McGill initiative in Computational Medicine

Intro to programming in Python

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July 14, 2025
Materials adapted from Benjamin Rudski

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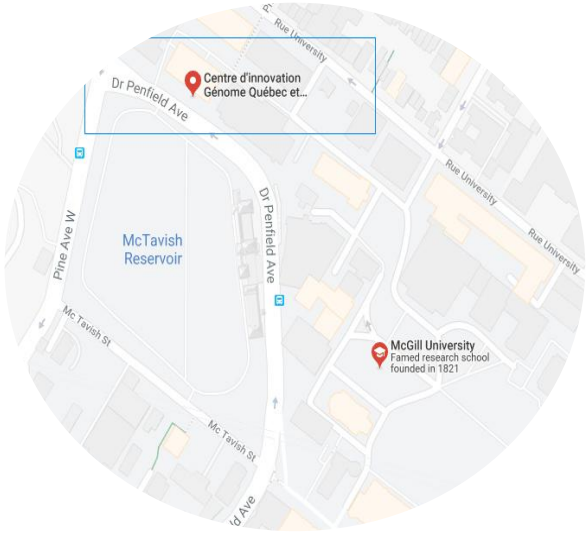
Mission statement: deliver quality workshops designed to help biomedical researchers develop the skills they need to succeed.



Location: 550 Sherbrooke West, Montreal, Quebec

Scan the QR code to sign up for our **mailing list**

Contact: workshop-micm@mcgill.ca

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Workshop	Date	Location	Registration
How to think in Code	Jun. 25 10AM-12PM	EDUC 133	Closed
Intro to Git & GitHub	Jun. 26 9AM-1PM	EDUC 133	Closed
Intro to Unix	Jun. 30 9AM-1PM	EDUC 133	Closed
Intro to R	July 14 9AM-1PM	EDUC 434	Closed
Intro to Python	July 15 9AM-1PM	EDUC 434	Closed
Statistics in R	July 17 1PM-5PM	EDUC 434	Closed
Data Processing in Python	July 21 9AM-1PM	EDUC 434	Closed
Intro to Machine Learning	July	TBA	TBA
Data Processing for Genetics	August	TBA	TBA
Polygenic Risk Scores	August	TBA	TBA
Proteogenomics	August	TBA	TBA

https://www.mcgill.ca/micm/training/workshops-series

- Outline:
  1. **Welcome! (10 min)**
     1. About Python…
     2. How to use Colab
  2. **Part 1– Python Syntax and Variables (1 hour)**
     1. Variable assignment
     2. Operators in Python
     3. Incrementing a variable
     4. Intro to strings
     5. BONUS: Get user input
  3. **Part 2 – Data Structures (30 minutes)**
     1. Lists
     2. Dictionaries
     3. Tuples

4. **Part 3– Control Flow (1 hour)**
    1. Conditional statements
    2. While loop
    3. For loop
    4. Iterable objects and for loops
    5. BONUS: List Comprehension
5. **Part 4 – Functions & Modules (40 minutes)**
    1. Functions
    2. Modules
    3. BONUS: Intro to matplotlib
6. **Exercises**

About Python…

- Open Source
  - Anyone can download, use, **modify and distribute** the Python programming language.
- Interpreted
  - Python scripts are run line-by-line
  - Can easily launch it from the command line and have access to an **interactive shell**
- Object-Oriented
  - “Objects” – collections of data and manipulations that make it easier to represent the real world

This is an interactive Workshop!

- Please open the Jupyter notebook using Colab (you can find the link on the GitHub repo)
- https://colab.research.google.com/drive/177yXlgRgIoZRbq-UCdDBDm2N_li_J-P4?usp=sharing

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Thank you for attending!

Please scan the QR code to confirm you attended today's workshop ☺

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