**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**
Instructor Name: Sandra Efu
Office location: S111D
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**Office hours**

| | |
|---|---|
| Monday | 9:00 am – 10:00 am; 1:00 pm – 2:00 pm |
| Wednesday | 1:00 pm – 2:00 pm |
| Thursday | 12:00 pm – 1:00 pm |
| Friday | 10:00 am – 11 am |

**Hours of Instruction**
Monday and Wednesday, 2:00 pm – 3:30 pm, Room CC228
Labs: 111Y, Thursday, 1:00 pm – 2:50 pm, Room CC267
        111X, Friday, 11:00 am – 12:50 pm, Room CC282

**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 |
|---|---|
| Exercises (class/lab) | 21% |
| Group project (research paper and presentation) | 25% |
| Assignments | 10% |
| Midterm 1 | 12% |
| Midterm 2 | 12% |
| Final Examination | 20% |

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

**Lab**
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, analysis, and interpretation of findings.

**Note:**
1. For learning to happen in any course, you must take an active role in the process. For this class, you are expected to come to class prepared and ready to learn, which requires you to review each chapter before class. Being prepared for class enables you to construct a knowledge base on which subsequent learning rests.
2. Your lowest exercise and assignment mark will be dropped in the calculation of your final grade. If you miss an assignment or quiz it will be considered a zero and qualify as your lowest grade. This is to accommodate any illness or emergency.
3. For collaborative exercises, one grade will be provided to every group member based on the exercise deliverables.
4. All exercises and assignments must be completed during the allotted period. There will be no exceptions.

I emphasize group learning in my classes, as I believe group activities help students develop varied skills that are increasingly important in the work environment. Working in groups will provide each student the opportunity to develop team skills, improve communication skills, and leverage personal experiences to contribute to group tasks.

**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 | EXERCISES AND ASSIGNMENTS |
|---|---|---|---|
| 7 & 9 Jan | Review of course outline<br>Introduction to Statistics | Course Outline<br>Chapter 1-3 | Lab: introduction to SPSS |
| 14 & 16 Jan | Descriptive Statistics:<br>Averages and Variability | Chapter 4<br>Chapter 5 | Exercise 1 (class and lab)<br>Assignment 1 |
| 21 & 23 Jan | Descriptive Statistics:<br>Visual representation of data, and Computing correlation coefficients | Chapter 4<br>Chapter 5<br>Chapter 6 | Exercise 2 (class and lab) |
| 28 & 30 Jan | Descriptive Statistics: Reliability and validity<br><br>Hypothesis testing | Chapter 6<br><br>Chapter 12 | Exercise 3 (class and lab) |
| 4 & 6 Feb | Probability<br><br>**Midterm 1 during lab on February 7 and 8** | Chapter 8<br>Chapter 9 | |
| 11 & 13 Feb | Inferential Statistics:<br>The concept of significance<br>One-sample z-test | Chapter 12<br>Chapter 13 | Exercise 4 (class and lab)<br>Assignment 2 |
| 18 - 22 Feb | Reading week, no classes | | |
| 25 & 27 Feb | Inferential Statistics:<br>The t-test for independent samples<br>The t-test for dependent samples | Chapter 14 | Exercise 5 (class and lab) |
| 4 & 6 Mar | Inferential statistics:<br>Analysis of Variance (ANOVA) and its derivatives | Chapter 15 | Exercise 6 (class and lab)<br>Assignment 3 |
| 11 & 13 Mar | Inferential Statistics:<br>Testing the correlation coefficient<br>Linear and multiple regressions | Chapter 7<br>Chapter 20 | Exercise 7 (class and lab) |
| 18 & 20 Mar | Review of draft research paper<br><br>Inferential Statistics:<br>Linear and multiple regressions<br><br>**Midterm 2 during lab on March 21 and 22** | Chapter 7<br>Chapter 20 | **A draft copy of your research paper is due on March 18 (bring 2 hard copies to class) |
| 25 & 27 Mar | Nonparametric statistics | Chapter 16<br>Chapter 17 | Exercise 8 (class and lab)<br>Assignment 4<br><br>**Group presentation during lab on March 28 and 29 |
| 1 & 3 April | Advanced statistical procedures and how and when they are used<br><br>Data mining | | **A final copy of your research paper is due on April 5 |
| 8 & 10 April | Final Exam Review | | |
| 15 - 25 April | **Final Exam Week** | Comprehensive Exam | |

***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**

The Student Academic Support Services (SASS) department: Accessibility Services, Skill Centre and Wellness Services, work together to support student success at Keyano College.

**Accessibility Services (CC167)** supports student success through group and individualized instruction of learning, study and test taking strategies, and adaptive technologies. Students with documented disabilities, or who suspect a disability, can meet with the Learning Strategists to discuss accommodation of the learning barriers that they may be experiencing. Students who have accessed accommodations in the past are encouraged to visit our office at their earliest opportunity to discuss the availability of accommodations in their current courses. Individual appointments can be made by calling 780-791-8934

**Skill Centre (CC119)** provides a learning space where students can gather to share ideas, collaborate on projects and get new perspectives on learning from our tutorial staff.  Students visiting the centre have access to one-to-one or group tutoring, facilitated study groups, and assistance in academic writing. The Skill Centre's Peer Tutor program provides paid employment opportunities for students who have demonstrated academic success and want to share what they have learned. Tutoring is available free to any students registered at Keyano College on a drop in basis, from 9:00 am to 5:00 pm Monday through Friday. Additional evening hours are subject to tutor availability and are posted in the Skill Centre.

**Wellness Services (CC260)** offers a caring, inclusive, and respectful environment where students can access free group and individual support to meet academic and life challenges.  Mental Health Coordinators offer a safe and confidential environment to seek help with personal concerns. The Mindfulness Room in CC260 is available as a quiet space for students to relax during regular office hours. Wellness Service welcomes students to participate in any of the group sessions offered throughout the academic year addressing such topics as Mindfulness and Test Anxiety. Individual appointments can be made by calling 780-791-8934.

**Please watch your Keyano email for workshop announcements from our Student Academic Support Services team.**