

BUSI 202, Business Statistics, Syllabus (3 credits)

COURSE DESCRIPTION

This course focuses on research methodologies, statistical analyses, and the appropriate usage of statistical methods, with primary emphasis on the ability to use statistical methods to measure and improve business performance. Prerequisites: BUSI 214 Management Information Systems and MATH 110 College Algebra or equivalent.

REQUIRED TEXTS & RESOURCES

Bowerman, B. L., O'Connell, R. T., Murphree, E. S. & Orris, J. B. (2015). Essentials of Business Statistics (5th ed.). New York, NY: McGraw-Hill Education

ISBN 978-0-07-802053-7

NOTE: The Point University Bookstore may offer this textbook in other formats. Information can be found at www.pointuniversityshop.com

COURSE SCHEDULE

Each course begins on a Wednesday with a Getting Started module before moving into the week 1-7 content. The introduce yourself forum is required during the Getting Started module in order to be counted present during this half-week of instruction. The introduce yourself forum is open from the start of the course to the first Sunday. All posts are due by Sunday at 11:59 p.m. Participation is required to be marked present for this time period. Keep in mind that in future weeks, forum due dates may be different.

Unless stated otherwise, graded assignments are due on the last day of the course week (Sunday). <http://point.edu/course-schedules/>

Week	Learning Activities	Graded Assignments
Week 1	Goal: Describing statistics and reviewing its use as a decision making tool by all types of organizations.	
	Welcome Discussion	
	Read: Chapters 1: An Introduction to Business Statistics & Chapter 2: Descriptive Statistics: Tabular & Graphical Methods	
	Listen to: Sakai Lecture Videos: <ul style="list-style-type: none">• Did You Know 2016? Amazing Statistics• Chapter 1: Why Statistics?• Chapter 1: Answering the 3 Questions of Statistics Using a Picture• Chapter 1: What is Statistics?	

	<ul style="list-style-type: none"> • Chapter 1: Introduction to Business Statistics: Lesson #1 • Chapter 2: Qualitative and Quantitative Data • Chapter 2: Pie Chart • Chapter 2: Histograms, Frequency Polygons, and Ogives 	
	Assignment – Chapters 1 & 2	Week 1 Day 7 by 11.55 p.m.
	Discussion Forum	Initial: Week 1 Day 5 by 11.55 p.m. with follow-up post by Week 1 Day 7 by 11.55 p.m.
	Quiz on Chapters 1 & 2 (Online, Untimed, Open Notes)	Week 1 Day 7 by 11.55 p.m.
	Simulation Project	Week 7 Day 7 by 11.55 p.m.
Week 2	Goal 2: Employing distributions and charts to interpret and summarize quantitative and qualitative data.	
	Read: Chapter 3: Descriptive Statistics: Numerical Methods	
	Listen to: Sakai Lecture Videos: <ul style="list-style-type: none"> • Measures of Central Tendency Rap • Chapter 3: Standard deviation - Statistics • Chapter 3: Inferencial & Descriptive • Chapter 3: Sampling What is Sampling? • Chapter 3: Sampling Population Sample and Generalizability 	
	Assignment – Chapter 3	Week 2 Day 7 by 11.55 p.m.
	Ethics Paper	Week 2 Day 7 by 11.55 p.m.
	Discussion Forum	Initial: Week 2 Day 5 by 11.55 p.m. with follow-up post by Week 2 Day 7 by 11.55 p.m.
	Quiz on Chapter 3 (Online, Untimed, Open Notes)	Week 2 Day 7 by 11.55 p.m.
	Simulation Project	Week 7 Day 7 by 11.55 p.m.
Week 3	Goal 3: Calculating, interpreting and gaining familiarity with probabilities.	

	Read: Chapter 4: Probability, Chapter 5: Discrete Random Variables & Chapter 8: Confidence Intervals	
	Listen to: Sakai Lecture Videos: <ul style="list-style-type: none"> • Probability and Non-Probability Sampling with CANDY! • Chapter 4: Sampling Probability Sampling Simple Systematic Stratified Cluster • Chapter 4: Sampling NonProbability Sampling Convenience Judgmental • Chapter 5: The last banana: A thought experiment in probability • Chapter 5: Normal Binomial or Poisson? • Chapter 8: Understanding Confidence Intervals: Statistics Help • Chapter 8: Calculating the Confidence Interval for a Mean Using a Formula 	
	Assignment – Chapters 4, 5 & 8	Week 3 Day 7 by 11.55 p.m.
	Discussion Forum	Initial: Week 3 Day 5 by 11.55 p.m. with follow-up post by Week 3 Day 7 by 11.55 p.m.
	Quiz on Chapters 4, 5 & 8 (Online, Untimed, Open Notes)	Week 3 Day 7 by 11.55 p.m.
	Simulation Project	Week 7 Day 7 by 11.55 p.m.
Week 4	Goal 4: Constructing Hypotheses to be able to define problems so that statistical techniques can be reviewed.	
	Read: Chapter 6: Continuous Random Variables, Chapter 7: Sampling & Sampling Distributions & Chapter 9: Hypothesis Testing	
	Listen to: Sakai Lecture Videos: <ul style="list-style-type: none"> • Intro to Continuous Probability Distributions • Chapter 6: Easiest Introduction to the Uniform Distribution! • Chapter 6: Normal Probability Distribution • Chapter 7: Random Sample • Chapter 7: Types of sampling 	

