



## **STA 210 Introduction to Business Statistics (3) Winter 2014**

### **Class Schedule**

Time : Mondays, 1:00 – 2.15 p.m. (Lab sessions)  
Wednesdays & Fridays, 9:45 – 11:00 a.m. (Lectures)  
Location : Room A2131

### **Instructor Information**

Instructor : Dr. Aries Sutantoputra  
Phone : 403-410-2000 (ext. 6907)  
Email : ASutantoputra@ambrose.edu  
Office : Room L2052

### **Office hours:**

- Mondays, 2.30 – 3.30 p.m.
- Wednesdays & Fridays, 11:15 a.m.-12:00 p.m.
- By appointment

### **Course Description**

This course is designed to give students a basic understanding of descriptive and inferential statistics. Emphasis is placed on practical application and students will learn to analyze and interpret basic statistical research. Topics include collection and presentation of data, descriptive statistics, introduction to probability theory, estimation, hypothesis testing, and linear regression. Students will also learn to use computer software to analyze data. This course has a lab component.

Statistics are a means of converting data into useful information that can be used to assist the business decision maker in making more thoughtful, information-based decisions. Specific topics include: the different levels of data, sampling, techniques for summarizing and depicting data, techniques to describe data, principles of probability, probability distributions, sampling distributions, constructing confidence intervals, hypothesis testing and simple regression analysis

The course has lecture and lab components. Classroom time will be devoted mainly to explanation and discussion of theory and methods. Lab time will be devoted to demonstration of statistical software applications by the instructor, and to hands-on practice by the students and/or to completion of assignments (or, occasionally, to the completion of a lecture or the writing of a quiz).

## **Course Objectives**

Students are expected to acquire sound understanding of principles, concepts and analysis of statistics after the completion of this course. This in turn will prepare them to take on more advanced statistics courses. More specific course objectives for students are as follows.

1. To develop an understanding of basic principles and analysis techniques in statistics
2. To get used to working with data including selecting, interpreting and presenting data.
3. To be able to perform hypothesis testing.
4. To understand and apply statistical techniques in data analysis and projections.
5. To understand and apply statistical techniques in business decisions.

## **Additional Information**

As noted, this is an introductory course that assumes no prior knowledge of statistics, but the student is required to have completed a course of instruction in basic principles of mathematics (MATH 30-1 or MATH 30-2) prior to commencing this course and have completed one of the pre-requisite courses (i.e MA 110, 111, 149). Students are also required to be competent in the use of personal computers (including basic familiarity with Excel) and must have good working knowledge of basic mathematics (fractions, percentages, decimals, and simple algebraic equations).

The lab sessions are an integral part of the course – attendance at lab sessions is not to be regarded as optional. Some lab sessions may be used to finish up coverage of materials that could not be completed during the regular lecture sessions and may also be devoted to the writing of quizzes.

## **Course Organization**

The course will include 15 weeks of study, where one mid-term and one final exam will take place. A new topic(s) will be covered each week, and problem-solving exercises in relation to the topic of the week will be reviewed and discussed in class or lab sessions. There will be weekly online assignments through Connect platform, four in-class quizzes/take-home assignments. In addition, there might some additional in-class assignments as assigned by the instructor. The active participation in class discussions is absolutely necessary to have a satisfactory grade in the course.

## **Instructional Method**

This is a demanding course that requires a lot of hard work in- and outside of the class. Students are expected to keep up with the weekly readings and exercises/problem solving assignments. There will be weekly on-line assignments that will be administered through Connect platform, a learning management system from the textbook that we use and hence, you need to get an access code that comes with the textbook.

Lectures will be used to provide grounding for the particular content/chapter and may not be able to cover the whole materials in the chapters.

Some problems will be reviewed and discussed in the class to ensure that students fully grasp the concepts, theories and analytical techniques. At times students will be asked to solve the problems in the class or present their solutions for the weekly assignments. This approach will allow practical exploration and peer-to-peer learning.

It is important for students to know how to set up problems and select the right concepts, theories, formulae to solve these. The calculations part will be the continuation of these processes and can be done using the aides such as statistical calculator and excel spreadsheet (MegaStat). These aides will generate the right results if we put the right inputs. They should serve as means and not the end. You will still get results, the wrong ones, if you set up the problems incorrectly.

