

Week 1:

Intro & Setting Up

1. Target Audience
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4. Setting Up
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Target Audience

This course may be right for you, if:

- You have **previous experience in Python**, but want a **systematic overview of the scientific ecosystem**
- You have **previous programming experience in another language** and would like to learn Python

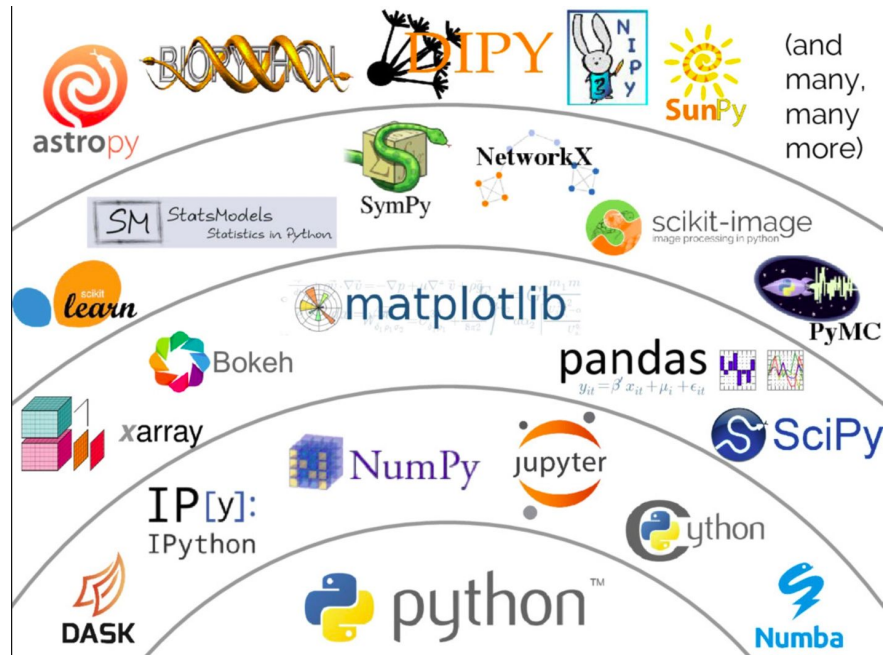
⇒ Welcome to the course!

This course may not be right for you, if:

- You have **no programming experience** at all
- You have some programming experience in Python, but **do not yet feel comfortable** in it

⇒ Basic Programming in Python

Python's Scientific Ecosystem



The Case for Python in Scientific Computing

<https://www.datacamp.com/community/blog/python-scientific-computing-case>

Course Content

- **Week 1: Intro & Setting Up**
- **Week 2: Basic Python**
- **Week 3: Advanced Python**
- **Week 4: Basic NumPy**
- **Week 5: Advanced NumPy**
- **Week 6: Basic Pandas**
- **Week 7: Advanced Pandas**
- **Week 8: Basic Visualization**
- **Week 9: Advanced Visualization**
- **Week 10: Mathematical Programming**
- **Week 11: Applications I**
- **Week 12: Applications II**
- **Week 13: Applications III**
- **Week 14: Final Project Descriptions**

Organisational Structure

Each week:

1. **Lecture:** Small prerecorded videos & Jupyter Notebooks on Courseware
2. **Practice:** Live BBB session with homework recap and Q&A
3. **Homework:** Pass/fail homework assignments on GitHub
⇒ **Individual, automatic, and instantaneous grading**

Passing the course:

Pass **n - 2** homework assignments

Receiving a grade:

Final project in the semester break

Additional Support:

- StudIP forum
- Telegram bot (experimental)
- Manual grading (via StudIP groups)

Setting Up

1. **Personal Computer:** Preferably running Linux as main OS, dual-boot or virtual machine
2. **GitHub Account:** Create one at <https://github.com/> (use your uni email for benefits)
3. **Accept Homework:** Link via StudIP message. Please **select your StudIP username!**
4. **Complete Homework:** Follow instructions in your **personal GitHub repository** here:
<https://github.com/scientificprogrammingUOS/2021-homework01-<YOUR-USERNAME>/>
5. **Telegram Registration (Optional):** Send **/start** to **@uos_scipy_bot** and follow instructions
⇒ Using this Telegram bot is completely optional and it may not work reliably

Next Steps

Watch those videos that are relevant to you:

- a. **Your Lecturers** - if you would like to know more about us
- b. **Intro to Python** - if you would like to know more about Python
- c. **Intro to Git and GitHub** - if you have never used Git and GitHub before
- d. **Linux VM Tutorial** - if you would like to run a Linux virtual machine
- e. **Code Editors and IDEs** - if you do not yet have a favourite code editor
- f. **Intro to Jupyter Lab** - if you would like to know more about Jupyter Lab
- g. **Homework Walkthrough** - if you have trouble with setting up the first homework