



TRAINING PROGRAMS

For

Data Science and AI

Training Programs

CodeForIndia has designed training programs to offer Data Science, AI and Machine Learning trainings to the students. Students gain exposure programming, to solving real world problems and various industry solution development activities. It aims to provide the students with the knowledge and skills required to perform in the industry.

About the Courses

The course sessions are structure to cover the basics to advanced Data Science and Machine Learning through either Python or R being the medium of scripting. The courses range from the foundational basics required, to advanced machine learning and industry-oriented business problem-solving. Through these courses one will learn the basics of data preparation and manipulation, data visualization, statistical analysis, machine learning, text analysis and deep learning. Every course is end-to-end and forms the pre-requisite for the next course in the series. The most engaging piece about the courses is the fact that they are designed to be a minimum of 70% hands-on and 30% theory based which gives the students the necessary exposure required to grow practically.

Continuous Learning and Development

At CodeForIndia, the classroom sessions are designed to foster a continuous learning and development environment. We conduct interactive quiz sessions, hackathons, team-based projects to keep the students engaged and excited to learn. We believe the next decade requires a spurt of learning in Data Science and Artificial Intelligence and we want to be one of the big movers in the development of students at an early age.

Further, we provide a list of curated courses that we believe would be the best starting point for students in the second to fourth year of college since it would help them build up a foundation to grow over the next few years. We also expand our course list to provide for new courses based on what the industry requires and are customizable to the needs of the students.

Title: Basics of Python (PY-001)

Prerequisites - This course is for beginners. No prior programming knowledge is required. Everything will be introduced in class.

Course Duration - 20 hours

Course Fee - INR 2500

Course Content:

Module 1: Get Ready - Install all required software and libraries and understand the Python IDE

Module 2: Data Types

- Number, String , List, Tuple, Dictionary, Set, Dataframes

Module 3: Operators

- Arithmetic Operators
- Compound Operators
- Comparison Operators
- Membership Operators
- Logical Operators
- Identity Operators

Module 4: Control Structure

- Conditional
- Loop
- Iterating Over Multiple Sequences
- Break & Continue

Module 5: Functions

- Function syntax
- Return value
- Return multiple values
- Passing argument values
- Default argument values
- Variable argument sequence

Module 6: Modules, Packages and Libraries

- Modules
- Packages
- Python Standard Library
- Install Third Party Packages
- Anaconda Packages

Title: Data Analytics with Python (PY-002)

Prerequisites - This course is for beginners to intermediate coders. It would be good to have completed the PY-001 course prior to this.

Course Duration - 40 hours

Course Fee - INR 5000

Course Content:

Module 1: Understanding data

- Introduction to python packages for data manipulation
- Importing and exporting data
- Importing datasets and understanding data
- Basics of analyzing the data

Module 2: Data Wrangling

- Dealing with missing values in python
- Data Formatting and conversions in python
- Data Wrangling
- Working with Pandas

Module 3: Exploratory Data Analysis

- Performing descriptive statistics with Python
- Correlations, Scatter-plots and charts with matplotlib in python
- Understanding data analysis with respect to various business scenarios

Module 4: Model Development for Analysis

- Linear Regression and Multiple Regression Models
- Model Evaluation Methods
- Model selection

Module 5: Data Visualization

- Understanding basic metrics and KPIs
- Dashboarding using Tableau (Provided Student License Available)

Title: ML with Python (PY-003)

Prerequisites - This course is for intermediate coders. It would be good to have completed the PY-001 and PY-002 course prior to this.

Course Duration - 50 hours

Course Fee - INR 6250

Course Content:

Module 1: Recap of basics of python and data preparation in python

- Reinstating the basics and data preparation techniques in python as a prerequisite to machine learning

Module 2: Introduction to Machine Learning with scikit-learn

- Introducing the machine learning flow and concepts
- Functions within scikit-learn
- Introduction to supervised and unsupervised machine learning

Module 3: Unsupervised Machine Learning

- Understanding unsupervised ML algorithms
- Introduction to clustering (k-means, SOM)
- Implementing clustering with real use cases

Module 4: Supervised Machine Learning

- Introduction to various supervised learning algorithms
- Understanding feature engineering and feature sets
- Understanding and implementing
 - Logistic Regression
 - Support Vector Machines
 - Decision Trees
 - Bayesian Networks
- Implementing the above algorithms with real use cases

Module 5: Evaluating machine learning models

- Understanding model selection and evaluation methods
- Optimize machine learning models

Title: Advanced ML with Python (PY-004)

Prerequisites - This course is for intermediate coders. It would be good to have completed the PY-001, PY-002 and PY-003 course prior to this.

