COURSE OBJECTIVE

This course provides an introduction to the application of statistical analysis in managerial decision-making. The concepts of statistical analysis are applied to a variety of topics, including decision-making, estimation by sampling, hypothesis testing, analysis of variance, simple linear and multiple regression and forecasting.

INSTRUCTOR AND CONTACT INFORMATION

Section 01: Mo W Th 10:30 – 11:20
Section 02: Mo W Th 16:30 – 17:20
Section 03: Mo W Th 13:30 – 14:20
Evening: Mo 19:00 – 22:00
Tutorial 01: Fr 08:30 - 09:20
Tutorial 02: Th 08:30 - 09:20
Tutorial 03: W 09:30- 10:20

Class Location: MDCL 1110
Class Location: MDCL 1309
Class Location: HSC/1A6
Class Location: JHE/ 367
Tutorial Location: TSH/B128
Tutorial Location: TSH/B128
Tutorial Location: TSH/B128

Instructor: Dr. Fouzia Baki
Teaching Assistants: TBA

bakif@mcmaster.ca
Office: DSB 409
Office Hours: W, Th 14:30-15:30 @DSB 409
or by appointment through email

COURSE ELEMENTS

Credit Value: 3  Leadership: No  IT skills: Yes  Global view: No
Avenue: Yes  Ethics: No  Numeracy: Yes  Written skills: No
Participation: No  Innovation: Yes  Group work: No  Oral skills: No
Evidence-based: Yes  Experiential: No  Final Exam: Yes  Guest speaker(s): No

COURSE DESCRIPTION

Theoretical Coverage:
Descriptive statistics and probability concepts will be reviewed. The main emphasis will be on statistical inference, including confidence intervals, hypothesis testing, regression,
and ANOVA using dummy variables.

**Business Application Coverage:**
Numerous examples will illustrate the practical applications of statistical inference. In addition, emphasis will be placed on avoiding the many pitfalls that exist in applying statistical inference to business and economics. Students will be introduced to Excel.

### LEARNING OUTCOMES

This course deals with basic statistical methods, in converting data into information, and further yet - into knowledge. Primary focus is on business related data, but data coming from other sources (e.g., economic, social, etc.) will also be explored, analyzed and discussed. Upon completion of the course, students will be able to:

- describe, summarize and interpret statistical data through tabular representation
- describe, summarize and interpret statistical (both qualitative and quantitative) data through graphical representation
- solve problems using appropriate probability theorems
- estimate, test and draw inferences about important characteristics of data
- do hypothesis testing
- use statistical software packages to perform basic analysis of data

### REQUIRED COURSE MATERIALS AND READINGS

Avenue registration for course related materials

- [http://avenue.mcmaster.ca](http://avenue.mcmaster.ca)

Two different textbook packages available in the bookstore. You choose to buy EITHER of them.

**PACKAGE 1: Hard copy of the Textbook with Aplia Access (also includes digital textbook)**
- Aplia access to ASW content and course, including eBook*
- 180 day Trial of MS Office 2010
- Minitab 14
  
  $119.95 list (price includes bookstore mark-up)

**OR**

**PACKAGE 2: Digital Textbook with Aplia Access**
- Aplia access to ASW content and course, including eBook
- 180 day Trial of MS Office 2010
- Minitab 14
  
  $92.95 (price includes bookstore mark-up)
EVALUATION

Students have two grade schemes to choose from. By the end of third week, students need to notify the instructor about their preferred grade scheme. This has to be done in writing. On a piece of paper you write your name and ID and the marking scheme that you choose to follow throughout the semester. You will not be able to change this option after that. During the fourth week of classes, a list will be posted on your course website that contains information regarding each student’s preferred grading scheme.

