



Business Statistics
6500:304:001 (3 credits)

Instructor Information		Class Information	
Instructor:	Scott C. Bible, BS, MA	Location:	CBA 132
Email:	scb3@uakron.edu		
Office:	College of Business Administration (CBA) Room 369	Time:	MWF 2:15p-3:05p
Phone:	(330) 972-6300		
Office Hours:	M W 12p-2p, M 3p-5p and by appointment		

Course Information

Course Description

Introduces statistical methods to support quantitative decision analysis for solving business problems. Includes: probability, sampling, estimation, hypothesis testing, and analysis of variance.

Prerequisites: 3450:145 (College Algebra) and 6200:250 (Spreadsheet Modeling and Decision Analysis)

This course is supported by The University of Akron's learning management system called Springboard. The Springboard website will be primarily used to post class notes, PowerPoint slides, reading materials, class assignments, announcements, etc. Quizzes will also be completed through Springboard. If you are new to Springboard, you can [get started by watching the tutorials here](#). It is strongly suggested that you access and review course materials BEFORE class. Course communications will be through Springboard and the class roster. Make sure that you have your UA email forwarded to whichever email you check.

Course learning objectives:

1. To master the essential concepts and tools of statistics and probability, and to apply these methodologies to solve practical, real-world, problems emphasizing business applications.
2. To provide a sound basis in statistics and probability for the student's future academic and professional careers.
3. To demonstrate the use of statistics, probability, and statistical models to support decision making in business.
4. To develop the critical thinking and independent problem solving skills necessary to independently analyze business data and model business situations.
5. To work in a team to develop business research questions and effectively communicate the answers to those questions.

Specific Course Competencies:

By the end of the course, the student should be able to:

1. Use descriptive statistics to describe data both graphically and numerically
2. Use probability concepts to determine the probabilities of specific events
3. Analyze probability distributions of discrete random variables utilizing the expectations operator
4. Calculate probabilities associated with discrete and continuous probability distributions.



5. Describe the behavior of the sampling distribution of a statistic based on the Central Limit Theorem
6. Utilize statistical inference techniques of: a.) confidence intervals, b.) one sample hypothesis tests, and c.) two sample hypothesis tests, to make a statement about the overall population based solely on a random sample or samples
7. Apply design of experiment concepts and ANOVA to the analysis of business data
8. Apply Chi-Square tools to evaluate goodness of fit and independence

College of Business Administration Objectives

This course is part of the CBA core, and as such, it shares these learning objectives:

- Master integrated business knowledge
- Analyze data using quantitative techniques
- Be informed decision makers
- Develop leadership and collaboration competencies
- Use writing and oral communication skills to persuade and to mobilize action
- Demonstrate a global perspective and cross-cultural awareness
- Recognize and understand how to address ethical concerns

Required Materials

Text: Bowerman, B., O'Connell, R., Orris, J., *Essentials of Business Statistics*, Student Value edition, McGraw Hill Irwin 2014. ISBN 9781259393488 (available in the bookstore.) It is recommended that you buy this book through the bookstore so that you will have access to the loose-leaf copy of the book, CONNECT homework manager (with the eBook) & the Megastat (Excel add-on) software. **Important: Please keep this book because it will be an important resource for Business Analytics (6500:305) – note that your Connect access code (with eBook access) will also be available for 540 days.**

Register for CONNECT using the code with your book and this link: [Business Stats MWF Connect Website](#)

If you have access to a used copy of the book or are sharing a book, you can purchase Connect (with eBook) separately for \$110.00, but this will not include the Megastat software.

Register for the Megastat software separately through www.mhhe.com/megastat. Use the code included with your book (or the cost to purchase separately is \$ 17.00.) Note that you need to download Megastat to your computer within 10 days of actually activating the code. There is a Mac version available for Excel 2011. Megastat is also available in the CBA labs.

Instructor Contact and Reply Policy

You may contact me via email or phone. During the week you can expect a reply within 24 hours. Over the weekend, you can expect a reply within 48 hours. Assignments will typically be graded within 1-2 weeks. Please include your full name, course name, section on all correspondence with your instructor.



Evaluation and Assessment

Grading:

Final grades are based on the total points earned from a maximum of 400 course points. Individual assignment point values appear in the following table. Letter grades are assigned per the default University of Akron Grading Scale (given below).