In order to succeed in completing this course, some systematic approaches that students may adopt are listed as follows. Students, at a minimum, should:

- Come to class prepared by reading the materials beforehand. Try to prepare a summary on weekly basis. Lectures are not substitutes for readings.
- Have done the on-line assignments and other assignments before they are reviewed and discussed in the class.
- Attend all the class sessions and participate actively in discussions.
- Discuss with your instructor if you have any difficulties in understanding the materials and doing the problems.

## **REQUIRED TEXT**

Lind, D.A., Marchal, W.G., Wathen, S.A. & Waite, C.A. (2012). *Basic Statistics for Business and Economics* (4<sup>th</sup> Canadian ed.). Toronto: McGraw-Hill Ryerson.

Students need to get access code for Connect platform that will be used for online assignments and downloading MegaStat application.

Available for purchase in the Ambrose College Bookstore.

MegaStat is an add-on function on Excel that allows sophisticated statistical analysis. The access for MegaStat comes with the textbook that can be downloaded via Connect platform. You can also use MegaStat on the Ambrose laptops during lab sessions or library computers. Students will be required to complete some assignments using Megastat.

## **Other Materials**

Each student is required to possess a hand-held electronic calculator *with statistical functions*. While a particular calculator (make and model) cannot be specified, it is imperative that the calculator have statistical capabilities comparable to the **TI BA II Plus Professional**. The course instructor will be demonstrating problem-solving with calculator applications, and will provide considerable assistance with the **TI BA II Plus Professional** calculator. Because of the wide variety of calculators in use, the instructor cannot provide such assistance with other

calculators, and each student is therefore ultimately responsible for knowing how to use the calculator that he/she brings to the course. Students who do not already possess such a calculator may wish to obtain information from the instructor during the first week of classes before deciding on the make and model to acquire

## Assessment of Learning

### Grading Items

Grade breakdown	Percentage (%)	% Grade	Letter Grade	Description
Course contribution and participation	10	95% to 100%	A+	Excellent
		90% to 94%	A	
		85% to 89%	A-	
Weekly online assignments	15	80% to 84%	B+	Good
		76% to 79%	B	
		72% to 75%	B-	
In-Class Quizzes/Take-home assignments	20	68% to 71%	C+	Satisfactory
		64% to 67%	C	
		60% to 63%	C-	
		55% to 59%	D+	Minimal Pass
50% to 54%	D			
Mid-term exam	25	0% to 49%	F	Failure
Final exam	30			
<b>TOTAL</b>	<b>100</b>			

Note: All assignments have to be submitted, either on-line or hardcopy format, depending on the instructions given by instructor and by the deadlines indicated in the course schedules or informed by the instructor. Late assignments will lose 10% of maximum mark (i.e. 10 out of 100 points) per day late, including weekend. After 5 days late or assignments have been reviewed and discussed in the class (whichever takes place first), assignments will not be accepted.

## **Course contribution and participation**

The general expectation is that students will attend all classes and lab sessions in which they are registered. A combination of low academic performance and notable absences from classes or lab sessions may be brought to the attention of the program head. Additionally, a portion of the final grade for this course includes a percentage for *participation*, and absences from lecture and/or lab sessions can negatively impact marks for participation.

Classroom learning will be built up by lectures, discussions, and mutual sharing of ideas and opinions in a professional attitude. Students are expected to participate actively in class, among other things, by asking questions, answering questions, sharing knowledge and ideas, discussing problems, doing the assigned exercises and presenting model answers.

Students are expected to attend all class meetings. If external circumstances or illness prevent you from attending or adequately preparing for a class, please let the instructor know ahead of time so that this can be taken into account, as repeated absences from class will negatively impact a student's individual participation grade.

Marks for classroom participation are based on the instructor's impression (cumulative throughout the semester) of the student's classroom attentiveness, attitude, and quality of contribution to classroom discussion.

