

# Syllabus



Figure 1: Lindner College of Business logo

## I. Course Information:

**Title:** BANA 7042: Statistical Modeling

**Course #:** BANA 7042

**Credit Hours:** 2

**Term:** Spring 2026

**Prerequisites:** BANA 7038

## II. Course Description:

This course provides a comprehensive introduction to statistical modeling techniques essential for business analytics and data science. Moving beyond basic linear models, students will explore advanced regression techniques for binary, categorical, and count data. The curriculum focuses on both the theoretical foundations and practical applications of these models using the R programming language. Key topics include linear regression review, logistic regression (binary, multinomial, and ordinal), and count regression models (Poisson and Negative Binomial).

### III. Student Learning Outcomes:

Upon successful completion of this course, the learner will be able to:

- Construct and interpret linear regression models for continuous outcomes.
- Apply logistic regression techniques to model binary outcomes and evaluate model performance using ROC curves and calibration plots.
- Analyze data with multiclass outcomes using multinomial and ordinal logistic regression models.
- Model count data using Poisson and Negative Binomial regression techniques.
- Diagnose model fit and check assumptions for various generalized linear models (GLMs).
- Implement statistical models using R and effectively communicate results to technical and non-technical audiences.

### IV. Instructor Information:

**Name:** Brandon Greenwell, PhD

**Title:** Director, Data Science @ 84.51° / Annual Adjunct Faculty, UC Lindner College of Business

**Office Information:** NA

**Office:** Virtual (Teams)

**Email:** greenwbm@ucmail.uc.edu (use Teams for fastest response!)

**Office Hours:** By appointment (reach out on Teams)

**Communication Policy:** Students are encouraged to contact me anytime via the [course's Teams channel](#). I'm usually very responsive during weekdays and will reply within 24 hours.

### V. Course Materials:

#### Required Tools

- [R](#) and [RStudio](#)
- [Git](#) & a [GitHub account](#)

#### Course Materials & Repository

- **Course Website:** <https://bgreenwell.github.io/uc-bana7042/> - Contains all syllabus, slides, and assignments.
- **Textbook:** No required textbook. Readings will be provided from open-source materials.

## VI. Commitment to All Perspectives:

Honest attempts to understand the perspectives of others facilitate learning and we will always strive to achieve this goal. As your instructor, I am committed to creating and fostering a positive learning and working environment based on open communication and mutual respect. If there are aspects of the design, instruction, and/or experiences within this course that result in barriers to your inclusion, participation, or the accurate assessment of your performance and achievement, please let me know.

## VII. Link to Pace:



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

### P – Professionalism

- Enhance oral & written ***communication*** through technical documentation, code comments, and project presentations
- Develop and practice ***teamwork*** skills through collaborative coding projects and version control workflows
- Practice professional habits of punctuality, preparation, respect and participation in modern software development environments

### A – Academics

- Develop foundational knowledge of ***programming concepts*** and their applications in real-world software development
- Begin applying programming and ***AI-assisted development techniques to critically analyze and solve technical problems***

### C – Character

- Learn and apply ***leadership*** techniques for project management in software development (plan, brief, execute, debrief)
- Build an understanding and initial skills of ***managing varied backgrounds and perspectives*** in diverse development teams

- Understand importance of *ethics and social responsibility* in AI-assisted development and software engineering practices

## **E – Engagement**

- Build understanding of importance and practices of *networking* through interactions with the developer community and open-source contributions
- Develop awareness and appreciation of *involvement* in technology communities, coding bootcamps, and professional development opportunities

## **VIII. Instructional Methods:**

This course utilizes a hands-on, lab-focused approach. Class time will consist of lectures, live coding demonstrations in R, and hands-on workshops where students can work on assignments with direct support. The course uses [Canvas](#) for grade tracking, and [GitHub](#) for assignment submissions.

## **IX. Duo Multi-Factor Authentication**

To reduce data security risks, the University implemented two-factor authentication (Duo). Please ensure you are enrolled to access Canvas and other university systems.

## **X. Course Communication:**

We will exclusively use Microsoft Teams for all course communication.

## **XI. Course and Grading Policies:**

### **Course Structure:**

Changes to the syllabus, due dates, course requirements or grading requirements will be made as far in advance as possible. Due dates will be clearly marked in Canvas.

### **Missed and/or late examinations, quizzes, and graded exercises:**

Late submissions will be penalized 10% per calendar day unless prior arrangements have been made with the instructor.

### **Grading Scale**

94% and above = A

90% = A- 87% = B+ 84% = B

80% = B- 77% = C+ 74% = C

70% = C- 60% = D Below 60% = F