



Business Analytics
6500:305-502 (3 credits)
Fall 2020

Instructor Information		Class Information	
Matt Brenn, MBA		Class Location: ONLINE (via BrightSpace)	
Email: brenn@uakron.edu		Time: Flexible (asynchronously - No live class meeting times.)	
Office: CBA 333			
Phone: (330) 972-5802			
Office Hours: Monday/Wednesday/Friday 10:45am-12:45pm and by appointment via WebEx.			

Course Information

Description

Studies core statistical techniques; data retrieval, analysis and mining; and decision modeling to effectively persuade in the project-oriented world of data-driven decisions.

Prerequisites

6500:304 (Business Statistics)

Overview

Welcome to the exciting frontier of business analytics and big data! Over the next few weeks, you will have the chance to further develop and demonstrate their business skills (both technical and communicative) in this scope.

The general work-flow of this course begins with division into topics and modules; an index of modules follows this section. Each module will consist of the following components:

1. student's preparatory reading of text/posted materials
2. in-class demonstration of topic and lab in JMP
3. independent completion and submission of topic's JMP lab assignment

The successful BA student is one who makes an initial decision to invest the time and work needed at the right time in order to keep up with the course flow. The learning elements of the course have been designed to provide students with all of the needed tools to succeed in the course, with sufficient (not excessive) investment of time and work. Students are always welcome and encouraged to contact the instructor for further help or advice with the course.

This course is supported by The University of Akron's learning management system called Brightspace. If you are new to Brightspace, you can [get started by watching the tutorials here](#).

Objectives

1. Expose you to visualization, supervised learning and unsupervised learning techniques that are used in a data empowered business strategy
2. Extend your knowledge of business statistics
3. Apply what you learn in this class to what you do at work, now or in the future.
4. Develop skills that are required to transform data into actionable intelligence & decision-making
5. Enhance your written communication, creative thinking, problem solving, and analytical skills

At the end of this course, successful students will be able to:

1. describe key concepts in business and data analytics
2. explain how business analytics differs from business intelligence and data mining
3. write a justification why organizations are actively adopting business analytics for strategic advantage
4. differentiate between information, insight and knowledge
5. apply appropriate statistical (basic analytics) concepts using analytic software
6. utilize data mining techniques on large data sets to answer business questions
7. analyze output from statistical and data mining procedures
8. write conclusions and recommendations based on relevant statistical and data mining output
9. communicate the results of data analysis by writing a detailed report

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

Course Materials (Required)

Fundamentals of Predictive Analytics with JMP®, Second Edition by Ron Klimberg & B.D. McCullough, SAS press, 2016, ISBN 978-1-62959-856-7 (Hardcopy).

[Link to free book below](#)

<https://learning.oreilly.com/library/view/fundamentals-of-predictive/9781629608013/?ar>

We will be using the powerful and user-friendly analytical software package JMP 14, published by SAS. JMP is available on all CBA lab computers and can also be downloaded (at no charge for current CBA students) from *myAkron*→*Technology*→*Home Use Software Downloads*.

Instructions on how to download the software can be found in our BrightSpace course by going to *Course Materials* – *Course Orientation* – *How to Download and Install JMP*.

Additional Resources (Non-Required)

Data Mining for Business Analytics: Concepts, Techniques, and Applications with JMP Pro by Galit Shmueli, Peter C. Bruce, Mia L. Stephens, Nitin R. Patel, Wiley Publishing, 2017, ISBN 9781118877432 (hardcopy), ISBN 9781118877524 (ebook)

We may also be using various articles, videos, and other materials with links posted on Brightspace.

Instructor Contact and Reply Policy

Email is the preferred method of communication for this course. Students should expect a response to emails within 24 hours on weekdays and 48 hours for a weekend or over a holiday. Submitted assignments will normally be evaluated and returned within 1-2 days.

Evaluation and Assessment

Index of Course Topics

Base - Introduction to Business Analytics and Big Data
Base - Business Analytics Process
1 Data: Concepts, Cleansing, Exploration & Visualization
2 Statistical Testing with JMP: T-test, ANOVA, and Chi-Square
3 Correlation & Linear Regression Analysis
4 Logistic Regression
5 Decision Tree
6 Model Comparison
7 Cluster Analysis
8 Neural Networks

Grading

Final grades are based on the total points earned from a maximum of 1000 course points. Individual assignment point values appear in the following table. Course letter grades are assigned per the default University of Akron Grading Scale (given below).