Grade Component	Points	Percentage of Final Grade
Exam 1	50	15%
Exam 2	75	15%
Exam 3	50	15%
Ongoing Team Case (2 parts)	75	25%
CONNECT Homework Highest 10 of 11 @ 5 points each	50	10%
Quizzes 5 @ 10 points each	50	10%
Comprehensive Final Exam	50	10%
LearnSmart Homework @ 1 point each	12	<i>Extra Credit</i>
Total	400 Points	100%

Grading Scale:

Below is the default University of Akron Grading Scale:

A	372 – 400 points	93 – 100%
A-	360 – 371 points	90 – 92.99%
B+	348 – 359 points	87 – 89.99%
B	332 – 347 points	83 – 86.99%
B-	320 – 331 points	80 – 82.99%
C+	308 – 319 points	77 – 79.99%
C	292 – 307 points	73 – 76.99%
C-	280 – 291 points	70 – 72.99%
D+	268 – 279 points	67 – 69.99%
D	252 – 267 points	63 – 66.99%
D-	240 – 251 points	60 – 62.99%
F	less than 240 points	Below 60%

Picture ID Requirement: During examinations, students may be asked to display their University of Akron picture IDs by placing them on their desks

Grade Component Description

1. **Unit Exams:** These three tests will be **closed book and closed notes** but one 8-1/2 x 11" sheet of notes (both sides) will be permitted. Specified tables and a calculator will also be needed. Calculators will also be permitted and should be brought to every class period. Sharing of notes or calculators is not permitted. Exams will consist of multiple choice, true/false, problems, and short answer questions.



2. **The Final Exam:** will consist of matching and multiple choice questions and will be **closed book, closed notes**, with no calculator needed or permitted.
3. **Team Case:** will consist of two business case scenarios that will require statistical preparation, analysis and professional reporting of results. Teams of 3-4 students will be assigned by the instructor. Further details will be provided with the first case assignment.
4. **Connect Homework** will consist of approximately 5-10 problems for each chapter. Eleven assignments will be made, and students will generally have about one week to complete them after the material is covered in class. The highest 10 of 11 assignment grades will count towards the final grade.
5. **LearnSmart** homework will be assigned for all chapters and is based on the text readings. This will be worth up to one bonus point for each assignment, up to a maximum of 12 points. It is strongly recommended that you try to complete (or at least begin) these assignments before we discuss the chapter in class
6. **Quizzes** will be administered through Springboard. Quizzes will consist of 10 to 20 multiple choice and true/false questions and will be similar to exam questions.

Class Policies and Expectations

Attendance

Lecture notes and other documents will be regularly posted on the Springboard course management website. It is the responsibility of the student to access the materials and be prepared for class. Each student is expected to prepare for each class meeting by reading in advance the assigned chapters or sections. Students are responsible for all material in the assigned readings, whether or not it is specifically covered in class, unless otherwise advised.

Just showing up is not enough. Each student is expected to come to every class prepared to discuss (or argue) and otherwise interact with classmates concerning the materials assigned. I will evaluate your contributions in the classroom. Assume that you will be learning as much from each other as you will from the instructor – then make sure it happens! Because participation requires attendance it is important that you come to class.

Participation

You are expected to participate in this course as follows:

- You are responsible for completing and submitting all case assignments to the appropriate Springboard drop box before the due date. You are responsible for clearly labeling your assignments as requested in the assignment, in the requested format (generally either .docx or .pdf) so I can identify your submission. Note that the University provides a Google Apps account to all students, and you can use Google Apps to create files in these file types.



- You are responsible for maintaining copies of your work and verifying that your Dropbox submission was received. You will receive an email confirmation when you submit assignments. You will be also able to track your submissions in Springboard.
- You are responsible for completing all Connect homework assignments before the due date.
- Technical challenges are not an acceptable excuse for missing deadlines. You must ensure that you have access to a working computer at all times. Please do not wait until the deadline to submit assignments.
 1. If you experience any technical issues with Springboard, please contact ZipSupport (330-972-6888) and ensure that the issue is tracked through the Footprints ticketing system.
 2. If you experience any technical issues with Connect, please contact the Customer Experience Group (CXG) through McGraw Hill (800-331-5094.) Ensure that a ticket is opened to resolve any issues.
- If you have any questions or concerns about any of the assignments or your performance, please contact me immediately. Do not wait until the assignment is due or your performance cannot be rectified.

Electronic Devices

Please be considerate of your classmates and do not use cell phones during class. Laptops and tablets may be used for note taking only. Please bring calculators to class on a regular basis. Calculators (**no cell phones**) will be needed for the exams and they may not be shared on exam days.

Late Assignments & Make-up Policies

Late homework and quiz assignments are not accepted (note that two of the eleven Connect assignments and one of the 6 quizzes are dropped.) Do not wait until right before the due date to submit homework or assignments. In exceptional circumstances (Connect homework site down for extended period, etc.) due dates may be extended for the entire class.

Team case assignments will be penalized 10% if late, with an additional 10% for each additional 24 hours late. Cases will not be accepted after graded cases have been returned to the class.

