

ST113 Syllabus Business Statistics

Instructor: Dr. Tim Murray

Office: Morrison 123

E-mail: timmurray@bentley.edu

Office Hours: Monday 5:30pm-6:30pm or by appointment via Zoom.

The best way to reach me is via email. I will respond within 24 hours.

Textbook

Business Statistics: Communicating with Numbers, 4th edition, by Sanjiv Jaggia and Alison Kelly, McGraw-Hill publishers, 2020.

A hard copy of the textbook is not required. An e-book is available through McGraw-Hill Connect.

Required Material

McGraw-Hill Connect: Connect is the on-line homework manager that accompanies ST113 and is *required* for this course. There is a registration fee for Connect which includes access to the e-book version of the textbook. You can access Connect through Brightspace. For more information about accessing Connect, [click here](#).

Microsoft Excel: Many homework problems and projects will require the use of Excel.

Calculators: A scientific calculator, at a minimum, is necessary for this course. A graphing calculator may be preferred, however that use of statistical functions of graphing calculators may not be used to justify your answers, you must be able to solve problems by hand and show your work.

Course Description

Modern businesses rely on data professionals to enhance and support decision-making. The primary objective of this course is to acquire proficiency in statistical techniques and concepts so that informed decisions may be made throughout critical business processes. Thus, the major topics of the course include:

- Descriptive statistics, both graphic & numeric
- Probability and probability distributions, including (at least) the binomial and normal
- Sampling distributions for means and proportions
- Confidence interval estimation
- Hypothesis testing
- Simple Linear Regression

Primarily, the statistical functions in EXCEL® will be utilized. Applications will be drawn from primary business disciplines such as accounting, economics, finance, information systems, management, and marketing.

Co-requisite: CS100, **Pre-requisite:** 3 units of Math

Assurance of Learning Statement:

Focus of Course: ST113 presents an introduction to descriptive and inferential statistics. Specific emphasis will be placed on techniques relevant to solving problems in business.

Learning Objectives

1. Students will evaluate claims according to clearly identified standards; systematically explore issues or topics through the collection and analysis of appropriate evidence and formulate and defend arguments that result in logical and informed conclusions or judgments.
2. Students will apply business statistics to a diverse range of problems from areas such as accounting, behavioral sciences, economics, finance, management, marketing, and service learning.
3. Students will demonstrate an understanding of the basic concepts of probability, and descriptive and inferential statistics.

Key Policies and Procedures

Attendance: Students are expected to attend every class in person. *There will be no remote option or recorded lectures for this course.*

Participation: Teaching will mostly be conducted via lecture and use of the white board. I encourage you to engage in class, be curious, and ask questions. I encourage you to take handwritten notes during class. [Multiple studies](#) show that writing notes by hand improves learning.

While the class will be a learning environment that at times involves dialogue and group work, I expect you to remain professional, polite, and civil at all times. This includes but is not limited to:

- Listening when someone else is talking and not talking over someone else.
- At times we will converse with each other when discussing policy or current events.
- It is okay to disagree as long as these conversations are done with respect. Lack of respect and civility can result in being asked to leave the classroom.
- During lectures, do not engage in side-bar conversations that will be a distraction.

Make-Up Work: You are responsible for turning in your work on time or communicating with me in advance if you need an extension. Students requesting an alternative time for an exam must inform me prior to the exam. Assignments submitted after the due date without

an extension or documented excuse or a missed exam without having discussed it with me will receive a grade of 0.

Grading

Homework	20%
Excel Projects	10%
3 Midterm Exams	15% each
Comprehensive Final Exam	25%

The following scale will be used to assign final course grades, based on the average grade as computed above:

Letter	Numerical Range	Meaning
A	94.5-100	Excellent Performance
A-	89.5-94.4	
B+	86.5-89.4	
B	82.5-86.4	Good Performance
B-	79.5-82.4	
C+	76.5-79.4	Average Performance
C	72.5-76.5	
C-	69.5-72.4	
D+	66.5-69.4	Below Average Performance
D	62.5-66.4	
D-	60.0-62.4	
F	00.0-59.9	Unsatisfactory Performance

Homework

Homework will be issues on Connect. Homework assignments have no time limit and problems can be attempted an unlimited number of times before the due date. Due dates will be announced in class and can be viewed in Connect. After the due date, the assignment will no longer be available in Connect. The lowest homework grade will be dropped.

