



PYTHON SYLLABUS COPY

Engineered for skill enhancement.



PROGRAM HIGHLIGHTS

Accredited Certificates :

- ✓ Program approved ISO Certification

Internships :

- ✓ Industry-relevant opportunities provided-

Placement Assistance :

- ✓ Career guidance from industry experts-

Basic to Advanced Level Training :

- ✓ Learn from experienced AI professionals .

Live & Recorded Lectures :

- ✓ Flexible learning at your convenience .

Real-Time Projects :

- ✓ Hands-on minor & major projects



ABOUT US

- **OUR MISSION :**

Nxt Sync is a pioneering EdTech company committed to bridging the gap between theoretical learning and practical application. Our mission is to empower students with cutting-edge AI skills that enhance employability and prepare them for a tech-driven future.

- **OUR VISION--UPSKILL:** Empowering minds for the future.
- **INNOVATE:** Fostering creativity and breakthroughs .
- **EXCEL:** Preparing industry-ready professionals.



WHY PYTHON?

- ➤ High Demand in Data Science, AI, and Web Development
- Beginner-Friendly yet Powerful
- Extensive Libraries & Frameworks
- Career Opportunities in Software Development, Automation, and Machine Learning
- Scalability in Web Applications & Data Analytics
- Integration with AI, IoT, and Cloud Computing



LEARNING PATH

1. Introduction to Python Programming
2. Python Fundamentals
3. Object-Oriented Programming (OOP) in Python
4. Data Handling & File Management
5. Web Development with Python
6. Data Science & Machine Learning with Python
7. Automation & Scripting
8. Python for AI & IoT
9. Industry Applications & Case Studies
10. Capstone Projects & Research



DETAILED MODULE BREAKDOWN

Module 1: Introduction to Python Programming

- Overview of Python & Its Applications
- Installation & Setup
- Python IDEs (Jupyter Notebook, VS Code, PyCharm)

Module 2: Python Fundamentals

- Variables, Data Types & Operators
- Control Structures (Loops & Conditionals)
- Functions & Modular Programming
- Exception Handling & Debugging



Module 3: Object-Oriented Programming (OOP) in Python

- Classes & Objects
- Inheritance & Polymorphism
- Encapsulation & Abstraction
- Working with Modules & Packages

Module 4: Data Handling & File Management

- File Handling (Reading/Writing Files)
- Working with CSV, JSON & XML
- Database Connectivity (MySQL, SQLite)
- Pandas for Data Manipulation

Module 5: Web Development with Python

- Flask & Django Frameworks
- REST API Development
- Web Scraping with BeautifulSoup & Selenium
- Deployment & Hosting



Module 6: Data Science & Machine Learning with Python

- NumPy & Pandas for Data Analysis
- Data Visualization with Matplotlib & Seaborn
- Introduction to Machine Learning with Scikit-Learn
- TensorFlow & Keras Basics

Module 7: Automation & Scripting

- Web Scraping & Data Extraction
- Automating Repetitive Tasks
- GUI Development with Tkinter
- Working with APIs

Module 8: Python for AI & IoT

- Introduction to AI & Deep Learning
- IoT Applications using Python
- Raspberry Pi & Python Integration
- Real-Time Data Processing



Module 9: Industry Applications & Case Studies

- Python in FinTech & Healthcare
- Cybersecurity & Ethical Considerations
- Case Studies from Leading Tech Companies

Module 10: Capstone Projects & Industry Research

- Hands-on Real-Time Python Projects
- Industry Collaboration & Research-Based Projects
- Python Portfolio Building
- Final Project Presentation



ASSIGNMENT'S & ASSESSMENTS

- Weekly hands-on assignments
- Mid-term Python mini-projects
- Final capstone Python project
- Live presentations & discussions



TOOLS & FRAMEWORKS USED

Development Tools:

Python, Jupyter Notebook, PyCharm, VS Code

Libraries & Frameworks:

NumPy, Pandas, Matplotlib, Seaborn, Scikit-learn
Flask, Django, TensorFlow, Keras

Database & APIs:

SQLite, MySQL, Firebase

Requests, BeautifulSoup, Selenium

Automation & Scripting:

Tkinter, OpenCV, PyAutoGUI



RECOMMENDED READING

Python Programming:

- "Automate the Boring Stuff with Python" - Al Sweigart
- "Python Crash Course" - Eric Matthes
- "Fluent Python" - Luciano Ramalho
- "Introduction to Machine Learning with Python" - Andreas C. Muller



WHY CHOOSE NXTSYNC?

- Industry-Aligned Python Curriculum
- Hands-on Real-World Projects
- Expert Mentorship & Career Guidance
- Flexible Learning Schedule
- ISO-Certified Python Training Program

Start Your Python Programming Journey with NxtSync Today!



THANK YOU