A **make-up exam** is available only in exceptional circumstances for students with excused absences and will be considered only if notification of your absence was given prior to the test (whenever possible), and documentation of your absence is provided before or after the exam.

University Policies

Withdrawal Policy

- A student may drop a course through the 14th calendar day (**September 12, 2016, for fall semester 2016**) of a semester or proportionately equivalent dates during summer sessions, intersession and other course terms. A “drop” will not appear on your transcript. The class simply “disappears.”
- After the 14th calendar day period, students may withdraw from a course through Zipline until the 49th calendar day (**October 17, 2016, for fall semester 2016**) of a semester or proportionately equivalent dates during summer session, intersession, and other course terms. If you withdraw, a “WD” will appear on your transcript. You should know that *a withdrawal may affect your financial aid, eligibility for on-campus employment and eligibility for insurance*. Speak with your advisor for details.



- A student who leaves a course without completing the coursework and without going through the withdrawal procedure *will be given an "F" for the course.*

Questions regarding your registration can be addressed by the [Office of the Registrar](#), 330-972-5400. [The official University Withdrawal Policy is located here.](#)

Incompletes

Permission to obtain an Incomplete is not common. For guidelines, consult the bulletin and discuss your specific situation with an advisor. You can find more information here:

http://www.uakron.edu/academics_majors/ub/important-policies/grade-policy-and-credit.dot

Student Conduct and Community Standards

Professional and considerate behavior during class is expected. In addition, each student must submit his/her own work, or the work of the students and his/her assigned team members. Plagiarism of a case assignment will result in an immediate F for the assignment.

Integrity of scholarship is essential for the university community. The University community is governed by the policies and regulations contained with the Code of Student Conduct and enforced by the Department of Student Conduct and Community Standards, Simmons Hall 302, (330) 972-6380. The University of Akron [Code of Student Conduct can be downloaded here.](#)

It is each student's responsibility to know what constitutes student misconduct and academic dishonesty, and to seek clarification directly from the instructor if necessary. Examples of misconduct and dishonesty include, but are not limited to:

- Plagiarism (intentional or unintentional representation of ideas or works of another author or creator, in whole or in part, without properly citing the original source for those ideas or works).
- Use of unauthorized assistance in taking quizzes, tests, or examinations.
- Submitting substantially the same work to satisfy requirements for one course or academic requirement that has been submitted in satisfaction of requirements for another course, without permission of the faculty member
- Use of sources prohibited by the faculty member in writing papers, preparing reports, solving problems, or carrying out other assignments.
- Inappropriate acquisition and/or improper distribution of tests or other academic materials without the permission of the faculty member.
- Engaging in any behavior specifically prohibited by a faculty member in the course syllabus or during class discussion.
- Knowingly furnishing false or misleading information to university officials or faculty members.
- Engaging in or threatening physical abuse, verbal abuse, threats, intimidation, harassment, coercion, and/or other conduct which threatens the welfare or safety of any person.
- Disorderly or disruptive conduct.
- Behavior that the student knew or reasonably should have known would cause a disruption or obstruction of teaching or research.



Students that are suspected of having violated the Academic Misconduct provision in the Code of Student Conduct, action will be taken as outlined in the Code of Student Conduct.

Accessibility Statement

Any student who has a disability that substantially limits learning in a higher education setting may contact [the Office of Accessibility](#) for information regarding eligibility for reasonable accommodations. The office telephone number is (330) 972-7928 (Voice) or (330) 972-5764 (TDD). No special accommodations will be provided to students unless I have received information from that office.

Support

Technical Support

If you have computer or software questions or require technical assistance, please contact ZipSupport:

- By Phone: 330-972-6888
- By Email: support@uakron.edu.

[The ZipSupport Help Desk web site for computer-related issues can be found here.](#)
[Springboard self-help guides can be found here.](#)

Academic Support

Research and Writing Support

The University of Akron provides free assistance to currently enrolled students at two main campus locations. Select the location name to access the website of each.

The UA Library

The UA library provides access to a significant number of online as well as traditional resources. Assistance in finding articles and conducting research can be found here:
http://libguides.uakron.edu/business_management

[Bierce Writing Commons](#)

Bierce Library, Rm. 68. For Appointments Call: (330) 972-6548

[Polsky Writing Lab](#)

303 Polsky Building. For Appointments Call: (330) 972-7046

Day and Evening Appointments Available for both services

Tutoring/eTutoring

A limited amount of tutoring will be available through Management Department during the semester. More details will be provided during class and on Springboard. In addition, The University of Akron also offers online tutoring, called eTutoring, which is provided through the Ohio eTutoring Collaborative. Students at The University of Akron have access to online tutoring in Writing, Accounting, Chemistry, Math (through Calculus II), and Statistics. The Online Writing Lab allows you to submit a draft of your paper to a tutor, ask for specific feedback, and receive your work back with a tutor's comments in approximately 24 to 48 hours. You may submit up to three drafts per paper. eChat will allow you to meet with a tutor in one-on-one tutoring sessions via a fully interactive, virtual online environment. Offline questions will allow you to leave a specific question for an eTutor, who will respond within 48 hours (but usually sooner). [Select this link to learn more about eTutoring services.](#)



