

**UNIVERSITY OF REGINA**  
**MBA 880: Business Analytics**  
**Fall 2023**  
**Course Outline**

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**COURSE DESCRIPTION**

This is an introductory course to business analytics. Students will learn to identify tools, understand valid and reliable ways to collect, analyze and visualize data. Students will also learn to identify patterns in data to inform decision making. The course is designed for students without a background in operations management.

**COURSE OBJECTIVES**

This course is intended to provide an introduction to Business Analytics, which can be defined as the combined use of data analysis techniques to make “data-driven” business decisions. Because Business Analytics has applications in finance, marketing, and operations, the course covers examples and includes practical exercises in a variety of areas:

- Finance – what is the best portfolio to invest, given the predicted risk of investment?
- Marketing – which customers should be targeted directly, given their predicted probability of responding to a certain advertisement?
- Operations – how to schedule appointments, given their no-show probability

This course covers the three dimensions of Business Analytics:

- Descriptive analytics, which “to use data to figure out what happened in the past”,
- Predictive analytics, which “to use data to find out what could happen in the future”,
- Prescriptive analytics, which “to use data to prescribe the best course of action to increase the chances of realizing the best outcome

**COURSE MATERIAL**

- **Textbook:** *Essentials of Business Analytics*, 4th Edition; Camm, Cochran, Fry, Ohlmann, Anderson, Sweeney, and Williams, 2020, CENGAGE Pub. The book is available at the U of R bookstore, CENGAGE publisher and Amazon.
- **Case Package:** Will be posted on UR-Courses. Note: there will be extra charges into your tuition fee to cover the cost of the case studies.

## **SOFTWARE**

This course includes RStudio. Other software options are EXCEL and SPSS. Details on how to download RStudio, as well as links to useful tutorials, will be posted on UR-Courses. Here is the link to download RStudio: <https://posit.co/products/open-source/rstudio/>

## **COURSE MANAGEMENT**

The course homepage is available at <http://www.uregina.ca/urcourses/>. Lecture slides, announcements, practice problems solutions, cases and all other related material will be posted on the course web page. It is your responsibility to check the website regularly.

## **COMMUNICATION**

Please use UR-courses for communication. Dr. Mehdi is the main instructor for the course, so you have to reach out to him for all course related issues.

## **EVALUATION**

The course grade will be based on the following:

Assignment mini-case studies (top 5 out of 8)	25 %
Class participation	10 %
Case study report and presentation (1 case)	25 %
Final exam	40 %

## **MINI-CASE STUDIES**

Some practice case studies will be assigned from the textbook to practice the quantitative material covered in class. Each student is expected to submit a report that includes answers to questions for those case studies. There is a total of 8 cases that will be discussed in class, out of which five will be counted towards the student final mark. The solutions for those mini-cases will be posted on UR courses after class discussions. All case reports should be submitted by 7:00 p.m. on the due date in the drop box assigned for the case. For each case study, you are required to submit an Excel file and a managerial report in PDF format.

## **PARTICIPATION**

It is strongly recommended that you attend all classes. **Students attending remotely should have their cameras on all the time and they should be engaged during the class discussions.** The objective is to create an involved atmosphere to enhance learning.

## **CASE REPORT**

Two case studies will be used to supplement the course material. A number of questions are suggested to help you prepare for the case study analysis. Student groups of 2 (or more depending on the final enrollment in the class) will be formed and they should submit a detailed analysis for one of the cases and present their analysis to the class. The case report is worth 15% and the case presentation is worth 10%. More details on the case studies and expectations will be discussed later in the term.

## **GRADING**

The grading system used in this course is based on the University of Regina Graduate grading system where:

95-100: An exceptional performance

90-94: An outstanding performance:

85-89: An excellent performance:

80-84: A very good performance:

75-79: A good or satisfactory performance:

70-74: A minimally acceptable performance or marginal pass:

0-69: An unacceptable or failing performance:

More details can be found on the following link:

<http://www.uregina.ca/gradstudies/grad-calendar/grading-system.html#gradingsystem>

*Note: The above described grading system is used for the course total mark only. Individual evaluation items grades are not based on this grading system.*

## **ACADEMIC INTEGRITY AND STUDENT BEHAVIOUR**

**Academic Integrity:** "Students enrolled in Business courses at the University of Regina are expected to adhere rigorously to principles of intellectual integrity. Plagiarism is a form of intellectual dishonesty in which another person's work is presented as one's own. Plagiarism or cheating on examinations/assignments is a serious offence that may result in a zero grade on an assignment, a failing grade in a course, or expulsion from the University"

**Student Behavior:** Students of the University of Regina (the "University") are expected to conduct themselves responsibly and with propriety both in their studies and in their general behavior, and are expected to abide by all policies and regulations of the University. Misconduct, which may be academic (that is, in academic studies) or non-academic (in general behavior), is subject to disciplinary action. For information on categories of offences and types of penalties. Students are referred to the University Calendar for information on appeals, withdrawal dates, plagiarism, cheating, and academic misconduct. Students are expected to abide by these regulations of the University of Regina

<http://www.uregina.ca/presoff/vpadmin/policymanual/Academic%20Regulations/DisciplinaryRegulations.pdf>.

**COURSE SCHEDULE**

The following is a tentative schedule of topics to be covered during the Semester. It is possible that there will be changes in the schedule as the course progresses. Changes to this schedule will be announced during class in advance of the class periods that will be affected.

Class	Date	Topic	Reading	Assignment
1	Sep 05	Course introductions What is Business Analytics and why it is important	Chapter 1	
2	Sep 12	Descriptive Statistics Data Visualization	Chapter 2 Chapter 3	
3	Sep 19	Descriptive Data Mining	Chapter 5	<i>Case 1: Movie theater releases (p.140)</i>
4	Sep 26	Descriptive Data Mining	Chapter 5	
5	Oct 3	Statistical Inference	Chapter 6	<i>Case 2: Know Thy customer (p.251)</i>
6	Oct 10	Fall break (No class)		
7	Oct 17	Linear Regression Models	Chapter 7	<i>Case 3: Young Professional Magazine (p. 324)</i>
8	Oct 24	Time Series Analysis and Forecasting	Chapter 8	<i>Case 4: Q21 (Consumer Credit Card Debt) p. 401</i>
9	Oct 31	Predictive Data Mining	Chapter 9	<i>Case 5: Forecasting food and beverage sales (p. 450)</i>
10	Nov 7	Spreadsheet Models	Chapter 10	<i>Case 6: Gray code corporation (p. 505)</i>
11	Nov 14	Monte Carlo Simulation	Chapter 11	<i>Case 7: Retirement Plan (p. 544)</i>
12	Nov 21	Monte Carlo Simulation	Chapter 11	
13	Nov 28	Decision Analysis	Chapter 15	<i>Case 8: Four Corners (p. 600)</i>
14	Dec 05	Case study presentations Final exam review		<i>Final case report due @ 7:00 pm</i>