

**BUS 111, Statistics I**

3 Credits, 3 hours Lecture, 2 hours Lab

Students are introduced to basic statistical concepts and procedures used to solve business problems. Topics include: data graphics and charts; measures of central tendency and dispersion; elementary probability; probability and sampling distributions; interval estimation; hypothesis testing about the mean and proportion, ANOVA, chi-square test, inference for correlation and linear regression. Students will also develop competence in the use of data analysis software.

*Prerequisites: BUS 110 Business Mathematics*

**Instructor**

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**Office Hours**

Tuesday: 11:00 - 11:50  
Wednesday/Thursday: 12:00 - 13:50

**Hours of Instruction**

Wednesday: 9:00 - 11:50 (CC195) [Lectures]  
Monday: 10:00 - 15:50 (S205) [Labs]

**Required Resources**

Business Statistics, Third Edition, eTextbook and MyLab Stats Access, Pearson ISBN 9780134686103, Robert A. Donnelly, Jr.(2020).

**Please register for MyLab Statistics in order to access labs, quizzes, assignments, and exams related to the course.** Instructions are provided on MOODLE under course orientation.

Textbook with access code for MyLab Statistics is available at the Keyano bookstore.

**Electronic Devices:** Laptops; Simple Scientific Calculator; Smartphone.

**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.
- Determine descriptive statistics of data including the mean, mode, median, variance and standard deviation.
- Calculate the probability that any given event may occur.
- Determine and apply the discrete and continuous probability distributions including the binomial distribution, the normal distribution, sampling distributions and the central limit theory.
- Utilize inferential statistics including hypothesis testing about the mean and proportion, ANOVA, chi-square test, inference for correlation and linear regression.
- Perform statistical analysis of data with Microsoft EXCEL.

**Evaluation**

<b>Assessment</b>	<b>Percentage</b>
Assignments	15%
Labs and Tutorials	15%
Class Participation	5%
Quizzes	20%
Midterm Examination	20%
Final Examination	25%
<b>Total</b>	<b>100%</b>

**Assignments**

Assignments are conducted online and as such access to MyLab Statistics is mandatory. Students receive access codes to this application with the purchase of the course textbook from Keyano College bookstore. If you decide to purchase a course textbook from elsewhere, then ensure that you get an access code for MyLab Statistics from Keyano College bookstore. Your instructor will go over the instructions during the first lecture. Assignments must be completed via the MyLab Statistics web site before the posted due dates. As well this access is required for other tests. The assignments cover chapters learned in class.

**Quizzes**

Quizzes will be via MOODLE during lab sessions. They will be closed-book brief tests covering chapters completed prior to the week of the quiz. The structure of the 30-minute Quiz will be a hybrid of multiple choice and direct answer questions. The Quizzes provide students with a variety of statistical problems related to the material covered in the lectures. Marks will be based on accurate statistical analyses and on the interpretation of the results of the statistical analyses. Students need to bring a Laptop, simple scientific calculator, pencils/pens, and an eraser.

**Labs and Tutorials**

In the real business world, most statistical analyses are conducted using computer software. This is one of the industry standards for analyzing statistics and as such we will be employing EXCEL in this course. Please download and install Microsoft EXCEL prior to the start of the course on your personal computer if possible (see MOODLE). There are five labs that 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. Labs are conducted in class and are due at the end of the class. The first session of the lab will be a technology workshop in which the students are introduced to the technology required to complete labs and relevant analyses and given the opportunity to ask the instructor questions. As well tutorials will be done during lab sessions. Tutorials will provide practice into technology and course material covered. Unlike labs, tutorials are instructor-assisted. All labs and tutorials are due at the end of the class.

## Exams

There will be midterm and final exams. All exams will be closed book, online via MOODLE and in-person. The structure of the midterm and final exams will be a hybrid of multiple choice, T/F and direct answer questions. Midterm will cover Chapters 1-7 and Final Exam will cover Chapters 6-15. The exams provide students with a variety of statistical problems related to the material covered in the lectures. Marks will be based on accurate statistical analyses and on the interpretation of the results of the statistical analyses. Students need to bring a Laptop, simple scientific calculator, pencils/pens, and an eraser.