## **Weekly online assignments**

These assignments are used to test a student's understanding on the materials covered and monitor each student's progress and performance throughout the course period. Each assignment will be given after the materials have been covered in the lecture. Some of the problems or exercises will be reviewed and covered on the following class meeting.

Even though students will be given the same test materials, Connect Platform allows customizations using their algorithms, which will generate similar but slightly different questions. Hence, students need to understand the process in solving the problems not just simply focusing on end results. There will likely be more than 10 weekly assignments given, however, for grading purpose the best 10 results will be used.

## **In-Class Quizzes/Take-home assignments**

The quizzes will be written in-class and typically administer at the beginning of class. No extra time will be given if you come to the class late.

The assignments will be take-home exercises. Deadlines for completion and submission of the assignments will be clearly indicated in advance.

The mark for a quiz/assignment which is missed with a legitimate reason (typically illness, evidenced by a Doctor's note) will normally be spread across (transferred to) the other quizzes/assignments.

### **Mid-Term**

Exams will be used to assess students' knowledge, understanding and application of the models, concepts, theories, principles and applications on materials covered in the course (i.e. lecture, textbook, exercises/problems and class discussions and other additional materials assigned and/or given in the class).

The mid-term examination will be 75 minutes in length written during regular class time and can cover all materials included in the course up to the date of the exam. A grade of 0 will be awarded for a mid-term examination missed without a legitimate reason. If the mid-term examination is missed with a legitimate reason, a make-up mid-term examination will be arranged within one week. If the instructor determines that this arrangement is not practical, the final grade will be reallocated depending on the instructor's discretion.

### **Final Exams**

The final examination will be comprehensive (i.e., will cover any materials included in the course), but emphasis will be on the materials covered after the mid-term. The final examination will have a maximum writing time of three hours (180 minutes).

The final examination will be written during the final examination period – April 12<sup>th</sup> to 19<sup>th</sup>, 2014 – following the last day of classes. It is the student's responsibility to ensure that he/she does not have any conflicting commitments during the final examination period.

The final exam will not be returned to the students.

All in-class quizzes and exams are closed book (no textbook, computerized personal organizers, class notes, course handout materials, assignment/quiz/exam papers, etc. are permitted) unless advised otherwise by the instructor.

Allowed aids in all in-class quizzes include:

- a hand-held, non-programmable, statistical calculator
- statistical tables (provided by the instructor, as needed)
- one sheet of notes (8.5 by 11-inch paper, both sides) containing formulae and notes **generated by the student**. Photocopied pages not permitted.

Allowed aids in the mid-term and final exams include:

- a hand-held, non-programmable, statistical calculator
- statistical tables (provided by the instructor, as needed)

- two sheets of notes (8.5 by 11-inch paper, both sides) containing formulae and notes **generated by the student**. Photocopied pages not permitted.

Students are reminded that examinations will be actively invigilated. Students may only bring to an examination room items stipulated by the instructor to be required for the completion of the examination. All non-essential items (including, but not limited to, hats, coats, gloves, knapsacks, purses, and electronic devices other than approved calculators) must be left in an area of the examination room designated by the instructor. All cell phones and other unauthorized electrical devices **MUST** be turned off during examinations. Failure to comply may result in a failing grade for the examination.

### **Important Dates for Registration, Withdrawal, and Course Auditing**

*January 19, 2014, is the last day to enter a course without permission, or to withdraw from a course without incurring a financial penalty in terms of tuition refund, or to change to audit.*

*March 3, 2014, is the last day to request revised time for a final exam.*

*March 21, 2014, is the last day to voluntarily withdraw from a course without academic penalty.*

*Course withdrawal forms are available from the Registrar. Students who do not follow the proper withdrawal procedures will be recorded as having failed the course.*

### **GENERAL CLASS PROCEDURES**

1. Students are expected to accord the same professional respect to their classmates' contributions as they do to the instructor. Courtesy, kindness, and respect are great human qualities to be cultivated.

