DATA SCIENCE
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 DATA SCIENCE?

- High Demand Across Industries
- Data-Driven Decision Making
- Lucrative Career Opportunities in ML, AI, and Big Data
- Transformational Insights from Raw Data
- Integration with Cloud & Business Intelligence
- Backbone of Digital Transformation

LEARNING PATH

- Introduction to Data Science
- Python for Data Science
- Data Analysis & Visualization
- Statistics & Probability
- Machine Learning (ML)
- Deep Learning & Neural Networks
- Natural Language Processing (NLP)
- Big Data & Cloud Integration
- Capstone Projects & Research

DETAILED MODULE BREAKDOWN

Module 1: Introduction to Data Science

- What is Data Science?
- Lifecycle of a Data Science Project
- Applications Across Industries
- Tools & Technologies Overview

Module 2: Python for Data Science

- Python Basics & Data Structures
- Numpy, Pandas, and Data Wrangling
- Data Cleaning & Preprocessing
- Working with APIs and Databases

Module 3: Data Analysis & Visualization

- Exploratory Data Analysis (EDA)
- Data Visualization using Matplotlib & Seaborn
- Interactive Dashboards with Plotly & Tableau
- Insights and Data Storytelling

Module 4: Statistics & Probability

- Descriptive & Inferential Statistics
- Probability Distributions
- Hypothesis Testing
- Correlation & Regression

Module 5: Machine Learning (ML)

- Supervised vs. Unsupervised Learning
- Classification & Regression Algorithms
- Model Evaluation & Tuning
- Scikit-Learn & ML Pipelines

Module 6: Deep Learning & Neural Networks

- Neural Network Architecture
- TensorFlow & Keras
- Image Recognition & CNNs
- Model Training & Optimization

Module 7: Natural Language Processing (NLP)

- Text Processing & Cleaning
- Sentiment Analysis & Text Classification
- Named Entity Recognition (NER)
- NLP with spaCy & NLTK

Module 8: Big Data & Cloud Integration

- Hadoop & Spark Basics
- Working with Big Data Pipelines
- Cloud Platforms: AWS, GCP, Azure
- Data Lakes & Warehousing

Module 9: Industry Applications & Case Studies

- Data Science in Healthcare, Finance, and Retail
- Real-Time Analytics in E-commerce
- Ethical AI & Data Governance
- Industry Case Studies

Module 10: Capstone Projects & Industry Research

- End-to-End Data Science Projects
- Collaborative Research-Based Projects
- Portfolio Building & Presentation
- Deployment & Performance Tracking

ASSIGNMENT'S &ASSESSMENTS

- Weekly coding challenges & assignments
- Mid-term mini-projects based on real-world datasets
- Final capstone project with end-to-end development
- Presentations, peer reviews, and expert feedback

TOOLS & FRAMEWORKS USED

Programming & Data Tools:
Python, Jupyter Notebook, Anaconda, R
Data Handling & Visualization:
Numpy, Pandas, Matplotlib, Seaborn, Plotly, Tableau
Machine Learning & AI:
Scikit-learn, TensorFlow, Keras, OpenCV
Big Data & Cloud:
Hadoop, Apache Spark, AWS, Google Cloud, Azure
NLP & Text Analytics:
spaCy, NLTK, TextBlob, Hugging Face Transformers

RECOMMENDED READING

Data Science:

- *"Python for Data Analysis" – Wes McKinney*
- *"Hands-On Machine Learning with Scikit-Learn, Keras, and TensorFlow" – Aurélien Géron*
- *"Deep Learning" – Ian Goodfellow, Yoshua Bengio, Aaron Courville*
- *"The Elements of Statistical Learning" – Trevor Hastie, Robert Tibshirani*

WHY CHOOSE NXTSYNC?

☑ Industry-Aligned Data Science Curriculum
☑ Hands-on Real-World Projects & Case Studies
☑ Expert Mentorship & Career Guidance
☑ Flexible Learning Schedule
☑ ISO-Certified Data Science Training Program

Start Your Digital Marketing Journey with NxtSync Today!

THANK YOU