



**BALL STATE
UNIVERSITY**

BA305 - Introduction to Business Analytics
Spring 2026

Instructor:

Dr. Abhijeet Kumar

Miller College of Business,

WB 246 E-mail:

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Instructor Office hours:

**15:00-17:00 Monday/Wednesday/Friday (or by
appointment)**

Schedule/Place:

Online/ Asynchronous

Course Description

This course introduces the core principles and methods of business analytics, with a focus on helping students: (1) understand the vast amounts of data available to businesses, and (2) acquire the skills to

access, prepare, analyze, and visualize data to support decision-making and solve business problems. Students will gain hands-on experience applying various business analytics techniques using contemporary data mining tools such as Excel and R. By the end of the course, students will be able to identify complex business challenges and structure them in a way that can be addressed through data analysis, visualization, and data mining.

Objectives Upon successful completion of this course, students will be able to:

- Recognize business problems that can be addressed using data mining and analytics tools.
- Identify relevant data sources, and capture, process, and manipulate data to solve business problems.
- Understand the theories and methods for modeling data to support business decision-making.
- Perform descriptive and predictive analytics techniques, including decision modeling, data visualization, and data mining, to address business challenges.
- Apply software tools such as Excel and R to implement various business analytics techniques.
- Present solutions to business problems based on data mining and analytical approaches.

Assurance of Learning Goals

The Miller College of Business is dedicated to ensuring that every graduate with a business degree is proficient in areas essential for success in business. These learning goals are summarized by the acronym C-KITE: Communication, Knowledge, Integration, Technology, and Ethics. This course supports students in achieving several of these goals in the following ways:

Communication: Students will gain a foundational understanding of data analytics and data-driven decision-making. This knowledge will enable them to conduct analyses and effectively communicate their findings in a clear, business-relevant manner.

Knowledge: Students will become familiar with a variety of data mining techniques used to extract valuable insights from large datasets.

Integration: The course combines the study of technology and data analytics with core business concepts, demonstrating how these elements work together to solve real-world problems.

Technology: Students will develop proficiency in software tools such as Excel and R to perform business analytics effectively.

Course Materials

Textbook (required): *Data Analytics Using Excel® Microsoft® 365: With Accounting and Finance Datasets (Version 4.0)* by Joseph M. Manzo, FlatWorld, ISBN: 978-1-4533-4285-5

Students may choose any format they prefer, including the most affordable option.

Canvas: Lecture notes, announcements, assignments, course schedule, additional readings, and other course information will be available on Canvas. Please check Canvas regularly.

Computers and Software: This course will utilize Excel and R (free). Students should have both programs installed and ready to use.

Additional Resources: *Data Mining for Business Analytics: Concepts, Techniques, and Applications in R* by Galit Shmueli et al., Wiley, ISBN-13: 978-1118879368

Course Policies

- **Communication** The instructor will send weekly updates via Canvas, and students are responsible for reviewing all information provided. Official communications will also be sent to students' Ball State University email addresses, which must be used for correspondence with the instructor. Responses can typically be expected within 24–48 hours. Privacy requirements, including those under federal law, may apply if a non-University email address is used.
- **Timeliness** Late work will incur a penalty. Students with unavoidable conflicts affecting exam or assignment deadlines should contact the instructor as early as possible, ideally before the due date. Make-up exams after the scheduled date will be granted only in exceptional circumstances. Equipment malfunctions or team scheduling conflicts are not valid reasons for late submissions.
- **Score/Grade Appeals** Students who believe a grade does not accurately reflect their performance are encouraged to discuss the issue with the instructor promptly. Grades assigned for more than one month are not eligible for appeal.
- **Software Support** The instructor will provide support for software tools explicitly required in the course. Students are responsible for resolving issues related to other software, including operating system problems and tools not specified in the course requirements.

