

**Detailed Content:**

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| <b>Module 1</b><br>Introduction                  | Getting started with Python<br>Who uses Python?<br>Why to use Python?<br>Python 2.x vs python 3.x<br>Python Installation<br>Adding python as environmental variable<br>Adding pip as environmental variable<br>Basic Python 3 Syntax writing<br>Primitive Data Structures <ul style="list-style-type: none"> <li>- Integers</li> <li>- Float</li> <li>- Strings</li> <li>- Boolean</li> <li>- Complex</li> </ul> Multiple operations on strings |
| <b>Module 2</b><br>Data Structures and Operators | Non-Primitive Data Structures <ul style="list-style-type: none"> <li>- Lists</li> <li>- Tuples</li> <li>- Dictionary</li> <li>- Sets</li> </ul> Operations in python <ul style="list-style-type: none"> <li>- Arithmetic Operators</li> <li>- Assignment Operators</li> <li>- Comparison Operators</li> <li>- Logical Operators</li> </ul> Data Type conversions  |
| <b>Assignment 1</b>                              |   |
| <b>Module 3</b><br>Control Flow                  | Taking input form user using input function<br>If else<br>For Loop<br>List comprehension<br>While Loop<br>Continue<br>Break<br>Pass<br>Generators in Python   |

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|  | Practice Activity on mini projects  |
| <b>Module 4</b><br>Functions in python   | Functions in Python<br>Return a value<br>Default Arguments<br>Keyword and Positional Arguments<br>Documentation Strings<br>*arg and **arg<br>Lambda Function<br>Standard predefined functions – sum, max, min etc   |
| <b>Module 5</b><br>Object-Oriented<br>Programming Basics                       | Introduction to Object Oriented Programming<br>Class coding basics<br>Creating objects<br>Self Arguments<br>__init__() method<br>__main__() method<br>super instance  |
| Assignment 2   |   |
| <b>Module 6</b><br>Object Oriented<br>Programming                              | OOP and Inheritance<br>Inheritance<br>Function overloading<br>operator overloading<br>Examples and Practice<br>Using python code as a package   |
| <b>Module 7</b><br>Packages – os, datetime,<br>random<br><br>Duration: 2 Hours | Installing packages in python<br>Opening a File<br>Reading from a file, writing to a file<br>Closing a File<br>Working with os package<br>Reading directories & other basic directory operations<br>(getcwd, mkdir, chdir etc.)<br>Renaming & deleting files<br>Working with datetime package |
| Assignment 3   |   |

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| <b>Module 8</b><br>Practice Session | Practice with Data structures and Control Flow<br>Practice examples for Functions in Python<br>Object Oriented Programming<br>Practicing with functions and packages in python<br>Do's and Don'ts with python programming<br>Further learning suggestions |
| <b>Module 9</b><br>Project          | Project 1 <ul style="list-style-type: none"><li>- Objective</li><li>- Writing Codes</li></ul> Project 2 <ul style="list-style-type: none"><li>- Objective</li><li>- Writing codes</li></ul>   |

Thanks & Regards

ElectroCloud Labs