#### **2. Attendance policy**

*Students are expected to attend all classes, both because of the pace and amount of material in the course, and also because of the classroom interaction and activities which are vital to the structure of the course. In the case of absence, you are responsible for the material covered and to turn in any required assignments on time.*

*Problems in coming to class should be discussed with the instructor, when possible, before the class is missed. Missed classes without prior communication with the instructor will result in loss of participation points.*

*Makeup quizzes/exams will only be given for valid reasons (illness, emergency, etc.) and with proper documentation. **Unexcused absences may result in a loss of grades.***

### **3. Lateness**

*Arriving late for class will lower your participation score. If the students happen to come late quite frequent, the instructor has the right to refuse the students joining the class session, which in turn will lower the students' participation marks.*

### **4. Time Deadlines.**

*Exams, assignments, and homework all have pre-scheduled due dates. On occasion, it may be necessary to alter these dates because of our progress during the semester. You will always be given advance notice of such changes.*

5. Students are expected to complete the assignment within the given timeframes. In the event a student cannot maintain the schedule due to some unforeseen and unavoidable emergency, an accommodation may be made at the discretion of the instructor. In the case of legitimate or approved absence, the assigned date may be rescheduled to a later date, or if this is not practically possible, the marks may be reallocated to other components of the course grade. However, your grade may be adversely affected.
6. I will actively use Moodle for posting class-related materials (announcements, course documents, ppt. slides, or other information), and communication. Please make sure you regularly check our class' Moodle page.

### **7. In-class Use of Electronic Devices**

*The use of personal electronic devices by students in-class is purely at the discretion of the instructor. The use of music players, earphones, cell phones, PDAs, or any other personal entertainment devices will not be allowed in-class at any time. Typically, laptop or notebook computers may be utilized only for taking notes or reviewing course materials if necessary. However, if laptop use becomes a distraction for other students in the class, or is used for activities that are not class-related (i.e. Internet browsing, playing games, watching videos, emailing, chatting, etc.), the instructor will ask the student to stop using the laptop and put it away, and make a deduction to the student's course participation grade – 20% deduction for first instances; additional 40% deduction and loss of laptop use for the remainder of the semester for any repeat instances.*

*Audio or video recording of class lectures is strictly prohibited without the prior expressed consent of the instructor.*

*If you are expecting communication due to an emergency, please speak with the professor before the class begins.*

8. All work in this course is expected to be that of the individual student. The work of others is to be appropriately cited (see below on the issue of academic integrity). Any term paper or examination that misrepresents the work of others as that of the student will receive failing grade.



## **Important Notes**

*Students are advised to retain this syllabus for their records. It is the responsibility of all students to become familiar with and adhere to academic policies as stated in the Student Handbook and Academic Calendar. Personal information, that is information about an individual that may be used to identify that individual, may be collected as a requirement as part of taking this class. Any information collected will only be used and disclosed for the purpose for which the collection was intended. For further information contact the Privacy Compliance Officer at [privacy@ambrose.edu](mailto:privacy@ambrose.edu).*

*Although extensions to coursework in the semester are at the discretion of the instructor, students may not turn in coursework for evaluation after the last day of the scheduled final examination period unless they have received permission for a “Course Extension” from the Registrar’s Office. Requests for course extensions or alternative examination time must be submitted to the Registrar’s Office by the appropriate deadline (as listed in the Academic Calendar <https://www.ambrose.edu/publications/academiccalendar>). Course extensions are only granted for serious issues that arise “due to circumstances beyond the student’s control.”*

*We are committed to fostering personal integrity and will not overlook breaches of integrity such as plagiarism and cheating. Academic dishonesty is taken seriously at Ambrose University College as it undermines our academic standards and affects the integrity of each member of our learning community. Any attempt to obtain credit for academic work through fraudulent, deceptive, or dishonest means is academic dishonesty. Plagiarism involves presenting someone else’s ideas, words, or work as one’s own. Plagiarism is fraud and theft, but plagiarism can also occur by accident when a student fails or forgets to give credit to another person’s ideas or words. Plagiarism and cheating can result in a failing grade for an assignment, for the course, or immediate dismissal from Ambrose. Students are expected to be familiar with the policy statements in the current academic calendar and the student handbook that deal with plagiarism, cheating, and the penalties and procedures for dealing with these matters. All cases of academic dishonesty are reported to the Academic Dean and become part of the student’s permanent record.*

