BUSINESS ANALYTICS
BUSINESS 4406 – Winter 2016

Class Times

<table>
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<tr>
<th>Section</th>
<th>Day</th>
<th>Time</th>
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<tr>
<td>A</td>
<td>Mondays</td>
<td>11:35 – 14:25</td>
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INSTRUCTOR
Dr. Alex Ramirez
Office: DT1722
Phone: 613.520.2600 x2397
Office Hours: Tuesdays 1:30 – 3:30 PM or by appointment
Email: Alex.Ramirez@Carleton.ca

Course Prerequisites

Third-year standing and BUSI 2400 with a grade of C or higher – The School of Business enforces all prerequisites.

Course Description

BUSI 4406 [0.5 Credit]

Business Analytics
Lecture three hours a week.

This is a course dealing with the evolution of organizational decision making and the systems that support decision making 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. It has permeated the world of business, especially after the economic downturn of 2008. 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:

• 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;
• evaluate the selected alternative technology to use Business Analytics tools;
• identify and justify opportunities for management support systems development and the specific considerations which apply in their effective management.

Grading/Deadlines
[Satisfactory in term performance means a student submitted the 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%
  o Excel Assignment (10%) due February 10, 2016 by 10:00 PM
  o SAS Assignment (10%) due March 16, 2016 by 10:00 PM
✓ Group Presentation 10% - in class April 4, 2016
✓ In Class Midterm Examination 30% - in class February 29, 2016
✓ Project 40%
  o Project Proposal (10%) due March 6, 2016 by 10:00 PM
  o Final Report (30%) due April 23, 2016 by 10:00 PM
There is a CU Learn site for this course. The reading material can be accessed through the Library Ares service linked to the course site. All expected deliverables for this course are expected to be submitted though 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. As a group you need to investigate that trend and prepare an online report as a blog or a wiki. That report has to be available to the instructor and students registered in this course after the last session. For that session, as a group **all members** need to make an in-class 5-7 minute presentation.

**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 computer, you have to inform me in advance to make arrangements to book a computer for you in the exam centre.

**Course Project**
**THIS IS AN INDIVIDUAL PROJECT!** You can choose one of the topics discussed in our course – or propose another topic within the scope of this course. [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]:

Within that topic you have to identify a problem, an opportunity or a directive and propose a way to investigate how best use 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 2013, SAS and other tools directly on your own device until the end of the term, without any cost!
First: Prepare a 2-3 pages proposal\(^1\) by March 06, 2016. If approved, a final Report of the project and ALL relevant documentation is due on April 23, 2016.

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 proposal. This will be agreed upon on the terms within the e-mail.

Outline*

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<th>Session</th>
<th>Date</th>
<th>Topic</th>
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<tr>
<td>1 01/11</td>
<td><strong>THEORIES</strong>&lt;br&gt; Welcome – Course Administration – Overview&lt;br&gt; From Decision Making and Support Systems to Business Analytics: A historical introduction</td>
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<td>3 01/25</td>
<td><strong>TOOLS</strong>&lt;br&gt; Excel: Opportunities and Limitations</td>
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<td>4 02/01</td>
<td>Teradata University Network&lt;br&gt; Data Warehousing &amp; Data Marts</td>
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<td>5 02/08</td>
<td>Data Analyses &amp; SAS Enterprise Guide</td>
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<td>6 02/15</td>
<td>Reading Week – No lecture</td>
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<td>7 02/22</td>
<td>Predictive Modelling &amp; SAS Enterprise Miner</td>
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<td>8 02/29</td>
<td><strong>Mid Term Exam</strong></td>
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<td>9 03/07</td>
<td>Data Visualization &amp; SAS Visual Analytics</td>
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<td>10 03/14</td>
<td>Business Forecasting &amp; SAS Forecast Studio</td>
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<td>11 03/21</td>
<td>Text Analytics [Guest Lecturer: Dr. Hine]</td>
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<td>12 03/28</td>
<td><strong>TRENDS</strong>&lt;br&gt; Business Analytics on today’s job market [Panel]&lt;br&gt; Artificial Intelligence &amp; Expert Systems – Advanced Intelligent Systems</td>
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<td>13 04/04</td>
<td>Big Data Emerging Trends – Social Networking &amp; the Cloud&lt;br&gt; Group Presentations</td>
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* Note: While every attempt will be made to keep to the schedule listed above, unforeseen circumstances may necessitate modifications throughout the semester.

\(^1\) 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.
Course Sharing Websites
Student or professor 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
WDN = Withdrawn from the course
ABS = Student absent from final exam
DEF = Deferred (See above)
FND = (Failed, no Deferred) = Student could not pass the course even with 100% on final exam

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 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). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. The deadlines for contacting the Paul Menton Centre regarding accommodation for final exams for the December 2015 exam period is November 6, 2015 and for the April 2016 exam period is March 6, 2016.

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 or instructors who have questions or want to confirm accommodation eligibility of a religious event or practice may refer to the Equity Services website for a list of holy days and Carleton's Academic Accommodation policies, or may contact 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 cooperation 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 in 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://www2.carleton.ca/sasc/advisingcentre/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’re 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/support-services/  
Be in the know with what’s happening at Sprott: Follow @SprottStudents and find us on Facebook SprottStudents Sprott.
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, it would be easier to respond to your inquiries if you would send all email from your Carleton 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/

Important Dates and Deadlines – Winter 2016
Graduate, Undergraduate and Special Students

Sessions:
- Fall term: September 2, 2015 – December 7, 2015
- Winter term: January 6, 2016 – April 8, 2016
- Fall/winter: September 2, 2015 – April 8, 2016

January 6
Winter-term classes begin.

January 19
Last day for registration for winter term courses.
Last day to change courses or sections (including auditing) for winter term courses.
Students who have not deposited (via automated upload) the final copy of their thesis to the office of the Faculty of Graduate and Postdoctoral Affairs must register.

January 31
Last day for a fee adjustment when withdrawing from Winter term courses or the Winter portion of two-term courses. Withdrawals after this date will create no financial change to Winter term fees (financial withdrawal).

February 12
April examination schedule available online.

February 12-20
Fall-term deferred examinations will be held.

February 15
Statutory holiday, University closed.

February 15-19
Winter Break. Classes are suspended.

March 1
Last day for UHIP refund applications for International Students who will be graduating this academic year.
Last day for receipt of applications from potential spring (June) graduates.
March 6
Last day to submit Formal Examination Accommodation Forms to the Paul Menton Centre for Students with Disabilities for April examinations.

March 24
**Last day to pay any remaining balance on your Student Account** to avoid a hold on access to marks through Carleton Central and the release of transcripts and other official documents. An account balance may delay Summer 2016 course selection.

Last day for tests or examinations in courses below the 4000-level before the final examination period (see Examination Regulations in the Academic Regulations of the University section of this Calendar).

March 25
Statutory holiday, University closed.

April 1, 2016
Last day for receipt of applications for admission to an undergraduate program for the fall/winter session, from candidates whose documents originate outside Canada or the United States, except for applications due February 1 or March 1.

April 8
Winter term ends.

Last day of fall/winter and winter-term classes.
Last day for academic withdrawal from fall/winter and winter 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/winter and winter-term courses.

April 9-10
No classes or examinations take place

April 11-23
Final examinations in winter term and fall/winter courses may be held. Examinations are normally held all 7 days of the week.

April 15, 2016
Winter Co-op Work Term Reports are due.

April 23, 2016
All take home examinations are due on this day.

June 6-16
Fall/winter and winter term deferred final examinations will be held.