



CENTRAL TOOL ROOM & TRAINING CENTRE, BHUANESWAR

Lesson Plan for Online Courses



SUBJECT: PYTHON

DURATION: 15 DAYS

PER DAY: 3hrs

Eligibility: 10th Pass

OBJECTIVE:

At the end of Session Participants Should Know:

- * Creation of object-oriented programs with Python classes.
- * learn how to design and program in Python

Day	Contents
Day 1	<ul style="list-style-type: none">➤ Online software installation guidance with self-introduction and interaction.➤ Software installation guidance.➤ Introduction to CTTC.➤ Introduction to PYTHON
Day 2	<ul style="list-style-type: none">➤ Variable➤ Identifier➤ Keywords➤ Statements & Comments➤ Indentation➤ Data types(number,string,list,tuple,set,dictionary)➤ Type casting, Type conversion➤ Input and output➤ Operators in Python – Arithmetic operator, Relational operator, Assignment operator, Logical operator, Bitwise operator, Identity operator
Day 3	<ul style="list-style-type: none">➤ The If statement and its' related statement➤ An example with if and it's related statement➤ The for loop➤ Practice exercise on looping
Day 4	<ul style="list-style-type: none">➤ The while loop➤ The range statement➤ Break & Continue➤ Assert➤ Practice exercise on looping
Day 5	<ul style="list-style-type: none">➤ List Comprehensions➤ Nested List Comprehensions➤ Dictionary Comprehensions➤ Exercise on data structure➤ Basic date and time classes➤ Different time formats➤ Converting between formats➤ Formatting dates and times

Day 6	<ul style="list-style-type: none"> ➤ Function Basics ➤ Defining function ➤ Function call ➤ Return statement ➤ Function parameters ➤ Call by value or call by reference ➤ Local and global variable ➤ Recursion
Day 7	<ul style="list-style-type: none"> ➤ Anonymous (lambda) function ➤ Defining module ➤ How to create module ➤ Importing module ➤ Exception Classes & Custom Exceptions ➤ File Handling Modes ➤ Reading Files ➤ Writing & Appending to Files ➤ Handling File Exceptions
Day 8	<ul style="list-style-type: none"> ➤ Oop concepts ➤ Defining a class ➤ Creating object ➤ Method vs function ➤ Calling methods ➤ Instance attribute vs class attribute ➤ Instance method vs class method ➤ Private attribute and method ➤ Static method ➤ Method Overloading ➤ Constructor ➤ List of objects
Day 9	<ul style="list-style-type: none"> ➤ Inheritance ➤ Method overriding ➤ Operator overloading ➤ Abstract method ➤ Abstract class ➤ Analyzing programs with pylint ➤ Using the debugger ➤ Profiling code ➤ Testing speed with benchmarking
Day 10	<ul style="list-style-type: none"> ➤ GUI Programming with QtDesigner ➤ Overview of PyQt ➤ Qt Architecture
Day 11	<ul style="list-style-type: none"> ➤ Using designer ➤ Standard widgets ➤ Event handling
Day 12	<ul style="list-style-type: none"> ➤ Introduction to SQLite module ➤ Connecting to database by using sqlite3 ➤ Creating table by sqlite3 ➤ Performing SQL operations

Day 13	<ul style="list-style-type: none"> ➤ Introduction to MySQL ➤ Installing MySQL ➤ Creating database using MySQL ➤ Connecting MySQL database from python ➤ Creating table
Day 14	<ul style="list-style-type: none"> ➤ GUI project and practice
Day 15	<ul style="list-style-type: none"> ➤ What is machine learning? ➤ Difference between Machine learning and AI ➤ Types of Machine learning ➤ Applications of Machine learning ➤ Popular Python packages for machine learning <ul style="list-style-type: none"> o Numpy o Pandas ➤ Review, Feed Back Session & Validation.

N.B:

*Classes & Demonstration will be conducted every day for a time period of two hours & doubt clear Session of one hour with all day online/on-call support.

*Hard copy of Certificate will be send to Participant's address by post or it may also be collected from our Centre when situation get normalized.

*Each trainee can avail a free one-week Internship (Practical/Project based) training at our Centre after this pandemic situation get normalized.

You may contact with coordinator for course related further information.

Course Coordinator: Ritu Maity

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