*Course changes, including adding or dropping a course, may be made during the Registration Revision period, as outlined in the Calendar of Events. All course changes must be recorded on a Registration form, available from the Office of the Registrar. Due to circumstances such as class size, prerequisites or academic policy, the submission of a Registration form does not guarantee that a course will be added or removed from a student’s registration. Students may change the designation of any class from credit to audit up to the date specified in the Calendar of Events, although students are not entitled to a tuition adjustment or refund after the Registration Revision period.*

*Withdrawal from courses after the Registration Revision period will not be eligible for tuition refund. Students intending to withdraw from some or all of their courses must submit a completed Registration form to the Registrar’s office. The dates by which students may voluntarily withdraw from a course without penalty are listed in the Calendar of Events. A grade of ‘W’ will be recorded on the student’s transcript for any withdrawals from courses made after the end of the Registration Revision period and before the Withdrawal Deadline (also listed in*

*the Calendar of Events). 'W' grades are not included in grade point average calculations. A limit on the number of courses from which Academic a student is permitted to withdraw may be imposed. Students wishing to withdraw from a course, but who fail to do so by the applicable date, will receive the grade earned in accordance with the course syllabus. A student obliged to withdraw from a course after the Withdrawal Deadline because of health or other reasons may apply to the Registrar for special consideration.*

*An appeal for change of grade on any course work must be made to the course instructor within one week of receiving notification of the grade. An appeal for change of final grade must be submitted to the Office of the Registrar in writing within 30 days of receiving notification of the final grade, providing the basis for appeal. A review fee of \$50.00 must accompany the appeal to review final grades. If the appeal is sustained, the fee will be refunded.*

**STA 210 Business Statistics**  
**Mondays, 1:00 – 2:15 p.m.**  
**Wednesdays & Fridays, 9:45 – 11:00 a.m.**

**Course Schedule**

Please note that this schedule is provisional, and may vary from time to time depending on the progress achieved and/or on the needs of the students. Additional readings and exercises may be required from time to time.

Week	Dates	Unit/Theme	Topic	Readings and Tasks
1	Mon, 6 Jan 2014		No class	
	Wed, 8 Jan 2014		Course Introduction	Course Syllabus
	Fri, 10 Jan 2014	<b>Overview of Statistics</b>	What is Statistics?	Chpt. 1
2	Mon, 13 Jan 2014	<b>Describing Data</b>	<i>Frequency Tables, Frequency Distributions and Graphic Presentation</i>	Chpt. 1 (Contd.)  Chpt. 2
	Wed, 15 Jan 2014			Chpt. 2 (Contd.)
	Fri, 17 Jan 2014			Chpt. 2 (Contd.)
3	Mon, 20 Jan 2014	<b>Describing Data</b>	<i>Numerical Measures</i>	Chpt.3
	Wed, 22 Jan 2014			Chapt. 3 (Contd.)
	Fri, 24 Jan 2014			Chapt. 3 (Contd.)
4	Mon, 27 Jan 2014	<b>Probability</b>	<i>A Survey of Probability Concepts</i>	Chapt. 4

Week	Dates	Unit/Theme	Topic	Readings and Tasks
	Wed ,29 Jan 2014			Chapt. 4 (Contd.)
	Fri, 31 Jan 2014			Chapt. 4 (Contd.)
5	Mon, 3 Feb 2014	<b>Probability</b>	<i>Discrete Probability Distributions</i>	Chapt. 5
	Wed, 5 Feb 2014			Chapt. 5 (Contd.)
	Fri, 7 Feb 2014			Chapt. 5 (Contd.)
6	Mon, 10 Feb 2014	<b>Probability</b>	<i>Continuous Probability Distributions</i>	Chapt. 6
	Wed, 12 Feb 2014			Chapt. 6 (Contd.)
	Fri, 14 Feb 2014			Chapt. 6 (Contd.)
7	Mon, 17 Feb 2014	No Class – Family Day		
	Wed, 19 Feb 2014	No Class – Mid-Semester Break		
	Fri, 21 Feb 2014			
8	Mon, 24 Feb 2014	<b>Mid-Term Exam</b>		
	Wed, 26 Feb 2014	<b>Sampling Distributions and Estimation</b>	<i>Sampling Methods and the Central Limit Theorem</i>	Chapt. 7
	Fri, 28 Feb 2014			Chapt. 7 (Contd.)