## Preparing for Class and Notes

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. For collaborative exercises, one grade will be provided to every group member based on the exercise deliverables. 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
Excellent	A+	4.0	> 93.9
	A	4.0	87 – 93.9
	A-	3.7	80 – 86.9
Good	B+	3.3	77 – 79.9
	B	3.0	74 – 76.9
	B-	2.7	70 – 73.9
Satisfactory	C+	2.3	67 – 69.9
	C	2.0	64 – 66.9
	C-	1.7	60 – 63.9
Poor	D+	1.3	57 – 59.9
<b>Minimum Pass</b>	D	1.0	50 – 56.9
Failure	F	0.0	< 50

**Proposed Schedule of Topics**

Week#	Main Topic	Chapter	Assignments/Labs
1	Introduction to Business Statistics	1	Introduction to Course, MOODLE and MyLab Statistics (Pearson). Sections 1.1-1.4
2	Displaying Descriptive Statistics.	2	Assignment#1 Sections 2.1-2.6
3	Calculating Descriptive Statistics.	3	Sections 3.1-3.6 Lab#1 - Descriptive Statistics.
4	Introduction to Probabilities	4-6	Assignment#2; Sections 4.1-4.6
5	Discrete and Continuous Probability Distributions.		Assignment#3 Sections 5.1-5.6; 6.1-6.5
6	Sampling and Sampling Distributions	7	Assignment#4 Sections 7.1-7.5
7	Confidence Intervals	8	Assignment#5 Sections 8.1-8.5 Lab#3 - Inferences for One-Sample
8	Hypothesis Testing for a Single Population.	9	<b>MidTerm, Chapters 1-7</b> Assignment#6 Sections 9.1-9.6
9	Hypothesis Tests Comparing Two Populations	10	Lab#4 - Inferences for Two-Sample Assignment#7 Sections 10.1-10.4
10	Analysis of Variance (ANOVA) and its derivatives	11	Assignment#8 Lab#5 - One-way Analysis of Variance Sections 11.1-11.5
11	<b>Reading Week</b>		
12	Chi-Square Tests, Hypothesis Tests for the Population Variance	12-13	Assignment#9 Sections 12.1-12.4; 13.1-13.4
13	Correlation and Simple Linear Regression/ Multiple Regression and Model Building	14-15	Assignment#10 Sections 14.1-14.4; 15.1-15.3
14	<b>Final Exam</b> - Chapters Review	Relevant Chapters 8-15	
15	<b>Final Exam:</b> - Written	8-15	

**Please Note:**

Date and time allotted to each topic is subject to change.

**Performance Requirements and Student Services****Student Responsibilities**

As a student, it is your responsibility to contact the Office of the Registrar to complete the required forms, including the [Withdrawal/Drop Form](#). All forms are available on the [College website](#). Please refer to the important dates listed in the Academic Schedule in the [Keyano College credit calendar](#) and/or on the [College website](#). It is the responsibility of each student to be aware of the guidelines outlined in the [Student and Academic Policies](#).

**Student Attendance**

Class attendance is helpful for two reasons: First, class attendance maximizes a student's learning experience. Second, attending class is an excellent way to keep informed of matters relating to the course administration (e.g., the timing of assignments and exams). Ultimately, you are responsible for your learning and performance in this course. It is the responsibility of each student to be prepared for all classes. Absent students are responsible for the material covered in those classes, and students must ensure they are ready for their next class, including completing any missed assignments and notes.

**Course Evaluation**

Midterm exams and term work is to be completed at the time/date indicated in your course syllabus. It is the expectation of the College that students make every reasonable effort to complete all course evaluation, including, quizzes, midterms, and exams, as scheduled. In the event of an emergency, rescheduling of exams and/or extensions are only provided at the discretion of the course instructor. Students should contact the instructor as soon as they are able, to notify them of missing an evaluative component. Instructors will use discretion in deciding whether circumstances justify granting a reschedule and/or extension.

