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Business Data Mining
ADM3308

Fall 2020
(September 9 – December 9)

Professor	Bijan Raahemi
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Website	http://web5.uottawa.ca/www5/braahemi/index.htm
Class Location	MS Teams
Class Hours	Tuesdays 11:30 – 12:50 Fridays 13:00 – 14:20
Prerequisite(s)	ADM2303, ITI1120
Program of study	Compulsory course of MISA, BTM options; Elective course of other options.

Course Deliverable	Due Date	Weight on Final Grade
4 Assignments (team work)	Oct. 16, Nov. 03, Nov. 20, Dec. 08	20% (4 x 5%)
Research report on real-world applications of data mining (team work)	Oct. 02	10%
Data Mining project using IBM SPSS Modeler (team work)	Dec. 11	20%
Final Exam	The schedule will be announced by the University	50%

1. Course Description

Data Mining (DM) is the nontrivial process of extracting implicit, novel, and useful information from large volume of data. It has emerged as a unique combination of several fields of science and technology including statistics, database systems, computer programming, machine learning, and artificial intelligence. This course is designed to provide undergraduate students with an understanding of data mining techniques, both predictive and descriptive methods including classification, clustering and association rules, as well as their applications in business such as customer relationship management, marketing, credit scoring, and fraud detection. Practical considerations in data pre-processing and model building will be discussed. The students will also be introduced to Big data and Big data analytics.

Students will gain hands-on experiences with the IBM SPSS Modeler data mining package. Using this tool, the students will perform pre-processing on a selected data, build both predictive and descriptive models, evaluate the models, and interpret the results of their discovery of useful and actionable patterns in the assigned data.

Course Contribution to Program Learning Goals

This course contributes to the attainment of the B.Com Learning Goals (LG) as follows:

LG2 Demonstrate Critical Thinking and Decision Making Skills
This course emphasizes on problem solving using statistical and data mining techniques, analyzing data for decision making including credit ranking, prediction, customer segmentation, and anomaly/fraud detection. Students learn how to process and analyze the data in today's digital world, gain insight into the data, and make an informed decision for businesses and organizations (e.g. product promotion, target marketing towards the right groups of customers, customer ranking)

LG3 Demonstrate Leadership, Interpersonal and Communications Skills
Students will interact in a team environment. Assignments and projects are done in teams.

LG7 Provide Value to the Business Community in a chosen Area of Specialization
Business analytics and business intelligence are made possible through analysis of large data using data mining techniques such as classification, clustering and association rules. Today's businesses are much interested in using data analytics to gain insight to the customer behavior and market trends.

2. Course Learning Objectives

After completing the course, students will learn the following materials:

- Data mining techniques, including predictive (supervised), and descriptive (unsupervised) techniques
- Applications of data mining in customer relationship management, marketing, and sales

- Data mining methodology
- Data pre-processing including normalization and discretization, dealing with missing values, dealing with imbalanced data
- Classification techniques including decision tree, k-nearest neighbors (memory-based reasoning), neural networks, and Bayesian models.
- Clustering techniques including k-means clustering, agglomerative and hierarchal techniques
- Association Rules and Market basket Analysis
- Hands-on experiences with the IBM SPSS Modeler data mining package, practical considerations in understanding data, pre-processing data, and building models
- Introduction to Big data and Big data analytics

3. Textbook/Course Reading Materials

- "**Data Mining Techniques for marketing, sales, and customer relationship management**", Third Edition, by Gordon Linoff and Michael Berry, Publisher: John Wiley, 2011, ISBN 978-0-470-65093-6.

Recommended Materials

(a) Reading material and resources posted on the course website on BrightSpace®.

(b) Additional reference books

"Data Mining: Concepts and Techniques", 3rd Edition, by Jiawei Han, Micheline Kamber, and Jian Pei, Publisher: Morgan Kaufmann; 2011

"Introduction to Business Data Mining", by David Olson and Young Shi, McGraw-Hill Irwin, 2007.

"Data Mining, Introductory and Advanced Topics", by Margaret H. Dunham, Prentice Hall, 2003.

4. Distance Learning and Course Delivery Online

The course contains both synchronous and asynchronous modes of delivery as follows:

(a) Live Lecture Sessions: Lecture sessions will be held live via **MS Teams** during the hours scheduled for this class. During these live sessions, students will have the opportunity to interact with the professor, ask their questions, and share their comments and views with the class and the professor.