Week	Dates	Unit/Theme	Topic	Readings and Tasks
9	Mon, 3 Mar 2014	<b>Sampling Distributions and Estimation</b>		Chapt. 7 (Contd.)
	Wed, 5 Mar 2014		<i>Estimation and Confidence Intervals</i>	Chapt.8
	Fri, 7 Mar 2014			Chapt.8 (Contd.)
10	Mon, 10 Mar 2014			Chapt.8 (Contd.)
	Wed, 12 Mar 2014	<b>Hypothesis Testing</b>	<i>One-Sample Tests of Hypothesis</i>	Chapt. 9
	Fri, 14 Mar 2014			Chapt. 9 (Contd.)
11	Mon, 17 Mar 2014	<b>Hypothesis Testing</b>		Chapt. 9 (Contd.)
	Wed, 19 Mar 2014		<i>Two-Sample Tests of Hypothesis</i>	Chapt.10
	Fri, 21 Mar 2014			Chapt.10 (Contd.)
12	Mon, 24 Mar 2014			Chapt.10 (Contd.)
	Wed, 26 Mar 2014	<b>Analysis of Variance</b>	<i>Analysis of Variance</i>	Chapt.11
	Fri, 28 Mar 2014			Chapt.11 (Contd.)
13	Mon, 31 Mar 2014			Chapt.11 (Contd.)
	Wed, 2 Apr 2014	<b>Linear Regression</b>	<i>Linear Regression and Correlation</i>	Chapt.12

Week	Dates	Unit/Theme	Topic	Readings and Tasks
	Fri, 4 Apr 2014	<b>Linear Regression</b>		Chapt.12 (Contd.),
14	Mon, 7 Apr 2014			Chapt.12 (Contd.)
	Wed, 9 Apr 2014			Chapt.12 (Contd.)
	Fri, 11 Apr 2014			No Class – Last day of class, Thur, 10 Apr 2014
15	<b>Monday, 14<sup>th</sup> Apr 2014</b>	<b>FINAL EXAM</b>  <b>1 p.m. – 4 p.m.</b>  <b>Room: A2141</b>		

## APPENDIX A

The following problems are recommended for practice and self-study, and you are expected to each understand them. That does not preclude you from working in groups, but you should be very cautious about that.

**Chapter 1** – Chapter Review problems: 1.1, 1.2, 1.3, 1.5, 1.6, 1.10, 1.11, 1.13, 1.14

**Chapter 2** - Concepts: 1, 4-9 Problems: 5, 6, 9-17, 20, 31

**Chapter 3** - Questions and Problems: 16-17, 26-30

**Chapter 4** - Questions and Problems: 1-6, 8-11, 14, 27-29, 31

**Chapter 5** - Questions and Problems: 1-5, 16, 17, 19, 20

**Chapter 6** - Concepts Review: 2, 3, 6; Questions and Problems: 1, 3-5, 10-13, 20, 21, 29, 42, 43, 45, 57, 60, 66, 67, 71, 73

**Chapter 7** - Self-Test Problems: both Concepts Review: 1,2,5,6, 8 Questions and Problems: 1-5, 9, 11, 14-17, 20, 21, 22, 24, 25, 26, 27

**Chapter 8** - Self-Test Problems: 1, 2; Concepts Review: 1-3, 5-7, 10; Questions and Problems: 1-16, 23, 25

**Chapter 9** - Self-test: all; Concepts: 1-8, 10-11; Questions and Problems: 1, 4, 6-9, 11-14, 16, 17, 20, 23

**Chapter 10** - Self-test: all; Concepts: 1, 3, 5 Problems: 2, 5, 7-9, 11, 13, 16, 24, 25, 31, 35, 36, 41, 42.

**Chapter 11** - Questions and Problems: 1, 2, 7-9, 11-13

**Chapter 12** - Concepts: 8; Questions and Problems: 1, 4, 6, 9, 10, 12, 14, 15, 19, 21, 23, 25, 27