

**COURSE PROSPECTUS**

|                                   |  |
|-----------------------------------|--|
| <b>Name of the Course:</b>        | <b>Online Certificate course in Python programming</b> |
| <b>Course Code:</b>               | 222352015503   |
| <b>Starting Date:</b>             | 6 <sup>th</sup> March 2023                             |
| <b>Duration:</b>                  | 2 weeks (10 Hrs.)                                      |
| <b>Course Coordinator:</b>        | Karthick Rajan. N                                      |
| <b>Last date of Registration:</b> | 2 <sup>nd</sup> March 2023                             |

**Preamble:**

Python is an easy-to-learn, powerful programming language. It has efficient high-level data structures and a simple but effective approach to object-oriented programming. Python's elegant syntax and dynamic typing, together with its interpreted nature, make it an ideal language for scripting and rapid application development in many areas on most platforms.

Python offers much more error checking than C, and, being a very high-level language, it has high-level data types built in, such as List, Tuples, and Dictionaries. Because of its more general data types, Python is applicable to a much larger problem domain than Awk or even Perl, yet many things are possible in Python.

Python allows you to split your program into modules that can be reused in other Python programs. It comes with a large collection of standard modules like file I/O, system calls, sockets, and even interfaces to graphical user interface toolkits like Tk. Python has been used in a lot of places like in creating games, for statistical data and visualization, and for speech and face recognition.

Python is an interpreted language, which can save our time during program development because no compilation and linking are necessary. The interpreter can be used interactively, which makes it easy to experiment with features of the language, write throw-away programs, or test functions during program development.

Python emerged as a leading programming language used in Booming areas like Artificial Intelligence (AI), Internet of Things (IoT) and Data analytics. Currently available academic curriculum is not much enough to fulfill the requirement of Skills needed to program in Python language. Because of the lack of hands-on experience among professionals, there is a huge demand in providing skill-based training in Python language which will bridge the skill gap of the engineering graduates.

**Objective of the Course:**

To develop and skill the engineering graduates in acquiring Problem Solving abilities in Python Programming Language and make the students become masters in writing Python scripts.

**Outcome of the Course:** After successful completion of this Course, students can able to:

1. Able to write simple Python programs for Real-time problems.
2. Develop problem-solving capability using python scripts.
3. Gained Hands on experience to design object-oriented programs with python classes.

**Course Structure:**

| S. No | Topics  | Duration                 |
|-------|---|--------------------------|
| 1     | Introduction to Python Language and Pycharm IDE | <b>2 weeks (10 Hrs.)</b> |
| 2     | Basic Syntax                                    |                          |
| 3     | Data types                                      |                          |
| 4     | Operators                                       |                          |
| 5     | Flow Control in Python                          |                          |
| 6     | Functions, Modules                              |                          |
| 7     | File I/O  |                          |
| 8     | Exception Handling                              |                          |
| 9     | Classes   |                          |

**Other Details:**

**Course Fees: Rs. 600/- (Including GST) (Non-Refundable)**

However, the above Training fee shall be refunded on a few special cases as given below:

1. If the course is postponed and the new date is not convenient for the student.
2. If the course is canceled.

**Payment schedule:** The Fee is to be paid in one instalment as given below.

| Instalment No. | Last Date for Payment | Amount (in Rs.) |
|----------------|-----------------------|-----------------|
| 1.             | 02-03-2023            | Rs.600/-        |

**Prerequisite:** Knowledge of basic Mathematics

**Eligibility:** Pursuing Students from 12th Standard and above

**Number of Seats: 50**

### How to apply:

Candidates can apply online using the Google Form link <https://forms.gle/5oKrd5dvTt6YnmaS8>. Payment towards the Course fee can be paid through any one of the following modes:

- **ACCOUNT DETAILS: Account No:** 3194198019 **Branch:** Central Bank of India, Jadavpur, Kolkata. **IFSC Code:** CBIN0281247
- Pay through UPI Mobile Apps eg: Google Pay, Paytm, BHIM, Phone Pe

**Note:** Institute will not be responsible for any mistakes done by either the bank concerned or by the depositor while remitting the amount into our account.

