Instructor Information:
Leonardo Lozano
Assistant Professor
Department of Operations, Business Analytics, and Information Systems
531 Lindner Hall
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Office Hours: Tuesdays 3:00-5:00 PM EST and by appointment
Communication Policy: Students are encouraged to contact me anytime via email. A response will be given within 48-72 hours except on weekends.

Teaching Assistant:
Nick Charles – charlens@mail.uc.edu
Office Hours: Thursdays 2:00-5:00 PM EST and by appointment

Pace:

This course aligns with PACE, the Lindner College of Business platform for developing the total business professional.

P – Professionalism: Students will acquire and refine the soft-skills necessary to effectively lead and perform in business and social situations.

A – Academics: Students will gain a breadth and depth of knowledge of business functions and general education, developing and applying strong analytical and problem-solving skills.

C – Character: Students will build a solid base of the mental and cultural competencies necessary to contribute to their organizations, professions, and the global community.
E – Engagement: Students will understand the importance of commitment to and active participation in experiences valued to their professional fields and for personal growth and development.

Course Objectives:

- Develop skill in recognizing situations where business analytics are a valuable modeling tool
- Develop skill in formulating, analyzing, and interpreting commonly encountered mathematical models
- Develop a solid background in the basics of analysis of variance; simple and multiple regression; linear, integer, and nonlinear programming; network models for transportation/transshipment modeling and personnel assignment; risk and simulation modeling; decision analysis; and making multi-criteria decisions
- Acquaint the student with currently available software packages for analyzing mathematical models. Microsoft EXCEL Data Analysis and Microsoft EXCEL Solver will be employed for problem solving.

Course Materials

Cengage Publishing
ESSENTIALS OF BUSINESS ANALYTICS, 2nd Edition (Camm/Fry/Anderson/Sweeney/Williams)

Although hard copies of this book are available, both new and used, you will receive an ebook from Cengage along with a required code for a discounted price of $106.62. This is a requirement as homework assignments are available only through this mechanism. A Cengage representative will come to the first class to discuss this with you.

Information Resources

Extensive use of Blackboard Learning and Community Portal System Version 9.1 will be employed for students to access documents (in Lecture Materials) such as PowerPoint slides, the syllabus, or assignments, and for communication such as announcements and postings for office hours. Email communication will be maintained through Blackboard and this requires that you keep a functioning email address registered, a setting you control. You may access Blackboard at http://canopy.uc.edu/ and the Contact Support Team at the Help button may assist. The Blackboard site for this course is not to be used for anything other than course-related issues. Blackboard should not be used to solicit classmates for anything such as encouragement to fill out a survey, attend a function, or anything not related to the course.
Course Description:
This course is an introduction to widely used quantitative models for business analytics. We will cover statistical models, optimization models, simulation, and decision analysis. Upon completion of this course, students will be able to formulate real applications as mathematical problems, understanding the underlying assumptions, and the scalability/difficulty of the proposed models. Students will also be able to solve problems using computational software and will be able to communicate the results obtained as well as perform basic sensitivity analysis.

Course and Grading Policies:

1. Grading Policy: Your grade will be based on assignments both written and computational, midterm and final exams.

   **Point Allocation:**
   - Online homework assignments (5) 10 Points
   - Homework assignments (3) 25 Points
   - Midterms (2) 50 Points
   - Final Exam (1) 25 Points
   - **Total Points Available** 110 Points

   **Grading Scale**
   - 93 points or above = A
   - 90-92 points = A-
   - 86-89 points = B+
   - 80-85 points = B
   - 77-79 points = B-
   - 74-76 points = C+
   - 70-73 points = C
   - 67-69 points = C-
   - 60-66 points = D
   - Below 60 points = F

   - **Homework Assignments:**
     Assignments will require students to model and implement a computational solution for realistic problems. The students should submit a written report along with the supporting Excel spreadsheets. Students can work in groups of up to 4 people.

   - **Exams:**
     Exams will be given in class and timed. Tests will be paper-based and no electronics (phones, computers, etc.) are permitted. You can bring one page (2-sided 8.5x11) as notes for the tests.

