



THE COLLEGE OF
WOOSTER

BUEC-299 - Data Analytics in Business

Meeting Days: MWF, Times: 10:00am – 10:50am

Location: Morgan 217, Semester: Spring, Year: 2022

Instructor Information

Name	Moses Luri [I prefer to be addressed as Prof. Luri]
Contact Info	Email: mluri@wooster.edu [This is my preferred method of contact]
Office location	Morgan Hall, Room 209
Office hours	Monday, Wednesday: 1pm – 3pm [Or by appointment]

TA Information

TA Name	Nga Thuy Le (Prefers to be called Narissa)
TA Contact Info	nle22@wooster.edu
Office location	Library, APEX learning center
Office hours	Tuesdays, 8 – 10pm

Course Description

The digital age of Business, Economics, and similar other fields require an understanding of data. This course prepares students with the relevant tools and skills needed to extract insights from data for business decisions and other purposes. The course offers students a theoretical understanding of data and how it is used in business decision-making, and equips them with the relevant skills needed to make sense of data through hands-on practice with real-world datasets. Special attention is paid to how different qualitative and quantitative techniques are employed to extract actionable information from data to support decision-making. By the end of the course, students will be able to help a company, or an institution make data-driven decisions. Prerequisites for this course include Data 102 Or Econ 110.

Learning Objectives

By the end of this course, you should be able to: (1) Demonstrate a solid understanding of the processes and techniques of business data collection, analysis, and visualization, (2) Explain and apply the logic of optimization and attribution in business analytics, (3) Explain the terminology and tools of business analytics, (4) Apply the practical tools and techniques of business analytics, (5) Understand the roles of data technologies, data management systems, and data visualization in business, (6) Study and practice programming tools and structured query language, (7) Understand machine learning and deep learning as part of artificial intelligence, (8) Appreciate how to run field experiments in digital environments using A/B testing, (9) Realize the critical role of cloud services and Internet of Things in business analytics, (10) Gain practical experience of how web analytics is used for better business decision-making, (11) Understand predictive and prescriptive modeling.

Learning Resources

The recommended textbook for this course is the digital textbook “Business Analytics: Data Analysis and Storytelling for Business.” By Drennan Davis. ISBN: 978-1-7346888-3-2. The textbook contains chapter quizzes that students must complete as part of the course assessment process.

The textbook also comes bundled with a first of its kind simulations package called “Mimic Analytics” that is designed to allow students mimic the experience of a typical business analytics intern, for a fictional company called Buhi. Mimic Analytics contains 9 rounds of challenging data transformation, cluster analysis, data integration, A/B testing and decision-making projects that each student will be required to complete. The following link [Textbook&MimicAnalytics](#) takes you to the page where you can register and obtain access to the textbook and Mimic Analytics.

Assessments

Final course grade will be calculated using the following categories:

Assessment	Percentage of Final Grade
Attendance and Participation , 50 points	5%
Exercises (5 or 6 out-of-class exercises), 300 points	30%
Quizzes (14-chapter quizzes, drop lowest score), 130 points	13%
Mimic Analytics (9 rounds at 30/round), 270 points	27%
Midterm (1) , 100 points	10%
Final Exam , 150 points	15%
Total , 1,000 points	100%

Students will be assigned the following final letter grades, based on calculations coming from the course assessment section.

Grade	Percentage Interval
A, A-	100 – 93, 92.99 – 90
B+, B, B-	89.99 – 87, 86.99 – 83, 82.99 – 80
C+, C, C-	79.99 – 77, 76.99 – 73, 72.99 – 70
D	69.99 – 60
F	<59.99

Attendance and Participation: Your overall attendance and contribution to class discussions, response to questions in class, collaborate and work with a group and classmates both in and out of class, will determine your score for this assessment category.