<table>
<thead>
<tr>
<th>Component</th>
<th>Scheme #1</th>
<th>Scheme #2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assignment-submitted through Aplia (Will be discussed in class)</td>
<td>10%</td>
<td>X</td>
</tr>
<tr>
<td>Midterm #1</td>
<td>20%</td>
<td>25%</td>
</tr>
<tr>
<td>Midterm #2</td>
<td>30%</td>
<td>35%</td>
</tr>
<tr>
<td>Final</td>
<td>40%</td>
<td>40%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Exams: Midterms and Final

Final and midterms are mandatory. All exams (midterms and finals) will have multiple-choice questions and problem solving. Formula sheets will be provided. Only the use of a McMaster standard calculator is allowed during midterms and final in this course. See McMaster calculator policy at the following URL: [http://www.mcmaster.ca/policy/Students-AcademicStudies/examinationindex.html](http://www.mcmaster.ca/policy/Students-AcademicStudies/examinationindex.html)

Midterm Exam (Tentative) Schedule

<table>
<thead>
<tr>
<th>Midterm</th>
<th>(tentative) Date</th>
<th>Time</th>
<th>Rooms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Midterm #1</td>
<td>October 13th, Saturday</td>
<td>2:00 - 4:00</td>
<td>TBA</td>
</tr>
<tr>
<td>Midterm #2</td>
<td>November 3rd, Saturday</td>
<td>2:00 - 4:00</td>
<td>TBA</td>
</tr>
</tbody>
</table>

Final Exam

The final exam will be held during the final exam period in December. The exact date, time and location will be determined by the Registrar's Office.

Assignments

If you choose to do assignments, you must decide by the third week of class. Assignments are given, and marked through the Aplia website, which requires a separate registration process. The registration process is detailed at the end of this course outline. When you buy your textbook from the bookstore, it will give you access to Aplia. Keep the registration card that comes with the textbook. You will only need to register once. After the registration process is complete, you will not need to enter the course key again. For technical problems or problems signing in, please send Aplia an e-mail by clicking on the "Support" link in the lower-right corner of any page or by e-mailing support@aplia.com. Regular assignments will make you better prepared for the tests. There will be assignments and

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practice problems given through Aplia regularly. For this course, regular practice is one of the important keys to learn.

**You must attend tutorials.** During the tutorials, Teaching Assistants (TAs) will discuss use of Excel in solving statistical problems. After each class, solve problems and you will have to solve problems. In some tutorials, you will have chance to do problems with the help of the TAs. Remember that tutorials are valuable components in your learning.

**Grade Conversion**

At the end of the course your overall percentage grade will be converted to your letter grade in accordance with the following conversion scheme.

<table>
<thead>
<tr>
<th>LETTER GRADE</th>
<th>PERCENT</th>
<th>LETTER GRADE</th>
<th>PERCENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>90 - 100</td>
<td>C+</td>
<td>67 - 69</td>
</tr>
<tr>
<td>A</td>
<td>85 - 89</td>
<td>C</td>
<td>63 - 66</td>
</tr>
<tr>
<td>A-</td>
<td>80 - 84</td>
<td>C-</td>
<td>60 - 62</td>
</tr>
<tr>
<td>B+</td>
<td>77 - 79</td>
<td>D+</td>
<td>57 - 59</td>
</tr>
<tr>
<td>B</td>
<td>73 - 76</td>
<td>D</td>
<td>53 - 56</td>
</tr>
<tr>
<td>B-</td>
<td>70 - 72</td>
<td>D-</td>
<td>50 - 52</td>
</tr>
<tr>
<td>F</td>
<td>00 – 49</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Code of conduct**

You and hundreds of others are attending the classes and tutorials. Please be courteous to each other, the instructor and the teaching assistants. Turn off your cell phones before class starts. Please do not listen to music, play computer games, check emails or Facebook, text message, read the newspaper, or hold loud conversations that may be disruptive to the rest of the class. Laptop computers should be used only for taking notes during class. If you have questions or comments, please raise your hand or come to see me later.

