

Introduction to Python
ECON 6118 – 701 - Spring 2026
Marquette University
Microsoft Teams Meeting - Wednesdays 5:30PM – 8:15PM CST

Instructor: Jose Zenteno - jose.zentenocadena@marquette.edu | [LinkedIn](#) | 262-510-5691

I. Course Info

A. Course Description and Course Learning Outcome

This course aims to teach the basics of programming with Python. Python is a general-purpose programming language that is becoming ever more popular for data science. Companies worldwide are using Python to harvest insights from their data and gain a competitive edge. In this course, you will learn the basics of creating programs using Python to interact with data. The goal of this course is to set up your computer environment to write and execute Python programs, learn the basic building blocks of Python programming, the core data structures in Python, data manipulation and supervised learning as well as use Python to access web data and data from databases.

B. Course Resources

Your professor: My contact information is provided at the top of the syllabus. My preferred method of communication is email and you will get a response within 48 hours.

Office hours: I am also available by appointment after business hours during the weekdays.

Required Textbooks: None

Required Hardware: You are required to bring your own laptop to class.

Required Software:

- **Google Colab:** We will be using Google Colaboratory (Colab) for all in-class coding and assignments. Colab is a cloud-based version of Jupyter Notebooks that requires no installation on your local machine and provides free access to computing resources.
- **Web Browser:** A modern web browser (Google Chrome is highly recommended for the best experience with Colab).
- **Google Account:** As Marquette University does not provide official Google accounts, you will need to use a personal Gmail account to save and manage your notebooks. If you do not have one, you can create a free account at accounts.google.com.

To ensure you are ready for the first day of class, please follow these simple steps to access our coding environment:

1. **Sign In:** Go to colab.research.google.com. Sign in using your personal Google account.
2. **Create a New Notebook:** Once signed in, a dialog box will appear. Click on the "**New Notebook**" button at the bottom left.
3. **Rename Your File:** Click on the filename at the top left (e.g., Untitled0.ipynb) and rename it to Week1_Intro.ipynb.
4. **Test the Environment:** In the first code cell, type `print("Hello Marquette!")` and press the **Play** button on the left of the cell or hit Shift + Enter.
5. **Saving:** All changes are automatically saved to your Google Drive in a folder named "Colab Notebooks."

C. Requirements Before Class:

- I. **Preclass survey:** To understand your background and experience with programming as well as career aspirations you will be required to take a survey prior to the beginning of the class. This survey will count toward your grade and you will get full credit for completing it.

D. Course Outline

The (tentative) outline below describes the goals and content of each lecture. Assignments are fixed but the content of the lectures may change as the class progresses.

Week 1: March 18st, 2026

Setting up your environment and building blocks of Python

Due before class: Preclass survey

- Instructor and student introductions
- Syllabus review
- What is Python?
- Environment setup and terminal overview
- Jupyter Notebooks
- Hardware overview
- Mathematical and comparison operators
- Variables and variable types
- Program flows, sequential, conditional and repeated steps
- Introduction to functions
- Packages & modules

Week 2: April 1st, 2026

Core Python Data Structures

Due before class: Quiz 1

- Lists and lists manipulation
- Loops

- Dictionaries
- Tuples
- Object-oriented programming definitions and terminology
- Regular expressions

Week 3: April 8nd, 2026

Python Pandas and Data Manipulation

Due before class: Quiz 2, Programming Assignment 1

- Pandas foundations
- Importing data using pandas
- Pandas DataFrames
- Indexing and slicing
- Querying a DataFrame
- Missing values
- Merging DataFrames
- DataFrames group by
- Intro to data visualization in Python
- Project proposal discussion

Week 4: April 15th, 2026

Exploratory Data Analysis, Statistical Analysis and Machine Learning with Scikit-Learn

Due before class: Programming Assignment 2, Notebook Project Proposal

- Exploratory data analysis (EDA)
- Statistical exploratory data analysis
- Visual exploratory data analysis
- Hypothesis testing
- Classification with scikit-Learn
- Regression with scikit-Learn
- Train/test split for classification and regression

Week 5: April 22nd, 2026

Access Web Data & Data from Databases

Due before class: Final Project Notebook & Written Report

In class: Notebook Presentation

- Notebook presentation
- Introduction to relational databases and SQL
- Importing data from databases
- Ports and servers
- Retrieving web pages using urllib library
- Data on the web

- JSON and APIs

II. Grading and Assignments

Grades in this course will be assigned using the following grading scale:

Assignment	Proportion of Final Grade
Preclass survey	5%
Quiz 1	10%
Quiz 2	10%
Programming Assignment 1	15%
Programming Assignment 2	15%
Final Project Proposal	10%
Final Project Notebook	25%
Final Project Notebook Presentation	10%

Letter Grades will be assigned in the following order:

A	94% or higher
A-	$91\% \leq \text{grade} < 94\%$
B+	$88\% \leq \text{grade} < 91\%$
B	$85\% \leq \text{grade} < 88\%$
B-	$82\% \leq \text{grade} < 85\%$
C+	$79\% \leq \text{grade} < 82\%$
C	$76\% \leq \text{grade} < 79\%$
F	Less than 76%

If an assignment is late without proper justification, then the assignment will have a deduction of points in the following way:

- 1-3 days late: 15% penalization
- 3-7 days late: 30% penalization
- 7-14 days late: 50% penalization

I will not accept an assignment that is late by more than 14 days.

A. Quizzes (25%)

In addition to the preclass survey, there will be two quizzes that will test your knowledge of the lectures covered in class. These quizzes will consist of short written responses and may require you to write and execute Python code to solve questions.

The quizzes will be delivered online via D2L. Quizzes have no time limit and you will be allowed one attempt for each quiz.