Exercises: Students will be required to complete a total of 5- to- 6 graded, out-of-class exercises throughout the semester. This would allow you to practice the concepts you learn throughout the course. Some of these exercises may be assigned as group projects where a single submission is required from a group, while others will be completed by individuals. (More on this in class)

Quizzes: Quizzes are based on completion of chapter reading assignments. Every chapter of the course textbook has an accompanying quiz (10 multiple choice questions). You **must** read and complete the chapter quizzes **before** you come to class. Reading assignment due dates/times for each week will be posted to the class Moodle page. Make sure to look that up.

Mimic Analytics: Every student will be required to complete nine rounds of the “Mimic Analytics” simulation by the end of the course. I highly recommend you work on this with your group, even though submission will be on individual basis. The average score for each group/team will be computed after each round. The group with the highest average score “wins” that round. If a group wins 7 out of the 9 rounds of Mimic Analytics, every member of that group will receive extra points towards their final grade.

Exams: One midterm and a final exam will be given in this course. The structure, timing, and other details of the midterm and final exam will be announced to students two to three weeks before to the exam date.

Grading Policies:

- **Late-work policy:** Due dates are non-negotiable. No credit will be given for late submissions unless prior permission is granted from the instructor.
- **Make-up work policy:** No makeups will be given for any missed assessments in this course.
- **Re-grade policy:** you can request a re-grade of your work only if it is determined that the instructor or grader oversighted something in your work.

Course Policies:

- **Attendance & Participation:** This class is designed to be completed in-person and will take place at the scheduled day/time unless otherwise advised by the College. Class attendance is expected unless you are too ill to participate/concentrate, or have a compelling excuse backed by documentation. Students are expected to be on time for class and stay for the entire class period. Historically, students with better attendance rates perform considerably better in course work. If you miss a class, read the day's section(s) and get notes from a classmate, and review the day's activity or lab (on Moodle) *before* contacting me for help. Also remember that your groupmates are counting on your attendance! Participate fully in each class by coming prepared, being mentally focused, asking and responding to questions, and completing in-class activities.
- **Maximum Class Absences:** Regular attendance is necessary for students to achieve the essential learning goals of this course. A student may not miss more than **15% of, (or 6 out of 40)** class meetings, through any combination of excused and unexcused absences. If this occurs, the instructor will notify the student. If there are documented extenuating circumstances, the student may petition for a late course withdrawal.
- **Course Reading policy:** You **MUST** each chapter and complete the accompanying quiz **before** the class introduces the chapter. To get the most out of the readings, do not just “skim” through the chapter. Highlight definitions and concepts for easy recall. Work through the labs and practice the activities to the best of your ability. Reference previous examples/sections/labs if necessary. Make notes of things you

don't understand, or questions you have about the materials and ask them during the next class! Although I do expect everyone to read chapters carefully before class begins, *I will not expect that everyone understands everything they've read or seen.* You should feel free to ask questions (in class or out of class) about material, either from the book or from my presentation. In fact, there will be time at the beginning of every class period for just these types of questions!

- **Technology and Communication:** All course materials beside the textbook chapters and Mimic analytics will be posted to the course Moodle page. Check Moodle and your email daily. Excel and Python will be used throughout the course. Python is a free open-source programming language that can be used for Data Analytics. If you are not familiar with python, no need worry, just keep an open mind and be ready to learn something new. If instead you are familiar with another statistical programs like R, and you would like to use that for your assignments, you may do so. However, you should not expect technological help from the instructional team. Proper maintenance of computer accounts, files, etc. is your responsibility.

The best way to contact me outside of class is by email or by coming to my office hours. If I ever need to contact everyone outside of class, I will use email. You are welcome to email me any time of the day or night. You should allow 24 hours response time for any emails – I usually respond faster than that, but you should not count on it. Please keep this in mind, especially when emailing me late at night or over the weekend.

I would like to stress that communication is key to success! This will hold true throughout your college career, work career, and really your entire life. I implore you to contact me as soon as possible if you are struggling with material or if a conflict arises (see “Conflicts with Academic Responsibilities” on the College Policies document).

