

| Main Topic     | Sub Topic                   | Details<br>* = with pre-written code<br>** = with live coding   |
|----------------|-----------------------------|---|
| 1 Installing   | 1.1 Installing Anaconda     | -   |
|                | 1.2 Installing VS code      | -   |
|                | 1.3 Print function          | 1 Print function*   |
| 2 Basic Python | 2.1 Variables and Datatypes | 1 Declaring Variables*<br>2 Type function*<br>3 Data types  |
|                | 2.2 Int and Float           | 1 Declaring Int and Float*<br>2 Math operations*<br>3 Round function*   |
|                | 2.3 String                  | 1 Declaring String*<br>2 String operation*<br>3 Int function*<br>4 Upper-Lower function*<br>5 Find function*<br>6 Replace function* |
|                | 2.4 List                    | 1 Declaring List*<br>2 Indexing*<br>3 Len function*<br>4 Append function*<br>5 Insert fuction*<br>6 Pop function*                   |

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|-------------------------------------|----------------------------|---|
|                                     | 2.5 Dictionary             | 1 Declaring Dictionary*<br>2 Referring*<br>3 Keys function*<br>4 Values function* |
|                                     | 2.6 Boolean and Comparison | 1 Declaring Boolean*<br>2 Comparison*<br>3 In List*<br>4 In String*<br>5 And-Or*  |
|                                     | 2.7 Input                  | 1 Input*  |
|                                     | 2.8 Code Challenges        | 1 CodeChallenge1**<br>2 CodeChallenge2**<br>3 CodeChallenge3**                    |
| 3 Conditional Programming (if-else) | 3.1 If-else statement      | 1 If statement*<br>2 else statement*  |
|                                     | 3.2 Else if statement      | 1 elif statement*   |
|                                     | 3.3 Code Challenges        | 1 CodeChallenge1**<br>2 CodeChallenge2**  |
| 4 Loop (For-While)                  | 4.1 For loop in range      | 1 Range*<br>2 For loop in range*  |
|                                     | 4.2 For loop in list       | 1 For loop in list*   |
|                                     | 4.3 While loop             | 1 While loop*<br>2 While true*  |
|                                     | 4.4 Loop breaking          | 1 Break*  |
|                                     | 4.5 Code Challenges        | 1 CodeChallenge1**<br>2 CodeChallenge2**  |

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| 5 Functional Programming      | 5.1 Function basics           | 1 Function without parameters*<br>2 Function with parameters*        |
|                               | 5.2 Function with return      | 1 Function with return1*<br>2 Function with return2*                 |
|                               | 5.3 Global vs Local variables | 1 Global vs Local variables*   |
|                               | 5.4 Lambda function           | 1 Lambda function as a variable*<br>2 Anonymous function*            |
|                               | 5.5 Code Challenges           | 1 CodeChallenge1**<br>2 CodeChallenge2**                             |
| 6 Iterable (set, tuple, list) | 6.1 Set and Tuple             | 1 Declaring Set*<br>2 Declaring tuple*<br>3 Loop in Set and Tuple    |
|                               | 6.2 List comprehension        | 1 List comprehension*<br>2 List comprehension with if*               |
|                               | 6.3 List Slicing              | 1 List slicing*  |
|                               | 6.4 Code Challenges           | 1 CodeChallenge1**   |
| 7 Object Oriented programming | 7.1 Class and Object          | 1 Class and Object basics  |
|                               | 7.2 Creating Class and Object | 1 Creating Class and Object*<br>2 Manipulating objects's attributes* |
|                               | 7.3 Methods                   | 1 Define and use method*   |
|                               | 7.4 Init method               | 1 Define and use Init method*  |
|                               | 7.5 Inheritance               | 1 Inheritance1*<br>2 Inheritance2*                                   |
|                               | 7.6 Encapsulation             | 1 Private vs Public attributes*<br>2 Use of encapsulation*           |

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|                                 | 7.7 Code chalanges | 1 CodeChallenge1**<br>2 CodeChallenge2**                             |
| 8 Libraries and File management | 8.1 Import         | 1 File management<br>2 Import*<br>3 Import...as*<br>4 From...Import* |
|                                 | 8.2 Libraries      | 1 pip install<br>2 Import libraries*                                 |
|                                 | 8.3 Text files     | 1 open text file<br>2 read text from file<br>3 write text to file    |
|                                 | 8.4 CSV files      | 1 open csv file<br>2 read csv from file<br>3 write csv to file       |
| 9 Python notebook (ipynb)       | 9.1 ipynb file     | 1 using ipynb file*  |
|                                 | 9.2 Google Colab   | 1 using Google Colab   |