2. Academic Integrity: As with all Lindner College of Business efforts, in this course you will be held to the highest ethical standards, critical to building character. Ensuring your integrity is vital and ultimately is your responsibility. To help ensure the alignments of incentives, the Lindner College of Business has implemented a “Two Strikes Policy” regarding Academic Integrity that supplements the UC Student Code of Conduct (see: [UC's Student Code of Conduct](#)).
   - All academic programs at the Lindner College of Business use this “Two Strikes Policy”; Any student who has been found responsible for two cases of academic misconduct may be dismissed from the College.
• All cases of academic misconduct (e.g., copying other students assignments, failure to adequately cite or reference, cheating, plagiarism, falsification, etc.) will be formally reported by faculty; and
• Students will be afforded due process for allegations as outlined in the policy.

3. **Disability:** Students with disabilities who need academic accommodations or other specialized services while attending the University of Cincinnati will receive reasonable accommodations to meet their individual needs as well as advocacy assistance on disability-related issues. Students requiring special accommodation must register with the Disability Services Office. [UC's Disability Services Office](#).

4. **Counseling Services, Clifton Campus:** Students have access to counseling and mental health care through the University Health Services (UHS), which can provide both psychotherapy and psychiatric services. In addition, Counseling and Psychological Services (CAPS) can provide professional counseling upon request; students may receive five free counseling sessions through CAPS without insurance. Students are encouraged to seek assistance for anxiety, depression, trauma/assault, adjustment to college life, interpersonal/relational difficulty, sexuality, family conflict, grief and loss, disordered eating and body image, alcohol and substance abuse, anger management, identity development and issues related to diversity, concerns associated with sexual orientation and spirituality concerns, as well as any other issue of concern. After hours, students may call UHS at 513-556-2564 or CAPS Cares at 513-556-0648. For urgent physician consultation after-hours students may call 513-584-7777.

5. **Title IX:** Title IX is a federal civil rights law that prohibits discrimination on the basis of your actual or perceived sex, gender, gender identity, gender expression, or sexual orientation. Title IX also covers sexual violence, dating or domestic violence, and stalking. If you disclose a Title IX issue to me, I am required forward that information to the Title IX Office. They will follow up with you about how the University can take steps to address the impact on you and the community and make you aware of your rights and resources. Their priority is to make sure you are safe and successful here. You are not required to talk with the Title IX Office. If you would like to make a report of sex or gender-based discrimination, harassment or violence, or if you would like to know more about your rights and resources on campus, you can consult [UC's webpage for Title IX](#) or contact the office at 556-3349.

6. **LCB Weather Related Protocol:** When inclement weather threatens the safety of the University of Cincinnati community, the Senior Vice President for Administration and Finance may invoke University Rule 3361:10-55-01 and declare an emergency closing. The Lindner College of Business will observe the university emergency closing protocol for all on-campus classes. During a university emergency closing, all college offices will be closed. Students should clarify with their course instructors how the closure will affect assignments and deadlines, and whether class information from the missed session(s) will be posted on Blackboard, and/or if the class will meet virtually during the closure.

   *In the event of inclement weather and the university is closed, the closure will not affect online courses. All course assignments and activities will remain as scheduled in the course syllabus.*
Tentative Course Schedule:
Additional (or fewer) topics may be covered depending on time availability.

Week 1  Class overview. Simple linear regression.
Week 2  Multiple Linear Regression.
Week 3  Multiple Linear Regression. Problem solving session. Homework 1 goes live.
Week 4  Nonlinear Regression.
Week 5  Review and midterm 1. Homework 1 is due.
Week 6  Linear Programming.
Week 7  Linear Programming. Homework 2 goes live.
Week 8  Networks
Week 9  Solver Solutions.
Week 10 Integer programming. Problem solving session.
Week 11 Integer programming.
Week 12 Review and midterm 2. Homework 2 is due.
Week 13 Simulation.
Week 14 Simulation. Problem solving session. Homework 3 goes live.
Week 15 Decision trees.
Week 16 Decision trees. Review. Homework 3 is due.