Course Duration - 30 hours

Course Fee - INR 3750

Course Content:

Module 1: Advanced supervision Machine Learning in Python

- Understand and implement real world use cases using the following algorithms:
 - Random Forests
 - Neural Networks
 - Gradient Boosting
 - XGBoost

Module 2: Machine Learning on Text Data

- Overview of ML on text data
- Understanding doc2vec for machine learning on text data

Module 3: Deep Learning

- Introduction to deep learning with python
- Overview of tensorflow for deep learning and building a basic neural network

Title: Data Analytics with R (R-001)

Prerequisites - This course is for beginners. No prior programming knowledge is required. Basic knowledge of statistics would be good.

Course Duration - 30 hours

Course Fee - INR 3750

Course Content:

Module 1: Get Ready - Install all required software and libraries and understand the R Studio IDE

Module 2: Data Types and Operators in R

- Number, String , List, Tuple, Dictionary, Set, Dataframes
- Arithmetic Operators
- Compound Operators
- Comparison Operators
- Membership Operators
- Logical Operators
- Identity Operators

Module 3: Control Structure and Functions in R

- Conditional and Looping statements
- Functions in R
- Introduction and application of the 'apply family'

Module 4: Graphs in R

- Understanding different charts and graphs
- Working with box-plots, histograms, pie-charts and scatter-plots

Module 5: Working with strings

- Using gsub and stringr for advanced string operations

Title: Advanced Analytics with R (R-002)

Prerequisites - This course is for intermediate coders. It would be good to have completed the R-001 course prior to this.

Course Duration - 40 hours

Course Fee - INR 5000

Course Content:

Module 1: Data Preparation in R

- Understanding data types
- Understand how to deal with missing data
- Understanding data times and how to manipulate them
- Understand the working of apply functions

Module 2: Timeseries in R

- Understanding timeseries data in R
- How to perform basic forecasting in R
- Create timeseries plots in R

Module 3: Data Visualization in R

- Understanding different types of visualizations and their uses
- Using ggplot2 for data visualizations

Module 4: Statistical Analysis in R

- Understanding regression for statistical analysis
- Implement various different types of regression algorithms

Module 5: Basics of Text Mining and NLP

- Understanding Text Data
- Using RTextTools to mine text data and perform basic operations

Masterclass Sessions

Masterclass sessions are generally conducted by industry professionals where they walk you through a couple of hours of how to use technology to perform advanced operations with the help of real world business cases. These sessions are extremely useful and are generally 3-4-hour sessions with a lot of hands-on and exposure to industry practices.

Some of our Masterclass Sessions are listed below:

Introduction to Data Science

This masterclass will glide through the basics of data science and how it is influencing change with examples pertaining to real world problems. This will help students understand its importance through interactive hands on training.

Data Storytelling

This session walks through how to use data and the aspects of data storytelling and visualization when solving business problems and communicating with high level executives of the industry.

Data Science in Practice

This masterclass will glide through the various data science problems that are prevalent in the industry today and some of the ways in which they can be tackled with the help of data analytics and data science.

Business Models

Business is as important as the technical aspects of data. This masterclass is aimed at how to define a business through various parameters and how you would ideally convince customers and consumers of your product or service.

Business Strategy

This session talks about why it is important to strategize any business solution and how that can have a significant impact in the progress of any business.

Hackathons

Hackathons are team-based activities where students are put through the grind and made to solve industry-oriented problems with the skills they have acquired on the Data Science and Machine Learning front. They are generally one to two-day long events which see all the teams pitching their solutions at the end. This exposes the students to quick problem solving, logical thinking and presentation skills. At present we conduct the following two types of hackathons but are always expanding our portfolio to host new events.

Hawk-Eye: Data Driven Insights

Hawk-Eye is designed to provide students an opportunity to work as a team to extract insights and derive meaning from challenging pieces of data provided by businesses. This hackathon will engage students in logical thinking, test their coding skills and provide an opportunity to present in front of industry experts and obtain valuable feedback.

Bot-Builder: Intelligent Chatbots

Chatbots are the next big thing in the artificial intelligence space today because it is very interactive and makes mundane tasks easier to work with. But with it comes challenges in terms of language, grammar, voice and numerous others. This hackathon will push students to their limits by engaging them in an amazing experience which will see them create practically useful chatbots which can serve a business purpose. Students will have an opportunity to showcase their machine learning and ideation skills through this hackathon.

To know how CodeForIndia can add value to the skill development processes of the students of your college or for any customized solution, please feel free to get in touch with the undersigned.



Thanks & Regards

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