- **Classroom Behavior Expectations:** I expect you to be respectful in the classroom. I am happy to take any questions in class, no matter how trivial they may seem. To facilitate an open learning environment, every member of this class must show respect for every other member of this class. Listen when others are speaking (including me) and avoid distracting or rude behavior. At Wooster we embrace diversity of background, beliefs, ethnicity, gender, gender expression, national origin, religious affiliation, sexual orientation, and other visible and non-visible categories. I will not tolerate discrimination, offensive language or any other behaviors that may disrupt teaching and learning in the classroom.

Ten Tips for Success in this Course

Note: these tips are not listed in any order

1. **Keep an open mindset and be ready to learn new things.**
2. **Do not be intimidated by software, buzz words, jargons, etc.**
3. **Treat this course like a team sport** – make it point to work closely with your group members, as this will greatly reduce the amount of time and effort you put into accomplishing tasks.
4. **Take things easy** – speed is steady, and steady is fast. Follow instructions carefully (and read them over multiple times if necessary)
5. **Be proactive** – Prior Preparation Prevents Poor Performance (my 5 “P’s” rule). Come to every class prepared and ready to actively participate and learn.
6. **Always seek clarification!**
7. **Seek help early** – Take stock of your understanding of the material each week and seek help if you need it.
8. **Avoid being Complacent or Overconfident** – This can be dangerous.
9. **Keep up with the material** – DONOT play catch up. Procrastination is a recipe for disaster.
10. **Never get weary practicing** – Practice, practice, practice, and practice some more!

Tentative Course Schedule

Week	Expected Topic(s)	Reading	Assignments
1	Business Analytics Overview	Ch1	
2	Spreadsheet and Programming Tools for Business Analytics	Ch2	Exercise 1
3	Metrics	Ch12	Mimic Analytics Round 1: Basic Data Transformation
4	Unstructured Data and NoSQL	Ch3	
5	Structured Data and SQL	Ch4	Mimic Analytics Round 2: Advanced Data Transformation
6	Data Mining with Cluster Analysis	Ch5	Exercise 2
7	A/B Testing	Ch6	Exercise 3 Mimic Analytics Round 3: Basic Data Integration
8	Machine Learning and Deep Learning	Ch7	Midterm
9	Cloud Services	Ch8	Mimic Analytics Round 4: Advanced Data Integration
10	Web Analytics	Ch9	Mimic Analytics Round 5: Cluster Analysis
11	Analytics for the Internet of Things	Ch10	Mimic Analytics Round 6: A/B Testing Landing Page 1
12	Storytelling through Visualization	Ch11	Exercise 4 Mimic Analytics Round 7: A/B Testing Landing Page 2
13	Predictive Analytics	Ch13	Exercise 5 Mimic Analytics Round 8: A/B Testing Landing Page 3
14	Optimization	Ch14	Exercise 6 Mimic Analytics Round 9
15	Final Exam		

Syllabus Changes: Disclaimer

Although every effort has been made to make this syllabus as complete as possible, changes may occur regarding schedule, grading, assignments, and office hours. The instructor reserves the right to make changes to this syllabus if it is deemed necessary. Any such changes will be communicated to students in a timely manner and posted on Moodle.

COLLEGE POLICIES:

Academic Integrity

I encourage students to exchange ideas and discuss problems. However, for assignments to be turned in, it will be considered plagiarism if a student copies the work of another. Anything taken from another source, such as another textbook or the internet, *must* be properly cited – failure to do so is plagiarism. On exams or quizzes the giving or receiving of any aid is not permitted. **Our ideas are the most valuable things we have – do not steal them from others.**

The academic program at the College seeks to promote the intellectual development of each student and the realization of that individual's potential for creative thinking, learning, and understanding. In achieving this, each student must learn to act rigorously, independently, and imaginatively.

