FACILITIES:

Library
The Library has well rounded collection of books and Periodicals/ Journals. These include text books, foundation books and books for subsidiary readings. Institute has access to digital library resources also.

Labs
There are many labs under different divisions for example: iOS MAC Lab, Embedded Systems Lab, VLSI Design Lab, Telemedicine, Cyber Security, Advance Network Engineering Lab, FOSS Lab, Multilingual Lab, Multi-Media & Web design, IT For Masses Lab, Workshops etc. These Labs are equipped with PC's, Servers (i5 / i7 Latest Configuration), IT hardware, Software and each system is connected with LAN. Class rooms are equipped with LCD projector.

Auditorium & Conference Room
The Centre has an AC Auditorium with capacity to accommodate 100+ persons. The auditorium is fitted with audio-visual equipment. The conference room has a capacity to accommodate 30 persons.

Sponsored by:

Department of Science & Technology, Govt. of India, New Delhi

Organised by:

Centre for Development of Advanced Computing (C-DAC), A-34, Phase VIII, Industrial Area, Mohali, Punjab, India

ABOUT C-DAC

Centre for Development of Advanced Computing (C-DAC) is the premier R&D organization of the Ministry of Electronics and Information Technology (MeitY) for carrying out R&D in IT, Electronics and associated areas. C-DAC has today emerged as a premier R&D organization in IT&E (Information Technologies and Electronics) in the country working on strengthening national technological capabilities in the context of global developments in the field and responding to change in the market need in selected foundation areas.

As an institution for high-end Research and Development (R&D), C-DAC has been at the forefront of the Information Technology (IT) revolution, constantly building capacities in emerging/ enabling technologies and innovating and leveraging its expertise, caliber, skill sets to develop and deploy IT products and solutions for different sectors of the economy, as per the mandate of its parent, the Ministry of Electronics and Information Technology, Ministry of Communications and Information Technology, Government of India and other stakeholders including funding agencies, collaborators, users and the market-place.

C-DAC, Mohali operates from its own impressive building having a covered area of approximately 4300 sq. mts. The centre is engaged in design and deployment of world class IT and electronics solutions in the following domains:

- Health Informatics
- Multilingual Technologies
- Artificial Intelligence
- Software Technologies
- Cyber Forensics and Security
- Quantum Computing
- Augmented & Virtual Reality

Centre continues to play a leading role in human resource development and training in Information Technology (IT) & Electronics sector in the northern region. From year 2020, C-DAC Mohali is also conducting M.Tech in CSE (Artificial Intelligence), M.Tech in CSE (Cyber Security) and M.Tech in Embedded Systems. Short term value added courses and diploma are designed for knowledge based skill development. It also offers courses for foreign participants, sponsored by MEA under ITEC/SCAAP programs. The Centre is certified for ISO 9001:2015 standard.

BIG DATA MANAGEMENT & COMPREHENSIVE ANALYSIS

for
Scientists and Technologists working in Government Sector

09th Oct – 13th Oct, 2023

विज्ञान एवं प्रौद्योगिकी मंत्रालय
MINISTRY OF SCIENCE AND TECHNOLOGY
सत्यमेव जयते

G20 भारत 2023 INDIA

Sponsored by

Department of Science & Technology, Govt. of India, New Delhi

Organised by

Centre for Development of Advanced Computing (C-DAC), A-34, Phase VIII, Industrial Area, Mohali, Punjab, India

BIG DATA MANAGEMENT & COMPREHENSIVE ANALYSIS

COURSE BRIEF
With the growth and advancement in technological, cultural, financial and social engineering trades, data generated from individuals/organizational entity is at a very fast pace and accordingly, drive the economic world and businesses. The Governments & business entities process these data for the betterment of mankind and to develop technically advanced solutions for the next generation. Ever increase of the usage of social engineering platforms globally by people, gives rise in the connected world but somehow increase the risk through compromising security and individual's privacy.

Data gets generated from various diverse resources from internal to external as well from primary and secondary sources, including wearable devices, scientific instruments, scientific experimentation, satellites, mobiles, individual person etc. There is an extensive demand to develop the tools and techniques for analysing a large amount of data. The results through analysing such data provide support in decision making for the benefit of masses in technical, societal and economic terms.

To address the challenges in the processing of large amount of data sets, this programme is designed for imparting training to Scientists and Technologist on the concepts of Big Data Management & Comprehensive Analysis.

