems Area
DeGroote School of Business
McMaster University

INSTRUCTOR AND CONTACT INFORMATION

Mehmet Akgul	
Instructor	Teaching Assistant - TBA
akgulm@mcmaster.ca	
Office: GSB	
Office Hours: by appointment	

Course website: All communication will be through course Avenue

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COURSE ELEMENTS

Credit Value:	3	Leadership:	Yes	IT skills:	Yes	Global view:	Yes
A2L:	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

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COURSE INFORMATION

Class Meeting Time and Location		
Section	**Day/time** *(Eastern Time)*	Location
1 - C01	Tuesday (04:30am-06:20pm)	
2 - C02	Tuesday (12:30pm-02:20pm)	
All communication will be through course Avenue		

Students corresponding 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.

IMPORTANT LINKS

- Mosaic
- Avenue to Learn
- Student Accessibility Services - Accommodations
- McMaster University Library

COURSE LEARNING OUTCOMES

Upon completion of this course, students will be able to:

- Understand the concepts of descriptive, predictive, and prescriptive analytics.
- Discuss data analytics software tools, their applicability, and how enterprises use them.
- Discuss up-to-date procedures, techniques, and standards for 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.

COURSE LEARNING GOALS

Data Analytics allows enterprises 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, hands-on-activities, case studies, and readings. The course encompasses managerial, technical, and statistical perspectives, showing how each area is dependent on the other to make enterprise analytics work.

REQUIRED MATERIALS AND TEXTS

These items are an integral part of the lesson plan for the course, and not having these materials could have a negative impact on a student's learning outcomes for the course.

Required: Sharda, Delen & Turban, "Business Intelligence, Analytics, and Data Science: A Managerial Perspective, 4/e" Pearson Education Canada, 2018

Textbook Listing: https://textbooks.mcmaster.ca

CLASS FORMAT

This is an in-person 2-hour and 1-hour asynchronous work course. The two hours will consist of mini-lecture, lengthier discussion, and more in-depth discussion of the topics related to the lecture. There will be a short break part way through at a convenient time based on what we are working on. Please use this time to take care of personal needs of various kinds.

COURSE EVALUATION

Learning in this course results primarily from assigned readings, class lectures and discussions, assignments, tests, and term projects. Missed assignments/exams will receive a grade of zero unless the student has submitted and been approved for a Notification of Absence or MSAF.

Assignments

The assignments are designed for students to gain hands-on experience in data analytics techniques. These assignments should be done individually.

Four assignments have been devised to help you better understand the related concepts given in the lectures and/or textbook. The objective of the first assignment is to provide students with some hands-on experience with Tableau which is one of the most popular tools for visualization. The objective of the second assignment is to provide students with some hands-on experience with JMP and how it is used to for data mining. The objective of the third assignment is to practice the use of RStudio for Optimization, sensitivity analysis and simulation and how this support decision-making in organizations. The objective of the fourth assignment is to provide students with some hands-on experience with Excel Pivot Table, Macro, and VBA which help students manage a large volume of data. Details of each assignment will be described in class.

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

Assignments will be accepted after the due date, but a **late penalty will apply where 20% will be deducted from 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.

Exams

There will be two written exams: (1) a midterm exam and (2) a final exam. Both exams cover concepts from BOTH lectures and book chapters, and they both are closed-book exams. **The midterm exam covers materials in the first half of the course and the final exam covers all the materials in the course.** More details about the midterm exam will be given prior to the date of the exam.

NOTE: Alternate (make up) exam dates

For students who apply to miss a midterm, the Student Experience (SE) Office will schedule the alternate write dates. These dates are only for students who submit an email request to SE office (buscom@mcmaster.ca) 10 business days prior to the midterm date for the following reasons:

- Religious observance (RISO)
- Varsity sports requirements
- Midterm conflicts
- Known absence (e.g., scheduled medical procedure)

Term Project

Students are required to do a project including a group presentation about a topic that should be selected from the list at the end of this outline in week 2. For this group work, all team members share the same grade.