Grade Component	Points	% of Final Grade	
JMP labs (around 8 labs)	300	30%	
Team case (visualization, statistics, linear regression, logistic regression, decision tree, model comparison)	250	25%	
Midterm exam	200	20%	
Comprehensive final exam	250	25%	
Total points:	1000	100%	
BStat assessment quiz (up to 30 bonus points)	30	$\leq 3\%$ <i>bonus</i>	

Grade Component Description

JMP labs. A total of eight labs utilizing the JMP software will be assigned during the semester. Labs may be completed on an individual basis. All JMP labs are due at 11:59pm on the due date. **No late JMP labs will be accepted.**

Team case. Semester-long teams of 3-4 students will be assigned by the instructor. Teams are responsible for assembling and submitting a team contract as well as completing a comprehensive case throughout the course, including an executive summary and well-developed and reported supporting analysis. More details will be provided when the case is assigned. **Late case assignments are accepted with a penalty of 10% per day late.** Peer evaluations (confidential) of team members will be required. Team membership is subject to update at any time by the instructor.

Midterm exam. The midterm exam will be closed book and closed notes. The use of simple or scientific calculators may be permitted during the exam (no phones). Exams will consist of multiple choice, true/false, problems, and short answer questions. Exams will be administered through Respondus Monitor Lockdown Browser. (If you only have chromebook access, the use of Proctorio can be an option as well)

Final exam. The comprehensive final exam will consist of multiple choice and true/false questions and will be **closed book and closed notes**, with no calculator needed or permitted. Exams will be administered through Respondus Monitor Lockdown Browser. (If you only have chromebook access, the use of Proctorio can be an option as well)

Grading Scale

Below is the default University of Akron Grading Scale:

A	93 - 100%
A-	90 - <93%
B+	87 - <90%
B	83 - <87%
B-	80 - <83%
C+	77 - <80%

C	73 - <77%
C-	70 - <73%
D+	67 - <70%
D	63 - <67%
D-	60 - <63%
F	BELOW 60%

Course Policies and Expectations

Attendance

In order to succeed in this course, regular engagement with the course content is strongly encouraged. Being a summer class, with a shortened semester, there is room to fall behind the pace of the course.

Participation

You are expected to participate in this course as follows:

- You are responsible for completing and submitting all assignments to the appropriate Brightspace assignment submission folder “dropbox” before the due date. You are responsible for clearly labeling your papers so I can identify your submission. For example, use your first and last name in the filename along with the assignment number. You are also responsible for submitting files in the requested format, such as .doc, .docx, or .pdf. 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 has been received. You will receive an email confirmation when you submit assignments. You also will be able to track your submissions in Brightspace.
- You are responsible for completing all labs and 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.
 - If you do experience any technical issues, please contact the UA I.T. Help Desk (330-972-6888) and ensure that the issue is tracked through the Footprints ticketing system.

If you have any questions or concerns about any of the assignments or your performance, please contact me. Do not wait until the assignment is due or your performance cannot be rectified.

Late Assignments

Late lab assignments are not accepted. Do not wait until right before the due date to submit lab assignments.

Team case assignments will be penalized 10% if late, with an additional 10% for each additional 24 hours late.

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 test.

Withdrawal Policy

- A student may drop a course through the 14th calendar day of a semester or proportionately equivalent dates during *summer*. 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 “**My Akron**” until the 49th calendar day 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 and dates are located here](#).

For undergraduate students only:

- You must consult your academic advisor:
 - before withdrawing from more than two courses before you have earned 32 credits; and
 - before withdrawing from more than two courses after you have earned 32 credits but before you have earned 64 credits. (This does not count withdrawals that occurred before you earned 32 credits.)
- You may not withdraw from more than four courses before you have earned 64 credits.
- You may not withdraw from the same course more than twice.
- Exceptions may be made for extraordinary non-academic reasons (e.g., medical treatment or convalescence, military service).

Incompletes

An Incomplete grade indicates that the student has completed passing work but that some part of the work is, for good and acceptable reason, not complete at the end of the term. Failure to make up the omitted work satisfactorily by the end of the following term, not including summer sessions, converts the “I” to an “F.” When the work is satisfactorily completed within the allotted time the “I” is converted to the grade that the student has earned. Permission to obtain an Incomplete is not common. Talk with your instructor and advisor about your specific situation.

Student Conduct and Community Standards

Academic Integrity

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. The University of Akron. You can find more information here: www.uakron.edu/studentconduct

It is each student's responsibility to know what constitutes student academic misconduct, and to seek clarification directly from the instructor if necessary. Examples of academic misconduct 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)
- The use of materials prepared by another person or agency engaged in the selling of term papers or other academic materials.
- 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

If a faculty member suspects that a student has violated the Academic Misconduct provision in the Code of Student Conduct, action will be taken as outlined in the Code of Student Conduct.

