

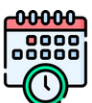



# INDUSTRIAL TRAINING PROGRAM ON DATA SCIENCE



 <b>DURATION</b> 1 month	 <b>START DATE</b> 6th December, 2024	 <b>END DATE</b> 4th January, 2025	 <b>LAST DATE OF REGISTRATION</b> 30th November, 2024
---	---	--	---

# ABOUT THE PROGRAM

Develop fundamental concepts in Probability and Statistical for data science. Explore supervised and unsupervised machine learning algorithms with applications using Python. Understand database management system and SQL. Explore data mining techniques and visualization with Power Bi. Develop conceptual framework of deep learning with various transfer learning architectures for solving complex problems.



**Learning Format**  
Faculty - Based  
Program



**1 month**  
Self - paced course



**Campus Immersion**  
Webel CoE, NITTR - K



**Certificate**  
NITTR , Webel CoE

## WHO WILL BENEFIT

- ✓ **IT Professionals, Research Analysts**
- ✓ **Data analysts, Data Engineers, Data Based Administrators**
- ✓ **Finance, HR, Marketing Professionals**
- ✓ **Academic researchers in statistics and analytics**
- ✓ **Faculty members specializing in data analytics**
- ✓ **Lecturers and instructors in IT and analytics**
- ✓ **University and college professors**
- ✓ **Under graduate & Post Graduate in Science & Technology**

# PROGRAM OUTCOME

The Industrial Training Program on Data Science aims to provide hands-on, practical skills essential for data science roles. Participants will gain an understanding of core data science concepts and workflows. They will learn techniques for data cleaning, preprocessing, and visualization. The program includes training in building and evaluating predictive models using machine learning algorithms. Participants will work with tools such as Python, R, and SQL for effective data manipulation and analysis. Finally, they will apply data science techniques to real-world industry problems, preparing them for roles like data analysts, data scientists, and machine learning engineers.



## CERTIFICATION BY



# LEARNER'S OUTCOME

- Overview of mathematical techniques and probability concept required for data science.
- Explore regression models with estimation methods for prediction with R programming.
- Understand the concept of supervised and unsupervised machine learning algorithms.
- Acquire practical experience in implementing ML models using Python.
- Develop proficiency in writing SQL queries to select, insert, update, and delete data. Utilize SQL for data manipulation, filtering, sorting, and advanced analytics. Construct complex SQL queries involving multiple joins, subqueries, and aggregate functions. Practice integrating SQL with data science tools and environments for analysis. Apply SQL skills to solve real-world data retrieval and analysis problems.
- Gain an understanding of the principles and importance of data visualization. Learn the basics of visual design, including choosing the right chart types, colour schemes, and layout to communicate data clearly and effectively.
- Leverage Power BI to its full potential, transforming raw data into insightful, visual stories that drive business intelligence. This course will empower participants with the skills needed to communicate complex data effectively to stakeholders at all levels of an organization.
- Grasp foundational theories and methodologies used in data mining. Learn techniques for pre-processing, cleaning, and transforming data for analysis. Apply common algorithms for classification, clustering, association analysis, and regression. Develop skills to interpret the output of data mining models and evaluate their effectiveness.
- Concept of deep learning including convolution filters, max-pooling layers, batch normalization, optimizers and FCNN etc.
- Experimenting on benchmark datasets using different Python libraries.

# TOPICS TO COVER

Day	10:30 AM -12:00 PM	12:00 PM- 1:30 PM	L U N C H	2:30 PM -4:00 PM	4:00 PM -5:30 PM
Day 1	Inauguration + Pre training activity	Overview of Data Science & Understanding Data		Getting Started with Data Science	Self-learning, Activity Quiz (Assessment 01)
Day 2	Fundamental of Programming (Python, R, C++)	Fundamental of Programming (Python, R, C++)		Fundamental of Programming (Python, R, C++)	Self-learning, Activity Quiz/ (Assessment 02)
Day 3	Foundation of Mathematics for Data Science, Basic of Statistics	Algebraic Equation & Linear Algebra, Matrix and Optimization Techniques		Probability and Baye's Algorithm, Correlation and Regression Models	Self-learning, Activity Quiz (Assessment 03)
Day 4	Introduction to Database Management & RDBMS	Data Manipulation		Database Management with MySQL	Self-learning, Activity Quiz (Assessment 04)
Day 5	Data Science with Python	Data Science with Python		Data Science with R	Self-learning, Activity Quiz (Assessment 05)
Day 6	Data Mining	Big data - Hadoop		Data Visualisation with Power Bi	Self-learning, Activity Quiz (Assessment 06)
Day 7	Support Vector Machine With Applications	Decision Trees & Random Forest Algorithms (Theory + Practical)		Artificial neural network (ANN)	Self-learning, Activity Quiz (Assessment 07)
Day 8	Introduction to Deep Learning	Generative Adversarial Networks (GAN)		Natural Language Processing (NLP)	Self-learning, Activity Quiz (Assessment 08)
Day 9	Artificial Neural Network (Theory + Practical)	K-means, Fuzzy C-means (Theory + Practical)		Revision and Doubt Clearing Session	Self-learning, Activity Quiz (Assessment 09)
Day 10	Case Discussion - Sales & Marketing	Case Discussion - BFSI		Wrap-Up session / Feedback	Quiz (Assessment 10) Valediction & Certification

# COURSE ADVISORS / FACULTY

## PATRONS



**Shri Sanjay Kumar Das**  
**Managing Director**

West Bengal Electronics  
Industry Development  
Corporation Limited



**Prof. Debi Prasad Mishra**  
**Director**

NITTTR Kolkata

## LEADING FACULTY



**Prof. Chandan Chakraborty**  
**Dean & Professor, CSE NITTTR Kolkata**

Prof. Chandan Chakraborty is currently a professor in the Dept. of Computer Science & Engineering at National Institute of Technical Teachers' Training & Research (NITTTR) Kolkata, West Bengal, India. His academic background includes Graduation (Statistics Hons.) from Narendrapur Ramakrishna Mission Residential College under University of Calcutta, Masters (Applied Statistics & Informatics) from IIT Bombay and PhD from IIT Kharagpur.