The College's understanding and expectations in regard to issues of academic honesty are fully articulated in the Code of Academic Integrity as published in [The Scot's Key](#) and form an essential part of the implicit contract between the student and the College. The Code provides framework at Wooster to help students develop and exhibit honesty in their academic work. You are expected to know and abide by these rules.

Dishonesty in any of your academic work is a serious breach of the Code of Academic Integrity and is ground for serious penalties. Such violations include turning in another person's work as your own, copying from any source without proper citation, violating expectations for a group project, submitting an assignment produced for a course to a second course without the authorization of all the instructors, and dishonesty in connection with your academic work. You will be held responsible for your actions. Particular attention should be directed to the appropriate use of materials available online. Whether intentional or not, improper use of materials is a violation of academic honesty. If you are unsure as to what is permissible, please contact your course instructor.

The Wooster Ethic

I hereby join this community with a commitment to the Wooster Ethic upholding academic and personal integrity and a culture of honesty and trust in all my academic endeavors, social interactions, and official business of the College. I will submit only my own original work, and respect others and their property. I will not support by my actions or inactions the dishonest acts of others. (THE SCOT'S KEY, p. 60)

Conflicts with Academic Responsibilities

The College of Wooster is an academic institution, and its fundamental purpose is to stimulate its students to reach the highest standard of intellectual achievement. As an academic institution with this purpose, the College expects students to give the highest priority to their academic responsibilities. When conflicts arise between academic commitments and complementary programs (including athletic, cultural, educational, and volunteer activities), students, faculty, staff, and administrators all share the responsibility of minimizing and resolving them.

As a student you have the responsibility to inform the faculty member of potential conflicts as soon as you are aware of them, and to discuss and work with the faculty member to identify alternative ways to fulfill your academic commitments without sacrificing the academic integrity and rigor of the course.

Title IX Reporting Policy Regarding Sexual Misconduct, Harassment, Relationship Violence, and Stalking

Contact: Lori Makin-Byrd, lmakin-byrd@wooster.edu, (330) 263-2017, [Title IX website](#)

The College of Wooster is committed to fostering a campus community based on respect and nonviolence. To this end, we recognize that all Wooster community members are responsible for ensuring that our community is free from discrimination, gender bias, sexual harassment, and sexual assault. In accordance with Title IX, Wooster is legally obligated to provide supportive options for all reports of sexual harassment and sexual assault that occur on our campus. Faculty who become aware of an incident of sexual violence, including harassment, rape, sexual assault, relationship violence, or stalking, are mandated reporters at the College and are required to notify Wooster's Title IX Coordinator. The purpose of this disclosure is to ensure that students are made aware of their reporting options and resources for support. For more information about your rights and reporting options at Wooster, including confidential and anonymous reporting options, please visit <https://inside.wooster.edu/title-ix/>

Discriminatory or Bias-Related Harassment Reporting Policy

Contact: Kayla Campbell, kcampbell@wooster.edu; or visit the [Bias Reporting website](#)

The College of Wooster is committed to promoting its mission of inclusivity and equity in all aspects of the educational enterprise. This commitment extends to all rights, privileges, programs and activities, including housing, employment, admissions, financial assistance, and educational and athletic programs at the College. The College's Bias Incident Reporting Process is designed to effectively respond to bias concerns raised by faculty, students, staff, alumni and visitors to the College. If you or someone you know are the victims of bias, you can:

- [File a report online](#) (where you may choose to identify yourself or not)
- Contact Campus Safety: 2590 (from campus phone) or 330-263-2590
- Call the Anonymous Tip Line: 2337 (from campus phone) or 330-263-2337
- Contact the Dean of Students Office: 2545 (from a campus phone) or 330-263-2545
- Contact the Chief Diversity, Equity, and Inclusion Officer representative for students: Kayla Campbell, kcampbell@wooster.edu, 330-263-2607

Inclusive Academic Resource Center: Academic Support and Disabilities

Contact: Amber Larson, alarson@wooster.edu, (330)263-2595, [ARC Website](#)

The Academic Resource Center, which is in APEX (Gault library) offers a variety of academic support services, programs and 1:1 meetings available to all students. Popular areas of support include time management techniques, class preparation tips and test taking strategies. In addition, the Academic Resource Center coordinates peer-tutoring for several academic departments. Students are encouraged to schedule an appointment.

