

COSC 375 DATA SCIENCE




INSTRUCTOR


Dr. Beau M. Christ

Associate Professor


Department of Computer Science

 christbm@wofford.edu

 (864) 597-4528

 www.beauchrist.com

 Olin 204F

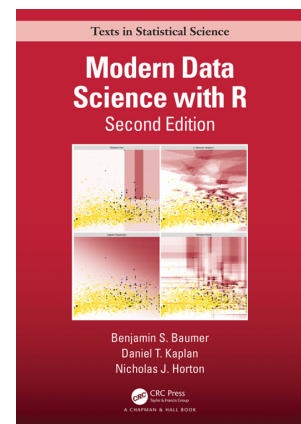
 Office hours will be held **Mondays and Wednesdays (1:30PM-4:00PM), and Fridays from 1:30PM - 3:00PM**. We can also individually schedule other times, if needed. I am always happy to chat!

MEETING TIME & LOCATION

We will meet every Monday, Wednesday, and Friday from 11:30AM - 12:20PM in **Olin 220**, unless otherwise specified.

TEXTBOOK

You will need to obtain a copy of Modern Data Science with R (2nd Edition) by Baumer, Kaplan, and Horton. You can obtain a physical copy, or the book is also available for free from the authors online.



 **COURSE OVERVIEW**

Welcome to **COSC 375: Data Science!**

According to Glassdoor, “Data Scientist” has been named the #1 job in the US for the past several years. But what is Data Science, and what makes it so great?

Data Science is an exciting, interdisciplinary field combining computer programming, statistics, machine learning, and domain knowledge. Everybody has data, and everybody wants to make sense of that data. The goal of Data Science can be simply stated as “the science of turning data into understanding”.

This course will examine the fundamental concepts of the field (visualization, data wrangling, data cleaning, statistical learning, etc.), the implementation of those concepts in code using a programming language well suited for Data Science (R), and how to convey results in an easily understandable and reproducible manner.

Prerequisites: COSC 235 (*Programming & Problem Solving*) with a minimum grade of C.

Catalog Description: An introduction to the field of Data Science with real-world applications. Topics include datasets, data visualization, interactive graphics, data wrangling, ethics, applied statistics, machine learning (supervised and unsupervised), databases, and big data. Students will also learn a programming language tailored for data analytics.

 **COURSE OBJECTIVES**

By taking this course, my goal is for you to:

- **Understand essential concepts and characteristics** of data.
- **Write programming code using tools** such as R and RStudio for data analytics.
- **Explore real datasets** including accessing data via a database.
- **Comprehend principles and practices in statistical learning** towards predictive analytics.
- **Learn to communicate results** to decision makers (verbally and visually).

You will fulfill these objectives by:

- Reading your textbooks
- Taking three exams
- Completing multiple assignments
- Presenting a final presentation
- Being engaged during in-class discussions and activities



GRADING

All grades will be recorded in Moodle as the semester progresses, including your final grade. Your final grade will be weighted as follows:

Assignments (45%)

You will complete multiple assignments to help solidify your understanding of the material, and these will be completed via DataCamp. Every assignment will be equally weighted, and each will be given a grade of 1 (completed), 0.5 (completed late), or 0 (not completed).

Exams (45%)

You will complete three exams (15% each) during the semester 1) to help test your knowledge of things we discuss in class and read in the textbook, 2) to help you keep up in the course, and 3) to help me understand what topics need to be covered better.

Final Presentation (10%)

You will present a final presentation that will cover some topic related to the course. It will occur on the scheduled final exam date.

GRADING SCALE

We will utilize the following grading scale (grades will be rounded, so a 92.49% will map to an A-, and a 92.5% will map to an A):

0% - 59%	F		80% - 82%	B-
60% - 69%	D		83% - 86%	B
70% - 72%	C-		87% - 89%	B+
73% - 76%	C		90% - 92%	A-
77% - 79%	C+		93% - 100%	A

 **POLICIES**

ATTENDANCE

You are expected to attend class. I do understand that absences are sometimes unavoidable, so I appreciate an email letting me know in advance that you will be absent. You are responsible for catching up on missed classes. Finally, in accordance with Wofford policy, you must be present for the final exam.

CLASSROOM

You are allowed to bring your computer to work along with the examples in class. I highly advise you, however, to not become distracted by your devices (notebook, phone, tablet, etc.) for things other than course-related use. Not only are you missing out and inhibiting your learning, but it is often a distraction to others as well. I strongly encourage you to use features such as **do not disturb** or **focus mode**. It is also worth mentioning that research has shown that taking notes by hand instead of typing results in a better learning experience.

LATENESS

You are expected to keep up with all coursework and due dates during the semester. Submitting coursework past the due date/time (even by a single minute!) will result in a 1 point penalty (out of 10) for that particular project. After that, you have 24 hours to submit the late work until a second penalty is given (another point). After 48 hours past the due date, the project will not be accepted under any circumstances and will receive a 0. There are a few reasons that are acceptable (medical, family emergencies, etc.), but I will usually only grant extensions for those cases when receiving an email or phone call before the due date. I will decide on a case-by-case basis, but having official documentation will help make your case.

COMMUNICATION

I will use email as my main means of communication. Feel free to contact me using "christbm@wofford.edu". The top of this syllabus shows other ways to contact me as well. You are also welcome to stop by office hours to chat about any questions or concerns you have.

ACADEMIC INTEGRITY**Please do your own work!**

I have caught students cheating in the past, and take these matters very seriously. Any student I determine is guilty of academic dishonesty will have their case referred to the department and the college to be pursued further (trust me, you do not want that to happen). You may discuss ideas with other students, but **all work must be your own**. You can discuss approaches and ideas with others, but there should be no sharing of code.

To make sure you understand what constitutes academic dishonesty, please read the Wofford Honor Code. By enrolling in this course, you are pledging that you agree to the Wofford Honor Code and that all submitted work is your own. Please talk to me if you are unsure what constitutes academic dishonesty.

REASONABLE ACCOMMODATIONS

If you need accommodations with anything at all, please contact both the Wofford Accessibility Services and myself at the beginning of the semester. We will do our best to assist you as best we can.

USE OF GENERATIVE AI

Any AI-generated submissions are not permitted and will be treated as plagiarism. Any use of generative AI for any stage of your work in this course is considered a violation of the honor code. The one exception is the use of generative AI for syntax-related questions (e.g. "How do you write a for loop in Java?" or "How do I import a library in R?").