TENTATIVE COURSE SCHEDULE

Week	DATES	Topics started/ (Course Competencies)	READINGS / CLASS ACTIVITIES	DUE DATES @11:59 pm unless otherwise stated
1	M 8/29 W 8/31 F 9/2	Overview of Course Data Visualization	Chapter 1: Introduction to Business Stats Chapter 2: Tabular & Graphical Methods	Hwk Ch 1-2 due Sunday 9/4 LearnSmart 1-2 due Sunday 9/4
2	M 9/5 W 9/7 F 9/9	Happy Labor Day Descriptive Statistics Descriptive Statistics	NO CLASS Chapter 3: Descriptive Statistics	Hwk Ch 3 due Sunday 9/11 LearnSmart Ch 3 due Sunday 9/11
3	M 9/12 W 9/14 F 9/16	Probability Probability Probability	Chapter 4: Probability Last Day to drop course Mon 9/12/16 at 11:59 pm	Hwk Ch 4 due Sunday 9/18 LearnSmart Ch 4 due Sunday 9/18 Quiz 1 (CH 1-3) due Friday 9/16
4	M 9/19 W 9/21 F 9/23	Discrete Random Variables Discrete Random Variables Continuous Variables	Chapter 5: Discrete Random Variables Chapter 6: Continuous Random Variables	Hwk Ch 5 due Sunday 9/25 LearnSmart Ch 5 due Sunday 9/25
5	M 9/26 W 9/28 F 9/30	Continuous Variables Continuous Variables Exam Review	 Review	Hwk Ch 6 due Thursday 9/29 LearnSmart Ch 6 due Thursday 9/29 Quiz 2 (CH 4-6) due Friday 9/30
6	M 10/3 W 10/5 F 10/7	Exam 1 Sampling & Sampling Dist. Sampling & Sampling Dist.	Exam 1: Chapters 1-6 (M 10/3) Chapter 7: Sampling & Sampling distributions	Hwk Ch 7 due Sunday 10/9 LearnSmart Ch 7 due Sunday 10/9
7	M 10/10 W 10/12 F 10/14	Confidence Intervals Confidence Intervals Confidence Intervals	Chapter 8: Confidence Intervals	Hwk Ch 8 due Sunday 10/16 LearnSmart Ch 8 due Sunday 10/16
8	M 10/17 W 10/19 F 10/21	Hypothesis Testing Hypothesis Testing TEAM DAY	Chapter 9: Hypothesis Testing (one sample) Last Day to withdraw from course is Monday 10/17/16	Quiz 3 (Ch 7-8) due Friday 10/21
9	M 10/24 W 10/26 F 10/28	Hypothesis Testing Statistical Inference Statistical Inference	Chapter 10: Statistical Inference based on two samples	Hwk Ch 9 due Sunday 10/30 LearnSmart Ch 9 due Sunday 10/30
10	M 10/31 W 11/2 F 11/4	Statistical Inference Statistical Inference Statistical Inference		Hwk Ch 10 due Sunday 11/6 LearnSmart Ch 10 due Sunday 11/6 Quiz 4 (Ch 9-10) due Friday 11/4
11	M 11/7 W 11/9 F 11/11	Exam Review Exam 2 ANOVA	Review and Catch up Exam 2: Chapters 7-10 (W 11/9) Chapter 11: Experimental Design & ANOVA	Case part one due Sunday 11/13
12	M 11/14 W 11/16 F 11/18	ANOVA ANOVA ANOVA		Hwk Ch 11 due Sunday 11/20 LearnSmart Ch 11 due Sunday 11/20
13	M 11/21 W 11/23 F 11/25	TEAM DAY NO CLASS Happy Thanksgiving		
14	M 11/28 W 11/30 F 12/2	ANOVA Chi-square tests Chi-square tests	Chapter 12: Chi-Square tests In Class Exercise	Quiz 5 (Ch 11-12) due Friday 12/2
15	M 12/5 W 12/7 F 12/9	Chi-square tests Exam Review Exam 3	Review for Exam 3 & final exam Exam 3: Chapters 11 & 12 (F 12/9)	Hwk Ch 12 due Sunday 12/11 LearnSmart Ch 12 due Sunday 12/11 Case part two due Sunday 12/11
16	M 12/12	2:30p-4:30p	Final Exam	