Participation

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 is appreciated. Hence, students are encouraged to well-prepared before each class and engage actively for in class discussions. There are two types of class participation including synchronous (in-person) and asynchronous.

Synchronous (10%)

In-class participation marks are based on the *quality* as well as the quantity of participation (with a greater emphasis on quality). Marks are NOT awarded for attendance only. Contributions are evaluated based on a three-point scale: 1) physically but not actively engaged; 2) some contribution; and 3) good contribution.

Debate and challenge are important activities that help in the learning process, and the willingness of individuals to engage in such activities with their classmates is critical.

Name cards and class pictures are used to help give credit for your participation. You must have a name card, or log in, with your full first and last name clearly written and displayed for every class.

Since student participation is an important component of this course, official McMaster student ID photographs will be used to ensure that each student is assessed accurately. The instructor will use the photograph to ensure the accuracy of participation marks, group work, and for identifying students for grading purposes

Opportunities for participation include:

Asking questions; responding to questions posed by the instructor or other students; making relevant comments; and reflecting on the discussion that has occurred. Just raise your hand and wait for the instructor to acknowledge you before speaking. The instructor will strive to give all students equal contribution chances, but you have to show interest in participating by raising your hand.

When there is a group project presentation, half of the synchronous participation (5%) will be from the project presentation peer evaluation.

Asynchronous (5%)

Submitting answers for two questions posted on the Avenue for each week.

Components and Weights

Grade Component	Description	%
Midterm Exam	Covers material from BOTH lectures and textbook chapters **1,2,3, and 4 only**. This is a closed book exam and will be comprised of multiple-choice & true/false questions. The date/time of the midterm will be scheduled for week 8 (after midterm recess). Check Avenue closer to this week for more information about the exam.	15%
Final Exam	Final exam will be **cumulative**. The exam covers materials from BOTH all lectures and all chapters of the textbook (**1,2,3,4,5,6,7, and 8)**. This is a closed book exam and will be comprised of multiple-choice & true/false questions. The date/time of the final exam will be made known once the master final exam schedule is finalized by the University.	30%
Term Project	Term Project Presentation	10%

Hands-on Assignment 1	"**Tableau**: Descriptive Analytics" Assignment. This is an individual assignment. More details will be made available on AVENUE once the assignment is released.	7.5%
Hands-on Assignment 2	"**JMP**: Descriptive & Predictive Analytics" Assignment. This is an individual assignment. More details will be made available on AVENUE once the assignment is released.	7.5%
Hands-on Assignment 3	"**RStudio**: Prescriptive Analytics" Assignment. This is an individual assignment. More details will be made available on AVENUE once the assignment is released.	7.5%
Hands-on Assignment 4	"**Excel**: PivotTable, Macro, & VBA" Assignment. This is an individual assignment. More details will be made available on AVENUE once the assignment is released.	7.5%
Synchronous Participation	Students are encouraged to actively engage in class discussions and should also submit presentation peer-evaluation forms when there is a term project presentation.	10%
Asynchronous Participation	After each session, students should answer two questions posted on Avenue.	5%
Total		100%

LATE ASSIGNMENTS

All assignments must be handed in electronically through the course website by the deadline date and time specified for each component. **The penalty for overdue assignments is 20% of the total assignment mark per day.**

COMMUNICATION AND FEEDBACK

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. All students must receive feedback regarding their progress prior to the final date by which a student may cancel the course without failure by default.

- *For Level 1 and Level 2 courses, this feedback must equal a minimum of 20% of the final grade.*
- *For Level 3 courses and above, this feedback must equal a minimum of 10% of the final grade.*

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

REQUESTING RELIEF FOR MISSED ACADEMIC WORK

In the event of an absence for medical or other reasons, students should review and follow the Academic Regulation in the Undergraduate Calendar "Requests for Relief for Missed Academic Term Work" and the link below;

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

COURSE MODIFICATION

From time to time there may be a need to remove/add topics or to change the schedule or the delivery format. If these are necessary, you will be given as much advance notice as possible.

