Paul J. Hill School of Business

BUS 335AC: Business Analytics

Winter 2020 Course Outline

Instructor: Matt Waynert, MBA, BBA, PMP, PSM
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Office Hours: By appointment
Class Day and Time: Mondays from 7:00 pm to 9:45 pm
Class Location: ED 531
Course Website: http://www.uregina.ca/urcourses

Course Description:

This course focuses on teaching students different methods for data driven decision making. Students will learn to apply basic business analytics principles, and effectively use and interpret analytic models to make better business decisions. Topics may include: Descriptive statistical measures, statistical inference, regression analysis, linear and integer optimization, data mining, and simulation. Different application areas will be studied in the areas of finance, marketing and operations. ***Prerequisite: STAT 100***

Course Objectives:

This course is intended to provide an introduction to Business Analytics. Business Analytics is often defined as the process of transforming data into insights to improve decision-making. Business Analytics is synonymous with data-driven, fact-driven, or insight-driven decision-making. Business Analytics can be applied to numerous disciplines and subject areas, so this course will cover examples from a variety of areas which may include, but are not limited to:

- Finance: forecasting financial performance and risk
- Human Resources: hiring candidate predictions for organizational fit
- Marketing: customer segmentation and product bundling
- Health Care: facility scheduling and patient diagnosis
- Supply Chain: optimization of goods delivery and inventory management
- Sports: assessing players for amateur drafts

This course will cover the three primary areas of Business Analytics:

- Descriptive Analytics: What happened?
- Predictive Analytics: What is likely to happen?
- Prescriptive Analytics: How can we make it happen?

Course Material:

- UR Courses (http://www.uregina.ca/urcourses): All lecture slides, class announcements, practice problems, assignments, and course material will be posted on the UR courses page. Please check this page regularly.

- Textbook: Essentials of Business Analytics, 3rd Edition; Camm, Cochran, Fry, Ohlmann, Anderson, Sweeney, and Williams, 2018, South-Western College Pub. The book is available at the U of R bookstore.
- Microsoft Excel: Excel will be used extensively throughout the course in-class, for course assignments, and tests. If you plan to use your own laptop, it's recommended that you have Excel 2013 installed at the minimum (Excel 2016 is preferred). Also note that the Mac version of Excel is substantially different from the Windows version. We will be using the Windows version, so it's recommended that you use this version as well. Excel is also available on all workstations within ED 531.
- Analytic Solver (www.solver.com/student): Solver is an Excel add-in. You can download a free 15-day trial and then purchase a 140-day license for $25 using the instructions posted to UR Courses (Course code: BUS335ACMW20SP Book code: CCFOEBA). We will not begin using Solver until the latter half of the semester, so there is no need to purchase it right away. Solver is also available on all workstations within ED 531.

Communication:

Feel free to contact me through UR Courses or through email to the address listed above. Please recognize that I am a sessional lecturer and work full-time, so I may take up to 24 hours to respond.

Evaluation:

The course grade will be determined as follows:

Assignments (5):	25%
Midterm Examination:	35%
Final Examination:	35%
Participation:	5%

Examinations:

There will be both an in-class midterm examination and a final examination. The final examination is scheduled for April 20, 2020 at 7 pm (location is to be determined). The midterm examination will cover all course material up to the exam date. The final examination will focus primarily on content from the second half of the course but may include content from the first half as well. Any topics discussed during class are eligible to appear on the exam. The format of the examinations will be discussed later in the course. Missed exams will be assigned a grade of zero unless medical documentation dated the day of the exam is provided explaining the reason for the absence or proof is provided for an extraordinary circumstance that is beyond your control. Any allowance to write a make-up exam or reassign the value to another component of the course is at my discretion and/or the Associate Dean.

Assignments:

Five individual assignments will be assigned to practice the material covered in class. Each student is expected to submit their assignment file (via UR Courses) at the beginning of class on the assignment due date along with any supporting material. The file name should follow the following format: LastName-StudentNumber-AssignmentNumber-Date. The solution for each assignment will be posted on UR Courses after the due date. We will also discuss the assignments in class. Please note that late assignments will not be accepted for any reason.

Participation and Attendance:

As the assignments and examination content will be discussed extensively in class, it is strongly recommended that you attend all classes. Participation during class is encouraged, as 5% of the total class mark dedicated to participation. Your relevant class questions, commentary, discussion participation, and attendance will be counted towards your participation mark.

Course Schedule

Below is a tentative schedule of topics to be covered during the semester, as well as assignment due dates. There may be changes to this schedule as the course progresses. Schedule changes will be announced in class in advance of the affected classes. I will also be scheduling some guest speakers throughout the course. Due to the busy schedules of these speakers, I may not know of their availability to speak until the week before the class. I will announce the guest speakers as soon as I have confirmed dates for their attendance.

Date	Topic	Readings	Assignment
Jan 6	Course Introduction	Chapter 1	
Jan 13	Descriptive Statistics Data Visualization	Chapter 2 Chapter 3	
Jan 20	Descriptive Data Mining	Chapter 4	Assignment 1 Due
Jan 27	Statistical Inference	Chapter 6	
Feb 3	Linear Regression	Chapter 7	Assignment 2 Due
Feb 10	Time Series Analysis and Forecasting	Chapter 8	
Feb 24	Midterm Examination Predictive Data Mining	 Chapter 9	
Mar 2	Spreadsheet Models	Chapter 10	
Mar 9	Monte Carlo Simulation	Chapter 11	Assignment 3 Due
Mar 16	Linear Optimization Models	Chapter 12	
Mar 23	Integer Optimization Models	Chapter 13	Assignment 4 Due
Mar 30	Nonlinear Optimization Models	Chapter 14	
Apr 6	Decision Analysis	Chapter 15	Assignment 5 Due
Apr 20	Final Exam		

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. For more information on this matter, please consult the Student Code of Conduct and Right to Appeal section of this Calendar

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.