**Communication and Feedback**

Students who are uncomfortable in directly approaching an instructor regarding a course concern may send a confidential email to the Operations Management Area Chair, Dr. Hassini (hassini@mcmaster.ca) or the Associate Dean (adbusac@mcmaster.ca).

Students who wish to correspond with instructors or TAs directly via email must send messages that originate from their official McMaster University email account. This protects the confidentiality and sensitivity of information as well as confirms the identity of the student. Emails regarding course issues should NOT be sent to the Area Administrative Assistants.

Instructors are required to provide evaluation feedback for at least 10% of the final grade to students prior to Week #8 in the term.

Instructors may conduct an informal course review with students by Week #4 to allow time for modifications in curriculum delivery.
Students who wish to have a course component re-evaluated must complete the following form:

http://www.mcmaster.ca/policy/Students-AcademicStudies/Form_A.pdf

In order for the component to be re-read:

- the component must be worth 10% or more of the final grade in the course
- students pay a fee of $50 in Gilmour Hall #209 (receipt is then brought to APO)
- the Area Chair will seek out an independent adjudicator to re-grade the component
- an adjustment to the grade for the component will be made if a grade change of three points or greater on the 12 point scale (equivalent to 10 marks out of 100) has been suggested by the adjudicator as assigned by the Area Chair
- if a grade change is made, the student fee will be refunded

**ACADEMIC DISHONESTY**

It is the student’s responsibility to understand what constitutes academic dishonesty. Please refer to the University Senate Academic Integrity Policy at the following URL:

http://www.mcmaster.ca/policy/Students-AcademicStudies/AcademicIntegrity.pdf

This policy describes the responsibilities, procedures, and guidelines for students and faculty should a case of academic dishonesty arise. Academic dishonesty is defined as to knowingly act or fail to act in a way that results or could result in unearned academic credit or advantage. Please refer to the policy for a list of examples. The policy also provides faculty with procedures to follow in cases of academic dishonesty as well as general guidelines for penalties. For further information related to the policy, please refer to the Office of Academic Integrity at:

http://www.mcmaster.ca/academicintegrity

**REQUESTING RELIEF FOR MISSED ACADEMIC TERM WORK**

Students may request relief from a regularly scheduled midterm, test, assignment or other course component in the following two ways:

a) for absences from classes lasting up to five (5) days; or
b) for absences from classes lasting more than five (5) days.

a) For absences from classes lasting up to five (5) days
Students must use the MSAF (McMaster Student Absence Form). This is an on-line, self-reporting tool, for which submission of medical or other types of supporting documentation is normally not required. Students may use this tool to submit a maximum of one (1) request for relief of missed academic work per term as long as the weighting of the component is worth 29% of the final grade or less. Students must follow up with their course instructors regarding the nature of the relief within two days of submitting the form. Failure to do so may negate the
opportunity for relief. It is the prerogative of the instructor of the course to determine the appropriate relief for missed term work in his/her course.

If the value of the component is worth 30% or more, students must report to the APO to discuss their situation and will be required to provide appropriate supporting documentation.

b) For absences from classes lasting more than five (5) days
Students cannot use the MSAF. They MUST report to the APO to discuss their situation and will be required to provide appropriate supporting documentation.

Students who wish to submit more than one request for relief of missed academic work per term cannot use the MSAF. They must report to the APO and discuss their situation with an academic advisor. They will be required to provide supporting documentation and meet with the Director.

The MSAF cannot be used during any final examination period.

Students who require accommodations to meet a religious obligation or to celebrate an important religious holiday must make their requests in writing within three weeks of the start of term to the APO.

Students seeking relief due to: work-related (for part-time students only) commitments; representing the university at an academic or varsity athletic event; and/or conflicts between two (or more) overlapping scheduled midterm exams, have the option of applying for special exam arrangements. Such requests must be made to the APO at least ten (10) working days before the scheduled exam along with acceptable documentation. There will be only one common sitting for the special exam. Instructors cannot themselves allow students to unofficially write make-up exams/tests. Adjudication of the request must be handled by the APO.

