



# UNIVERSE IT INSTITUTE

## Professional Python/Django Development

**Course Duration:** 48 hours

**Total Class:** 24

**Tools:** Python, Django , Vs Code , Git Base

<b>Class #1</b>	<b>Introduction and Environment Setup</b>
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1. Introduction to Python
2. Python Environment Setup
3. Features of Python
4. Benefits and Limitations of Python
5. A Career in Python
6. Getting to Know the Python Interpreter
7. Basic Python Syntax
  - a. Statements, Indentation, and Comments

### Assignment- #1:

<b>Class #2</b>	<b>Variable, Data Type and Type Casting</b>
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1. Python Variables
  - a. Naming Conversion of Python Variable
  - b. Variables & Assigning Values to Variables
  - c. Python Variable Scope
  - d. Re- assignment of Values to Variables
  - e. Multiple Variable Assignment
2. Data Types in Python
3. Type Casting or Converting one type of data to another

### Assignment- #2:

<b>Class #3</b>	<b>Python Strings</b>
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1. Introduction and declaration of string
2. Accessing Values & Updating String
3. String Formatters and Escape Sequences
4. String Functions and Operations
5. Most Important Built in Methods of String

### Assignment- #3:

<b>Class #4</b>	<b>Operators in Python</b>
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1. Arithmetic Operator
2. Comparison Operator
3. Logical Operator
4. Assignment Operator
5. Boolean Operator
6. Membership Operator
7. Identity Operator
8. Bitwise Operator
9. Ternary Operators
10. Operators Precedence & its Associativity

**Assignment- #4:**

<b>Class #5</b>	<b>Python Control Statement and Loops</b>
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1. If, If ... else statement
2. If... elif ... else statements
3. Nested if, nested if else and nested elif statement
4. For loop statement
5. While loop statement
6. Infinite and nested loop statement
7. Break, continue and pass statement

**Assignment- #5:**

<b>Class #6</b>	<b>Python Built-in Data Structures</b>
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1. Python Lists
  - a. List Comprehension
2. Python Tuples
  - a. Tuples vs Lists
3. Indexing, Slicing, Negative Indexing in Python
4. Dictionaries in Python
5. Sets in Python

**Assignment- #6:**

<b>Class #7</b>	<b>Functional Programming</b>
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1. Functions in Python
2. Function Arguments
3. Function Recursion
4. Built-in Functions
5. Anonymous Function or Lambda Expressions

**Assignment- #7:**

<b>Class #8</b>	<b>File and Exception Handling</b>
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1. Reading and Writing Files
2. Copying Files with Python
3. Renaming Files with Python
4. Zipping Files with Python
5. Errors and Exceptions
6. Exception Handling



**Assignment- #8:**

<b>Class #9</b>	<b>Modules and Packages</b>
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1. Modules
  - a. Counter
  - b. Defaultdict
  - c. OrderedDict
  - d. namedtuple
  - e. Numeric Modules- math, decimal, random
  - f. sys
  - g. Generating Random Numbers
2. Packages
  - a. pip and PyPI
  - b. Modules vs Packages

**Assignment- #9:**

<b>Class #10</b>	<b>Object-Oriented Programming</b>
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1. Methods in Python
  - a. Methods vs Functions
  - b. Magic (Dunder) Methods

2. Classes in Python
  - a. Abstract class
  - b. Concrete class
3. Python Objects
4. Inheritance in Python
5. Multiple Inheritance

**Assignment- #10:**

<b>Class #11</b>	<b>Miscellany</b>
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1. Working with Date and Time
2. Virtual Environments and Packages
3. The datetime Module – Part I
4. The datetime Module – Part II

**Assignment- #11:**

<b>Class #12</b>	<b>Command Prompt and Github</b>
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1. Fundamental Bash Commands
2. Git Basics
3. GitHub Basics
4. Source Control

**Assignment- #12:**

<b>Class #13</b>	<b>Django Web Framework</b>
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1. Introduction
2. About Django
3. Django Components
4. Installing & Configuring Django Components
5. Django Pre-Requisites
6. Downloading & Installing Django
7. Choosing a Database
8. Creating a New Project

