



**BUSINESS ANALYTICS  
BUSINESS 4406 – Fall 2017**

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**Class Times**

<i>Section</i>	<i>Day</i>	<i>Time</i>
A	Tuesdays	8:35 – 11:25

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**INSTRUCTOR**

**Dr. Alejandro Ramirez**

Office: DT1722

Phone: 613.520.2600 x2397

Office Hours: Tuesdays 1:00 – 3:00 PM or by appointment

Email: [Alex.Ramirez@Carleton.ca](mailto:Alex.Ramirez@Carleton.ca)

**Course Description**

BUSI 4406 [0.5 Credit]

**Business Analytics**

Evolution of Decision Support Systems. Business Intelligence. Data Mining and Warehousing. Web Analytics. Mobile Apps for Business Analytics. Strategic use of Information Systems for Competitive Advantage

Prerequisite(s): Third-year standing and BUSI 2400 with a grade of C or higher

Lecture three hours a week.

*The School of Business enforces all prerequisites.*

This course uses the evolution of organizational decision making and the systems that support decision making in organizations to develop a critical view of the use of computers in organizations. The goal is to understand the role of **Business Analytics** in today organizational environment. It was designed to help you:

- become aware of the present state of knowledge in the areas of Business Intelligence and Business Analytics
- become familiar with academic and non-academic literature in these fields
- develop a personal perspective on emerging theories and their application, current debates and controversies within these disciplines

- develop analytical and critical skills to deal with these issues (i.e., help you develop, present and defend arguments)

### **Approach taken in this Course**

Business Analytics continues to be the *buzzword* of the day. Business Analytics is a **data-driven process that provides insight**. It may report on historical information or predictions about future events. The end goal of analytics is to add value through analyses that turn data into information. This course introduces a range of methods and modern technologies that are used in business analytics. We start from where we are all comfortable, MS-Excel, and move into a world of more sophisticated tools that need a different understanding of manipulation of data through tools that are for modelling, visualization, and forecasting.

The instructional approach will include some software demos and illustrate applications of decision support technologies to problems in finance, marketing, manufacturing, services and health care management, and information systems consulting. Students have the opportunity to work on a personal project.

The course introduces recent approaches to managerial decision analysis and support. The student will be exposed to formal methods and specific computer-based tools. The course deals with advanced techniques and tools to support decision making processes.

### **Course Objectives**

The main goal of this course is to provide the students with an understanding of management support capabilities of information technologies to support the function of Business Analytics, and the development of skills to become a business analytics professional. At the conclusion of this course, students will be able to:

- explain the theory of *Bounded Rationality* and its implications on managerial decision making
- demonstrate an understanding of the underlying methods and technologies used in business analytics;
- analyse and applied alternate methods for designing, developing and implementing Business Analytics tools;
- identify and justify opportunities for management support systems development and the specific considerations which apply in their effective management.

### **Reading Material**

There is an Ares page [<https://libares01.carleton.ca/>] with access to the reading material for this course. Also available through CU Learn. You are expected to read this material before the indicated lecture. These readings are part of the midterm assessment. Students are expected to discuss the relevance and implications of it to Business Analytics.

## Grading/Deadlines

[SATISFACTORY IN TERM PERFORMANCE MEANS A STUDENT SUBMITTED TWO ASSIGNMENTS, PARTICIPATED IN THE GROUP PRESENTATION, WROTE THE MIDTERM AND DELIVERED THE COURSE PROJECT]

Your final grade will be composed of the following:

- ✓ **Two Assignments 20%**
  - Excel Assignment (10%) due October 2, 2017 by 10:00 PM
  - SAS Assignment (10%) due November 20, 2017 by 10:00 PM
- ✓ **Group Presentation 10%** - in class December 5, 2017
- ✓ **In Class Midterm Examination 30%** - October 17, 2017
- ✓ **Project 40%**
  - Project Proposal (10%) due November 1, 2017 by 10:00 PM
  - Final Report (30%) due December 22, 2017 by 10:00 PM

There is a CU Learn site for this course. All expected deliverables for this course are expected to be submitted through the site. You will find your feedback there as well. It is important that you visit the site regularly to stay on top of the course's expectations. When communicating with the TA or the instructor, please use the mail service associated with the course or include in your message the course number if using a different mail service