**STUDENT ACCESSIBILITY SERVICES**

Student Accessibility Services (SAS) offers various support services for students with disabilities. Students are required to inform SAS of accommodation needs for examinations on or before the last date for withdrawal from a course without failure (please refer to official university sessional dates). Students must forward a copy of such SAS accommodation to the instructor immediately upon receipt. If a student with a disability chooses NOT to take advantage of an SAS accommodation and chooses to sit for a regular exam, a petition for relief may not be filed after the examination is complete. The SAS website is: [http://sas.mcmaster.ca](http://sas.mcmaster.ca)

**POTENTIAL MODIFICATIONS TO THE COURSE**

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.

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COMMERCIAL 2QA3
APPLIED STATISTICS FOR BUSINESS
FALL 2011 COURSE SCHEDULE

TENTATIVE COURSE SCHEDULE

During the first class for day session, we will discuss course outline, assignment submission, etc. Night section (3 hour time slot) will have more than discussion of course outline during the first class.

From the second class we will start our course materials (for day classes). Each chapter should take a week to finish (ideally). But, sometimes few chapters need more time than a week. Generic slides for each chapter will be posted on the website before the class. During the lecture we will solve problems from texts and other sources. Assignments are given on Aplia. During tutorials, teaching assistants will solve some problems, and will help you to solve some problems.

<table>
<thead>
<tr>
<th>WEEK</th>
<th>WEEK OF</th>
<th>TOPIC</th>
<th>READING/ASSIGNMENT/IN-CLASS</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-2</td>
<td>Sept. 3 and Sept. 10</td>
<td>Course overview and introduction, Ch. 1</td>
<td>Lab: No tutorial this week</td>
</tr>
<tr>
<td>3</td>
<td>Sept. 17</td>
<td>Descriptive Statistics, Ch. 2</td>
<td>Tutorial 1 Assignment 1_Practice Assignment</td>
</tr>
<tr>
<td>4</td>
<td>Sept. 24</td>
<td>Descriptive Statistics: Numerical Measures, Ch. 3</td>
<td>Tutorial 2</td>
</tr>
<tr>
<td>5</td>
<td>Oct. 1</td>
<td>Introduction to Probability, Ch. 4</td>
<td>Tutorial 3</td>
</tr>
<tr>
<td>6</td>
<td>Oct. 8</td>
<td>Discrete Probability Distributions, Ch. 5</td>
<td>Tutorial 4</td>
</tr>
<tr>
<td>7</td>
<td>Oct. 15</td>
<td>Continuous Probability Distribution, Ch. 6</td>
<td>Tutorial 5</td>
</tr>
<tr>
<td>8</td>
<td>Oct. 22</td>
<td>Sampling and Sampling Distribution Ch. 7</td>
<td>Tutorial 6</td>
</tr>
<tr>
<td>9</td>
<td>Oct. 29</td>
<td>Interval Estimates Ch. 8</td>
<td>Tutorial 7</td>
</tr>
<tr>
<td>10</td>
<td>Nov. 5</td>
<td>Hypothesis Tests Ch. 9</td>
<td>Tutorial 8</td>
</tr>
<tr>
<td>11</td>
<td>Nov. 12</td>
<td>Comparison Involving Means, Experiment Design and ANOVA</td>
<td>Tutorial 9</td>
</tr>
<tr>
<td>12</td>
<td>Nov. 19</td>
<td>Comparison Involving Proportions and a Test of Independence Ch. 11</td>
<td>Tutorial 10</td>
</tr>
<tr>
<td>13</td>
<td>Nov. 26 and Dec. 3</td>
<td>Simple linear regression Ch. 12</td>
<td>Tutorial 11</td>
</tr>
</tbody>
</table>