आज़ादी का अमृत महोत्सव

भाकृअनुप ICAR

भाचाअनुसं IIRR

ONLINE TRAINING PROGRAMME

ON

ADVANCED STATISTICAL TECHNIQUES FOR DATA ANALYSIS USING R

(03 - 15 January, 2022)

Patron

Dr. R M Sundaram, Director ICAR - IIRR

Co-Patron

Dr. P Muthuraman, Head TTT, ICAR - IIRR

Course Director

Dr. Santosha Rathod

Course Co-Directors

Dr. S Arun Kumar

Dr. B Nirmala

Dr. R Mahender Kumar

Organised by

ICAR-Indian Institute of Rice Research, Hyderabad - 500030

In association with

Society for Advancement of Rice Research

BACKGROUND

Statistical data modeling and data analysis plays an important role in agricultural and allied research for analyzing large number of data sets generated through biological field /lab experiments, surveys and published reports. Each technique has its special assumptions and particular area of application. With advancement in computational tools and techniques, this area has become most important for the current needs. R is freely available and regularly updated by the global R community with advanced computational methods. This training is designed to undertake hands-on practical sessions for each of the theory classes, so that participant can analyze their data sets using R anytime.

OBJECTIVES

The proposed training programme aims at; Educating the participants about various existing and advanced statistical techniques for data analysis with hands-on experience in R software.

COURSE CONTENT

The course has been structured in a series of modules with classroom lectures and practical hands-on demonstrations in R software package.

MODULE 1 : R SOFTWARE PACKAGE

- Introduction to R
- Data manipulation using R tidyverse
- Data Visualization through ggplot2
- Basic Statistics in R

MODULE 2: REGRESSION AND MULTIVARIATE ANALYSIS

- Regression Analysis
- Nonlinear Growth Models
- Logit, Probit and Logistic Regression
- LASSO Regression
- Data classification and data reduction techniques (Custer analysis, PCA, Factor Analysis, Discriminant Function Analysis)

MODULE 3: DESIGN OF EXPERIMENTS

- Analysis of complete block design of experiments
- Analysis of incomplete block design of experiments (IBD, Lattice designs, Augmented design)

- Response Surface Design
- Analysis of multi-environment experimental data

MODULE 4: STATISTICAL GENETICS AND GENOMIC DATA ANALYSIS

- Mating designs and Path analysis
- Stability analysis and GEI/ AMMI analysis
- Statistical models for Genomic Selection in Breeding
- QTL data analysis and GWAS
- Transcriptomic data analysis

MODULE 5: TIME SERIES DATA ANALYSIS

- Trend and Time Series Analysis
- Spatiotemporal time series modeling and Forecasting
- ARCH Family of Models
- Count time series models
- Machine Learning Techniques in TS (ANN / SVR / Hybrid)

MODULE 6: OTHER USEFUL TECHNIQUES

- Image / data classification using ML & DL models
- Analysis of Spectroscopic data
- Crop yield forecast using AI Techniques
- Non Parametric Tests
- Scientific Methods of Field Experimentation

PRE-TRAINING SESSION

A pre-training session on how to install R and RStudio along with required packages will be conducted on 01.01.2022 at 02.00 PM – 04.00 PM.

ABOUT ICAR-IIRR

DRR was upgraded to national institute status as 'Indian Institute of Rice Research (https://www.icar-iirr.org/) from 2014. Currently there are 45 funded & more than 100 voluntary centers where trials were conducted in each discipline. IIRR is involved in basic and strategic research for enhancing rice productivity in various ecosystems; coordination of multi-location testing to develop location specific varieties and technologies, dissemination of technologies, capacity building and establishing linkages.

ABOUT SARR

The Society for Advancement of Rice Research (http://sarr.co.in/) is a registered society for researchers, research manager's extension personnel, institutions, development agencies, trade and industry who practice and promote activities for the advancement of rice science and development.

WHO CAN APPLY

- Working professionals in agricultural and allied sectors
- Students /research scholars

REGISTRATION FEE

- Working professionals in agricultural and allied sectors: 750 /-
- Students/Research Scholars/Project staffs: 500 /-
- For SARR Members: 250/-

BANK ACCOUNT DETAILS TO PAY THE COURSE FEE

Name of the account holder :
Society for Advancement of Rice Research, Hyderabad.
A.C.No.52114977800,
SBI, Budvel branch, IFSC code: SBIN0020378

REGISTRATION LINK

https://forms.gle/8H45BuUeMHsYbPrZ9

Last date of REGISTRATION
December 25 — 2021 —

For Registration related queries contact

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