(b) Recorded Lecture Sessions: Subject to MS Teams technical capabilities, the plan is to record all the live sessions and post their links on Brightspace to allow students to watch the recorded sessions if they could not attend the live sessions.

Notes on Privacy: Access to the recorded sessions are restricted only to students who are enrolled in this class. Please note that whenever class sessions are recorded, your image, voice and name may be disclosed to your classmates. Note that by remaining in sessions that are being recorded, you are agreeing to be recorded.

You are entitled to the following options when the sessions are being recorded:

1- You can turn off your camera and microphone if you do not want your video or voice to be recorded.
2- You can request the professor to temporarily pause the recording if you want to share comments that you are not comfortable to be recorded.
3- You can use the "Chat" function to ask your questions or share your views with your class. Alternatively, you can communicate in private chat & email with the professor.

(c) Lecture Notes: Lecture PPTs will be posted on the course website on **Brightspace** on weekly basis. Refer to the course "Weekly Schedule" page on BrightSpace.

Additionally, frequently asked questions & answers (FAQs) will also be posted on the on BrightSpace.

(d) Consulting Hours: There will also be consulting hours via **MS Teams** arranged with students to answer questions related to lectures and course deliverables. Please email the professor to book an appointment. The professor will then confirm your appointment, and will send you a link to join the meeting on MS Teams. Students will need to have a webcam and audio/voice capabilities through their computers to join the meetings. MS Teams works on mobile/smart phones as well.

Technical Requirements

The course requires you have personal computer with a reliable, high-speed Internet connection that allows you to watch videos, participate in discussion forums, upload documents and images, and use your uOttawa Google Drive.

MS Teams is the video conferencing platform used for meeting with the professor. You will need to have a webcam and audio/voice capabilities through your computer. MS Teams works on mobile/smart phones as well.

Technical Supports

If you experience difficulties with logins to any uOttawa systems, consult the following resources and IT supports at the University. Please do not contact the instructor or the course TA until you have tried to solve the problem through the following resources:

For information about MS Teams, downloading the software, getting started, visit:
https://sites.telfer.uottawa.ca/itsupport/microsoft-teams-for-distance-education/#get-started-container/students

All student inquiries for assistance with MS Teams, including uoAccess Password resets, should be directed to the University of Ottawa's IT Helpdesk:

Phone: 613-562-5800 x6555
Online request: https://it.uottawa.ca/request

Note: Only your professor can add you to a Team Classroom. If you can log into MS Teams but are unable to see your class, please contact your professor.

To self-enrol your account for Multi-Factor Authentication (MFA) before you can proceed with remote access to University labs, visit:
https://it.uottawa.ca/security/mfa_opt

To access Telfer lab remotely (via VMware), visit:
https://it.uottawa.ca/students/remote_labs

For all questions related to Brightspace, call the support line between 8 AM and 8 PM (Eastern) at 1-866-811-3201 OR submit an online request using this form 24 hours a day (https://tlss.uottawa.ca/site/support-form)

For any other IT related issues, including uoAccess Password reset, please contact the University of Ottawa's IT Help Desk. They have a helpdesk that you can call, or you can submit a service ticket with a specific request 24 hours a day.

Phone: 613-562-5800 x6555
Online request: https://it.uottawa.ca/request

5. Expectations for Communications

1- Announcements regarding deadlines, exams, and marks will be posted on the course website on BrightSpace®. Visit the course website on BrightSpace® regularly.

2- Please ensure that you have set up your Brightspace account to receive notifications of announcements to your uOttawa.ca email address. Check your uOttawa email on a regular basis.

3- Frequently asked questions & answers (FAQs) will be posted on BrightSpace. Check the "Frequently Asked Questions (FAQs)" module on BrightSpace regularly. Your question might have already been answered there.

4- To meet with me via MS Teams, please email me to book an appointment. I will then confirm your appointment, and will send you a link to join the meeting on MS Teams.

5- You can also send your questions by email to raahemi@telfer.uottawa.ca. Use ONLY your **uOttawa.ca** email address for sending messages. Make sure to include the course code, ADM3308, in the subject line of your email. I frequently check my emails, and regularly reply within 24 hours.