**Jayasree Ghosh**  
**AVP – Process Transformation**

Jayasree have 12+ years of experience as a Data consultant with overlapping experience of 8 years in Power BI in Dashboard creations, integrating with other tools, embedding in cloud. Below are the list of functionalities worked on –DAX , M Language/Power Query, Embedding Power BI in Cloud.

Connecting JIRA data source through OData Feed and other sources, Relationships, Data Modelling, Measures.



**Dr. Kinsuk Giri**  
**Assistant Professor in the Dept. of Computer Science & Engineering at NITTTR, Kolkata.**

Dr. Kinsuk Giri is currently an Assistant Professor in the Dept. of Computer Science & Engineering at National Institute of Technical Teachers' Training and Research (NITTTR), Kolkata. His research interests include Machine Learning, Computational Geometry, Parallel Computing, Computational Astrophysics etc. He joined NITTTR, Kolkata in the mid of 2015. Before that, he worked as a post-doctoral fellow at National Tsing Hua University, Taiwan from 2013 to 2015. He received his Ph.D. (Science) from the S. N. Bose National Centre for Basic Sciences (Degree awarded from Jadavpur University), and both M.Sc. (Mathematics) and B.Sc. (Mathematics) from Visva-Bharati, a central university founded by Rabindranath Tagore in Santiniketan.

## ABOUT THE CENTRE OF EXCELLENCE : INDUSTRY 4.0



An initiative of the Government of West Bengal, the Centre of Excellence in Industry 4.0 is being developed by Webel, Fujisoft Inc, and Vara Technology. The CoE brings together graduate students, professionals, start-ups, corporates, technology providers and government to radically transform skill development as well foster innovation. It is located in Rajarhat, Kolkata, India.

### A Unique Interface

The CoE is being set up as a triangulation of leading industry organizations, academia and technology providers to:

- Create relevant skills for Industry 4.0
- Help transform organizations to meet the new challenges in today's rapidly changing world
- Connect MSMEs to a global partner network
- Work with start-ups to turn ideas into businesses

The CoE will work closely with the government, which is supporting it with infrastructure and funding, to create a unique best-in-class facility. This is one of the first platforms in the Eastern part of India, which brings together the technologies that define the Fourth Industrial Revolution.

## ABOUT NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH, KOLKATA

National Institute of Technical Teachers' Training & Research (NITTTR), Kolkata was established in 1965 as Technical Teachers' Training Institute (TTTI), Calcutta. This was the first among four such institutes (other three being at Chandigarh, Bhopal & Chennai) established by the Ministry of Education, Govt. of India as fully centrally funded autonomous institutions for providing pre & in-service training to the teachers and staff of Degree and Diploma level training institutions and also for conducting various activities related to quality improvement of the technical education system of the country. The Govt of India, in 2003, accorded national status to this institute, (along with the three sister institutes) in recognition of the contribution of these institutes for the expert service rendered for overall improvement of quality of Technical Education System.

The focal activities of the institute are

i) Education & Short-term Training, (ii) Curriculum Development, (iii) Learning Resources Development, (iv) Research & Development and (v) Extension Services & Consultancy. AICTE has recognized the Short-term training programmes conducted by the Institute for consideration for the purpose of movement to higher grades under the Career Advancement Scheme (CAS). The Institute is also offering four (4), AICTE approved, two year (four semester), M.tech programme in " Artificial Intelligence and Machine Learning", Green Manufacturing , Mechatronics Engineering and Structural Engineering . The institute has recently received the status of "Deemed University" by UGC, Govt. of India.



Some of the notable national level projects in which the Institute is associated are serving as Nodal agency to centrally sponsored Community Polytechnic Scheme; designing & conducting AICTE sponsored "Induction training Programme" for fresh teachers of engineering colleges and polytechnics; facilitating implementation of Centrally sponsored scheme for Integrating Persons with Disabilities (PWD) in the Mainstream of Technical & Vocational Education etc. The Institute has highly qualified & experienced faculty members and excellent infrastructural support in the form of well-equipped laboratories and other resources. The institute has established extension centers at Guwahati and Bhubaneswar for reaching out to its clients. The new mandate of the Institute has extended its clientele catchment area outside the country encompassing the Technical & Vocational Institutions of particularly SAARC & ASEAN countries.

## ELIGIBILITY

Graduates and Post-Graduates with any stream can apply for the course

## HOW TO ENROLL FOR THE COURSE

### ✓ REGISTRATION

<https://bit.ly/industrialtrainingds>



## COURSE FEES

10,000 INR Inclusive Tax (Per Person)

Organizations / Groups can avail discounts on block / group enrollments.



WEBEL FUJISOFT VARA CoE, Plot No. 2222  
Action Area IIIA Jothbhim, Baligari,  
Newtown, Kolkata, West Bengal-700156

☎ 1800 8900 822

✉ admissions@fujisoftvara.in

🌐 www.webelfujisoftvara.com

NITTTR, Kolkata, Block-FC, Sector-III,  
Salt Lake City, Kolkata - 700106

☎ (033) 6625 1919 (Extn - 904/965)

✉ academic@nitttrkol.ac.in

🌐 <http://www.nitttrkol.ac.in>