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# **python4vienna Documentation**

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These notes are for a Python/Astropy workshop held at the University of Vienna by [Thomas Robitaille](#) from June 1st-3rd 2015.

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**Note:** Please bring your laptop to the workshop!

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The purpose of this workshop is to get you started with Python and learn about Packages you can use for your research, such as Astropy.



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## Installing Python

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If you don't already have a Scientific Python Installation, install the [Anaconda Python Distribution](#) (works for MacOS X, Linux, and Windows). I recommend downloading the Python 3.4 version (you will still be able to set up Python 2 environments if needed).





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### Useful links

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- [Numpy](#)
- [Scipy](#)
- [Matplotlib](#)
- [Astropy](#)
- More about the [IPython notebook](#)
- UTF-8 error on MacOS X: see [here](#) for how to fix it.



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## **Monday: Getting started with Python**

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Download the notebooks from [here](#) before starting (Windows users: use [this](#) instead).

### **3.1 Part 1**

- What is Python?
- Running Python code
- Using the IPython notebook

### **3.2 Part 2**

- Numbers, Strings, and Lists
- Booleans, Tuples, and Dictionaries
- Control Flow
- Functions

### **3.3 Part 3**

- Modules
- Introduction to Numpy
- Introduction to Matplotlib

You can now find the Exercise Solutions [here](#).



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## Tuesday: Introduction to Astropy

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Download the notebooks from [here](#) before starting (Windows users: use [this](#) instead).

- [Units and Quantities](#) [[Problem solutions](#)]
- [Tables](#) [[Problem solutions](#)]
- [Celestial Coordinates](#) [[Problem solutions](#)]
- [Handling FITS files](#) [[Problem solutions](#)]
- [Modeling](#) [[Problem solutions](#)]



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## Wednesday: Advanced Astropy and affiliated packages

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Download the notebooks from [here](#) before starting (Windows users: use [this](#) instead).

- Handling FITS files [Problem solutions]
- WCS Transformations [Problem solutions]
- Astropy Affiliated Packages: APLpy and WCSAxes
- Astropy Affiliated Packages: Astroquery
- Astropy Affiliated Packages: Image reprojection





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## Getting help

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### 6.1 General Python help

- [Google!](#)
- [StackOverflow](#) - use tag `#python`
- [Facebook Python users in Astronomy group](#)

### 6.2 Astropy help

- [astropy mailing list](#) (not just Astropy-related question, any astronomy & python questions)
- [StackOverflow](#) - use tag `#astropy`
- [IRC](#)
- [Twitter](#)
- [Private feedback](#)