BDAN 310 Business Data Analytics
SYLLABUS – CREWS (SPRING 2023)

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 3 co-authors)
ISBN 9781265901295 (ebook)
NOTE: Everyone should have access to the eBook 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 do 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 hands-on skills for making data driven business decisions

Instructor Information and Email

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

My email is thad.crewsii@wku.edu with an ii (like the Roman number 2) after my name.

> *NOTE: Be sure to use* **thad.crewsii** *as my email address because there are other valid WKU email addresses with "Thad Crews" or "Thaddeus Crews" that will NOT get to me.*

Dr. Crews Biography

After earning my bachelor's degree from WKU, I began my professional career as a software engineer working for a Fortune 500 company (Electronic Data Systems) developing and maintaining banking software applications. However, my true passion is education, so I went on to get a PhD in computer science from Vanderbilt University which is consistently ranked by U.S. News and World Report as one of the top 5 graduate programs for Education in the United States. I then joined the faculty at Western Kentucky University, and this is my 26th year 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 I have collaborated with two of the largest national education publishers (Pearson and Cengage Learning) to develop innovative digital solutions for higher education. But teaching remains my first love, and I am excited to teach this course this semester. Please feel free to reach out with any questions or comments you have at any time.

Course Schedule, Points and Grades

Week Starting	Topic	Chapter Quiz	Hands-on Homework 1	Hands-on Homework 2	Human Thriving	Final Project
			Points Available			
1/16/2023	UNIT 1: Introduction to Business Analytics	20	20	20		
1/23/2023	UNIT 2: Summary Measures	20	20	20	20	
1/30/2023	UNIT 3: Probability	20	20	20		
2/6/2023	UNIT 4: Statistical Inference	20	20	20	20	
2/13/2023	UNIT 5: Regression Analysis (Supervised Method 1)	20	20	20		
2/20/2023	UNIT 6: More Regression Analysis	20	20	20	20	
2/27/2023	UNIT 7: Logistic Regression	20	20	20		
3/6/2023	UNIT 8: Decision Trees (Supervised Method 2)	20	20	20	20	
3/13/2023	Spring Break, March 13 - 17					
3/20/2023	UNIT 9: k-Nearest Neighbors (Supervised Method 3)	20	20	20	20	
3/27/2023	UNIT 10: Unsupervised Learning (Clustering)	20	20	20		
4/3/2023	UNIT 11: Neural Networks and ChatGPT	20	20	20	20	
4/10/2023	UNIT 12: Putting It All Together (Final Project)					
4/17/2023	Work on Final Project					
4/24/2023	Work on Final Project					
5/1/2023	Finals Week (Complete Final Project)					120
					Total Points	900

All work must be submitted before the due date to earn full credit.
Last work may be submitted within 1 week of the due date for partial credit.
Any questions or petitions about grades must be made within one week of the grade being posted.

A final grade of "A" (90%) requires 810 (or more) points
A final grade of "B" (80%) requires 720 (or more) points
A final grade of "C" (70%) requires 630 (or more) points
A final grade of "D" (60%) requires 540 (or more) points

Chapter Quizzes

Each unit you will be assigned one chapter to read from your textbook. There will be a quiz over that material. Chapter quizzes are open book and may only be taken one time.

Hands-on Homework

Each week you will be assigned two hands-on homework activities. The first will focus on learning R as a tool for analytics. The second will focus on working with data and understanding results. Each hands-on homework will include a set of "Check Your Work" questions that you will use to self-check your progress and understanding. You can submit your answers an unlimited number of times prior to the due date, and your highest score is the one that counts as your grade for that hands-on homework assignment.

Human Trinary Balance (Reflective Discussions)

The Human Trinary Balance materials explore the complexity of human thinking and how the human brain processes information. These materials provide valuable insights how to Survive and Thrive at both a personal and professional level. These materials will also help you appreciate how human thinking is different and more complex than the "thinking" done by computers or even the most advanced artificial intelligence (AI) systems. At the end of each assignment, you will write a reflective post where you share how your own personal thoughts and experiences relate to the material.

Final Project

Your final project will be assigned in Unit 12, and you will submit your final project before the end of Finals Week.

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, Michael Crowe, 270-745-5429 or Joshua Hayes, 270-745-5121. 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.

COVID-19
All students are strongly encouraged to get the COVID-19 vaccine. In accordance with WKU policy, all students must call the WKU COVID-19 Assistance Line at 270-745-2019 within 4 hours of testing positive for COVID-19 or being identified as a close contact to someone who has tested positive. The COVID Assistance Line is available to answer questions regarding any COVID-19 related issue. This guidance is subject to change based on requirements set forth by federal, state, and local public health entities. Please refer to the Healthy on the Hill website for the most current information.
www.wku.edu/healthyonthehill

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