

DATA 2500 (Fall, 2026)

Data Wrangling in R

Instructor: Dr. Dave Campbell (he/him)
Class location: Please check Carleton Central for the room location.
Email: DaveCampbell@cunet.carleton.ca
Office location: HP 5279
Best ways to be in touch: in class or during office hours
Teaching Assistant: A list of teaching assistants and their contact/office hours information will be posted once the course starts.
Lecture times: MW: 11:35 am - 12:55 pm
Tutorial times: Please check Carleton Central for lab details
Course website: https://brightspace.carleton.ca

Important Carleton dates and deadlines can be found here: [Dates, Deadlines, and Regulations—Registrar's Office](#), including class suspension for fall, winter breaks, and statutory holidays.

Course Calendar Description

Reproducible workflows from acquisition, to cleaning, manipulation, and visualization. Data are acquired from databases, APIs, and web scraping. Cleaning and manipulating Numeric, categorical, date, and text data are introduced including regular expressions. Data visualization and report generation using dynamic tools are emphasized.

- Prerequisite(s): (COMP 1005 or COMP 1405), STAT 1500, and one of (DATA 1517, STAT 2507, or STAT 2655).

Learning Material(s) and Other Course/Lab-Related Resources

Textbook:

Simon Munzert, Christian Rubba, Peter Meißner, Dominic Nyhuis, (2014)
Automated Data Collection with R: A Practical Guide to Web Scraping and Text Mining

ISBN: 978-1-118-83480-0

A free copy of the e-book is available from the library:

https://ocul-crl.primo.exlibrisgroup.com/permalink/01OCUL_CRL/1jui968/alma991022634973205153

Students are not required to purchase textbooks or other learning materials for this course.

Topics Covered and Learning Outcomes

Schedule is subject to change

Week	Topic/Content	Readings/Prep for Class
1	Intro Data Science,	
2	Grammar of graphics - ggplot	
3-5	SQL	Textbook chapter 7
6-7	Handling text data	Textbook chapters 8, 10
8	Time data	
8-9	Webscraping and html	Textbook chapters 2, 9
10-11	Dashboarding, shiny apps	https://mastering-shiny.org/
12	Parsing JSON and xml	

Assessment Scheme

Grade Breakdown

COMPONENT	GRADE VALUE	DATE
Lab participation	4 %	Weekly starting in week 2
Lab Assignments	16 %	Weeks 2,3,4, 6,7,8, 10,11,12, Due end of day Sundays
Midterm 1	20 %	Oct 7 (week 5) in class
Midterm 2	20 %	Nov 18 (week 9) in class
Final Exam	40 %	

Lab Assignments: Due on Sundays by 11:59pm.

Midterms will be held in class and are closed book

Final exam will be held during the final exam period, Dec 12-23, 2026

All midterms and the final exam are expected to be completed individually, and without electronic aid; any communication or access of electronic

devices (including cellphones) during the test will be considered cheating. Use of Smart Glasses (or other similar assistive technologies) before or during a test is strictly prohibited and is considered an academic integrity violation. Even if you have prescription glasses with assistive technologies, you will not be allowed to use them during the test, so please make sure that you have acceptable prescription glasses. The proctor has the right to ask to inspect your glasses before or during the test. In addition, unless authorized with PMC accommodations, you are NOT allowed to use headphones nor ear buds during a test. Also, during a test, if you choose to wear a baseball cap, sunglasses or anything else that would prevent a proctor from monitoring where your eyes are focused during the test, you will likely be asked by a proctor to move to a different seat. Lastly, you must submit your test before leaving the classroom or it won't be graded.

For discrepancies in assignment grading, contact the lab tutor.
For discrepancies in midterms and the final exam, contact the course instructor

Late and Missed Work Policies

Late work will not be accepted as it further delays the release of solutions in a reasonable time frame impeding students from learning from their work.

Undergraduate Academic Advisors

The Undergraduate Advisors for Data Science are available in Room 5302HP; or by email at ds.ug.advisor@cunet.carleton.ca. The undergraduate advisors can assist with information about prerequisites and preclusions, course substitutions/equivalencies, understanding your academic audit and the remaining requirements for graduation. The undergraduate advisors will also refer students to appropriate resources such as the Science Student Success Centre, Learning Support Services and Writing Tutorial Services.