6. Course Work and Methods of Evaluation

6.1. Team Building

Assignments, research reports, and projects will be done in **teams of 3 students**. Students are expected to form teams within **the first week** of the class, self-enroll their team on BrightSpace®, and exchange contact information with their team members.

Team building must be completed by **Sep. 18.** Students without a team by this deadline will be assigned to a team by the professor.

Team Work Contributions, Dispute Resolution, and Peer Evaluation

All team members are **equally** responsible for the deliverables, and will receive the **same mark** for their team works **unless** objected by one of the team members. If you have any concerns or objection regarding your team (e.g. communications within team members, meetings arrangements, workload distribution, etc.), you must notify the professor as early as possible. Do not wait until such time when your team is supposed to deliver the assignments (that might be too late!). If I do not hear concerning comments from you, I safely assume that everything is fine and running smoothly within your team.

If one of the team members raises a concern regarding team work and workload sharing among the team, the professor will conduct a confidential peer review to make a decision on the contributions of each team member for the submitted assignment in dispute (if any). When peer-evaluation is in process for the submitted assignment in dispute (if any), each team member will receive different marks proportional to their contributions as indicated by peer-evaluation (See Appendix-A for the process of peer-evaluation and the form). One week after the first peer-evaluation, the professor will conduct a second confidential peer-evaluation. If the second peer-evaluation still indicates an on-going problem within the team, the professor will dismantle the team. In such case, the members of the dismantled team have two options: (a) submit all upcoming deliverables (assignments, project, etc.) individually on their own; or (b) form a smaller group among the remaining members of the dismantled team.

6.2. Assignments **(team work) (20%)**

There will be 4 assignments throughout the semester posted on the course website on BrightSpace®. The assignments help you to review the concepts and practice the methods you learn in the course. Details on the format and requirements will be communicated with the class in time.

The Assignments must be submitted electronically **by 10 AM** on **the due dates** on BrightSpace®. Click on the link "Submit Assignments" in the menu on the left side of the course website on BrightSpace® and follow the instructions to submit your assignments. Only one submission is required per team (i.e. please decide who will submit the assignment within your team). ALL members of the team must sign the Academic Integrity Statement, and attach it to the submission. A submission without the Academic Integrity Statement signed by ALL members of the team will receive a mark of Zero.

Late Submissions: Since the solutions to the assignments will be discussed in the live session on the same day that the assignment is due, late submissions **cannot be accepted** (neither can they be compensated by alternate means of course work). That is, a late submission is considered as No submission.

6.2. Research Report (Real-World Applications of Data Mining) **(team work) (10%)**

You will be asked to do a research on the internet for a real-world application of data mining in one of the suggested areas, then submit a report that explains your selected real-world application, the data analytics solutions applied in that specific case, and the results achieved. Details of the research assignment will be communicated with the class in time.

The report must be submitted electronically on BrightSpace® on its due date. Click on the link "Submit Assignments" in the menu on the left side of the course website on BrightSpace® and follow the instructions to submit your assignments. Only one submission is required per team (i.e. please decide who will submit the assignment within your team). ALL members of the team must sign the Academic Integrity Statement, and attach it to the submission. A submission without the Academic Integrity Statement signed by ALL members of the team will receive a mark of Zero.

6.3. Data Mining Project with the IBM SPS Modeler **(team work) (20%)**

The IBM SPSS Modeler is a commercial data mining package offered by the IBM capable of performing data mining tasks including predictive and descriptive models with user-friendly interfaces.

You will have remote access to the IBM Modeler in the lab. To access the application remotely, you need to activate MFA (Multi-Factor Authentication) on your account, and use VMware to access the software. Please see the "Technical Supports" sub-section in Section 4 for the links on how to activate MFA and use VMware.

There will be both live and recorded tutorials presented to the class on using the IBM Modeler for data mining. Students are also required to consult on-line resources to further learn about IBM Modeler. More information on the product is available at
https://www.ibm.com/products/spss-modeler?mhsrc=ibmsearch_a&mhq=Modeler

Each team must select one of the datasets listed in the project description (or from other recommended repositories with the approval of the professor), and announce it on the "Discussion Board" on the Forum named "Announcing Dataset Selection". Post your name, your tem-member's name, and the dataset selected. If a dataset is already taken by one of the teams, as posted on the Forum, that dataset cannot be selected by other teams.

