

# COMM 215

## Business Statistics

### Section EC

### Fall 2016

**This syllabus is subject to change and any changes will be posted in the Announcements section of your eConcordia portal.**

**Disclaimer: In the event of extraordinary circumstances beyond the University's control, the content and/or evaluation scheme in this course is subject to change.**

## About this course

### Instructor

**Instructor:** Dr. Fassil Nebebe

**Instructor Contact Information:** [comm215@econcordia.com](mailto:comm215@econcordia.com)

This email address allows you to contact the Professor directly with any general inquiries. If you have any questions or concerns about the course, or if there is a delay in hearing back from your TA, please do not hesitate to use this email.

TA Contact Information: available through the course website

**Note:** Please email your TA with any questions or concerns you have, or if you require further feedback. Also, allow for a 24 hour response time during the week (Monday-Friday). Teaching Assistants check their messages once over the 48 hour weekend period and are not available on statutory or university holidays.

## Course description

This course introduces the fundamentals of statistics as applied to the various areas of business and administration. Topics covered include techniques of descriptive statistics, basic theory of probability and probability distributions, estimation and hypotheses testing, chi-square tests in contingency table analysis and for goodness-of-fit, and linear regression and correlation.

**Prerequisite:** MATH 208 or equivalent and MATH 209 or equivalent; DESC 200 or INTE 290 or COMP 248 previously or concurrently.

### Learning Objectives

This course introduces statistics as a tool for dealing with information in quantitative form. Students will learn statistical skills that will contribute effectively to management and policy formation. This course aims at helping the student to achieve the following learning objectives:

#### Learning Objective 1

Understand the essentials of business data collection and the identification of different types of measurements.

#### Learning Objective 2

Describe collected data using various graphical, tabular and numerical summary methods.

#### Learning Objective 3

Understand the notion of probability and sampling variability and their role in business decision making for both continuous and categorical data measurements

#### Learning Objective 4

Analyze observational or experimental studies involving multi-dimensional data using the technique of regression.

#### Learning Objective 5

Use statistical software package and/or EXCEL statistics add-in for the analysis of business data and the effective presentation of statistical findings.

#### Course Materials

The material for this course consists of a required textbook and the COMM 215 course website which includes the video lectures, assignments and other course material.

#### Required Textbook

Title: BUSINESS STATISTICS: A Decision-making Approach

Author: D.F. Groebner, P.W. Shannon and P.C. Fry

ISBN: 978-1-269-46292-1

Publisher: Pearson

Edition: Ninth, CUSTOMIZED FOR CONCORDIA UNIVERSITY

#### Chapter sections covered

**Chapter 1:** Sections 1.1 to 1.5 except 1.2,1.3; **Chapter 2:** Sections 2.1 to 2.3; **Chapter 3:** Sections 3.1 to 3.3; **Chapter 4:** Sections 4.1, 4.2 except Bayes' Theorem; **Chapter 5:** Sections 5.1, 5.2; **Chapter 6:** Sections 6.1; **Chapter 7:** Sections 7.1, 7.2, 7.3; **Chapter 8** Sections 8.1, 8.2, 8.3; **Chapter 9** Sections 9.1, 9.2; **Chapter 13:** Section 13.1, 13.2; **Chapter 14** Sections 14.1,14.2,14.3; **Chapter 15** Section 15.1 except Adjusted  $R^2$ .

Once you are registered for the course, you can purchase your textbooks online from the [Concordia Bookstore](#) or in person at the McConnell Building, 1400 de Maisonneuve Blvd. West. Please note that textbooks ordered online from the Concordia Bookstore will be shipped only 5 working days from the date the order was placed.

#### Course Website

The course website can be accessed at [www.econcordia.com](http://www.econcordia.com)

Your eConcordia account will be valid until the end of the term for which you are registered.

Your account will allow you to access the online course material, which includes videos, notes, discussion boards, all graded course components, useful links, readings and many more resources from the course website for the duration of the term.