B. Programming Assignments (30%)

Once we complete the first two lectures of the course, you will be required to complete two programming assignments. In these assignments, you will be required to write and execute Python code in a Jupyter Notebook and/or the terminal and save your assignment as either a python file with extension .py or as a Jupyter Notebook with extension .ipynb. You will submit the files for grading in the dropbox in D2L.

C. Final Project

The final project will be your opportunity to demonstrate the knowledge you have acquired throughout the course. In this project, you will be graded based on not only your ability to write Python code but also based on your ability to create and present to the class a Jupyter Notebook that contains explanatory text and live code that imports, manipulates/cleans real-world data, contains statistical and visual exploratory data analysis as well as statistical analysis or supervised learning.

The final project will contain three parts:

1. Final project proposal: A 1-2 page summary of your proposed analysis
2. A Jupyter Notebook containing a description of each cell in your analysis along with executable Python cells that demonstrate your knowledge of the course
3. A 2-3 minute presentation of your notebook

III. Administrative Information

I. Special Needs

Please inform me during the first week of class if you have any conditions that may limit or affect your ability to participate in this course so that we can make necessary arrangements. You may also contact the Office of Student Disability Services (OSDS), in Marquette Hall 005 (8-1645) for more information (see also: <http://www.marquette.edu/disability-services/>).

II. Emergency Plan

Every Marquette University campus building has an emergency shelter and evacuation plans. Please familiarize yourself with the plans of each building in which you take classes or attend

meetings. Make sure to note the routes to the lowest level of the buildings for shelter during inclement weather, as well as exits from the buildings in the event of a fire or another emergency.

III. Attendance Statement

The Marquette University Graduate School of Management considers regular class attendance an important component of the learning process. Students are expected to attend scheduled class meetings; excessive absences may have adverse consequences, ranging from a lowered course grade to forced withdrawal from the course. Excessive absence is generally defined as missing more than 10-15 percent of the regularly scheduled class time. Please consult the instructor's course syllabus for additional details regarding a particular course.

For this course, anything more than 1 class period is determined to be "excessive". Because this is a short (5-week) course, missing even one week will make it difficult to learn the material and satisfactorily complete the course requirements. If you miss more than one class, your grade will be reduced by a full letter grade for each absence after the first. All students are expected to complete all quizzes, assignments, and the final project.

The policy above applies to "unexcused" absences. There are a handful of situations which are considered "excused" absences:

- absences resulting from legal obligations (such as jury duty)
- absences resulting from university-sanctioned activities and related travel and absences resulting from religious observance

If you anticipate missing any classes (even for the "excused" reasons mentioned above), please let me know as early as possible so we can plan accordingly.

IV. College of Business Administration Assessment Statement

The fundamental mission of the College of Business Administration is to provide a quality education grounded in Catholic, Jesuit intellectual values. Students are expected to learn how to function effectively in a diverse and global economy and develop into responsible members of the business community. As one of many methods of assuring that the goals of our educational mission are successfully met, the college regularly and systematically engages in the assessment of these competencies.

Students in the program are assessed on their ability to reason ethically, communicate effectively, analyze critically, and understand local, national and global business and cultural issues.

Assessment takes place each semester in all programs and settings using quantifiable measures to gather and analyze information to help continuously improve the educational process. The College of Business Administration is dedicated to successfully providing a quality education for all students. Assessment is the continuous improvement process of evaluating our success. More information on assessment can be found at <http://www.marquette.edu/assessment/> or

in the assurance of learning tabs under <http://business.marquette.edu/academics/assurance-of-learning-undergrad> or <http://business.marquette.edu/academics/assurance-of-learning-graduate>.

V. Academic Integrity

Students, faculty, and staff at Marquette University developed a Statement on Academic Integrity located on the provost's website - <http://www.marquette.edu/provost/integrity-pledge.php> - that recognizes the importance of integrity, both personal and academic, and includes an Honor Pledge and Honor Code that applies to all.

VI. The Honor Pledge

I recognize the importance of personal integrity in all aspects of life and work. I commit myself to truthfulness, honor, and responsibility, by which I earn the respect of others. I support the development of good character and commit myself to uphold the highest standards of academic integrity as an important aspect of personal integrity. My commitment obliges me to conduct myself according to the Marquette University Honor Code.

VII. Student Obligations under the Honor Code

1. To fully observe the rules governing exams and assignments regarding resource material, electronic aids, copying, collaborating with others, or engaging in any other behavior that subverts the purpose of the exam or assignment and the directions of the instructor.
2. To turn in work done specifically for the paper or assignment, and not to borrow work either from other students or from assignments for other courses.
3. To give full and proper credit to sources and references, and to acknowledge the contributions and ideas of others relevant to academic work.
4. To report circumstances that may compromise academic honesty, such as inattentive proctoring or premature posting of answers.
5. To complete individual assignments individually, and neither to accept nor give unauthorized help.
6. To accurately represent their academic achievements, which may include their grade point average, degree, honors, etc., in transcripts, in interviews, in professional organizations, on resumes, and in the workplace.
7. To report any observed breaches of this honor code and academic honesty.

VIII. Instructor Pledge

As instructor, I strive to be prepared and current with the content and conduct of the course and to plan the course and class sessions to achieve the course objectives effectively. I strive to answer questions honestly and completely and to acknowledge when I do not have an answer. I strive to give all students an equal opportunity to participate in class discussions and activities. I respect students' views on issues of judgment, and I clearly distinguish between my personal opinion and my professional expertise. I am available during office hours or at arranged times to work with students

individually to help them to master course material. I strive to develop and update exams and assignments so that they are meaningful tests of understanding and progress toward achieving course objectives. Finally, I give due and careful consideration to students' answers and submissions when evaluating them and assigning grades.