You are required to import the data into the IBM SPSS Modeler, transform the data (if it is in a different format), perform pre-processing tasks if necessary, and analyze the data by applying two or more modeling techniques (classification, clustering, and association rules).

Each team will submit a report including:

- Explaining the data you selected for your project (attributes, instances, etc.)
- Explaining your pre-processing tasks if any (cleaning, transforming, normalizing, etc.)
- Explaining the data mining modeling techniques you performed on the data (at least two techniques)
- Demonstrating the graphs/tables of the results produced by the techniques
- Interpretation of the modeling results: useful patterns, predicted values, significance of the features, what actions you might suggest based on your findings
- Concluding remarks, your recommendations, actionable discoveries, and future trends/studies you would recommend

Project Report Submission and Evaluation

The project report is due **by 10 AM on December 11** on BrightSpace®. Click on the link "Submit Assignments" in the menu on the left side of the course website on BrightSpace® and follow the instructions to submit your assignments. Only one submission is required per team (i.e. please decide who will submit the assignment within your team). ALL members of the team must sign the Academic Integrity Statement, and attach it to the submission. A submission without the Academic Integrity Statement signed by ALL members of the team will receive a mark of Zero.

The IBM Modeler project report should include:

- Executive summary (or abstract) (10 points)
- Explanation of the data set, and the pre-processing tasks to prepare the data (10 points)
- Explanation of at least two data mining techniques you performed on the data. Also, explain why you considered the specific data mining tasks for your dataset (20 points)
- Relevant graphs/tables showing the results of the techniques you applied (20 points)
- Interpretation of the modeling results: useful patterns, predicted values, significance of the features, what actions you might suggest based on your findings (10 points)
- Conclusion: what you learned from your data, actionable discoveries, your recommendations, and future trends/studies you would recommend (10 points)

- Overall organization of the paper, its soundness and readability, and quality of the presentation (20 points)

In overall, your report should be 15 to 25 pages long (including graphs). Use 12 pt Times New Roman font, with 1.5 or double space between the lines. Keep a margin of 1" on all sides of the page.

6.4. Final Exam (50%)

The schedule of the final exam will be announced by the University. The final exam covers all material presented during the lectures, class discussions, lecture notes posted on the course website on BrightSpace®, assigned reading from the textbook, as well as materials distributed in class or posted on the course website.
The exam is open book, and will take about 3 hours. It will be done online on BrightSapce during the exam period scheduled by the University.

Important note on deferred exams:
The Student Services Center (SSC) is the only body authorized to review and approve the requests for the deferred final exam. Professors are not involved in the process of reviewing such requests. Students must contact the SSC within five (5) business days after the exam if they missed their final exam in order to officially submit their supporting documents (e.g. medical note, family emergency) to be reviewed by the SSC.

University regulations require all absences from exams due to illness to be supported by a medical certificate.
Absence for any other serious reason must be justified in writing, to the Student Services Centre (undergraduate@telfer.uottawa.ca) within five (5) business days following the date of the exam. **Please visit the following webpage to download the deferral request form and carefully read the directives**. The Telfer School reserves the right to accept or refuse the reason.

Religious absences: If a religious holiday or a religious event will force you to be absent during an evaluation, it is your responsibility to inform your professor as early as possible.

Note that as per the University policy it is not possible to submit extra course work in order to compensate for the final exam or to improve your grades.

7. Deadline to Review your Marks and Assessments

I will communicate with you your marks for assignments and projects. If you believe that errors were made in assessment or marking of your deliverables, please provide me with the original evaluation along with a short explanation of your concerns. The deadline for requesting a re-assessment of your deliverables is **five (5) business days** after the date on which your assessment was made available to you or your group.

8. Note on Academic Assessment

Please note that, you will not have more than 20% of your final course mark evaluated by the deadline for withdrawal without academic penalty (**November 20th**). As such, if you have

concerns about your successful progress in the course, please do consult with me before the drop deadline of November 20th.

9. Course Weekly Schedule

Note: This is a **tentative** weekly schedule. The schedule is subject to change and adjustment according to the class progress and as it may be necessary. An up-to-date schedule will be posted on the course web site on BrightSpace® on a weekly basis.

