**BUS 111A, Statistics I**

*3 Credits, 3 hour lecture, 2 hour lab*

Students are introduced to basic statistical concepts and procedures used to solve business problems. Topics covered include: data graphics and charts; measures of central tendency and dispersion; elementary probability; probability and sampling distributions; interval estimation; hypothesis-testing; and regression & correlation. Students will also develop competence in the use of data analysis software.

*Prerequisites and/or co-requisites: BUS 103*

### Instructor
Sandra Efu
S111D
780-791-8974
sandra.efu@keyano.ca

### Office hours
| | |
|---|---|
| Monday | 10:00 am to 11:00 am |
| Tuesday | 10:00 am to 12:00 pm; 6:00 pm to 6:30 pm |
| Wednesday | 1:00 pm to 2:00 pm |
| Thursday | 3:00 pm to 3:30 pm |

### Hours of Instruction
*Monday, 11:00 am – 1:50 pm, Room CC228*
*Labs: 111Y, Tuesday, 12:00 pm – 1:50 pm, Room CC267*
*     111X, Wednesday, 2:00 pm – 3:50 pm, Room S107*

### Required Resources
Sharpe, N., De Veaux, R., Velleman, P., and Wright, D. (2018). Business Statistics, third Canadian edition. Pearson. Canada. ISBN 9780134712529.

You will require access to MyLab Statistics for assignments and tests.

Textbook with access code for MyLab Statistics is available at the Keyano bookstore. You are also able to purchase just the MyLab Statistics access (without the textbook) at the Keyano bookstore.

### Course Outcomes
Upon successful completion of the course, the student shall be able to:
- Arrange data sets and represent them using a number of organizational methods.
- Calculate the mean, median, mode, variance and standard deviation of a data set.
- Calculate the probability that any given event may occur.
- Calculate z-values in Normal Probability Distributions.
- Differentiate between z- and t-values.
- Conduct Hypothesis testing, using the five-step method, for single and two sample tests.
- Describe some of the common errors that occur in samples.
- Perform ANOVA calculations and generate the corresponding table.

**Evaluation**

| Assignment | Percentage |
|---|---|
| In-class Exercises/Quizzes | 28% |
| Concept Application/Case Study/Assignment | 27% |
| Midterm 1 | 10% |
| Midterm 2 | 10% |
| Final Examination | 25% |

*A grade of C- is required for progression or transfer.*

**Lab Assignments**
In the real world, most statistical analyses are conducted using computer software.  In this course we will be using one of the industry standards for analyzing statistics: IBM SPSS (Statistical Package for the Social Sciences).  Labs are designed to introduce students to the main features of data organization and analyses (both descriptive and inferential).  The labs serve to demonstrate how data analyses covered in the course can be conducted with the statistical software.

**Grading System**

| Descriptor | Alpha Grade | 4.0 Scale | Percent |
|---|---|---|---|
| | A+ | 4.0 | > 93.9 |
| Excellent | A | 4.0 | 87 – 93.9 |
| | A- | 3.7 | 80 – 86.9 |
| | B+ | 3.3 | 77 – 79.9 |
| Good | B | 3.0 | 74 – 76.9 |
| | B- | 2.7 | 70 – 73.9 |
| | C+ | 2.3 | 67 – 69.9 |
| Satisfactory | C | 2.0 | 64 – 66.9 |
| **Progression** | C- | 1.7 | 60 – 63.9 |
| Poor | D+ | 1.3 | 57 – 59.9 |
| **Minimum Pass** | D | 1.0 | 50 – 56.9 |
| Failure | F | 0.0 | < 50 |