**Last date of Registration:** 2<sup>nd</sup> March 2023

**Selection of candidates:** Selection is based on a first-come basis (subject to fulfilling the eligibility criteria)

### Admission Procedure:

All interested candidates are required to fill out the Registration form (in Google Form) with the Course fees on or before 2<sup>nd</sup> March 2023. You are required to send the scanned copy (soft copy) of the following documents and make it into a single pdf and send it to mail id: [karthickrajan.nielit@gmail.com](mailto:karthickrajan.nielit@gmail.com) on or before 2<sup>nd</sup> March 2023.

- Self-attested copy of Degree certificate /Consolidated Mark sheet
- Self-attested copy of Semester mark sheets and College ID (only applicable for candidates who are currently studying)
- Self-attested copy of Govt. issued photo ID card (Only Aadhar Card)
- Passport size photograph
- Screenshot of the Successful Payment of the Course fee done.

**Discontinuing the course:** No fees under any circumstances shall be refunded in case of a student discontinues the course. No certificate shall be issued if discontinued.

**Course Timings:** 1 hour (4 PM. to 5 PM.) online daily from Monday to Friday

**Mode of Training:** Online

**Certification:** After Successful completion of the course, the examination will be conducted, and accordingly Certificate will be issued.

### Grading Scheme:

Following Grading Scheme (on the basis of total marks) will be followed:

| Grade                 | S            | A        | B        | C        | D        | Fail        |
|-----------------------|--------------|----------|----------|----------|----------|-------------|
| Marks Range<br>(in %) | 85 to<br>100 | 75 to 84 | 65 to 74 | 55 to 64 | 50 to 54 | Below<br>50 |

**Address:** National Institute of Electronics and Information Technology Chennai Centre,  
Jadavpur University Campus, Kolkata-700032  
E-mail: [karthickrajan.nielit@gmail.com](mailto:karthickrajan.nielit@gmail.com) / Phone: (033) 2414 - 6054/ 6081  
Contact Person: Karthick Rajan. N, Mobile: 9940569468

## Annexure

### Detailed Syllabus of the Course

#### 1. Introduction to Python Language and Pycharm IDE:

- ✓ About Python Language
- ✓ Companies using Python
- ✓ Features of Python
- ✓ Getting Started with Pycharm IDE

#### 2. Basic Syntax:

- ✓ First Python Program
- ✓ Identifiers
- ✓ Keywords/Reserved Words
- ✓ Lines and Indentation
- ✓ Multi-Line Statements
- ✓ Quotation & Comments
- ✓ Constants & Literals

#### 3. Data types:

- ✓ Numbers
- ✓ String
- ✓ Lists
- ✓ Dictionaries
- ✓ Tuple
- ✓ Set

#### 4. Operators:

- ✓ Operator & its Types
- ✓ Arithmetic Operators
- ✓ Comparison (Relational) Operators
- ✓ Assignment Operators
- ✓ Logical Operators
- ✓ Bitwise Operators
- ✓ Membership Operators
- ✓ Identity Operators

#### 5. Flow Control in Python:

- ✓ Decision Making statements & Types
  - IF Statement
  - IF... ELSE... Statements
  - If...elif Statement
- ✓ Loop statements & Types
  - while loop statements

- for loop statements
- break statement
- continue statement

#### **6. Functions & Modules:**

- ✓ Function definition and call
- ✓ Function Scope
- ✓ Arguments
- ✓ Pass by Reference
- ✓ Anonymous Functions
- ✓ The import Statement
- ✓ The from...import Statement

#### **7. File I/O:**

- ✓ Printing to the Screen
- ✓ Reading Keyboard Input
- ✓ Opening and Closing Files
- ✓ Reading and Writing Files
- ✓ Renaming and Deleting Files

#### **8. Exception Handling:**

- ✓ Standard Exceptions
- ✓ Assertions in Python
- ✓ What is Exception?
- ✓ Handling an Exception
- ✓ Argument of an Exception
- ✓ Raising an Exception

#### **9. Classes:**

- ✓ Overview of OOP Terminology
- ✓ Creating Classes
- ✓ Creating Instance Objects
- ✓ Class Inheritance
- ✓ Overriding Methods