Regular term quizzes, midterms, and exams are not eligible for deferral and/or date extension accommodations. Students with accommodations, please refer to Accessibility Services.

Final Exams are subject to deferral processes, please refer to the current [Keyano College Credit Calendar](#).

**Academic Integrity & Misconduct**

Academic integrity requires commitment to the values of honesty, trust, fairness, respect, and responsibility. It is expected that students at Keyano College will adhere to these ethical values in all activities related to learning, teaching, research, and service. Any action that contravenes this standard, including misrepresentation, falsification, or deception, undermines the intention and worth of scholarly work and violates the fundamental academic rights of members of our community.

Academic dishonesty takes many forms:

- Plagiarism or the submission of another person's work as their own,
- The use of unauthorized aids in assignments or examinations (cheating),
- Using Artificial Intelligence (AI) to complete coursework (without instructor approval),
- 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,
- Submitting unchanged work for another assignment, and
- Breach of confidentiality.

In all academic work, the ideas and contributions of others must be appropriately acknowledged and work that is presented as original must be, in fact, original. Using an AI-content generator (such as ChatGPT)

to complete coursework without proper attribution or authorization is a form of academic dishonesty. If you are unsure about whether something may be plagiarism or academic dishonesty, please contact your instructor to discuss the issue.

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 & Academic Policies* 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, Academic Integrity, and Non-Academic Misconduct Policies.

To ensure your understanding of plagiarism, you may be required to complete the online [Understanding Plagiarism tutorial](#) and submit the certificate of completion.

### Online Learning

Technology and internet connectivity will impact your online learning experience. You may be required to watch online videos, take online quizzes, or participate in live online classes. Live/virtual courses will be hosted in Microsoft Teams or Zoom. For all course delivery types, you will access your course resources on Keyano's learning management system: Moodle (iLearn). Login in using your [Keyano username and password](#). Keyano College operates in a Windows-based environment and having access to the correct tools for online learning is essential.

### Internet Speed

Minimum download and upload speeds of 10 Mbps. Recommended download speeds of 25 Mbps and upload speeds of 10 Mbps (if you are sharing your internet at home). You can check your internet speed with [Speedtest by Ookla](#).

### Computer System Requirements

Keyano College software are Windows based.

<b>Minimum Requirements and Recommended Upgrades for Windows (preferred system) and Apple devices</b>
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These minimum standards are required for a Windows computer/laptop (OS 10 or 11) and a Macintosh (OS 10.14 or above).
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| <ol style="list-style-type: none"><li>1. Windows 10 Operating System or above</li><li>2. 4GB of RAM. Recommended upgrade to 8GB of RAM.</li><li>3. 10GB+ available hard drive storage space. Note installing Microsoft Office 365 requires 3GB of available hard drive space.<ol style="list-style-type: none"><li>a. Install the Microsoft Office 365 suite (~3GB) *</li></ol></li><li>4. Microphone, webcam, and speakers (All modern laptops have these three accessories built-in. However, a headset or earbuds with a microphone is also recommended.</li><li>5. Windows has built-in anti-virus/malware software. It is essential to install system updates to keep your device secured regularly.</li></ol> |
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<p>*<a href="#">Microsoft Office 365</a> is free to Keyano students.</p>
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Tablets, iPads, and Chromebooks are <b>not</b> recommended: they may not be compatible with the testing lockdown browsers and Microsoft Office 365.
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### Specific Department Requirements

Business and OA programs require Windows 10 or higher.

Other programs may utilize Windows-based tools as well.

### Computer Software

Students have access to Microsoft Office 365 and Read & Write for free using Keyano credentials.

See [Recommended Technology](#) for more information.

