

# PNB 2A03 -Python for PNB

## Course outline

**Fall 2019**

### Instructor

Dr. David R. Feinberg

Email: ([feinberg@mcmaster.ca](mailto:feinberg@mcmaster.ca))

Pronouns: He/Him

Room 407, Psychology Complex (PC)

Office Hour: 10:00am-11:00am in PC 154 (computer cluster) for coding help, or by appointment in PC 407 for other matters.

### Teaching Assistants

Parker Banks ([banksp@mcmaster.ca](mailto:banksp@mcmaster.ca))

Isaac Kinley ([kinleyid@mcmaster.ca](mailto:kinleyid@mcmaster.ca))

Office hours by appointment

### Schedule/Location

Lectures: Wednesdays 4:30PM – 5:20PM BSB-B103

Labs: Thursday & Friday 2:30PM-3:20PM ABB 136

### Overview

In this course you will gain introductory experience to scientific computing while learning the basics of programming in Python. We will cover topics including basic programming skills, data manipulation and analysis, and data visualization. You will learn these tasks with reference to everyday problems we face in Psychology, Neuroscience, & Behaviour.

### Required reading:

There is no assigned reading for this course. The internet is your friend when learning programming.

### Course websites:

The main course website is Avenue2Learn

Lecture slides are hosted on: <https://drfeinberg.github.io/PNB-2A03/>

### Assessments:

There are no tests in this course. Each student will complete programming labs in class and additional assignments at home each week. Coding labs are pass/fail. Assignments will be assessed on their method and functionality. Students will also be assessed on a final project where they will design and analyze results from a mock experiment using Python.

## Grading:

- **Course participation:** 10% of total grade
  - Students must respond to at least 2/3 iClicker questions at each lecture. These are averaged over the 12 lectures in the term.
- **Coding Labs:** 25% of total grade
  - Coding labs are pass fail, a passing grade counts as 100%, a failing grade counts as 49% as a score for each individual lab. These are averaged over the 12 Coding Labs in the term.
  - Coding labs are to be submitted at the end of each lab class
- **Assignments:** 30% of total grade
  - Assignments are given in-class during Friday Labs and are to be finished at home.
  - Assignments are due the Friday after they are assigned
  - You may submit late assignments, up until assignment solutions are posted (~1 week after the due date), but for only 75% credit.
  - Assignment scores are averaged and equally weighted all assignments in the term.
- **Final Project** 35% of the total grade
  - The final project is due on the last day of class. Late projects will be marked as zero.

## Outline of topics

1. Introduction to Python
2. Variables and Operators
3. Conditionals, Data Types and Loops
4. Dictionaries, Functions, and Methods
5. Debugging
6. Classes
7. Objects
8. Namespaces
9. PsychoPy 1: Stimuli
10. PsychoPy 2: Responses
11. Exploring Data in Pandas
12. Analyzing Data in Pandas
13. Data Visualization

## **Note:**

The instructor and university reserve the right to modify elements of the course during the term. The university may change the dates and deadlines for any or all courses in extreme circumstances. If either type of modification becomes necessary, reasonable notice and communication with the students will be given with explanation and the opportunity to comment on changes. It is the responsibility of the student to check their McMaster email and course websites weekly during the term and to note any changes.