	<ul style="list-style-type: none"> • Chapter 9: Theory vs. Hypothesis vs. Law... Explained! • Chapter 9: What is a null hypothesis (and alternate hypothesis?) • Chapter 9: How to Perform z and t Tests of the Mean 	
	Assignment – Chapters 6, 7 & 9	Week 4 Day 7 by 11.55 p.m.
	Discussion Forum	Initial: Week 4 Day 5 by 11.55 p.m. with follow-up post by Week 4 Day 7 by 11.55 p.m.
	Quiz on Chapters 6, 7 & 9 (Online, Untimed, Open Notes)	Week 4 Day 7 by 11.55 p.m.
	Simulation Project	Week 7 Day 7 by 11.55 p.m.
Week 5	Goal 5: Expressing the basic concepts of experimental design and statistical independence.	
	Read: Chapter 10: Statistical Inferences Based on Two Samples, Chapter 11: Experimental Design & Analysis of Variance & Chapter 12: Chi-Square Tests	
	Listen to: Sakai Lecture Videos: <ul style="list-style-type: none"> • Understanding Statistical Inference • Chapter 10: How to calculate t statistics of different groups • Chapter 11: Introduction to ANOVA • Chapter 11: How to Calculate and Understand Analysis of Variance (ANOVA) F Test • Chapter 12: How to calculate Chi Square Goodness of Fit (one way) • Chapter 12: How to calculate Chi Square Test for Independence (two way) 	
	Lecture Practice Exercises	
	Assignment – Chapters 10, 11 & 12	Week 5 Day 7 by 11.55 p.m.
	Discussion Forum	Initial: Week 5 Day 5 by 11.55 p.m. with follow-up post by Week 5 Day 7 by 11.55 p.m.
	Quiz on Chapters 10, 11 & 12 (Online, Untimed, Open Notes)	Week 5 Day 7 by 11.55 p.m.
	Simulation Project	Week 7 Day 7 by 11.55 p.m.

Week 6	Goal 6: Understanding the Simple Linear Regression Model and Least Squares Estimate and using the model in describing the relationship between two variables.	
	Read: Chapter 13: Simple Linear Regression Analysis & Chapter 14: Multiple Regression and Model Building	
	Listen to: Sakai Lecture Videos: <ul style="list-style-type: none"> • An Introduction to Linear Regression Analysis • Chapter 13: The Simple Linear Regression Model (in under 5 minutes) • Chapter 13: Linear Regression - Least Squares Criterion Part 1 • Chapter 13: Linear Regression - Least Squares Criterion Part 2 • Chapter 14: An introduction to Regression Analysis • Chapter 14: Multiple Regression and Model Building (in under 5 minutes) 	
	Assignment – Chapters 13 & 14	Week 6 Day 7 by 11.55 p.m.
	Discussion Forum	Initial: Week 6 Day 5 by 11.55 p.m. with follow-up post by Week 6 Day 7 by 11.55 p.m.
	Quiz on Chapters 13 & 14 (Online, Untimed, Open Notes)	Week 6 Day 7 by 11.55 p.m.
	Simulation Project	Week 6 Day 7 by 11.55 p.m.
Week 7	Goal 6: Understanding the Simple Linear Regression Model and Least Squares Estimate and using the model in describing the relationship between two variables.	
	Read: Chapter 15: Process Improvement Using Control Charts	
	Listen to: Sakai Lecture Videos: <ul style="list-style-type: none"> • A Very Brief Introduction to Control Charts • Chapter 15: What is a Control Chart? • Chapter 15: How to Show Control Charts for Process Improvements 	
	Assignment – Chapter 15	Week 7 Day 7 by 11.55 p.m.
	Discussion Forum	Initial: Week 7 Day 5 by 11.55 p.m. with follow-up post by Week 7 Day 7 by 11.55 p.m.

	Quiz on Chapters 15 (Online, Untimed, Open Notes)	Week 7 Day 7 by 11.55 p.m.
	Simulation Project Due	Week 7 Day 7 by 11.55 p.m.

GRADING POLICIES

Course Evaluation Plan

An assessment instrument (checklist, rubric, quiz, etc.) will accompany each major graded assignment. See the instructions for specific assignment criteria and accompanying grading instruments.

Points Distribution

Graded assignments will be distributed as follows:

Graded Assignments	Points Possible
Quizzes 1@40 & 6@60	400
Assignments 7@40	280
Ethics Paper 1@15	15
Discussion Forums 7@25	175
Simulated Project 1@130	130
Total Points:	1000

Final Grades

The following scale will be used when calculating final grades:

A	90-100%	D	60-69%
B	80-89%	F	0-59%
C	70-79%		

Final grades will be posted according to the Academic Calendar:

<http://point.edu/academic-calendar/>

COURSE LEARNING GOALS & OBJECTIVES

TIME REQUIREMENTS & COMMITMENTS

This course is 3 credit hours. Regarding time on task, students can expect to spend approximately 16 hours per week for an undergraduate course.

