Python for Economics Graduate Students
Syllabus

Fall 2023

Class Coordinates
- ILCB 112 ([map](#))
- August 16-17
- 8:30am - 4:30pm
    - During the first 30 minutes of the class, our focus will be assisting you in gaining entry to the online course. Please arrive on time to prevent delays.

Teaching Structure
- Taught in-person
- Learning support available in the room from multiple teaching assistants
- Students will learn and practice coding throughout the day
- 10 minute breaks every hour
- 1 hour lunch break every day
- Participation is measured; certificate of participation available
- Additional optional activities available throughout the course

Requirements
- Students will bring laptops or keyboard equipped personal computing devices to the class
- Students use their TAMU NetID to access to the class materials
- Web Browser (Chrome, Firefox) used to participate in activities

Web Resources
- Course resources will be made available on the HPRC website
- Materials will be distributed via a Google Classroom
- Computing activities are performed using Google Colaboratory web app
- Students will have the opportunity to access the ACES cluster, also in web browser
- Microcredentials are available for further learning in Python and Data Science

Learning outcomes
- Orientation and Introduction
    - Motivate the use of Python for Economics
    - Familiarity with Jupyter IDE via Google Colab
    - Understand general programming concepts
    - Know what Python is, where it comes from
- Programming skills
    - Core Concepts: Variables, Operators, Functions
    - Data Types: Numbers, Text, Booleans

- ○ Style: Indentation, Multiline statements, Comments
- ○ Control Structure: Loops
- ○ Data Structures: Tuples, Lists, Dictionaries, Arrays, Dataframes
- ○ Object-oriented programming: Slices, Methods, Modules
- ○ Libraries: NumPy, Matplotlib, Pandas, Requests
- ● Data Skills
  - ○ Data Visualization: Line plot, Scatter plot, Linear Regression
  - ○ Data Handling: Filtering, Sorting, Labeling, Array Operations
  - ○ APIs: HTTP, JSON, FRED
- ● Individual Research Project
  - ○ Begin and/or Complete a student-led Data Science project
  - ○ Required for Certificate of Participation

Schedule (overview)

Wendesday, August 16, 2023	
8:30am - 9:00am	Announcements, Preparations, Tech Support
9:00am - 12:00pm	Introduction to Python, Elements of Code
12:00pm - 1:00pm	Lunch
1:00pm - 4:00pm	Control Structures, Data Structures
4:00pm - 4:30pm	Register for ACCESS ID, Helpdesk
Thursday, August 17, 2023	
8:30am - 9:00am	Announcements, Preparations, Tech Support
9:00am - 12:00pm	Data Libraries (NumPy, Matplotlib, Pandas)
12:00pm - 1:00pm	Lunch
1:00pm - 4:00pm	Data Libraries (continued), APIs, Economics Data Project
4:00pm - 4:30pm	Introduction to ACES cluster, Helpdesk