Date	Topic	Reading	Due Dates, Important Notes
Sep. 11	- Course Outline - Introduction	Course Syllabus	
Sep. 15	Data Mining Techniques and Applications	Ch. 1	
Sep. 18	DM Business Applications	Ch. 2	**Team building finalized.** Research assignment is posted.
Sep. 22	- DM Business Applications (cont'd) - Data Preparation - Explaining research assignment (real-world applications of DM)	Ch. 2	
Sep. 25	- Classification using Decision Tree	Ch. 7	
Sep. 29	- Decision Tree (cont'd)	Ch. 7	Assignment-1 is posted.
Oct. 2	- Data Mining Process Model	Ch. 3	**Research report is due at 10 AM today.** Submit on BrightSpace®.
Oct. 6	**IBM SPSS Modeler Tutorial-1 (Decision Tree).** Students connect to the lab remotely (using MFA and VMware).		For this session, Students need to connect to the lab remotely (using MFA and VMware)
Oct. 9	Classification using Neural Networks	Ch. 8	
Oct. 13	Classification using Neural Networks (cont'd)	Ch. 8	Assignment-2 is posted.

Oct. 16	Solutions to Assignment-1		**Assignment-1 is due at 10 AM today.** Submit on BrightSpace®.
Oct. 20	- Distance-based Classification (K Nearest Neighbor) - Memory Based Reasoning	Ch. 9	
Oct. 23	**IBM SPSS Modeler Tutorial-2 (Neural Networks).** Students connect to the lab remotely (using MFA and VMware).		**Selection of the dataset** for the IBM Modeler project **is due today**. For this session, Students need to connect to the lab remotely (using MFA and VMware).
Oct. 27, 30	**Reading Week**		
Nov. 3	Solutions to Assignment-2		**Assignment-2 is due at 10 AM today.** Submit on BrightSpace®.
Nov. 6	Clustering (k-means)	Ch. 13	
Nov. 10	Clustering (hierarchical)	Ch. 14	Assignment-3 is posted.
Nov. 13	- Practical considerations in data pre-processing and data mining, and Discussion of projects - Presentations on Applications of DM		
Nov. 17	**IBM SPSS Modeler Tutorial-3 (Clustering).** Students connect to the lab remotely (using MFA and VMware).		For this session, Students need to connect to the lab remotely (using MFA and VMware).
Nov. 20	Solutions to Assignment-3		**Assignment-3 is due at 10 AM today.** Submit on BrightSpace®.
Nov. 24	Association Rules and Market Basket Analysis	Ch. 15	
Nov. 27	Data Warehouse, OLAP and Sandbox Analytics	Ch. 17	**Course Evaluation today:** Your opinions matter! Lets get online to evaluate the course. Assignment-4 is posted.

Dec. 1	Big Data Analytics		
Dec. 4	**IBM SPSS Modeler Tutorial-4. Discussions of projects.** Students connect to the lab remotely (using MFA and VMware).		For this session, Students need to connect to the lab remotely (using MFA and VMware).
Dec. 8	- Solutions to Assignment-4 - Final Exam preparation		**Assignment-4 is due at 10 AM today.** Submit on BrightSpace®. **IBM SPSS Modeler project report is due at 10 AM on Dec. 11.** Submit on BrightSpace®.

10. Copyright Notice:

The educational materials developed for this course, including, but not limited to, lecture notes and slides, handout materials, examinations and assignments, and any developed materials posted to Brightspace®, are the intellectual property of the professor. These materials have been developed for student use only and are not intended for wider dissemination and/or communication outside of the given course. Participation in this course constitutes an agreement by all parties to abide by the relevant University Policies, and to respect the intellectual property of others during and after their association with the University of Ottawa. Students redistributing or providing unauthorized audio, video, photographic or textual material of lecture content violates the professor's intellectual property rights, and the Canadian Copyright Act.

Copying, scanning, photographing, posting, or sharing by any means is a violation of copyright and will be subject to appropriate penalty as prescribed by University of Ottawa regulation.