# BUS 111A

**Proposed Schedule of Topics**

| WEEK OF | TOPIC | REQUIRED READING | ASSIGNMENTS & QUIZZES |
|---|---|---|---|
| 8 Jan | Introduction to Course<br>Introduction to Statistics<br>*No lab | Course Outline<br>Chapter 1 | |
| 15 Jan | Data<br>Surveys and Sampling | Chapter 2<br>Chapter 3 | In-class exercise 1<br><br>Concept Application 1 (lab) |
| 22 Jan | Displaying and Describing Categorical Data | Chapter 4 | In-class exercise 2<br><br>Concept Application 2 (lab) |
| 29 Jan | Displaying and Describing Quantitative Data | Chapter 5 | In-class exercise 3<br><br>Concept Application 3 **(review exercise)** on Chapters 1 – 5 (during lab on Jan 30 and 31) |
| 5 Feb | Scatterplots, Association, and Correlation<br><br>**Midterm Exam 1 (Chapters 1 – 5)** | Chapter 6 | The midterm exam will be written during lab on February 6 and 7 |
| 12 Feb | Introduction to Linear Regression | Chapter 7 | In-class exercise 4<br><br>Concept Application 4 (lab) |
| 19 - 23 Feb | Reading week, no classes | | |
| 26 Feb | Randomness and Probability | Chapter 8 | In-class exercise 5<br><br>Concept Application 5 (lab) |
| 5 Mar | Random Variables and Probability Distributions | Chapter 9 | In-class exercise 6<br><br>Concept Application 6 (lab) |
| 12 Mar | Sampling Distributions<br>Confidence Intervals for Proportions | Chapter 10<br>Chapter 11 | In-class exercise 7<br><br>Concept Application 7 **(review exercise)** on Chapters 6 – 11 (during lab on Mar 13 and Mar 14) |
| 19 Mar | Testing Hypothesis About Proportions<br><br>**Midterm Exam 2 (Chapters 6 – 11)** | Chapter 12 | The midterm exam will be written during lab on March 20 and 21 |
| 26 Mar | Confidence Intervals and Hypothesis Tests for Means | Chapter 13 | In-class exercise 8<br><br>Concept Application 8 (lab) |
| 2 April | Statutory holiday, no classes | | |
| 9 April | Review | | Concept Application 9 (lab) |
| 16 - 20 April | **Final Exam Week** | Comprehensive Exam<br>(All chapters covered in class) | |

*Please Note:*
Date and time allotted to each topic is subject to change.

**Performance Requirements**

### Student Responsibilities

It is your responsibility as a student to contact the Office of the Registrar to complete the forms for Withdrawal or Change of Registration, and any other forms.  Please refer to the list of important dates as noted in the Academic Schedule in the Keyano College credit calendar.

More specific details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar.  It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

### Student Attendance

Class attendance is useful for two reasons. First, class attendance maximizes a student's learning experience.  Second, attending class is a good way to keep informed of matters relating to the administration of the course (e.g., the timing of assignments and exams).  Ultimately, you are responsible for your own learning and performance in this course.

It is the responsibility of each student to be prepared for all classes.  Students who miss classes are responsible for the material covered in those classes and for ensuring that they are prepared for the next class, including the completion of any assignments and / or notes that may be due.

### Academic Misconduct

Students are considered to be responsible adults and should adhere to principles of intellectual integrity.  Intellectual dishonesty may take many forms, such as:

- Plagiarism or the submission of another person's work as one's own
- The use of unauthorized aids in assignments or examinations (cheating)
- Collusion or the unauthorized collaboration with others in preparing work
- The deliberate misrepresentation of qualifications
- The willful distortion of results or data
- Substitution in an examination by another person
- Handing in the same unchanged work as submitted for another assignment
- Breach of confidentiality.

The consequences for academic misconduct range from a verbal reprimand to expulsion from the College.  More specific descriptions and details are found in the Student Rights and Student Code of Conduct section of the Keyano College credit calendar.  It is the responsibility of each student to be aware of the guidelines outlined in the Student Rights and Student Code of Conduct Policies.

In order to ensure your understanding of the concept of plagiarism, you must successfully complete the online tutorial found on ilearn.keyano.ca. Then print the certificate, sign it, and show it to each of your instructors. Your course work will not be graded until you show this signed certificate.

**Specialized Supports**

### Counselling and Accessibility Services

Counselling Services provides a wide range of specialized counselling services to prospective and registered students, including personal, career and academic counselling.

### SKILL Centre

The SKILL Centre is a learning space in the Clearwater Campus at Keyano College where students can gather to share ideas, collaborate on projects and get new perspectives on learning from our tutorial staff.

The SKILL Centre, through a variety of delivery methods, provides assistance in skill development to Keyano students.  Assistance is provided by instructors, staff and student tutors.  Individuals wishing to improve their mathematics, writing, grammar, study, or other skills, can take advantage of this unique service.