

Khwopa College of Engineering
Basic Python Syllabus

1. Day 1:

- a. Introduction to Python
- b. Python installation and IDE setup (Editor of choice eg VSCode, Sublime, Pycharm, etc VSCode preferred for consistency with trainer)
- c. Introduction to Python interpreter
- d. Basic Python program (Hello World)

2. Day 2:

- a. Introduction to Coding layout in Python (PEP8)
- b. Operators in Python
- c. Introduction to Data types in Python
 - i. String
 - ii. List
 - iii. Tuple
 - iv. Set
 - v. Dictionary/Hash Map
 - vi. Booleans and the None data type
- d. The dir() function and __dict__ attribute
- e. Variables in Python

3. Day 3:

- a. Control Flow and Looping
 - i. If / else
 - ii. For Loop
 - iii. While Loop
 - iv. Loop manipulations (break, continue, else, pass)
- b. Numerical Comparison

4. Day 4:

- a. Input/Output
- b. Output Formatting
- c. Operations/Manipulation in data types
 - i. List manipulation
 - ii. String manipulation
 - iii. Iterating through list/tuple/dictionary
- d. Typecasting

5. Day 5:

- a. Functions
- b. Lambda/anonymous functions
- c. Default arguments in functions

6. Day 6:

- a. File handling
 - i. Creating new files/opening existing files
 - ii. Reading and writing files

7. Day 7:

- a. Error and Exception
 - i. Syntax Error
 - ii. Error Handling
 - iii. Raising Exceptions

8. Day 8:

- a. Using modules and packages
- b. The PYPI
- c. Managing external modules through pip
 - i. Installing modules
 - ii. Importing external modules in program

9. Day 9:

- a. List Comprehension
- b. Iterators
- c. Generators
- d. Decorators

10. Day 10:

- a. Introduction to OOP
- b. Class, Objects, and Methods
- c. Operator Overloading (dunder functions)
- d. Inheritance
- e. Method Overriding

11. Day 11:

- a. Virtual Environments
 - i. Creating virtual environments with virtualenv module
 - ii. Activating a virtual environment
 - iii. Installing modules in virtualenv

12. Day 12:

- a. Web Scraping in Python
- b. Using Python requests module to fetch web data
- c. Introduction to BeautifulSoup4(BS4) module

13. Day 13:

- a. Do more with BS4 module

14. Day 14:

- a. Debugging Python with ipdb
- b. Working with Jupyter notebook

15. Day 15:

- a. GIT and version control
- b. Creating your first GIT repository
- c. Discussion and Q&A