An additional support that the Academic Resource Center offers is English Language Learning. Students can receive instruction or support with English grammar, sentence structure, writing, reading comprehension, reading speed, vocabulary, listening comprehension, speaking fluency, pronunciation, and American culture through 1:1 meetings with the Academic Resource Center staff, ELL Peer Tutoring, ELL Writing Studio courses, and other programming offered throughout the year.

The Academic Resource Center also coordinates accommodations for students with diagnosed disabilities. At the beginning of the semester, students should contact the Academic Resource Center to make arrangements for securing appropriate accommodations. Although the Academic Resource Center will notify professors of students with documented disabilities and the approved

Inclusive Learning Statement

Your success in this course is important to me. If there are circumstances that may affect your academic performance or impact your learning in particular portions of the class, please let me know as soon as possible. You do not need to share specifics, but together we can develop strategies to meet both your needs and the requirements of the course. I encourage you to visit the [Academic Resource Center](#) to determine how you could improve your learning as well. If you need official accommodations, the ARC can work with you to make sure your needs are met. There are also a range of resources on campus, including the [Writing Center](#), [Math Center](#), [STEM Success Initiative](#), and [APEX](#).

It is also important that we all be respectful of everyone's privacy around health concerns, vaccination status, and any accommodations that are necessary in the classroom. It is not appropriate to question why someone requests physical distancing, chooses to wear a mask, or requires any other accommodations. As part of our participation together in this class, we commit to showing respect to each other as individuals, to working together to create a learning environment that fosters a sense of belonging and inclusion to all members, and to understanding that our differences are also strengths. Your suggestions are encouraged and appreciated, and please contact me—via email, office hours, or after class—if you have any concerns or questions.

Wellbeing at Wooster

Contact (24/7): (330) 263-2319, or visit the [Wellness Center website](#)

The College of Wooster is committed to supporting the wellbeing of our students. During the course of their academic careers, students experience challenges that may interfere with their learning & health (both physical and mental), including but not limited to: strained relationships, adjusting to a new environment, chronic worrying, persistent sadness or loss of interest in enjoyable activities, family conflict, grief and loss, domestic violence, unwanted sexual experiences, difficulty concentrating, drug/alcohol problems, significant changes in eating and sleeping patterns, microaggressions, challenges with organization, procrastination and/or lack of motivation. Counseling Services at the Longbrake Student Wellness Center is a free and confidential resource providing short-term counseling and connections to community agencies for students needing longer term or specialized resources. You can make an appointment by calling 330.263.2319 between 8:30am-4:30pm during weekdays or by emailing Lori Stine (lstine@wooster.edu). You can also find helpful resources on the Counseling Services website at <https://inside.wooster.edu/health/counseling/>.

Students also have free access to TimelyCare, a telehealth service providing scheduled medical and counseling appointments as well as 24/7 crisis consultation with licensed professionals. Students use their Wooster email to establish an account at [TimelyCare: Telehealth for Scots](#). TimelyCare also provides students access to nutritionists and health coaches about issues of sleep and exercise, and psychiatry (with a referral from doctor or counselor).

If you or a friend is in crisis, please call Campus Safety at 330-287-3333 or the National Suicide Prevention Lifeline (1-800-273-TALK) or connect with the Crisis Text Line by Texting "4HOPE" to 741-741.

For financial concerns: Dean of Students Office, dos@wooster.edu (330) 263-2545, [DoS website](#)

For safety concerns: Campus Safety 330-263-2590 or cov-security@wooster.edu, [Campus Safety website](#). **In the care of an emergency, call: 330-287-3333.**