BDAN 310 BUSINESS DATA ANALYTICS

SYLLABUS – CREWS (Spring 2024)

Course Description

An introduction to the application of data analytics methods to business issues. Topics include business case studies, data analytic, model building techniques, and communication of results.

Required Text

Business Analytics, 2ⁿᵈ Edition by Jaggia (and co-authors)
ISBN 9781264302802 (ebook)
NOTE: Everyone should have access to the eBook in Blackboard for the first two weeks of class. After those first two weeks, if you are not using Big Red Backpack, you will need to purchase access to the book separately, which you can rent directly from the publisher (McGraw-Hill) at the following link:
https://www.mheducation.com/highered/product/business-analytics-jaggia-kelly/M9781264302802.html

Learning Objectives

Upon completion of this course, students should be able to:

- Develop effective models of business scenarios.
- Use statistical techniques to analyze business data.
- Improve your analytical tool skills for making data-driven business decisions.

Instructor Information

Dr. Thad Crews, Grise Hall 227, 270-745-3509

After earning my bachelor's degree from WKU, I began my professional career as a software for Electronic Data Systems, a Fortune 500 company. However, my true passion is education. Consequently, I pursued and earned a PhD in computer science from Vanderbilt University, consistently recognized by U.S. News and World Report among the top graduate programs for Education in the United States.   I then joined the faculty at Western Kentucky University, and I am proud to note this is my 28th year of dedicated teaching on the Hill. I have served as National Chair of the Technology in Education Committee for the Association of Information Technology Professionals (AITP). I have written two college textbooks on computer programming and collaborated with leading national education publishers (Pearson and Cengage) to develop cutting-edge digital solution products for higher education. Through it all, teaching remains my foremost passion. I am thrilled to be teaching this course this semester, and I encourage you to reach out with any questions or comments you may have at any time. Your success is my primary goal!

Email

My email is **thad.crewsii**@wku.edu which includes an **ii** *(like Roman numeral 2)* after my last name:
> *Be sure you email* **thad.crewsii** *because any other WKU "Thad Crews" email will NOT get to me.*

Your subject line matters. For example, **BDAN 310 Unit 2c Question 6** includes your class, the unit item, and the specific issue inside that unit item. Emails with proper subject lines will get a response within 24 hours, often much sooner. Emails with poor subject lines will be delayed, and the email might be returned unanswered with instructions to resend with a proper subject line.

Calendar, Points and Grades

BDAN 310 Calendar (Spring 2024)

		Monday	Tuesday	Wednesday	Thursday	Friday
January 16 - January 19	Week 1		Class Begins			
January 22 - January 26	Week 2					Unit 1 Due
January 29 - February 2	Week 3					Unit 2 Due
February 5 - February 9	Week 4					Unit 3 Due
February 12 - February 16	Week 5					Unit 4 Due
February 19 - February 23	Week 6					Unit 5 Due
February 26 - March 1	Week 7					CASE STUDY A
March 4 - March 8	Week 8					Unit 6 Due
March 11 - March 15	Week 9					Unit 7 Due
March 18 - March 22	Week 10	Spring Break	Spring Break	Spring Break	Spring Break	Spring Break
March 25 - March 29	Week 11					Unit 8 Due
April 1 - April 5	Week 12					CASE STUDY B
April 8 - April 12	Week 13					Unit 9 Due
April 15 - April 19	Week 14					Unit 10 Due
April 22 - April 26	Week 15					Capstone Project Due
April 29 - May 2	Week 16				Final Exam Due	

Each unit is divided into three graded unit activities.
This allows steady progress without getting overwhelmed (steps that are too big) or bored (too many small steps)

Points Breakdown

Units	Topics	Points		Unit Part A	Unit Part B	Unit Part C
				Concepts Quiz	R code Quiz	"Check Your Work"
Unit 1	Introduction to Business Analytics	60	→	20	20	20
Unit 2	Predictive Analytics (an Executive Overview)	60	→	20	20	20
Unit 3	Summary Measures	60	→	20	20	20
Unit 4	Data Visualization	60	→	20	20	20
Unit 5	Decision Trees	60	→	20	20	20
	Case Study: Titanic Survivors	60				
Unit 6	Linear Regressions (part 1)	60	→	20	20	20
Unit 7	Linear Regressions (part 2)	60	→	20	20	20
Unit 8	Logistic Regressions	60	→	20	20	20
	Case Study: Numeric Predictions	60				
Unit 9	Artificial Intelligence and Neural Networks	60	→	20	20	20
Unit 10	Unsupervised Learning	60	→	20	20	20
	RCode Capstone Project	60				
	Concepts Final Exam	100				
	TOTAL POINTS	880				

A final grade of "A" (90%) requires 792 points.
A final grade of "B" (80%) requires 704 points.
A final grade of "C" (70%) requires 616 points.
A final grade of "D" (60%) requires 528 points.

All items are due on Friday night of their assigned week.

Student Benefit #1 // Weekend Extensions: As a student benefit, items not submitted by Friday will still be accepted for 48-hours until the following Sunday night. However, Saturday and Sunday are the "On Your Own Zone" when I am less likely to be checking email. Items not submitted by the Sunday night extension are "twice late" and will receive a grade of zero. Late work is not accepted after the "twice late" Sunday night.

Student Benefit #2 // Drop-and-Replace policy: In addition to the weekend extensions, there is also a "drop-and-replace" policy where your three lowest unit part scores (60 points total) will be dropped and replaced by your next three lowest unit part scores. Your three lowest unit part scores can come from the same unit or from different units.