Academic Integrity

Academic Regulation 14 defines academic fraud as "*any act by a student that may result in a distorted academic evaluation for that student or another student. Academic fraud includes but is not limited to activities such as:*

a) Plagiarism or cheating in any way;
b) Submitting work not partially or fully the student's own, excluding properly cited quotations and references. Such work includes assignments, essays, tests, exams, research reports and theses, regardless of whether the work is written, oral or another form;
c) Presenting research data that are forged, falsified or fabricated;

d) Attributing a statement of fact or reference to a fabricated source;
e) Submitting the same work or a large part of the same piece of work in more than one course, or a thesis or any other piece of work submitted elsewhere without the prior approval of the appropriate professors or academic units;
f) Falsifying or misrepresenting an academic evaluation, using a forged or altered supporting document or facilitating the use of such a document;
g) *Taking any action aimed at falsifying an academic evaluation.*"[1]

The Telfer School of Management does not tolerate academic fraud. Please familiarize yourself with the guidance provided at: http://web5.uottawa.ca/mcs-smc/academicintegrity/home.php

The Telfer School of Management asks that students sign and submit with their deliverables the Personal Ethics Agreement form. Two versions of this form exist: one for individual assignments, and one for group submissions. **Assignments will not be accepted or marked if this form is not submitted and signed by all authors of the work.** We hope that by making this personal commitment, all students will understand the importance the School places on maintaining the highest standards of academic integrity.

Prevention of Sexual Violence

The University of Ottawa is committed to a safe and healthy campus for work, for study and for campus community life for all members of the University community. The University, as well as various employee and student groups, offer a variety of services and resources to ensure that all uOttawa community members have access to confidential support and information, and to procedures for reporting an incident or filing a complaint. For more information, please visit uOttawa Sexual violence: support and prevention.

STUDENT SUPPORT SERVICES

Academic Accommodations for Students who Need Adaptive Measures

Students who have a disability or functional limitation and who need adaptive measures (changes to the physical setting, arrangements for exams, learning strategies, etc.) to progress or participate fully in university life should contact Academic Accommodations Service as early as possible:

- By visiting our office on the third floor of the Desmarais Building, Room 3172
- By filling out the online registration form
- By calling us phone at 613-562-5976

The University is committed to providing students with disabilities academic accommodation to allow them an equitable opportunity to fully access and participate in the learning environment with dignity, autonomy and without impediment while preserving academic freedom, academic integrity, and academic standards.

The **Academic Accommodations service** works collaboratively with our university community and stakeholders to facilitate the academic accommodation process. To consult the policy, visit the Academic Regulation I-16 - Academic Accommodations.

The academic accommodation process is a collaborative process and a shared responsibility among all parties involved. Our role in the academic accommodation process is to assess, establish, and implement appropriate academic accommodations for students who have a temporary or permanent disability.

Students who need academic accommodations are encouraged to contact us as soon as possible.

Writing Resources

You will be judged on your writing abilities on all written deliverables. It is recommended to take the appropriate measures to avoid mistakes such as spelling, syntax, punctuation, inappropriate use of terms, etc.
When working on any of your written assignments, please keep in mind that all written submissions are expected to be grammatically sound (see Writing Quality expectations under Appendix 3: U Ottawa Course Policies) and make appropriate use of research where applicable on how to avoid Academic Fraud. Regarding writing quality, see the information on University of Ottawa Writing/Learning resources below for further assistance:

- The Academic Writing Help Centre, University of Ottawa.
- *The Elements of Style* (Strunk & White). Also available at the library.
- APA style. (Also see the Quick APA guide posted on our Brightspace page)

Other U Ottawa Services that you might find useful

- Career Services:
  - Telfer Career Centre
  - U Ottawa Career Services
- Counselling Service

Personal Ethics Statement Concerning Telfer School Assignments

Group Assignment:

By signing this Statement, I am attesting to the fact that I have reviewed not only my own work, but the work of my colleagues, in its entirety.

I attest to the fact that my own work in this project meets all of the rules of quotation and referencing in use at the Telfer School of Management at the University of Ottawa, as well as adheres to the fraud policies as outlined in the Academic Regulations in the University's Undergraduate Studies Calendar. Academic Fraud Webpage

To the best of my knowledge, I also believe that each of my group colleagues has also met the rules of quotation and referencing aforementioned in this Statement.

I understand that if my group assignment is submitted without a signed copy of this Personal Ethics Statement from each group member, it will be interpreted by the Telfer School that the missing student(s) signature is confirmation of non-participation of the aforementioned student(s) in the required work.