## Assignments

**These are INDIVIDUAL assignments!** That does not mean that you can't discuss them with your classmates, on the contrary, business analytics is better when you are able to discuss the issues with your peers – collective intelligence is what has moved this field forward. What it means is that you need to do your own analysis and write your own reports. It is one of the most important skills you need to develop in this course. Therefore, once the analysis is finished, write your report considering that it is expected to empower your manager to make decisions. Most of the output generated during your analysis can be included only as appendices, the body of the report only needs to refer to it when absolutely necessary. Late assignments will be penalized 25% and accepted only within a 24-hour period, after that will be considered missed and tabulated as 0 [Zero].

## Group Presentation

You will be expected to form a group of 3 – 4 members in this course. In CU Learn there will be a list of topics of business analytics trends. Topics will be assigned to groups via email. As a group you need to choose, request via email, investigate and make an in-class 5-7 minutes presentation on one of those topics. Please note that **all members** need to be present during this session to receive full marks.

### **In Class Midterm Examination**

There will be a 2-hours in class examination that needs to be submitted in CU Learn. If you don't have access to a portable computer, you must inform the instructor in advance to book a computer for you in the exam centre.

### **Individual Course Project**

[This has been a valuable exercise for students in the past. It is a way they have managed to explore with more detail aspects of interest in their disciplines or work environment. Some have even used their family's business to start developing a business analytics strategy]:

Identify a problem, an opportunity or a directive and propose a way to investigate how best use business analytics in that situation. Depending on its scope, the project does not have to fully generate a solution, but it should serve as a starting point to a bigger commitment that you may continue working on your own, after the course ends.

With the advantage of using the Virtual Desktop Infrastructure (VDI), you will have access to MS-Office 2016, SAS and other tools directly on your own device until the end of the term, without any cost.

**First:** Prepare a two to three-pages **proposal<sup>1</sup> by November 1, 2017**. *If approved*, a final Report of the project and ALL relevant documentation is **due on December 22, 2017 at 10:00 PM**.

***If your proposal is not approved**, you will receive a detailed e-mail message indicating the change of scope of the proposal to be considered; then you may resubmit the updated proposal, or prepare a new one. This will be agreed upon on the terms within the e-mail.*

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<sup>1</sup> There are some proposal examples in CU Learn from students in past semesters. Use them to understand the scope of a proposal, not as an expected template of the proposal you need to write.

## Outline\*

Session	Date	Topic
1	09/12	<p style="text-align: center;"><b><u>THEORIES</u></b></p> <p style="text-align: center;">Welcome – Course Administration – Overview From Decision Making and Support Systems to Business Analytics: A historical introduction</p>
2	09/19	<p style="text-align: center;">Decision Making, Systems, Modelling, and Support – Business Analytics Concepts, Methodologies, and Technologies: An Overview</p> <p style="text-align: center;"><b><u>TOOLS</u></b></p> <p style="text-align: center;">Excel: Opportunities and Limitations <a href="#">Readings: Simon 1999 [Chapter 2] &amp; Mintzberg 2013 [Chapter 3]</a></p>
3	09/26	<p style="text-align: center;">Data Warehousing &amp; Data Marts – Analyzing Data in Excel 2016 with Business Intelligence</p> <p style="text-align: center;"><a href="#">Reading: Laursen &amp; Thorlund 2017 [Chapter 5]</a></p>
4	10/03	<p style="text-align: center;">Data <a href="#">Visualization</a> – Excel’s Power Pivot, Power View, Power Map</p> <p style="text-align: center;"><a href="#">Reading: Knafllic 2015 [Chapter 1]</a></p>
5	10/10	<p style="text-align: center;">Data Analyses &amp; SAS Enterprise Guide</p> <p style="text-align: center;"><a href="#">Reading: Cegielski et al. 2016</a></p>
6	10/17	<b><i>Mid Term Exam</i></b>
	10/24	<b><i>Reading Week – No lecture</i></b>
7	10/31	Predictive Modelling & SAS Enterprise Miner I
8	11/07	Predictive Modelling & SAS Enterprise Miner II
9	11/14	Business Forecasting
10	11/21	SAS Forecast Studio
11	11/28	<p style="text-align: center;">Artificial Intelligence &amp; Expert Systems</p> <p style="text-align: center;"><b><u>TRENDS</u></b></p> <p style="text-align: center;">Business Analytics on today’s job market</p>
12	12/05	<p style="text-align: center;">Big Data Emerging Trends – Social Networking &amp; the Cloud</p> <p style="text-align: center;">Group Presentations</p>

\* Note: While every attempt will be made to keep to the schedule listed above, unforeseen circumstances may necessitate modifications throughout the semester.