Unit Quizzes (Concepts and R Code)

Most units will include two quizzes. The *concepts quizzes* will cover conceptual materials from lecture, textbook, and other third-party readings or video materials. The *R code quizzes* will cover the R code training materials provided in the unit. Each quiz is 1 attempt only. Each quiz is open book and open notes.

Unit "Check Your Work" Homework

Most units will include a CHECK-YOUR-WORK activity that allows you to check your work as you go. You can submit each answer one-at-a-time and check to see if your answer is correct. You can submit an unlimited number of times before the due date. This gives you an *EXCELLENT* way to check your understanding as you go. Your highest score is the one that counts for your grade.

Capstone Project

The capstone project will focus on your R coding skills. The project will also include explaining the results of your work.

Final Exam

The final exam will focus on the unit concepts (textbook) materials. There are no R code questions on the final exam. Below are three important notes about the Final Exam:

1. **The Final Exam is proctored exam**. In the first or second week of the course, you will receive an email from the **Distance Learning and Testing Centers (DLTC)** with instructions about how to register for the exam. Be sure to read those instructions and register for the exam.

2. **The Final Exam is closed book. However, you can create a single page (front and back) of hand-written notes that you can use during the Final Exam.** Everything on the page must be hand-written. No printed text or printed images are allowed. If you want to develop your page of hand-written notes unit by unit as you cover each new unit, that might be easier than trying to create the study notes all at once at the end of the semester. After you finish your Final Exam, you will give your page of hand-written notes to the proctor. You will NOT get the notes back. Your name should be clearly written on your page of study notes.

3. **The Final Exam will cover the unit concepts (textbook) materials only.** There are no R code questions on the final exam. The final exam has the same format as the unit concepts exams, except the final exam will NOT be open book. The only notes you are allowed to use during the final exam are the single page of hand-written notes you create yourself. There will be around 50 to 60 questions on the final exam.

Academic Integrity

Students are expected to pursue their studies with commitment to intellectual honesty and personal integrity. Cheating, plagiarism, and other acts of academic dishonesty are discussed in the [Academic Requirements and Regulations](#) section of the WKU Undergraduate Catalog. Possible penalties for academic dishonesty include a failing grade in the course without the possibility of withdrawal.

The Gordon Ford Leadership Team wants you to be aware of the following:

WKU Counseling and Testing Center

The university experience should be challenging, but not overwhelming. To this end, the WKU Counseling Center provides a variety of services to help strengthen students' capacity to tolerate distress, form healthy relationships, and seek healthy expressions of their ideals and values. If you would like to speak with someone, you may contact WKU's Counseling and Testing Center at 270-745-3159 or use their Here to Help service at https://www.wku.edu/heretohelp/heretohelpemail.php. If you need immediate help, please visit the Counseling Center in 409 Potter Hall or call the 24-hour emergency help line at 270745-2548.

Big Red Backpack

The Big Red Backpack program is the title of WKU's partnership with Barnes & Noble College for their First Day Complete initiative. Big Red Backpack is a course materials delivery program that ensures students have their required course materials on the first day of class and may reduce the costs of materials for many of their courses. Enrollment in the program occurs automatically when students register for classes. Students may opt out of the program each semester, as long as they choose to opt out for all of their classes.

Students MUST carefully and completely follow all instructions regarding the Big Red Backpack Program. Those instructions will be provided by:

1. An email to all Topper email addresses from the Big Red Backpack Program one month prior to the start of classes.
2. The Big Red Backpack Program site: https://www.wku.edu/bigredbackpack/.

Students should refer to the Big Red Backpack Program site referenced above for opt-out deadlines and any additional details.

The University Leadership Team wants you to visit http://www.wku.edu/syllabusinfo/ for WKU's most up-to-date information about COVID-19, Title IX Discrimination & Harassment, ADA Accommodation, Regular and Substantive Interaction (Online Courses Only), and various other Things You Should Know.

ADA Accommodations

In compliance with university policy, students with disabilities who require academic and/or auxiliary accommodations for this course must contact the Student Accessibility Resource Center located in Downing Student Union, Room 1074. The SARC can be reached by phone number at 270-745-5004 [270-745-3030 TTY] or via email at sarc.connect@wku.edu. Please do not request accommodations directly from the professor or instructor without a faculty notification letter (FNL) from The Student Accessibility Resource Center.

Title IX/ Discrimination & Harassment

Western Kentucky University (WKU) is committed to supporting faculty, staff, and students by upholding WKU's Sex and Gender-Based Discrimination, Harassment, and Retaliation (#0.070) and

Discrimination and Harassment Policy (#0.2040). Under these policies, discrimination, harassment and/or sexual misconduct based on sex/gender are prohibited. If you experience an incident of sex/gender-based discrimination, harassment and/or sexual misconduct, you are encouraged to report it to the Executive Director, Office of Institutional Equity/Title IX Coordinator, Ena Demir, 270-745-6867 or Title IX Investigators or Michael Crowe, 270-745-5429. Please note that while you may report an incident of sex/gender based discrimination, harassment and/or sexual misconduct to a faculty member, WKU faculty are "Responsible Employees" of the University and MUST report what you share to WKU's Title IX Coordinator or Title IX Investigator. If you would like to speak with someone who may be able to afford you confidentiality, you may contact WKU's Counseling and Testing Center at 270-745-3159.

Please visit **http://www.wku.edu/syllabusinfo/** for more important WKU information you should know.