_____	_____
Signature	Date
_____	_____
Last Name (print), First Name (print)	Student Number
_____	_____
Signature	Date
_____	_____
Last Name (print), First Name (print)	Student Number
_____	_____
Signature	Date
_____	_____
Last Name (print), First Name (print)	Student Number
_____	_____
Signature	Date
_____	_____
Last Name (print), First Name (print)	Student Number
_____	_____
Signature	Date
_____	_____
Last Name (print), First Name (print)	Student Number

Personal Ethics Statement

Individual Assignment:

By signing this Statement, I am attesting to the fact that I have reviewed the entirety of my attached work and that I have applied all the appropriate rules of quotation and referencing in use at the Telfer School of Management at the University of Ottawa, as well as adhered to the fraud policies outlined in the Academic Regulations in the University's Undergraduate Studies Calendar. Academic Fraud Webpage

_____	_____
Signature	Date
_____	_____
Last Name (print), First Name (print)	Student Number

Appendix-A
Peer-Evaluation Process and Form

ADM3308 (Business Data Mining)
Fall 2020

How am I notified to submit a peer-evaluation form?

You will receive the following email in your **@uottawa.ca email account**. The professor reasonably assumes that all students normally check their university emails on a daily basis.

Date: --,--,2020
Hello,
I have received a notice of concern about team work, workload sharing and contributions within your team. **As such, ALL members of the team must submit the attached peer-evaluation form to evaluate the contributions of his/her team members within TWO days of the date of this email.**

Submission of this peer evaluation is mandatory. Failure to submit your peer evaluation results in a mark of zero for all your upcoming team works.

As stated in the course syllabus:

> "All team members are equally responsible for the deliverables, and will receive the same mark for their team works **unless** objected by one of the team members.
> …
> If one of the team members raises a concern regarding team work and workload sharing among the team, the professor will conduct a confidential peer review to make a decision on the contributions of each team member for the submitted assignment in dispute (if any)…. One week after the first peer-evaluation, the professor will conduct a second confidential peer-evaluation. If the second peer-evaluation still indicates an on-going problem within the team, the professor will dismantle the team. In such case, the members of the dismantled team have two options: (a) submit all upcoming deliverables (assignments, project, etc.) individually on their own; or (b) form a smaller group among the remaining members of the dismantled team."

The objective of this peer evaluation is to ensure that your concerns/comments regarding the contributions of your team members are heard. In a team in harmony, with workload fairly distributed among all team members, each member will receive an evaluation of 100% from his/her peers.

How does this affect my mark?

The mark assigned to the submitted assignment in dispute (if any) will be proportionally scaled down based on the individual's peer evaluation. In an ideal situation, your individual mark will be the same as your team mark. Otherwise, it is scaled down based on the peer evaluation. For example, if your team has 3 members and receive the mark *M* for the team work submitted, and you receive peer evaluation of *P1%*, and *P2%* from your team members, your individual mark for that deliverable will be *M*[(P1%+P2%)]/2.*

Some of the factors you can consider in evaluating your team members are:
- Presence and punctuality during group meetings
- Accepting fair share of the team workload and active participation
- Preparation (readings, documentation, research, and solutions)
- The team member exceeded/met/not met your expectations.
- Would you like to work with this team member again?

What will happen next?

One week after the first peer-evaluation, I will conduct a second confidential peer-evaluation. Having reviewed the second peer-evaluation, I will make a decision as follows:

> **(a)** If the second peer evaluation shows that the team members are evaluating each other higher than 90%, this is an indication that the team is working in harmony, then I will stop the peer-evaluation. That is, all team members will receive the same marks for the upcoming team-works they submit.
>
> **(b)** If the second peer evaluation indicates an ongoing problem within the team, I will dismantle the team. In such case, the members of the dismantled team have two options: (**I**) submit all upcoming deliverables (assignments, project, etc.) individually on their own; or (**II**) form a smaller group among the remaining members of the dismantled team.

Please see the peer-evaluation form in the next page.

Peer-Evaluation Form

ADM3308 (Business Data Mining)
Fall 2020

Instruction: Fill out this form, date it, and email it to the following email address in confidence:
Professor: raahemi@telfer.uottawa.ca

Note on Confidentiality: The information in this form is protected and remains confidential after it is submitted to the professor. This form is destroyed after the official marks are announced by the university.

My Name is: **My Student ID is:**

My Email Address (@uottawa.ca) is:

Names of my team members	**My evaluation of my team members' teamwork from 0% to 100%**
1-	
2-	

Comments, Concerns, Justifications :

Date: …….