

**Department of Statistics
Assam University, Silchar
and
SQC & OR Division
Indian Statistical Institute
Kolkata**

Jointly Organize

**Five-day Faculty
Development Program
on
Data Analytics and
Decision Making**

November 21-25, 2022



About Assam University

Assam University (established by an act of parliament in 1989) came into existence in January 21, 1994. It has two campuses – Silchar and Diphu. At present, there are 16 schools and 42 Departments in the university. In 28 years of its existence, the university has established itself as an important institution of higher education.

About the Department of Statistics

The department of Statistics, under the Albert Einstein School of Physical Sciences was established in 2014. The mission of the department is to bring about development of the researchers in the university by providing training in data analysis. Alongside its normal academic programmes, the department aims at organizing workshops on Statistical tools, techniques and software for the benefit of research scholars.

About Indian Statistical Institute

Indian Statistical Institute (ISI) is a premier institute involved in carrying out research, teaching, training and consultancy in Statistics, Mathematics, Social Sciences, Computer and Communication, Biological Sciences, Physics and Earth Sciences and Statistical Quality Control & Operation Research. Prof. P. C. Mahalanobis, the founder of Indian Statistical Institute, rightly deserves the credit for overwhelming development of “Statistics” in India in general and the institute in particular. The institute has been declared by the Government of India as an institution of national importance by an act of the Parliament in 1959.

SQC-OR Division of Indian Statistical Institute

The Statistical Quality Control (SQC) and Operations Research (OR) Division was set up in 1953 following the visit of Walter A. Shewhart (the originator of SQC) in 1947-48. The objective of the Division is to propagate the use of SQC & OR for improving quality, enhancing productivity, reducing manufacturing cost and losses in industries.

Chief Patron:

Prof. Rajive Mohon Panth, Vice Chancellor, Assam University

Patron:

Prof. Sanghamitra Bandyopadhyay, Director, ISI, Kolkata

Workshop Coordinator:

Prof. Prasun Das, Indian Statistical Institute, Kolkata

Prof. Dibyojyoti Bhattacharjee, Dept. of Statistics, AUS

Members of the Organizing Committee:

Prof. Abhijit Gupta, Indian Statistical Institute, Kolkata

Prof. Nandini Das, Indian Statistical Institute, Kolkata

Dr. Rama Shanker, Head, Dept. of Statistics, Assam University

Dr. Tanusree Deb Roy, Dept. of Statistics, Assam University

Dr. Jonali Gogoi, Dept. of Statistics, Assam University

Dr. Vivek Verma, Dept. of Statistics, Assam University

IMPORTANT DATES

Registration Closes: 15th November, 2022

Information to Participants: On or before 17th November, 2022

Workshop Days: 21- 25 November, 2022

Scope and Objective of the Workshop

Quality data is, simply put, data that helps in decision making. Data has a number of quality characteristics: Accuracy, Completeness, Consistency, Timeliness, Uniqueness, Validity etc. Data must be properly labeled and defined to be meaningful. That is to say, the data describing the data - metadata- must be accurate. Quality data does not necessarily mean perfect data. Broadly, quality data is “fit for use”; it can be trusted and it is suitable for its intended purpose.

Assessing whether a specific set of data meets the criteria requires answering several questions: What data is being used, who is using it, how are they using it, when are they using it, and why? This becomes more complex as organizations begin sharing data across lines of business, departments, and other entities.

The primary function of data analysis is reaching to conclusions that enable decision making and forward planning after meaningful data analytics. One of the hallmarks of a good researcher is the ability to reach to conclusions that are data driven. A researcher is expected to have the clarity of goals, use all the information available, choose appropriate methodology, weigh pros and cons and take decisions.

We shall discuss how Quality Data together with statistical insights helps in Decision making in research and several other domains in a so faster and efficient way.

Sub-themes of the workshop is not limited to

- ❑ **Data Quality** : Type of Data, Structured/Unstructured Data, BIG Data, Quality of Data, Principles of Data Science
- ❑ **Data Pre-Processing: Missing Data-** Missing value replenishment, Merging data files, Appending the data files, Transformation or normalization and Random Sampling
- ❑ **Data Visualization (Exploratory Analytics):** Frequency Distribution, Histogram, Box Plot, Dot Plot, Stem-and-Leaf Plot, Bar Chart, Column Chart, Stack Column Chart, Line Chart, Time Series Plot, Parallel Coordinates, Pie Chart, Area Chart, Scatter Plot, Scatter plot Matrix, Bubble Chart, Radar Plot, Pareto Chart, Funnel Chart, Surface Chart, Geographical Mapping, Tree Diagram / Dendogram, Chernoff Faces, Stick Figures, Heat Map, Mosaic Plot, Sieve Plot, Silhouette Plot
- ❑ **Predictive Analytics:** Special Regression Models-Principal Component, Partial Least Squares, Binary logistics, Ordinal Logistics
- ❑ **Decision Making:** Normality Test, Tests of Hypothesis, ANOVA, Designs of Experiment, Response Surface Methodology, Multi Criteria Decision Making, Desirability Optimization, Evolutionary Optimization
- ❑ **Time Series Analysis:** Components of time series, Choosing of appropriate ARIMA model, Time series Models with explanatory variables, Panel data regression
- ❑ **Simulation:** Simulation from Discrete, Continuous and multivariate distribution

Workshop Application Procedure

Who can Apply

Teachers, professionals and research scholars and PG students are invited to participate in the workshop. For participation one has to fill in the registration form of the workshop which is provided in the link below on or before 15 November, 2022.

<https://forms.gle/GvKyiP4mhRUwXtUk7>

The webinar shall be conducted in Physical Mode in the Seminar Hall of the Department of Statistics. All communications to the participants shall be through e-mail.

Submission of Fees

Payment shall be made through Net banking or any other e-mode such as Google pay/Phone Pe/ UPI/Paytm to the following account:

| | |
|---------------------|------------------------------------|
| Bank Name | : UCO Bank |
| Bank Account No. | : 20050110033890 |
| Account holder name | : HEAD DEPT OF STATISTICS |
| IFSC Code | : UCBA0002005 |
| Branch | : ASSAM UNIVERSITY BRANCH, SILCHAR |

****NOTE: PLEASE MENTION YOUR NAME IN THE NARRATION WHILE DOING THE PAYMENT****

Registration Fees for Participants

Teachers/Professionals: **Rs. 2000/-**

Research Scholars & Others: **Rs. 1500/-**

Students: **Rs. 1000/-**

The Registration Fee is non–refundable. Transaction details have to be provided at the time of registration. All registered participants shall be provided entry to all sessions, Lunch, snacks, workshop kit and certificate.

Attendance in all sessions are mandatory.