

## Skill Hunt Presents Python for Programming and Data Science Course Outline

### Module 1: Python Programming.

**Objective:** By the end of this module, students will have established a solid understanding of Python programming, enabling them to confidently progress to more complex topics and projects.

**Content:**

- Beginner Programming concepts
- Data Structure
- Object Oriented Programming
- Project: to be decided

### Module 2: Web development Using Python

**Objective:** Upon completing this module students will be able to create, develop and deploy dynamic websites using python frameworks. This will also prepare them to be able to pursue a career in Web development.

**Content:**

- HTML, CSS, Bootstrap
- Introduction to JS
- Python framework (Django, Flask)
- Project: Building a live website

### Module 3: Data Science using Python

**Objective:** Students will become well equipped with the necessary professional and practical skills and tools to become a data scientist. And they will have enough knowledge to explore domains of machine learning and Artificial intelligence

**Content:**

- Data Science and its applications
- Data Cleaning
- Data Visualization (Pandas, matplotlib)
- Machine learning (Training, testing various models)
- Neural Network
- BI tools
- Project: Real life problem

**Outcome:**

Upon successful completion of this comprehensive course, students will emerge with a versatile skill set encompassing Python programming, web development, and data science. They will confidently navigate programming concepts, build dynamic websites using Python frameworks, and wield data analysis techniques to solve real-world challenges. Equipped with a portfolio showcasing their expertise with the help of the projects.

### Day 1: Python fundamentals

- Variables, data types, and type conversion
- Operators (arithmetic, comparison, logical)
- Control structures (if statements, loops)
- Practice problem

#### **Day 2: Functions:**

- Defining functions
- Parameters, arguments and returns
- Scope and namespaces
- Using built-in modules like Random and creating custom modules
- Practice problem

#### **Day 3: Data Structure:**

- Lists and Tuples
- Dictionary
- Intro to OOP

#### **Day 4: Intro to Web Development:**

- HTML
- CSS
- JavaScript

#### **Day 5: Webdev Continued:**

- JavaScript Continued
- Django/Flask

#### **Day 6: Introduction to Data Science:**

- Overview and Data science applications
- Data Cleaning and data prep
- Pandas and Numpy

#### **Day 7: Machine learning fundamentals:**

- Introduction to supervised and unsupervised learning
- regression, classification, clustering
- accuracy, precision, recall, F1-score, RMSE.
- Hands-on: Building your first machine learning model.

#### **Day 8: Introduction to Neural Networks**

- How to build a neural network from scratch
- How to build a neural network using python frameworks
- What is deep learning
- Hands-on: building a neural network to solve a problem

#### **Day 9: Introduction to Data Analytics**

- SQL Basics
- Building dashboard using powerBI/tableau
- Generating Report

#### **Day 10: Reviewing the full program.**

#### **Day 11: Special discussion on data Science**

**Day 12: Learning Freelancing**

# Skill Hunt

Leading Towards Development