GENERATIVE AI

Students are not permitted to use generative AI in this course. In alignment with McMaster academic integrity policy, it "shall be an offence knowingly to … submit academic work for assessment that was purchased or acquired from another source". This includes work created by generative AI tools. Also state in the policy is the following, "Contract Cheating is the act of "outsourcing of student work to third parties" (Lancaster & Clarke, 2016, p. 639) with or without payment." Using Generative AI tools is a form of contract cheating. Charges of academic dishonesty will be brought forward to the Office of Academic Integrity.

ACADEMIC INTEGRITY

You are expected to exhibit honesty and use ethical behaviour in all aspects of the learning process. Academic credentials you earn are rooted in principles of honesty and academic integrity. **It is your responsibility to understand what constitutes academic dishonesty.**

Academic dishonesty is to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. This behaviour can result in serious consequences, e.g. the grade of zero on an assignment, loss of credit with a notation on the transcript (notation reads: "Grade of F assigned for academic dishonesty"), and/or suspension or expulsion from the university. For information on the various types of academic dishonesty please refer to the Academic Integrity Policy.

The following illustrates only three forms of academic dishonesty:

- plagiarism, e.g. the submission of work that is not one's own or for which other credit has been obtained.
- improper collaboration in group work.
- copying or using unauthorized aids in tests and examinations.

AUTHENTICITY/PLAGIARISM DETECTION

Some courses may use a web-based service (Turnitin.com) to reveal authenticity and ownership of student submitted work. For courses using such software, students will be expected to submit their work electronically either directly to Turnitin.com or via an online learning platform (e.g. Avenue to Learn, etc.) using plagiarism detection (a service supported by Turnitin.com) so it can be checked for academic dishonesty.

Students who do not wish their work to be submitted through the plagiarism detection software must inform the Instructor before the assignment is due. No penalty will be assigned to a student who does not submit work to the plagiarism detection software. **All submitted work is subject to normal verification that standards of academic integrity have been upheld** (e.g., on-line search, other software, etc.). For more details about McMaster's use of Turnitin.com please go to www.mcmaster.ca/academicintegrity.

COURSES WITH AN ON-LINE ELEMENT

Some courses may use on-line elements (e.g. e-mail, Avenue to Learn, LearnLink, web pages, capa, Moodle, ThinkingCap, etc.). Students should be aware that, when they access the electronic components of a course using these elements, private information such as first and last names, user names for the McMaster e-mail accounts, and program affiliation may become apparent to all other students in the same course. The available information is dependent on the technology used. Continuation in a course that uses on-line elements will be deemed consent to this disclosure. If you have any questions or concerns about such disclosure please discuss this with the course instructor.

ONLINE PROCTORING

Some courses may use online proctoring software for tests and exams. This software may require students to turn on their video camera, present identification, monitor and record their computer activities, and/or lock/restrict their browser or other applications/software during tests or exams. This software may be required to be installed before the test/exam begins.

CONDUCT EXPECTATIONS

As a McMaster student, you have the right to experience, and the responsibility to demonstrate, respectful and dignified interactions within all of our living, learning and working communities. These expectations are described in the Code of Student Rights & Responsibilities (the "Code"). All students share the responsibility of maintaining a positive environment for the academic and personal growth of all McMaster community members, **whether in person or online.**

It is essential that students be mindful of their interactions online, as the Code remains in effect in virtual learning environments. The Code applies to any interactions that adversely affect, disrupt, or interfere with reasonable participation in University activities. Student disruptions or behaviours that interfere with university functions on online platforms (e.g. use of Avenue 2 Learn, WebEx or Zoom for delivery), will be taken very seriously and will be investigated. Outcomes may include restriction or removal of the involved students' access to these platforms.

Academic Accommodation of Students with Disabilities

Students with disabilities who require academic accommodation must contact Student Accessibility Services (SAS) at 905-525-9140 ext. 28652 or sas@mcmaster.ca to make arrangements with a Program Coordinator. For further information, consult McMaster University's Academic Accommodation of Students with Disabilities policy.