### ADDITIONAL INFORMATION

#### Course Sharing Websites

Materials created for this course (including presentations and posted notes, labs, case studies, assignments and exams) remain the intellectual property of the author(s). They are intended for personal use and may not be reproduced or redistributed without prior written consent of the author(s).

### **Required calculator in BUSI course examinations**

If you are purchasing a calculator, we recommend any one of the following options: Texas Instruments BA II Plus (including Pro Model), Hewlett Packard HP 12C (including Platinum model), Staples Financial Calculator, Sharp EL-738C & Hewlett Packard HP 10bII

### **Group work**

The Sprott School of Business encourages group assignments in the school for several reasons. They provide you with opportunities to develop and enhance interpersonal, communication, leadership, follower-ship and other group skills. Group assignments are also good for learning integrative skills for putting together a complex task. Your professor may assign one or more group tasks/assignments/projects in this course. Before embarking on a specific problem as a group, it is your responsibility to ensure that the problem is meant to be a group assignment and not an individual one.

In accordance with the Carleton University Undergraduate Calendar (p 34), the letter grades assigned in this course will have the following percentage equivalents:

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

Grades entered by Registrar:

WDN = Withdrawn from the course

DEF = Deferred

### **Academic Regulations, Accommodations, Etc.**

University rules regarding registration, withdrawal, appealing marks, and most anything else you might need to know can be found on the university's website, here:

<http://calendar.carleton.ca/undergrad/regulations/academicregulationsoftheuniversity/>

### **Requests for Academic Accommodations**

*For Students with Disabilities:*

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or [pmc@carleton.ca](mailto:pmc@carleton.ca) for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your **Letter of Accommodation** at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (*if applicable*). **Requests made within two weeks will be reviewed on a case-by-case basis.** After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the PMC website ([www.carleton.ca/pmc](http://www.carleton.ca/pmc)) for the deadline to request accommodations for the formally-scheduled exam (*if applicable*).

*For Religious Obligations:*

Students requesting academic accommodation on the basis of religious obligation should make a formal, written request to their instructors for alternate dates and/or means of satisfying academic requirements. Such requests should be made during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist, but no later than two weeks before the compulsory event.

Accommodation is to be worked out directly and on an individual basis between the student and the instructor(s) involved. Instructors will make accommodations in a way that avoids academic disadvantage to the student.

Students and instructors can confirm accommodation eligibility of a religious event or practice by referring to the Equity Services website (<http://carleton.ca/equity/accommodation/religious-observances/>) for a list of holy days and Carleton's Academic Accommodation policies. If there are any questions on the part of the student or instructor, they can be directed to an Equity Services Advisor in the Equity Services Department for assistance.

#### *For Pregnancy:*

Pregnant students requiring academic accommodations are encouraged to contact an Equity Advisor in Equity Services to complete a letter of accommodation. The student must then make an appointment to discuss her needs with the instructor at least two weeks prior to the first academic event in which it is anticipated the accommodation will be required.

#### **Academic Integrity**

Violations of academic integrity are a serious academic offence. Violations of academic integrity – presenting another's ideas, arguments, words or images as your own, using unauthorized material, misrepresentation, fabricating or misrepresenting research data, unauthorized co-operation or collaboration or completing work for another student – weaken the quality of the degree and will not be tolerated. Penalties may include; a grade of Failure on the submitted work and/or course; academic probation; a refusal of permission to continue or to register in a specific degree program; suspension from full-time studies; suspension from all studies at Carleton; expulsion from Carleton, amongst others. Students are expected to familiarize themselves with and follow the Carleton University Student Academic Integrity Policy which is available, along with resources for compliance at: <http://carleton.ca/studentaffairs/academic-integrity>.

