



COURSE OUTLINE

 **Tech Bairn** 
Let's accelerate the future

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Machine Learning

The focus of this workshop is to give the student a hands-on experience on **Python Programming Principals** and **Machine Learning Algorithms** that are used in industry. Understanding the need of the students to start from basics, the programming will start from programming basics and go up to advanced Industry level concepts.

Understanding the need of the students to start from basics, the workshop will start from Python programming basics and go up to advanced B.E. level projects.

We know that in today's fast changing world everyone wants to remain updated about new technologies. So here we provide a certified course on Machine Learning. In this we help students to learn and to have a hands-on experiences in this new technology that will help them to get ready for industry. Understanding the need of the students to start from basic, the workshop will start from basic programming and go up to advanced industry level projects.

The workshop will be conducted on the basis of **Project Based Learning and Outcome Based Education**.

COURSE CONTENTS

Unit A - Python Scripting

Basics of Python Scripting

Basics of Python

- Interpreter Vs compiler
- Basic python syntax
- Data types conversion
- Native data types of Python - lists, dictionaries, tuples

Conditional Statements in Python

- Conditional execution
- If, for and while loops
- File handling and strings in python
 - Lab - Reading and writing of files with strings
 - Lab - Raw input with strings
 - Lab - Saving/Loading CSV and data files

Advanced scripting techniques in python

- a) List comprehensions in Python
 - Using functions in python(variable inputs also)
 - Use of one line for loops
 - Lab - Lambda, reduce, map functions

Modular programming in Python

- a) Functions in python
 - Lab - Creating user defined functions
 - Variable input with args and kwargs
- b) Exception Handling
 - Try/Except
 - Lab - Custom Exception method

Data visualization in python

- a) Lab - Visualization MATPLOTLIB

Understanding Data Analytics with Python

- Pandas basics
- Loading Datasets
- Filtering and Sorting data
- Grouping data
- Merge and Statistics

Data analytics with Python Pandas Library

- a) Project using Pandas
 - Project : Predicting Candy prices throughout year
 - Project : Weather prediction for different states

Unit B - Machine Learning

Understanding different Machine Learning models

Supervised vs Unsupervised Learning
Loading datasets
Processing data
Support vector machines

Machine Learning Using Python

Python SciKits
Lab : Supervised vs Unsupervised Learning
Lab : Loading datasets
Lab : Processing data
Lab : Support vector machines

IBM Cloud Fundamentals

Setting up the IBM Cloud
IBM Cloud Dashboard
IBM cloud services

IBM Watson Fundamentals

Understanding IBM Watson machine Learning architecture
Provisioning different services useful for ML application

Machine Learning Implementation on IBM Watson and Cloud Platform

Lab : Working with IBM Datasets
Lab: Building regression based models with IBM Watson services

Implementing case study on IBM Cloud Platform

Lab : Building Web interface for Machine Learning Model
Lab : Interfacing with IBM machine learning API
Lab : Calculating performance and accuracy

Project : Implementing SPSS simple predictive model on IBM Watson

ELIGIBILITY

Students of 2nd year, 3rd year and final year Electronics, Biomedical, Electronics and Telecommunication, Electronics and Electrical Engineering, Electrical Engineering, Computer Science Engineering, Pure Science undergraduates of Computer Science & Electronics and Diploma.

COURSE OUTCOMES

Participants will be introduced to the Python Programming.

Participants shall become ready to solve challenges from an industry based perspective.

The workshop includes hands-on labs resulting in exploration of concepts.

About Us

We are on a mission to build a better future both for the students and their beloved country.

Our Story

“Techie Bairns” was born out of the desire to reach out to students who couldn’t decide what to do next as a fresher. We have been endorsing in technologies in Bhubaneshwar since Our understanding with the students and nurturing their talent, backed with expertise is what makes us a vibrant team.

What’s with the name “Techie Bairns”

The word “Techie” is quite popular among everyone in and around us. “Bairn” whose colloquial translation is “kid”. We wanted it something to be a one which is catchy and hence here it is “TECHIE BAIRNS”.

Services offered by Techie Bairns

Techie bairns provide a number of programs for the students which helps them in enhancing their technical skills.

- **Training** : We provide training for the students on various courses, which are need of the hour. During this training the students will be able to learn and interact with our expert instructor, who will be there to explain topics in a great detail and at the same time help with your problems and at the same time provide personalized study as you progress through the course.
- **Workshop** : Techie Bairns organises certain workshops for the students in order for them to increase their understanding level. Theoretical knowledge is not always enough so it would be better if the students get hands on experience with the course they are pursuing.
- **Project help** : Apart from all these we also provide help in creating projects for the students.
- Research and Development