Any incident of copying/plagiarism of an assignment in this class can be expected to result, at minimum, in an "F" in the course. Every member of an involved team will get the same grade whether they were actively involved with copying/plagiarism or not.

Classroom/Group Meeting Behavior

Professional and considerate behavior during class or group meetings is required. Specific items mentioned in the Code of Student Conduct include:

- Intimidating or threatening behavior
- Disorderly or disruptive behavior
- Disrupting or obstructing the functioning of the University
- Use of an electronic device to make an audio or video recording of someone without consent
- Failure to comply
- 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
- Behavior that the student knew or reasonably should have known would cause a disruption or obstruction of teaching or research

Harassment

The University of Akron is committed to providing an environment free of all forms of discrimination, including sexual violence and sexual harassment. This includes instances of attempted and/or completed sexual assault, domestic and dating violence, gender-based stalking, and sexual harassment. Please know the majority of other University of Akron employees, including faculty members, are considered to be "responsible employees" under the law and are required to report sexual harassment and sexual violence. If you tell me about a situation, I will be required to report it to the Title

IX Coordinator and possibly the police. You will still have options about how your case will be handled, including whether or not you wish to pursue a law enforcement or complaint process. You have a range of options available and we want to ensure you have access to the resources you need. Additional information, resources, support and the University of Akron protocols for responding to sexual violence are available at uakron.edu/Title-IX.

Support

Technical Support

If you have computer or software questions or require technical assistance, please contact the I.T. Help Desk:

- By Phone: 330-972-6888
- By Email: support@uakron.edu.
- The web site for Zip Support can be found here: <http://www.uakron.edu/helpdesk/>
- Brightspace self-help can be found here:
http://www.uakron.edu/it/instructional_services/dds/Brightspace/Brightspace-student_resources.dot

Academic Support

The Writing Commons, Writing Lab, and Writing Center

The University of Akron provides free assistance to currently enrolled students. Writing help can be obtained in the Bierce Library Writing Commons.

- Information on the Writing Commons and eTutoring can be found here:
http://www.uakron.edu/it/instructional_services/dds/Brightspace/Brightspace-student_resources.dot

Additional Research and Writing Support

UA Library Business & Management Research Guide: http://libguides.uakron.edu/business_management
[Purdue Owl Online Writing Lab](#)
[Purdue Owl APA Style Guide](#)
[Purdue Owl – Using research](#)

eTutoring

Students looking for additional assistance outside of the classroom are advised to consider working with a peer tutor through Knack. The University of Akron CBA has partnered with Knack to provide students with access to verified peer tutors who have previously aced this course. To view available tutors, visit uakron.joinknack.com and sign in with your student account.

Accessibility

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). The office is located in Simmons Hall room 105. No special accommodations will be provided to students unless I have received information from that office.

Other Support

Confidential help is available. If you wish to speak to a professional, in confidence, please contact:

- Rape Crisis Center – www.rccmsc.org – 24 Hour Hotline: 877-906-RAPE Office Located in the Student Recreation and Wellness Center 246 and the office number is: 330-972-6328
- University Counseling and Testing Center – uakron.edu/counseling 330-972-7082
- University Health Services – uakron.edu/healthservices 330-972-7808

Tentative Course Schedule

Business Analytics 6500:305-502 Fall 2020

WEEK	DATES (week of)	MODULE	Assignments
1	8/24	Welcome, Course Overview, Introduction to Business Analytics, Big Data;	BStat Assessment Quiz Syllabus Quiz Introductions
2	8/31	Business Analytics Process, Data Concepts, Cleansing & Visualization	LAB 0
3	9/7	Business Analytics Process, Data Concepts, Cleansing & Visualization	LAB 1
4	9/14	Statistical Testing with JMP	LAB 2
5	9/21	Correlation & Linear Regression Analysis	LAB 3
6	9/28	Mid-Term Review & Exam	Mid-Term Exam
7	10/5	Logistic Regression	LAB 4
8	10/12	Decision Tree Analysis	LAB 5
9	10/19	Model Comparison/Evaluating Performance	LAB 6
10	10/26	Group Project Distributed	
11	11/2	Cluster Analysis	LAB 7
12	11/9	Neural Networks Analysis	LAB 8
13	11/16	Final Exam Review & Exam	Final Exam
14	11/23	Team Assignment	
15	11/30	Team Assignment	
Finals	12/7	Team Assignment due	Team Assignment Due

Link to University's Academic Calendar <https://www.uakron.edu/registrar/dates/acadcal.dot>

Note: The above schedule is intended to serve as a general outline and it is subject to change. Topics are tentative and may need to be modified during the semester. Updates will be posted to Brightspace. Unless otherwise stated, due dates are 11:59pm on the date determined.