COURSE OBJECTIVE
- To present approaches for Data analysis and overview of tools & techniques facilitating Data Analytics on huge datasets.
- To apprise the participants about the Big Data Concepts & its processing, Data visualisation, application of big data analytics technologies for different usage scenarios.
- To provide a structured forum for peer to peer interaction and knowledge sharing among the scientific community for better networking and synergy.

METHODOLOGY
THE content will be delivered through lectures/ presentations as well as interactive sessions. Apart from C-DAC faculty, distinguished Guest speakers would include eminent experts from Academia, Scientific community, and Government Organizations. A local field visit would also be organized and feedback session will be part of the course methodology.

TARGET GROUP
The programme has been specially designed for Scientists/ Technologists (Group-A only) working in Departments/ Ministries of Central Govt. Public Sector Units, Govt. Research Laboratories and Scientists/ Technologists working in State Governments. The Scientists and Academicians (only Ph.D./ M.Tech Degree holders) from Central and State Universities, Educational Institutions & Colleges, engaged in R&D in any discipline of Science & Technology are also eligible.
- Group 'A' officer serving in Govt. organization.
- The upper age limit is 58 years on July 1, 2023.
- Number of years of service as Group 'A' scientist - 05 years and above.
- The nominations shall be accepted as per DST guidelines.

VENUE OF TRAINING
The one-week residential training programme is planned to take place at the Centre for Development of Advanced Computing (C-DAC) in Mohali, Punjab. The program is sponsored by the Department of Science & Technology, Government of India, New Delhi.

BOARDING AND LODGING
- Participants will be provided with Hotel or Guest House accommodation during the training period.
- Participants are responsible for any overstay expenses incurred before or after the training period, as well as any costs associated with their personal visits.

BATCH SIZE
The programme has a limited intake capacity of 25 participants, and their admission will be based on the criteria outlined in the Training Guidelines set by the Department of Science and Technology (DST), Government of India.

FEE / SPONSORSHIP
The programme is sponsored by the Department of Science and Technology (Government of India), and participants will not receive any Travel Allowance (TA) or Daily Allowance (DA). However, all expenses related to the training program, including Fees, Food, Accommodation, and Local Transportation, will be covered by the DST, GoI, except for the costs of the participants' travel from their place of duty to C-DAC, which will be borne by the sponsoring organizations.

Training Session Plan
Four Sessions per day 09th Oct – 13th Oct, 2023

DAY 1
Introduction to Data & Management Processes: Basic insight of Data towards knowledge through information, Data management processes, Challenges for maintaining large datasets.
Data Management Applications: Data management applications in Agriculture, Data management & Analysis process for image & stream data.

DAY 2
Data Analysis Processes: Statistical approach towards Data Analysis, Tools & techniques for Data Analysis
Approach for Data Analysis: Various approaches for Data Analysis including predictive or descriptive approaches, Exploratory or Inferential approaches and Casual or Mechanistic approaches.

DAY 3
Data Processing Techniques: Data Mining and various techniques and algorithms for data mining, Machine learning techniques for Data analysis.
Probabilistic Graph Models for data processing, Demand forecasting through in-depth analysis, Introduction to Data Management techniques for Data Lake.

DAY 4
Big Data Concepts: Big Data and it's analytical framework, Introduction to Hadoop, HDFS, Map-Reduce process for Data processing, Associative technologies in Big data (Hive, Pig,HBase etc.).
Data Visualization: Data presentation techniques, Framework for big data visualization.

DAY 5
Big Data Processing: Big Data machine learning models & techniques, Machine learning for pattern recognition.
Case Studies: Analytical approach for process development in human activity detection, Approach for analysis process in drug discovery.

Internal Resource Persons w.r.t training:
1. Sh. VK Sharma (Centre Head)
2. Sh. Ajay Mudgil (Joint Director & Nodal Officer)
3. Smt. Sonia Dosanjh (Joint Director)
4. Sh. Sanjay Madan (Training Coordinator & Joint Director)
5. Dr. Manjit Kaur (Joint Director & Program Coordinator)
6. Smt. Amritpal Kaur (Senior Technical Officer)
7. Ms Gulbadan Khehra (Project Engineer)

Eminent speakers from Academia, Scientific community, and Government Organizations & Industry may be imparting knowledge by sharing their experiences as per their availability.

How to Apply
The nominated officers should register and apply online for this training programme at the DST's training portal i.e *https://training.dst.gov.in* and follow the instructions/ steps contained therein.

For any further details, applicants can also contact:
Ajay Mudgil (Nodal Officer-DST Trainings),
C-DAC, A-34, Industrial area, phase-8, Mohali-160071
Ph. No- 0172-6619000, 2237052-55
eMail : ajay@cdac.in, dst-trg@cdac.in