

## **Python for VFX and Animation: Proposed Course Outline**

**By:** Suzanne Berger, zane7x@gmail.com

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This is a proposed outline for VFX and Animation students who have no previous training in computer programming. It also covers topics specifically relevant to this industry.

- 1 **Computer Science Fundamentals:** - simplistic computer architecture [https://youtu.be/HEjPop-aK\\_w](https://youtu.be/HEjPop-aK_w), data representation, compiler vs interpreter
- 2 **Programming Basics with Python:** - follow this book: "Think Python: How to Think Like a Computer Scientist", By Allen B. Downey, <http://greenteapress.com/thinkpython2/html/index.html>, also refer to my examples on Github: <https://github.com/skoshiwosh/democode>, compare short Python script with equivalent in c++
- 3 **Software Development:** - specification, iterative program development, debugging, unit testing
- 4 **VFX and Animation Pipeline Infrastructure:** - version control using Git, packaging/distribution/release, file system architecture, environment variables, show configurations, shell scripting, using multiple platforms (Linux, Windows, and Mac), lessons may be influenced by "Engineering a Modern Pipeline For VFX and Animation Production" linked here: <https://www.dropbox.com/s/wayddv264yybijw/engineeringAModernPipelineBySafakOner.pdf?dl=0>
- 5 **Best Practices, Standards, and Policies:** - file organization, naming conventions, how to report bugs and request new tools
- 6 **Python APIs:** - PyQt/PySide, Houdini, Nuke, Katana, Maya, Shotgun, render farms