COURSE GOALS AND OBJECTIVES	Program Objective(s)
Goal 1: <i>The student will describe statistics and review its use as a decision making tool by all types of organizations.</i>	

	Objective 1.1: Students will describe statistics, discuss statistical terminology & identify and define types of data, studies, variables and sampling.	5.2
	Objective 1.2: Students will construct and interpret time series graphs.	2.2
	Objective 1.3: Students will research ethics in statistics and the importance of ethical uses of data in decision making.	5.3
Goal 2: The student will employ distributions and charts to interpret and summarize quantitative and qualitative data.		
	Objective 2.1: Students will construct statistical charts, then interpret results using Tabular and Graphical Methods.	2.2
	Objective 2.2: Students will compute and interpret descriptive statistics using Numerical methods.	2.2
Goal 3: The student will calculate, interpret and gain familiarity with probabilities.		
	Objective 3.1: Students will define and interpret the concepts of probability, to include sample space, independence, random and discrete continuous variables, probability and binomial distributions, the Central Limit Theorem and Confidence Intervals.	5.2
	Objective 3.2: Students will compute and interpret various statistics involving probabilities.	2.2
	Objective 3.3: Students will review statistical calculations and discuss confidence intervals.	5.2, 5.3
Goal 4: The student will construct Hypotheses to be able to define problems so that statistical techniques can be reviewed.		
	Objective 4.1: Students will describe statistical inferences and construct null and alternative hypothesis.	5.2
	Objective 4.2: Students will discuss and describe the types of errors and probabilities of occurrence.	5.2, 5.3
	Objective 4.3: Students will discuss population and carry out various tests about a population means by using critical values, then compute different sample population means under various scenarios.	2.2
Goal 5: The student will express the basic concepts of experimental design and statistical independence.		
	Objective 5.1: Students will explain experimental design and analysis of variance.	5.2
	Objective 5.2: Students will discuss and interpret Chi-Square Tests to express Hypothesis goodness-of-fit and Test for Independence.	5.2

Goal 6: <i>The student will understand the Simple Linear Regression Model and Least Squares Estimate and use of the model in describing the relationship between two variables.</i>		
	Objective 6.1: <i>Students will classify variables into independent and dependent.</i>	5.2
	Objective 6.2: <i>Students will interpret a simple linear regression model to describe the relationship, test the significance of the regression relationship and confidence interval.</i>	2.2
	Objective 6.3: <i>Students will discuss the principles and importance of quality improvement.</i>	5.2
	Objective 6.4: <i>Students will interpret pattern analysis to identify the presence of assignable causes and summarize whether or not a process has been designed to meet organization objectives.</i>	2.2, 5.2

DISABILITY SERVICES

Point University is committed to providing qualified students with disabilities an equal opportunity to access a Point education through the provision of reasonable and appropriate accommodations and support services. Accordingly, Point complies with Title IX (<https://point.edu/title-ix>) of the Educational Amendments of 1972 and the subsequent reauthorization of that act, Section 504 of the Rehabilitation Act of 1973, and the Americans with Disabilities Act of 1990 and subsequent amendments to that act. For more information about Disability Support Services, see the “Consumer Information” section of the website (<http://point.edu/disclosures>) and the “Student Services” section of this catalog, or contact the Director of Disability Services and College Section 504 Coordinator, at disability.services@point.edu.

COURSE EXPECTATIONS

Attendance

A student is expected to actively participate in each week of the class in which he or she is enrolled. Active participation each academic week includes submitting classwork in one or more of the following activities within the course during the week they are due: discussion forums, assignments such as (but not limited to) projects, papers, presentations, case studies, quizzes, or exams. Students may be absent up to 25% of the class. After absences exceed 25% of the session or term’s total – in either consecutive or cumulative days – the student will be withdrawn from the class roster and assigned a grade on the basis of work completed at the time of withdrawal unless, because of exceptional circumstances, prior arrangements have been made with the professor and the Chief Academic Officer.

Students representing the university, such as student-athletes, remain responsible for submitting work online within the week it is due to be counted present. No student will be disadvantaged while representing the university. However, the responsibility is on the student to notify faculty no later than one week before missing class for any reason, to ensure time for content to be made available to them and for make-up work to be considered and arranged. It is expected that students will limit their absences outside of these required absences, as they will be dropped if they overcut the allowed number of absences.

The full attendance policy is found in the catalog (<https://point.edu/catalogs/>).

Etiquette & Netiquette

Students are expected to be respectful and well-mannered towards the instructor and their peers, whether in the physical classroom or the online course site. For guidance on meeting this expectation, particularly in the online environment, please see the materials provided during student orientation or reach out to advising.center@point.edu.

Policies

For academic policies governing attendance, late assignments, and student support, please refer to the Academic Catalog directly (<https://point.edu/catalogs/>).

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