#### Assessments

##### Graded Assessments

Activity	%
Quizzes ( <i>best 4 of 6</i> )	10
Mid-term Examination ( <b>in-class exam</b> <b>- October 16, 2016, 17:00-19:00;</b> <b>Venue: TBA*</b> )	25
Case/Data analysis	10
Final Examination** (comprehensive)	55
Total	100

\* Classroom assignments for the midterm examination to be posted later.

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To receive credits for the course, a student must score at least 50% in the final examination.

## Description of Graded Assessments

### Quizzes: Best 4 of 6 (10%)

Quizzes are problems intended to reinforce specific methodological objectives treated in Lessons. There will be six online quizzes. The **best 4 of the 6** quiz results will be counted and there is **no replacement quiz for missing a quiz**, whatever the reasons may be. The quizzes constitute conceptual and business application skill developing questions in 'multiple choice' and 'solve and fill-in-the-blanks' formats. Each quiz is designed to evaluate the learning outcome of certain topics.

The questions of the quizzes are mainly from the indicated chapters. However, correct answer to questions may require knowledge of material covered in previous chapters.

- Quiz 1: On data collection and their description using graphical and tabular methods as well as numerical measures (material covered in chapters 1, 2 and 3)
- Quiz 2: On basic probability concepts and include all of chapter 4 (except Bayes' theorem).
- Quiz 3: On the general concepts of discrete and continuous probability distributions (material covered in chapters 5 and 6).
- Quiz 4: On sampling distributions and their roles in statistical inferences such as interval estimation (material covered in chapters 7 and 8).
- Quiz 5: On the notion of hypothesis testing and its applications in tests of goodness of fit and independence (Chapter 9 and 13)
- Quiz 6: On measure of association and linear regression analysis (Chapter 11).

### Case/Data Analysis (10%)

EXCEL is used to work with data management and analysis in this course. The case/data analysis is intended to reinforce specific methodological objectives treated in the chapters. **It can be done individually or in groups of at most 5 students.**

### EISEL

For the online section, students are encouraged to participate in **EISEL** for practice sessions. **EISEL** is an interactive, random generator of numerous multiple choice and/or true or false questions as practice tools designed to help students learn the course materials and to prepare them for the quizzes and examinations. There will be a number of activities, one per chapter, designed to help students prepare for the midterm and final examinations.

### Midterm Examination (25%)

A midterm examination on campus, has been scheduled for **October 16, 2016, 17:00-19:00; Venue: TBA**. It is based on materials from the included sections of Chapters 1 to 6 of the textbook. The midterm examination will have both multiple choice questions and regular problems.

Your assigned room for the midterm examination will be posted at a later date.

### Final Examination (55%)

The final examination is worth 55% of the total mark for this course. In order to pass the course, you must score at least 50% out of the final examination total. The final examination is comprehensive and will be based on all covered chapters and sections of the textbook. The final examination will have both multiple choice questions and regular word problems.

### Course-embedded assessment of learning objectives

	Quiz 1	Quiz 2	Quiz 3	Quiz 4	Quiz 5	Quiz 6	Midterm	Final	Case
LO1	X						X	X	X
LO2	X						X	X	X
LO3		X	X	X	X			X	X
LO4						X		X	
LO5									X

**Learning Objective 1:** Understand the essentials of business data collection and the identification of different types of measurements

**Assessed by Activities:** Quiz 1, Midterm and the Final Exam.

Multiple choice questions are used in quiz 1, and both the midterm and final have multiple choice and word problems formulated in the setting of a short business application some of which involve different scales of measurement

**Learning Objective 2:** Describe collected data using various graphical, tabular and numerical summary methods.

**Assessed by Activities:** Quiz 1, Midterm, Final Exam and a Case Analysis.

The student is asked both conceptual and technical calculation questions in quiz 1, midterm and final. In the case analysis, the student is presented with data from a business application and asked to summarize the data and draw conclusions using appropriate methods.

