

DATA5000: Introduction to Data Science

Winter 2022

School of Computer Science

Carleton University

Description

The course covers topics relevant to data science: working with data, exploratory data analysis, data mining, machine learning. The concepts are illustrated using the R language. Students may also receive hands-on tutorials to IBM Cognos Analytics, Tableau, etc. Students will be evaluated by their course projects. The course will be lecture-based and will also offer some hands-on tutorials. The project component will be flexible and will involve data collection, manipulation, and analysis.

Class Schedule

Lectures are held every Friday from 2:35 PM to 5:25 PM via Zoom. Fall Break: October 24–28, 2022 (no classes).

Course Website

Brightspace.

Instructors

Mikhail Genkin

Email: michaelgenkin@cunet.carleton.ca

Office: on-line

Office Hours: by appointment via Zoom or Discord

Teaching Assistant

TBD

Course Schedule

- Friday September 9, 2022 - Lecture 1: What is Data Science?/ Introduction to R.
- Friday September 16, 2022 - Lecture 2: Working with Data.
- Friday September 23 - Lecture 3: Visualization and Exploration.
- Friday September 30- Lecture 4: Data Mining and Machine Learning I.
- Friday October 7, 2022 - Lecture 5: Machine Learning II.
- Friday October 14, 2022 - Guest Lecture/Tutorial.
- Friday October 21, 2022 - Guest Lecture/Tutorial.
- Friday October 26, 2022 - NO Class (Winter Break)
- Friday November 4, 2022 - Guest Lecture/Tutorial.

- Friday November 11, 2022 - Guest Lecture/Tutorial.
- Friday November 18, 2022 - Guest Lecture/Tutorial.
- Friday November 25 - NO Class (in lieu of Data Day on March 29).
- Friday December 2, 2022 - Project Presentations.

Please NOTE: The above schedule, and due dates noted below, are tentative and may be adjusted as necessary based on the class progress and the availability of guest lecturers.

Evaluation

- Paper presentation: 10% (paper selection due September 25, 11:59 PM)
- Project proposal: 10% (due October 2, 11:59 PM)
- Presentation outline: 5% (due October 31, 11:59 PM)
- Poster presentation: 10% (in November, exact date TBD)
- Project presentation: 15% (in class, on December 2)
- Project report: 50% (due December 9, 11:59 PM)

University Policies

Student Academic Integrity Policy

Academic Integrity is everyone's business because academic dishonesty affects the quality of every Carleton degree. Each year students are caught in violation of academic integrity and found guilty of plagiarism and cheating. In many instances they could have avoided failing an assignment or a course simply by learning the proper rules of citation. See the [Academic Integrity](#) for more information.

Plagiarism

As defined by Senate, "plagiarism is presenting, whether intentional or not, the ideas, expression of ideas or work of others as one's own". Such reported offences will be reviewed by the office of the Dean of Science. Standard penalty guidelines can be found here: <https://science.carleton.ca/academic-integrity/>.

Academic Accommodations for Students with Disabilities

The Paul Menton Centre for Students with Disabilities (PMC) provides services to students with Learning Disabilities (LD), psychiatric/mental health disabilities, Attention Deficit Hyperactivity Disorder (ADHD), Autism Spectrum Disorders (ASD), chronic medical conditions, and impairments in mobility, hearing, and vision. If you have a disability requiring academic accommodations in this course, please contact PMC at 613-520-6608 or pmc@carleton.ca for a formal evaluation. If you are already registered with the PMC, contact your PMC coordinator to send me your Letter of Accommodation at the beginning of the term, and no later than two weeks before the first in-class scheduled test or exam requiring accommodation (if applicable). After requesting accommodation from PMC, meet with me to ensure accommodation arrangements are made. Please consult the [PMC website](#) for the deadline to request accommodations for the formally-scheduled exam (if applicable).

Pregnancy obligation

Write to the instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the [Equity Services](#) website.

Religious Obligation

Write to the instructor with any requests for academic accommodation during the first two weeks of class, or as soon as possible after the need for accommodation is known to exist. For more details visit the [Equity Services](#) website.

Survivors of Sexual Violence

As a community, Carleton University is committed to maintaining a positive learning, working and living environment where sexual violence will not be tolerated, and survivors are supported through academic accommodations as per Carleton's Sexual Violence Policy. For more information about the services available at the university and to obtain information about sexual violence and/or support, visit: carleton.ca/sexual-violence-support.