Microsoft Excel Projects

Microsoft Excel is a heavily used software for many jobs. To give you familiarity with Excel, there will be several projects that will require you to use the statistical functions in Microsoft Excel.

Exams

There will be three midterm exams and a comprehensive final exam. Midterm exam dates will be announced in class and on Brightspace. The final exam is scheduled for Monday December 16th from 6:30pm-9:30pm. Students who request an alternative time must

inform me prior to the exam.

Extra Credit

There will be no extra credit assignments in this class. You are responsible to keep up with the course material and to inform me, either directly or through another Bentley representative, if you have an on-going medical or personal issue that causes you to miss a significant number of assignments and/or classes.

Course Topics

The following is a tentative list of concepts and topics that will be covered throughout this course. Any changes will be announced on Brightspace.

Topic Area	Details
Probability	Counting rules
	Conditional probability and independence
	Bayes Rule
Describing Data and Distributions	Types of data and scales of measurement
	Using graphs to describe and visualize data
	Measures of central tendency
	Measures of variability
	Covariance and correlation
	Discrete random variables and expected value
	Normal, Binomial, and Poisson Distributions
Inferential Statistics	Sampling methods and distribution
	Confidence intervals
	Population vs sample means
	Hypothesis Testing
	Simple Linear Regression

The shaded colors are used to highlight the content that will be covered on each of the three midterm exams:

Midterm Exam 1	
Midterm Exam 2	
Midterm Exam 3	

This content is subject to change. Any changes will be announced in class and on Brightspace.

Bentley Policies and Procedures

All courses offered at Bentley University reflect our institution's commitment to a set of core values and practices. The links below will take you to full explanations of our policies and procedures related to accommodations and equitable learning environments. As a student, you are expected to review and be familiar with each of these policies:

- [Bentley's honor code and academic integrity system](#)
- [Equity and bias reporting forms and procedures](#)
- [Americans with Disabilities Act \(ADA\) requirements for disability accommodations](#)
- [Religious observances](#)
- [Bentley's core values](#)

WRITING CENTER: The Writing Center offers one-on-one tutoring to students of all years and skill levels. Located on the lower level of the Bentley library (room 023), the Writing Center provides a welcoming and supportive environment in which students can work on writing from any class or discipline. Writers are encouraged to visit at all stages of the writing process; they can come with a draft, an outline, or just some initial thoughts and questions. Staffed by highly skilled student tutors, the Writing Center is open six days a week. Most conferences will be conducted online, but limited in-person hours will be held by appointment only. Appointments can be made at <https://bentley.mywconline.net/>. For specific hours and additional information, please visit the Writing Center SharePoint site.

ESOL CENTER: The ESOL Center offers online appointments for helping undergraduate and graduate students strengthen their writing and English language skills. Our ESOL faculty tutors specialize in working with international and multilingual students to provide one-on-one support for all courses writing at any stage in the writing process. Along with individualized help for writing, the ESOL tutors provide guidance and feedback for documenting sources, oral presentation practice, and pronunciation/fluency enrichment. The ESOL Center offers real-time video appointments Monday through Friday between 7:30 a.m. and 10:00 p.m. These can be reserved through our website: <https://bentleyesol.mywconline.net>. The complete information about booking appointments and uploading papers is clarified on the website's announcement page.

MATH CENTER: The Mathematics Learning Center provides drop-in tutoring to undergraduate and graduate students enrolled in mathematics or statistics courses at Bentley. The goal is to have students leave a tutoring session with an increased understanding and confidence in their own ability to do mathematics. During the academic year, the center is open most days and evenings. Students can get help with all 100-level undergrad math courses (MA 123/126; MA 131/139). There are selected hours in which students may get help with GB 213 Business Statistics. Computer assistance as it relates to a mathematics course is also provided. Please check <https://www.bentley.edu/offices/academic-services/mathematics-learning-center> for the hours of operation and tutor/course schedule.