**Learning Objective 3:** Understand the notion of probability and sampling variability and their role in business decision making for both continuous and categorical data measurements

**Assessed by Activities:** Quizzes 2 to 5, Midterm, Final Exam and a Case Analysis.

The student is asked both conceptual and technical calculation questions in the quizzes, midterm and the final. The student is required in the case analysis to formulate and investigate hypotheses relevant to the main decision problems to be tackled.

**Learning Objective 4.** Analyze observational or experimental studies involving multi-dimensional data using the technique of regression.

**Assessed by Activities:** Quiz 6 and the Final Exam.

There are both multiple choice and word problems in the final exam that present both hypothetical and real application scenario designed to test the conceptual understanding and the technical knowledge in regression analysis

**Learning Objective 5.** Use statistical software package and/or statistics add-in for the analysis of business data and the effective presentation of statistical findings

**Assessed by Activities:** Case Analysis.

The case needs extensive uses of EXCEL and add-on for an in-depth analysis. The student is required to submit a formal report on the analysis of the case.

Evaluation will be based on a number of quizzes, case/data analysis, a midterm examination and a final examination with marks distributed as shown under 'Grade Assessments' above.

### Important Points to note

- You are only allowed to use non-programmable calculators with no graphical functions in the midterm and the final examinations. The calculators do not have to be "certified" by the university. Sharing of calculators is not allowed.
- A list of formulae will be provided in the examinations and you are expected to know and be able to recall formulae from the covered chapter sections of the textbook.
- You **MUST write your examination in the assigned room**. Failure to do so will result in the forfeiting of the examination.
- You **MUST** read carefully and follow the instructions on the front page of the examination paper. In particular, the examination booklet (tables and formula sheet included) must not be torn or mutilated in any way, and must not be taken from the examination room. You are also expected to comply with the instructions given by an invigilator during the examination.
- The final examination is run by the Examination Office. You should resolve any issues regarding the final examination with the Examination Office. Please refer to the "general Final Examinations regulations", "room regulations" and "academic code of conduct" on their website (<http://registrar.concordia.ca/exam/>).

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### Grades

In order to view your grades throughout the semester, click on the *My Grades* link in your eConcordia portal.

It is your responsibility to ensure your work has been received (to be verified as outlined in your assignment instructions) and to contact your TA via e-mail for clarification if you have any questions concerning your grades.

### Feedback and Grading

The objective of this course is to broaden your knowledge and skills in the area of Business Statistics. Problem solving sessions in the tutorials will enable you to develop a better understanding of this field. Feedback will be provided to you throughout the course.

At the end of each course, the instructor will submit a letter grade for every student registered. Using the grade point equivalents listed below, Grade Point Averages (GPA) are calculated for the evaluation of academic achievement, Honors standing, prizes, and academic standing.

### Grading Distribution

The following list provides the equivalent letter and number grades for assignments in this course:

Letter	Number
A+	90 - 100
A	85 - 89
A-	80 - 84
B+	77 - 79
B	73 - 76
B-	70 - 72
C+	67 - 69
C	63 - 66
C-	60 - 62
D+	57 - 59
D	53 - 56
D-	50 - 52
F	0 - 49

\* D- is the minimum requirement to pass the course

### Important Links

Topic	Link
Communication	<a href="#">Communication</a>
eConcordia Information	<a href="#">eConcordia Information</a>
Final Exams Information	<a href="#">Final Exams</a>
Plagiarism	<a href="#">Academic Integrity</a>
Refunds	<a href="#">Refunds</a>
Access Centre for Students with Disabilities	<a href="#">ACSD</a>
Technical Issues	<a href="#">Technical</a>
Concordia Library Citation & Style Guides	<a href="#">Citing - Help &amp; How-to</a>

# COMM 215 - Business Statistics

## Agenda

### Fall 2016

All deadlines indicated are on the due date listed by 11:59 p.m. unless otherwise indicated.