Mental Health and Wellness

The [Carleton Wellness Website](#) has many additional resources for students.

Therapy Dog Program

Trixie is a seven year old yellow Labrador Retriever and Carleton Certified [Therapy dog](#). At times when her [pawffice hours](#) are on the same day as class, Trixie may be present in class. She will remain on leash and under control at all times.

Academic Accommodations and Regulations

Academic Accommodation

Carleton is committed to providing academic accessibility for all individuals. You may need special arrangements to meet your academic obligations during the term. The accommodation request processes are outlined on the Academic Accommodations website (<https://students.carleton.ca/course-outline/>).

Generative AI Usage

As our understanding of the uses of AI and its relationship to student work and academic Integrity continue to evolve, students are required to discuss their use of AI in any circumstance not described here with the course instructor to ensure it supports the learning goals for the course.

The assignments are designed to be completed by humans, or by humans with limited involvement of AI. Thus limited generative AI is optional and permitted to be used on the lab assignments. The learning outcomes include using the tools and understanding how they work, including making modifications without generative AI with the goal of adding value to the AI output. Consequently, although AI is permitted on lab assignments, it is prohibited on the midterm and final exam. The midterm and final exam will test your understanding of the content, code, and processes, so relying solely on AI will not be sufficient to pass the course nor to obtain employment paying more than monthly premium AI subscription rates.

Academic Integrity

Students are expected to uphold the values of academic Integrity, which include fairness, honesty, trust, and responsibility. Examples of actions that compromise these values include but are not limited to plagiarism, accessing unauthorized sites for assignments or tests, unauthorized collaboration on assignments or exams, and using artificial intelligence tools such as ChatGPT when your assessment instructions say it is not permitted.

If you are unsure of the expectations regarding academic Integrity (how to use and cite references, if unauthorized collaboration with lab- or classmates is permitted (and, if so, to what degree), then you must ASK your instructor. Sharing assignment or quiz specifications or posting them online (to sites like Chegg, CourseHero, OneClass, etc.) is ALWAYS considered academic misconduct. You are NEVER permitted to post, share, or upload course materials without explicit permission from your instructor. Academic integrity offences are reported to the office of the Dean of Science. Information,

process and penalties for such offences can be found on the ODS webpage: <https://science.carleton.ca/students/academic-integrity/>.

Misconduct in scholarly activity will not be tolerated and will result in consequences as outlined in [Carleton University's Academic Integrity Policy](#). A list of standard sanctions in the Faculty of Science can be found [here](#).

Additional details about this process can be found on [the Faculty of Science Academic Integrity website](#).

Students are expected to familiarize themselves with and abide by [Carleton University's Academic Integrity Policy](#). Claiming ignorance of or confusion about the academic integrity standards as described in the Policy does not excuse a student from responsibility for violations of those standards."

Student Rights & Responsibilities

Students are expected to act responsibly and engage respectfully with other students and members of the Carleton and the broader community. See the [7 Rights and Responsibilities Policy](#) for details regarding the expectations of non-academic behaviour of students. Those who participate with another student in the commission of an infraction of this Policy will also be held liable for their actions.

Student concerns

If you have any concerns regarding this course, your first point of contact is me. Please email me or visit during my student hours, and I will do my best to address your concerns. If I cannot resolve the issue, the next point of contact is the School of Computer Science at studentconcerns@scs.carleton.ca. If the concern remains unresolved, the final point of contact is the Office of the Dean of Science at ODScience@carleton.ca. Please follow this order of contact.

Note: You can also bring your concerns to [Ombuds services](#).

We, the people of the Faculty of Science at Carleton University, acknowledge that our campus is located on the traditional, unceded territories of the Algonquin Anishinabeg people. Miigwetch for your hospitality and stewardship of this territory and the teachings that come from it. We are grateful for this land, the air that we breathe, and the water that sustains us all as well as for the animals, plants and other living beings: these enable us

to research, teach, mentor, support, study, and learn. We recognize our responsibility to our natural environment and to reconciliation with Indigenous peoples.