### Recording of Lectures and Intellectual Property

Students may only record a lecture if explicit permission is provided by the instructor or Accessibility Services. Even if students have permission to record a lecture or lecture materials, students may not share, distribute, or publish any of the lectures or course materials; this includes any recordings, slides, instructor notes, etc., on any platform. Thus, no student is allowed to share, distribute, publish, or sell course-related content without permission. It is important to recognize that the Canadian Copyright Act contains provisions for intellectual property. The [Academic Integrity Policy](#) provides additional information on Keyano College's expectations from students as members of the intellectual community.

### ITS Helpdesk

If you have issues with your student account, you can contact the ITS Helpdesk by emailing [its.helpdesk@keyano.ca](mailto:its.helpdesk@keyano.ca) or calling 780-791-4965.

### Specialized Supports

Keyano College is committed to Keyano students and their academic success. There is a variety of student support available at Keyano. All student services are available during Keyano business hours: Monday to Friday, 8:30 a.m. to 4:30 p.m. The College is closed on statutory holidays. If you require support outside of regular business hours, please inform the support service team, and they will do their best to accommodate your needs.

**Accessibility Services** provides accommodations for students living with disabilities. Students with documented disabilities or who suspect a disability can meet with an Access Strategist to discuss their current learning barriers and possible accommodations. Students who have accessed accommodations in the past are encouraged to contact the department to request accommodations for the following semester. Please note that requesting accommodations is a process and requires time to arrange. Contact the department as soon as you know you may require accommodations. For accessibility supports and disability-based funding, please book an appointment by emailing us at: [accessibility.services@keyano.ca](mailto:accessibility.services@keyano.ca).

Accessibility Services also provides individual and group learning strategy instruction for all students and technology training and support to enhance learning. You can meet with an Access Strategist to learn studying and test-taking strategies. In addition, you can schedule an appointment with the Assistive Technology Specialist to explore technology tools for learning. Book an appointment today by emailing: [accessibility.services@keyano.ca](mailto:accessibility.services@keyano.ca)

**Wellness Services** 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 provide a safe and confidential environment for you to seek help with personal concerns. Our Wellness Navigator offers support with basic needs such as housing, financial and nutritional support, and outside referrals when needed. Wellness Services welcomes students to participate in group sessions that address topics including mindfulness and test anxiety throughout the academic year. Individual appointments can be made by emailing [wellness.services@keyano.ca](mailto:wellness.services@keyano.ca).

**Library Services** provides students with research, information, and educational technology supports as they engage in their studies. Library staff are available to help you online and in person throughout the semester. Librarians offer individual and small group consultations booked using the online [Book A Librarian calendar](#). The library also provides virtual research and subject guides to help you with your

studies. Find the guide that supports your course-related research by viewing the complete list of online [Subject Guides](#). To start your research and access citation guides (APA, MLA, Chicago, or IEEE), visit the [Research Help page](#). The library's collections (including print and online materials) are searchable using [OneSearch](#). The library offers a Loanable Technology collection to support students accessing and using technology. For an up-to-date list of technology available for borrowing, visit the library's [Loanable Technology webpage](#). For a detailed list of library resources and services, go to [www.keyano.ca/library](http://www.keyano.ca/library). For all inquiries, please email [askthelibrary@keyano.ca](mailto:askthelibrary@keyano.ca) or [chat with us online](#).

The **Academic Success Centre** at Keyano College (CC-119) provides free academic support services to registered students, such as tutoring, writing support, facilitated study groups, workshops, and study space. Academic Content Specialists are available in Mathematics, Science, Trades, Power Engineering, Upgrading/College Prep, Human Services, English, Humanities, and more. Students are encouraged to visit the Academic Success Centre to discuss study strategies and academic concerns.

Specialists in the Academic Success Centre also work with students to develop academic success plans, time management skills, study strategies, and homework plans. For additional information, please email [Academic.Success@keyano.ca](mailto:Academic.Success@keyano.ca).



**Authorization**

This course outline has been reviewed and approved by the Program Chair.

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Robert Changirwa, Instructor

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Marie-France Jones, Chair

Date Authorized

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Coert Erasmus, Dean

Date Authorized

**Signed copies to be delivered to:**  
Instructor