Week 1: September 6 - September 11	
	Review the Course Outline and Agenda
	Navigate the Course Website
	Lesson 0 - About This Course
	Lesson 1 - The Where, Why and How of Data Collection
<b>September 06</b>	<b>Discussion Board opens at 2 PM</b>
	Chapter 1: All Sections
Week 2: September 12 - September 18	
	Lesson 2 – Descriptive Statistics
	Chapter 2: Sections 2.1 to 2.3, Chapter 3: 3.1 to 3.3
Week 3: September 19 - September 25	
	Lesson 3 –Introduction to Probability
	Chapter 4: Sections 4.1, 4.2 except Bayes' Theorem
<b>September 19</b>	<b>DNE Date: Academic withdrawal deadline (with tuition refund)</b>
<b>September 19</b>	<b>Last day to add two term and fall-term courses.</b>
<b>September 22</b>	<b>QUIZ 1 - LESSONS 1 and 2</b>
Week 4: September 26 - October 2	
	Lesson 4 – Discrete Probability Distribution
	Chapter 5: Sections 5.1, 5.2
Week 5: October 3 - October 9	
	Lesson 4 – Discrete Probability Distribution
	Chapter 5: Sections 5.1, 5.2
	Lesson 5 - Introduction to Continuous Probability Distribution
	Chapter 6: Sections 6.1
<b>October 04</b>	<b>QUIZ 2: LESSON 3</b>
Week 6: October 10 - October 16	
	Lesson 6 – Introduction to Sampling Distributions
	Chapter 7: Sections 7.1, 7.2, 7.3
<b>October 10</b>	<b>Thanksgiving Day -- University closed</b>
<b>October 12</b>	<b>QUIZ 3: LESSON 4 and 5</b>
<b>October 16</b>	<b>In-class midterm exam on October 16, from 17:00-19:00, rooms to be assigned later date</b>

Week 7: October 17 - October 23	
	Lesson 7 – Estimating Single Population Parameter
	Chapter 8 Sections 8.1, 8.2, 8.3
Week 8: October 24 - October 30	
	Lesson 8 Introduction to Hypothesis Testing
	Chapter 9 Sections 9.1, 9.2, 9.3
Week 9: October 31 - November 6	
	Lesson 9 - Goodness of fit Test and Contingency Analysis
	Chapter 13: Section 13.1, 13.2
November 03	<b>QUIZ 4 - LESSON 6 and 7</b>
November 06	<b>DISC Date: Academic withdrawal deadline from fall-term courses. (without tuition refund)</b>
Week 10: November 7 - November 13	
	Lesson 10 Introduction to Linear Regression and Correlation Analysis
	Chapter 14 Sections 14.1,14.2,14.3
Week 11: November 14 - November 20	
	Lesson 10 Introduction to Linear Regression and Correlation Analysis (continued)
	Chapter 14 Sections 14.1,14.2,14.3
November 17	<b>QUIZ 5: LESSON 8 and 9</b>
Week 12: November 21 - November 27	
	Lesson 10 Introduction to Linear Regression and Correlation Analysis (continued)
	Chapter 14 Sections 14.1,14.2,14.3
	Lesson 11 - Multiple Regression Analysis and Model Building
	Chapter 15 Sections 15.1
November 21	<b>Course Evaluation released</b>
November 21	<b>DATA ANALYSIS DUE</b>
November 24	<b>QUIZ 6: LESSON 10</b>
Week 13: November 28 - December 4	
	Lesson 11 - Multiple Regression Analysis and Model Building (Continued)
November 28	<b>Last day for instructor-scheduled tests or examinations</b>
	Chapter 15 Sections 15.1
Week 14: December 5 - December 11	
December 05	<b>Last day of classes</b>
December 06	<b>Deadline to complete Course Evaluation</b>
Examinations Period: December 7 - December 21	

	<ul style="list-style-type: none"><li>• <b>Final Examination: <i>Comprehensive - ALL covered chapters/sections</i></b></li><li>• <b><i>To receive credits for this course, a student must obtain at least 50% on the final examination.</i></b></li></ul>
	<b>Final Exam date, time and location is posted on your MyConcordia Portal</b>

[top](#)