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 should submit their request to their Faculty Office ***normally within 10 working days*** of the beginning of term in which they anticipate a need for accommodation 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.

Copyright and Recording

Students are advised that lectures, demonstrations, performances, and any other course material provided by an instructor include copyright protected works. The Copyright Act and copyright law protect every original literary, dramatic, musical and artistic work, **including lectures** by University instructors.

The recording of lectures, tutorials, or other methods of instruction may occur during a course. Recording may be done by either the instructor for the purpose of authorized distribution, or by a student for the purpose of personal study. Students should be aware that their voice and/or image may be recorded by others during the class. Please speak with the instructor if this is a concern for you.

Extreme Circumstances

The University reserves the right to change the dates and deadlines for any or all courses in extreme circumstances (e.g., severe weather, labour disruptions, etc.). Changes will be communicated through regular McMaster communication channels, such as McMaster Daily News, Avenue to Learn and/or McMaster email.

ACKNOWLEDGEMENT OF COURSE POLICIES

Your enrolment in Commerce 3KE3 will be considered to be an implicit acknowledgement of the course policies outlined above, or of any other that may be announced during lecture and/or on A2L. **It is your responsibility to read this course outline, to familiarize yourself with the course policies and to act accordingly.**

Lack of awareness of the course policies **cannot be invoked** at any point during this course for failure to meet them. It is your responsibility to ask for clarification on any policies that you do not understand.

COURSE SCHEDULE

Commerce 3KE3
Management of Enterprise Data Analytics
Fall 2023 Course Schedule

Week	Date	Lecture Topic	Assignment/ Term Project Presentation
1	Sep. 05	Course Overview An Overview of Business Intelligence, Analytics, and Data I	- Term Project Description
2	Sep. 12	An Overview of Business Intelligence, Analytics, and Data II	- Team up (6-7 students in each group)
3	Sep. 19	Descriptive Analytics I	**Assignment #1** **Release: Sep. 19 – 07:00 PM** **Due: Oct. 03 – 11:59 PM**
4	Sep. 26	Descriptive Analytics II	**Topic 1 Presentation**
5	Oct. 03	Predictive Analytics I	**Assignment #2** **Release: Oct. 03 – 07:00 PM** **Due: Oct. 17 – 11:59 PM** **Topic 2 Presentation**
6	**Oct. 9 to Oct. 13 NO CLASSES – MIDTERM RECESS**		
7	Oct. 17	Chapters Review for the mid-term exam: Chapters 1,2,3,4.	**Topic 3 Presentation**
8	**NO CLASS - MIDTERM EXAM** **Wednesday, October 25, 2022 6:15 PM-8:15 PM**		

9	Oct. 31	Predictive Analytics II	**Topic 4 Presentation**
10	Nov. 07	Prescriptive Analytics: Optimization and Simulation	**Assignment #3** **Release: Nov. 07 – 07:00 PM** **Due: Nov. 21 – 11:59 PM** **Topic 5 Presentation**
11	Nov. 14	Various Concepts in Data mining	**Topic 6 Presentation**
12	Nov. 21	Big Data Concepts and Tools	**Assignment #4** **Release: Nov. 21 – 07:00 PM** **Due: Dec. 05– 11:59 PM** **Topic 7 Presentation**
13	Nov. 28	Future Trends, Privacy and Managerial Considerations in Analytics.	**Guest Speaker**
14	Dec. 05	Chapters Review for the final exam.	**Topic 8 & 9 Presentations**

Term Project Presentation Groups - Topics	
Topic #	**Topic**
1	Data visualization business applications (Examples, Tools, etc.)
2	Programing languages in data analytics (R, Python, etc.)
3	NLP business applications (Examples, Tools, etc.)
4	Social media analytics (Examples, Tools, etc.)
5	Simulation business applications (Examples, Tools, etc.)
6	Location analytics applications (Examples, Tools, etc.)
7	The dark side of big data analytics
8	The top five myths of big data analytics
9	New trends and technologies in data analytics