

**Course Durations: 30 Hours**

**Course Mode: Online/Offline**

## About Company:

EduNextgen extended arm of Product Innovation Academy is a growing entity in education and career transformation, specializing in today's most in-demand skills. A platform with blended learning programs supported by in-trend technology platforms for learning. Engaging organizations for learning development objectives.

Training courses are designed and updated by renowned industry experts. Our blended learning approach combines online classes, instructor-led live virtual classrooms and virtual teaching assistance.

## About The Course:

Python is an interpreted high-level programming language for general-purpose programming. Python is one of the best programming language to be a good developer. Python has a design philosophy that emphasizes code readability and a syntax that allows programmers to express concepts in fewer lines of code. It provides constructs that enable clear programming on both small and large scales. It supports multiple programming paradigms, including object-oriented, imperative, functional and procedural, and has a large and comprehensive standard library. Python interpreters are available for many operating systems.

This course is designed for Developers who want to use Python to build an application. Even Students who want to make a career in Python Developer will find this course useful.

\*The course curriculum and contents are made by industries expert.

## Why This Course:

- Covers Python topics like Control Structures and Functions, Modules, Object-Oriented Programming, File Handling and many more.
- Hands-on Experience and interview based Assignments and Quizzes.
- Industry Grade real-time Projects.
- Live Support (24x7)

## Participants will get the Access to:

- LMS Access
- 50+ Assignments
- 100+ Quizzes
- 5+ Industry Grade Projects
- Live Support via Mail, Call & Screen Sharing
- Course Completion Certificate

## Batch Schedule:

Weekend: 3 Hours per day (Online), 4 Hours per day (Offline)

Weekday: 2 Hours per day (Online), 2 Hours per day (Offline)

\*Note: All modules are based on practical and hands-on.

## Course Curriculum

### Module 1: Rapid Introduction to Procedural Programming (3 hour)

This module will help you to understand what is Python, Setup and how to write the code. Below topics are covered in this module:

- Introduction to Python
  - Python Setup
  - First program in Python
  - Data Types
  - Object References
  - Collection Data Types
  - Logical Operations
  - Control Flow Statements
  - Arithmetic Operators
  - Input / Output
  - Creating and Calling Functions
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### Module 2: Data Types (3 hours)

This module will help you to understand Python Data Type. Below topics are covered in this module:

- Identifiers and Keywords
  - Integral Types
  - Integers
  - Booleans
  - Floating-Point Types
  - Floating-Point Numbers
  - Complex Numbers
  - Decimal Numbers
  - Strings
  - Comparing Strings
  - Slicing and Striding Strings
  - String Operators and Methods
  - String Formatting with the str.format() Method
  - Character Encodings
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### Module 3: Collection Data Types (3 hours)

This module will mainly focus on Collection Data Type. Below topics are covered in this module:

- Sequence Types
  - Tuples
  - Named Tuples
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- Lists
  - Set Types
  - Sets
  - Frozen Sets
  - Mapping Types
  - Dictionaries
  - Default Dictionaries
  - Ordered Dictionaries
  - Iterating and Copying Collections
  - Iterators and Iterable Operations and Functions
  - Copying Collections
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## Module 4: Control Structures and Functions (3 hours)

This module will cover Control Structure and Function in Python. Below topics are covered in this module:

- Control Structures
  - Conditional Branching
  - Looping
  - Exception Handling
  - Catching and Raising Exceptions
  - Custom Exceptions
  - Custom Functions
  - Names and Docstrings
  - Argument and Parameter Unpacking
  - Accessing Variables in the Global Scope
  - Lambda Functions
  - Assertions
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## Module 5: Modules (3 hours)

This module will you to understand how to work with Modules in Python. Below topics are covered in this module:

- Modules and Packages
  - Packages
  - Custom Modules
  - Overview of Python's Standard Library
  - String Handling
  - Command-Line Programming
  - Mathematics and Numbers
  - Times and Dates
  - Algorithms and Collection Data Types
  - File Formats, Encodings, and Data Persistence
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- File, Directory, and Process Handling
  - Networking and Internet Programming
  - XML
  - Other Modules
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## Module 6: Object-Oriented Programming (3 hours)

This module will help you to deep drive about OOPs in Python. Below topics are covered in this module:

- The Object-Oriented Approach
  - Object-Oriented Concepts and Terminology
  - Custom Classes
  - Attributes and Methods
  - Inheritance and Polymorphism
  - Using Properties to Control Attribute Access
  - Creating Complete Fully Integrated Data Types
  - Custom Collection Classes
  - Creating Classes That Aggregate Collections
  - Creating Collection Classes Using Aggregation
  - Creating Collection Classes Using Inheritance
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## Module 7: File Handling (2 hours)

This module will cover about File Handling in Python. Below topics are covered in this module:

- Writing and Reading Binary Data
  - Pickles with Optional Compression
  - Raw Binary Data with Optional Compression
  - Writing and Parsing Text Files
  - Writing Text
  - Parsing Text
  - Parsing Text Using Regular Expressions
  - Writing and Parsing XML Files
  - Element Trees
  - DOM (Document Object Model)
  - Manually Writing XML
  - Parsing XML with SAX (Simple API for XML)
  - Random Access Binary Files
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## Module 8: Advanced Programming Techniques (3 hours)

This module will help you to understand Advanced Programming Techniques in Python. Below topics are covered in this module:

- Further Procedural Programming
- Branching Using Dictionaries
- Generator Expressions and Functions
- Dynamic Code Execution and Dynamic Imports
- Local and Recursive Functions
- Function and Method Decorators
- Function Annotations
- Further Object-Oriented Programming
- Controlling Attribute Access
- Context Managers
- Descriptors
- Class Decorators
- Abstract Base Classes
- Multiple Inheritance
- Metaclasses
- Functional-Style Programming
- Partial Function Application
- Coroutines

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## Module 9: Debugging, Testing and Profiling (2 hours)

This module will cover about Debugging, Testing and Profiling. Below topics are covered in this module:

- Debugging
- Dealing with Syntax Errors
- Dealing with Runtime Errors
- Scientific Debugging
- Unit Testing
- Profiling

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## Module 10: Processes and Threading (1 hours)

This module will cover form User Input, Template-driven Forms, Form Validation, Reactive Forms, Dynamic Forms. Below topics are covered in this module:

- Using the Multiprocessing Module
- Using the Threading Module

## Module 11: Networking (1 hours)

This module will cover Networking part in Python. Below topics are covered in this module:

- Creating a TCP Client
  - Creating a TCP Server
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## Module 12: Database Programming (1 hours)

This module will help you to understand Database Programming in Python. Below topics are covered in this module:

- DBM Databases
  - SQL Databases
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## Module 13: Regular Expressions (1 hours)

This module will to understand what is Regular Expressions in Python and how to use. Below topics are covered in this module:

- Python's Regular Expression Language
  - Characters and Character Classes
  - Quantifiers
  - Grouping and Capturing
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## Module 14: Advance Project Creation using Python (1 Hours)

Understand Project: What is the Project, Requirements, Setup and Output

**Hands on/Programs/Practical:**

- Step by step Project Execution