**Assignment- #13:**

<b>Class #14</b>	<b>Generating Simple Django Views</b>
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1. Generating Simple Django Views
2. About View Functions
3. Using Django's HttpResponse Class
4. Understanding HttpRequest Objects
5. Using QueryDict Objects

**Assignment- #14:**

**Project- #1: Simple CRUD Operation**

<b>Class #15</b>	<b>Generic Views</b>
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1. Simple Generic Views
2. Using Generic Redirects
3. Other Generic Views
4. Create/Update/Delete Generic views

**Assignment- #15:**

**Project- #1: Simple CRUD Operation**

<b>Class #16</b>	<b>Configuring URLconf's</b>
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1. Configuring URLconf's
2. About URLconf
3. Regular Expressions
4. Expression Examples
5. Simple URLConf Examples
6. Using Multiple URLConf's
7. Passing URL Arguments

**Assignment- #16:**

**Project- #2: Tuition Management System(Start)**

<b>Class #17</b>	<b>Django Templates</b>
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1. About Templates
2. Template Fundamentals
3. Creating Template Objects
4. Loading Template Files
5. Filling in Template Content (Context Objects)
6. Template Filters
7. Template Tags

8. More on For Loops
9. Template Inheritance
10. Easy Rendering of Templates
11. Context Processors

**Assignment- #17:**

**Project- #2: Tuition Management System**

<b>Class #18</b>	<b>Working with Static Files</b>
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1. Include Static Files inside Template
2. Configuring static files
3. Creating Project with static resources
4. HTML, CSS, Images

**Assignment- #18:**

**Project- #2: Tuition Management System**

<b>Class #19</b>	<b>Introduction to Web</b>
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1. What is WEB?
2. Features of WEB?
3. How to work with HTML & HTML5
4. How to work with CSS & CSS3
5. How to work with JAVASCRIPT
6. How to work with Bootstrap
7. Creating Basic Web Pages

**Assignment- #19:**

**Project- #2: Tuition Management System**

<b>Class #20</b>	<b>Forms</b>
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1. Getting Data From the Request Object
2. A Simple Form-Handling Example
3. Making a Contact Form
4. Tying Form Objects Into Views

**Assignment- #20:**

**Project- #2: Tuition Management System**

<b>Class #21</b>	<b>Database Models with Django</b>
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1. About Database Models
2. Configuring Django for Database Access
3. About Django Models
4. Understanding Model Fields & Options
5. Creating A Django Model
6. Adding the App to Your Project
7. Adding Data to the Model
8. Understanding QuerySets
9. Applying Filters
10. Slicing QuerySets
11. Using Q Objects
12. Creating Forms from Models

**Assignment- #21:**

**Project- #2: Tuition Management System**

<b>Class #22</b>	<b>Using the Django Admin Interface</b>
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1. Using the Django Admin Interface
2. Enabling the Admin Interface
3. Creating an Admin User

**Assignment- #22:**

**Project- #2: Tuition Management System**

<b>Class #23</b>	<b>Access Control with Sessions and Users</b>
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1. Access Control with Sessions and Users
2. The Django Session Framework
3. Sessions in Views
4. Session Tuning
5. Installing Django User Authentication
6. Using Authentication in Views
7. Login and Logout
8. Building your Own Login/Logout Views
9. Authentication Decorators
10. Adding & Deactivating Users
11. Managing Permissions

**Assignment- #23:****Project- #2: Tuition Management System(End)**

<b>Class #24</b>	<b>Deploying Django Applications</b>
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1. What is deployment?
2. Creating a Project
3. Deploying Django App at product level
4. Install heroku CLI
5. Virtual Environment
6. Introduction to HEROKU
7. Deploy at HEROKU
8. \$pip freeze

**Assignment- #24: Exam**

<b>Bonus</b>	<b>From Universe It Institute</b>
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1. Django - File Uploading
2. Django - Sending E-mails
3. Django - Cookies Handling
4. Django - Caching
5. Django Middleware
6. Django Request and Response
7. Create CSV with Django
8. Django PDF
9. Resume Preparation for Job





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