#### **Sprott Student Services**

The Sprott student services office, located in 710 Dunton Tower, offers academic advising, study skills advising, and overall academic success support. If you are having a difficult time with this course or others, or just need some guidance on how to successfully complete your Sprott degree, please drop in any weekday between 8:30am and 4:30pm. Our advisors are happy to discuss grades, course selection, tutoring, concentrations, and will ensure that you get connected with the resources you need to succeed! <http://sprott.carleton.ca/students/undergraduate/learning-support/>

#### **Centre for Student Academic Support**

The Centre for Student Academic Support (CSAS) is a centralized collection of learning support services designed to help students achieve their goals and improve their learning both inside and outside the classroom. CSAS offers academic assistance with course content, academic writing and skills development. Visit CSAS on the 4th floor of MacOdrum Library or online at: [carleton.ca/csas](http://carleton.ca/csas).

**Important Information:**

- Students must always retain a hard copy of all work that is submitted.
  - All final grades are subject to the Dean's approval.
  - For us to respond to your emails, we need to see your full name, CU ID, and the email must be written from your valid CARLETON address. Therefore, in order to respond to your inquiries, please send all email from your Carleton CMail account. If you do not have or have yet to activate this account, you may wish to do so by visiting <http://carleton.ca/ccs/students/>
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**Important Dates and Deadlines – Fall 2017  
Graduate, Undergraduate and Special Students****September 1**

Last day for receipt of applications from potential fall (November) graduates.

**September 2-3**

Residence move in weekend.

**September 4**

Statutory holiday. University closed.

**September 5**

Academic orientation (undergraduate and graduate).

Orientation for Teaching Assistants.

All students are expected to be on campus. Class and laboratory preparations, departmental introductions for students and other academic preparation activities will be held.

**September 6**

Fall term begins.

Fall and fall/winter classes begin.

**September 15-17**

Full and late summer deferred final examinations held.

**September 19**

Last day of registration for fall term and fall/winter courses.

Last day to change courses or sections (including auditing) for fall/winter and fall term courses.

Graduate students who have not electronically submitted their final thesis copy to the Faculty of Graduate and Postdoctoral Affairs will not be eligible to graduate in Fall 2017 and must register for the fall 2017 term.

**September 30**

Last day to withdraw from fall term and fall/winter courses with a full fee adjustment (financial withdrawal). Withdrawals after this date will create no financial change to Fall term fees.

**October 6**

December examination schedule (fall term final and fall/winter mid-terms) available online.



**October 9**

Statutory holiday. University closed.

**October 15**

Last day for receipt of applications for admission to an undergraduate degree program for the winter term from applicants whose documents originate from outside Canada or the United States.

**October 23-27**

Fall break. Classes are suspended.

**November 1**

Application deadline to study at another institution on a [letter of permission](#) for the winter term.

**November 10**

Last day to request formal exam accommodations for December examinations to the Paul Menton Centre for Students with Disabilities. Late requests will be considered on case-by-case basis.

**November 15**

Last day for receipt of applications for admission to an undergraduate degree program for the winter term.

**November 24**

Last day for summative or final examinations in fall term courses before the official examination period (see [Examination Regulations](#) in the Academic Regulations of the University section of the Undergraduate Calendar).

**November 25**

Winter Payment Deadline. Click [here](#) for important payment information. [Late charges](#) may be applied to the student account any time after this date.

**December 1**

Last day for receipt of applications from potential winter (February) graduates.

Last day for graduate students to submit their supervisor-approved thesis in examinable form to the department.

**December 8**

Fall term ends.

Last day of fall-term classes.

Classes follow a Monday schedule.

Last day for academic withdrawal from fall term courses.

Last day for handing in term work and the last day that can be specified by a course instructor as a due date for term work for fall term courses.

Last day for receipt of applications for undergraduate degree program transfers for winter term.

Last day to pay any remaining [fall tuition fees](#) to avoid a hold on access to marks through Carleton Central and the release of transcripts and other official documents.

**December 9**

No classes or examinations take place.

**December 10 – 22**

Final examinations in fall term courses and mid-term examinations in fall/winter courses may be held. Examinations are normally held all seven days of the week.

**December 22**

All take home examinations are due.

**December 25-January 1, 2018**

University closed