Academic Integrity and Diversity

- The Office of Student Conduct is responsible for administering the *Code of Student Rights and Responsibilities*, addressing reports of misconduct, and providing outreach on safety, security, and other matters important to student success. The office also manages the emergency loan program, supports the Associate Provost in handling grade appeals and academic misconduct cases, and ensures compliance with the Clery Act. Additionally, it assists students in understanding and navigating a wide range of university policies and procedures. More information is available at: <https://www.bsu.edu/about/administrativeoffices/student-conduct>.
- If you require course adaptations or accommodations due to a disability, please contact me promptly. All accommodations are coordinated through Ball State's Disability Services Office, which must have appropriate documentation on file before services can be provided. Disability Services can be reached at 765-285-5293 or dsd@bsu.edu.
- Ball State University is committed to attracting and retaining a diverse faculty, staff, and student body. We strive to create an inclusive environment that values the unique experiences and perspectives of our community members. This commitment is reflected in our Beneficence Pledge, which promotes respect and civil discourse. For information on the Bias Incident Response process, visit the provided link or email reportbias@bsu.edu.

Grading Policy

Item	Type	Points
15 Assignments	Individual	600 points (40 points each)
5 Discussions	Individual	100 points (20 points each)
Mid-term Exam	Individual	200 points
Final Exam	Individual	200 points
Total		1100 points

Letter Grades Final course grades will be assigned based on the following percentage scale:

A (95+)	B- (75 – 79.9)
A- (90 – 94.9)	C (65 – 74.9)
B+ (85 – 89.9)	D (50 – 64.9)
B (80 – 84.9)	F (below 50)

Homework Assignments There will be 15 individual homework assignments. Assignments must be submitted on time to receive full credit (100%).

Online Discussions There will be five online discussions based on course learning materials. Specific instructions for each discussion will be posted on Canvas.

Exams Both exams are non-comprehensive and consist of hands-on exercises. Exams are open book and open notes, but students must complete their own work. Late submissions will **not** be accepted, and no make-up exams will be provided.

Week 1 (01/05/2026 - 01/11/2026)	Course Introduction & Syllabus Ch 1: Introduction to Business Analytics	Assignment 1 Discussion 1
Week 2 (01/12/2026 - 01/18/2026)	Ch 2: Essential Skills for Basic Data Analytics Projects	Assignment 2
Week 3 (01/19/2026 - 01/25/2026)	Ch 3: Data Analytics Techniques for Basic Projects	Assignment 3
Week 4 (01/26/2026 - 02/01/2026)	Ch 4: Using Mathematical Outputs for Analytics	Assignment 4

Week 5 (02/02/2026 - 02/08/2026)	Ch 5: Scenario Analytics	Assignment 5 Discussion 2
Week 6 (02/09/2026 - 02/15/2026)	Ch 6: Exception Analytics	Assignment 6
Week 7 (02/16/2026 - 02/22/2026)	Ch 6: Exception Analytics	Assignment 7
Week 8 (02/23/2026 - 02/01/2026)	Midterm Exam	
Week 9 (03/02/2026 - 03/08/2026)	Spring Break	
Week 10 (03/09/2026 - 03/15/2026)	Ch 7: Summarizing Exception Analytics	Assignment 8 Discussion 3
Week 11 (03/16/2026 - 03/22/2026)	Ch 8: Working with Big Datasets – Case: Investigating Fraud	Assignment 9
Week 12 (03/23/2026 - 03/29/2026)	Ch 9: Data Visualization in Excel	Assignment 10
Week 13 (03/30/2026 - 04/05/2026)	Ch 10: Predictive Analytics – Case: Can You Predict the Stock Market?	Assignment 11 Discussion 4
Week 14 (04/06/2026 - 04/12/2026)	Introduction to R and Data Mining Process	Assignment 12
Week 15 (04/13/2026 - 04/19/2026)	Data Visualization in R	Assignment 13 Assignment 14
Week 16 (04/20/2026 - 04/26/2026)	Multiple Linear Regression Principal Component Analysis	Assignment 15 Discussion 5
Final Week	Final Exam	