

XSD Python Training Home

To sign up to be on the mailing list see [Python Training E-Mail List](#). Note that a separate E-mail list exists for Beginning Python Training. Please follow the link to the Beginning Python below to find a link to that E-mail List.

Files for lectures can be found in: <https://anl.box.com/v/2016Python> (see links in table below)

Next Lecture: *Intro to Matplotlib*, June 4, 10:30 am & 2 pm

Beginning Python: See [new page](#).

| Past and future topical Python lectures | | | | |
|--|-----------------------|--|-----------|---|
| Date / Time / Location | Topic | Lecture Description | Presenter | Links |
| Part 1: Getting Started / Basics | | | | |
| 2016-06-06 10:30 AM - Noon / A1100 | Basic Python | The Basics of the Python language (I). Topics: course organization, Python variables & data types; defining functions | BHT | <ul style="list-style-type: none"> slides homework (answers) videos: part 1, part 2 |
| 2016-06-20 10:30 AM - Noon / A1100 | Basic Python | The Basics of the Python language (II) Topics: conditional statements and looping | BHT | <ul style="list-style-type: none"> slides homework (answers) videos: part 1, part 2 |
| 2016-07-11 10:30 AM - Noon / A1100 | Basic Python | The Basics of the Python language (III) Topics: file I/O, system-supplied and DIY modules | BHT | <ul style="list-style-type: none"> slides homework (answers) videos: part 1, part 2 |
| 2016-07-25 10:30 AM - Noon / A1100 | Coding Environment | PyCharm IDE Version (git/github) control intro | DPJ & PRJ | <ul style="list-style-type: none"> slides homework videos: prev homework, PyCharm, GitHub |
| 2016-08-15 10:30 AM - Noon / A1100 | Recommended Practices | Version Control with Git and GitHub, PyCharm interface to version control | PRJ & DPJ | <ul style="list-style-type: none"> slides videos: Git/GitHub, Git from PyCharm, homework assignment (answers) |
| 2016-08-29 10:30 AM - Noon / A1100 | Coding Environment | Using Jupyter Notebooks | JH | <ul style="list-style-type: none"> slides videos: prev homework, Jupyter Notebooks |
| 2016-10-17 10:30 AM - Noon / A1100 | Recommended Practices | documenting code (Sphinx) structuring a package (intro), logging | PRJ | <ul style="list-style-type: none"> slides video homework |
| Part 2: Things APS Scientists Need to Get Started (Bootcamp for APS Scientists) | | | | |
| 2016-11-14 10:30 AM - Noon / A1100 | EPICS | Using Python to control beamlines: practical examples (EPICS interfacing) | PRJ | <ul style="list-style-type: none"> slides video homework |
| 2016-11-28 10:30 AM - Noon / A1100 | Working with files | CSV, introduction to pandas, etc | JH | <ul style="list-style-type: none"> Slides as html or pdf Slides as jupyter notebook video |
| 2016-12-12 10:30 AM - Noon / A1100 | Working with files | Working with HDF5 | JH | <ul style="list-style-type: none"> slides Jupyter notebook files, or as HTML video |
| Part 3: Scientific Programming Tools | | | | |

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|---|-------------------------------|--|--------------------------|--|
| 2017-02-06 10:30 AM - Noon / A1100 | numerical calculations | Python for numerical computations I: Basics of NumPy; Optimizing NumPy for speed | RBVD | <ul style="list-style-type: none"> slides: PDF or PPTX video of 1st half (recording failed) |
| 2017-03-06 10:30 AM - Noon / A1100 | GUI development | GUI development with Qt (1) | NS | <ul style="list-style-type: none"> slides examples video |
| 2017-03-27 10:30 AM - Noon / A1100 | numerical calculations | Python for numerical computations II: Using SciPy | RBVD | <ul style="list-style-type: none"> slides <p>(talk was not recorded)</p> |
| 2017-6-19 | code optimization | Using multiple cores in Python: Intro to the multiprocessing module (1) | BBF | <ul style="list-style-type: none"> slides examples video |
| 2017-04-? 10:30 AM - Noon / A1100 | GUI development | GUI development with Qt (2) | NS | |
| 2018-06-04 (A1100) 10:30 am-noon & 2 pm-3:30 pm | scientific graphics | Intro to Matplotlib | Tom Caswell (BNL) | <ul style="list-style-type: none"> Lecture 1: Video, Source files, notebooks as PDFs: [1], [2], [3] Lecture 2: Video, Source files |
| Part 4: Large-Scale Computing in Python | | | | |
| Meetings will be 10:30am-noon in 401/A1100 unless otherwise noted. | | | | |
| 2017-11-15 | code optimization | Optimizing Python Applications Using Intel® Performance Tools | Oleksandr Pavlyk (Intel) | Slides |
| 2018-Mar-26 Note: 401/B2100 | HPC with Python (1) | Python Parallelism & MPI Overview | William Scullin (ALCF) | Slides , code examples (or as tarball) |
| 2018-April-9 | No Lecture (postponed) | | | |
| 2018-April-30 (A1100) note new date | HPC with Python (2) | MPI Concepts | William Scullin | |
| TBD | HPC with Python (3) | Advanced MPI & Parallel Performance and Debugging | William Scullin | |
| Possible Future (Advanced) Topics | | | | |
| ? | code optimization | Multicore processing in Python with the multiprocessing module | BBF | |
| ? | Python environments | Installing packages (with pip and conda); managing environments with conda | PRJ | |
| ? | code distribution | Packaging Python code for redistribution | PRJ | |
| | | Documenting python code with Sphinx, publishing docs (readthedocs) | PRJ? | |
| | | Creating web applications | TBD | |
| | | Data base access in Python (sql, XML, JSON, excel, web services, logging) | TBD | |
| | | Python advanced basics (from Enthought)? or later as needed | TBD | |
| | | 3rd visualization in Python | | |

Recent space activity



Toby, Brian H.

[2018 Beginning Python Tutorial](#) updated Dec 03, 2018 • [view change](#)

[XSD Python Training Home](#) updated Jun 28, 2018 • [view change](#)

[Hammonds, John P.](#)

Space contributors

- [Toby, Brian H.](#) (1348 days ago)
- [Hammonds, John P.](#) (1541 days ago)
- [Schwarz, Nicholas](#) (1985 days ago)

[2018 Beginning Python Tutorial](#) updated May 24, 2018
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[XSD Python Training Home](#) updated Apr 18, 2018 • [view change](#)



Toby, Brian H.

[Python materials for scientific programmers \(ECP-IDEAS\)](#) updated Apr 05, 2018 • [view change](#)