

About the College

Ram Lal Anand College is a University of Delhi Maintained Institution founded in the year 1964 by Late Shri Ram Lal Anand, a senior advocate in the Supreme Court of India. The college is located in the picturesque surroundings against the backdrop of the Aravali ranges in the neighbourhood of the South Campus of the University of Delhi and several other educational institutions. The college has excellent infrastructure, with state of the art Laboratories, Seminar room, Amphitheatre, Library, Playground and Cafeteria. The campus is Wi-Fi enabled. Being a multi-disciplinary, co-educational institution it has approximately 2100 students pursuing 14 undergraduate courses in Arts, Commerce and Science streams. The college boasts of a highly learned and committed teaching faculty of about 80 teachers. Apart from their traditional role of disseminating knowledge, the teachers inspire and guide the students to manage different activities such as seminars, workshops, debates, theatre, cultural activities including classical music and dance programmes.

About StepUp Analytics

StepUp Analytics is a community of creative, high energy data science and analytics professionals and data enthusiasts. It aims at bringing together influencers and learners from industry to augment knowledge, and to provide as many resources as possible for analytics and data science learning.

Objectives of Course

In this course, you will master the basics of beautiful open source R language, with over 2.5 million users worldwide. R is rapidly becoming the leading programming language in statistics, data science, and Actuarial Science. Unlike SAS or Matlab, you can freely install, use, update, clone, modify, redistribute and resell R. It is a powerful scripting language. You will also learn about most important and widely used tools across the industry- advance Excel and SQL. With the knowledge gained in this course, you will be ready to undertake your first very own data analysis. The course covers practical issues in statistical computing, Analytics, Machine Learning, and Actuarial Science. This course will help you build a strong foundation for your next job in Data Science or Actuarial Science.

Instructional Methods

- Instructor Led Training
- Audience Participation/Hands-on Exercises
- Assignments or Problem Solving Strategies
- Opportunity to learn one of the popular and applicable programming language.
- Small Groups & Individual Practice

Target Audience

UG students, PG students and Research Scholars

Registration Fee: Rs 5000/-

Contact Details

Programme Coordinator: Dr. Seema Gupta
Associate Professor, Department of Statistics

Contact no. 9891664133

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For online registration [Click Here](#)

Important Notes

The fee will include the Participation fee, Certificate and Refreshment.

Participants are requested to submit registration form along with the fee in the form of NEFT/DD drawn in favour of "**Principal, Ram Lal Anand College**" payable at New Delhi on or before **March 07 2019, UBI, Bank SSF A/c No. 403502010005997 IFSC UBIN0540358. NO SPOT REGISTRATION**

Certificate Course on SQL Advanced Excel & R Programming March 9th-April 13th, 2019



Organised by
Ram Lal Anand College

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Day - 1 (09.3.2019) SQL

- Getting Started and Selecting & Retrieving Data with SQL
- Course Introduction
- Data Models, Part 1: Thinking About Your Data, Part 2: The Evolution of Data Models, Part 3: Relational vs. Transactional Models
- CREATE Table, SELECT, INSERT, UPDATE and DELETE Statement
- Types of Relationships
- Mapping Entities to Tables
- Relational Model Concepts
- Basics and Advanced Filtering with SQL
- Using Wildcards in SQL
- Sorting with ORDER BY
- Math Operations and Aggregate Functions
- Using String Patterns, Ranges

Day - 2 (10.3.2019) SQL

- Sorting and Grouping Result Sets
- Relational Model Constraints basic and Advance
- Using Subqueries, Subquery Best Practices and Considerations
- Joining Tables: An Introduction
- Working with Text Strings
- Working with Date and Time Strings
- Date and Time Strings Examples
- Case Statements

Day - 3 (16.3.2019) SQL and Excel

- Data Governance and Profiling
- Using SQL for Data Science, Aggregate functions
- Introduction to Excel, Absolute Referencing
- LOOKUP Functions basic and advance
- PivotTables basic and advance
- Logical Functions basic and advance
- Statistical Functions

Day - 4 (17.3.2019) Excel

- Chart Data Techniques
- Date/Time Functions
- Text Functions
- Validations, Summarising Data
- Advanced Filters

- Advanced Sorting, Hyper / Data Linking
- Math & Trigonometry Functions, Outlining
- Using Auditing Tools, Custom Views
- Exercise

Day - 5 (30.3.2019) R Programming

- **Data structure**
- Vector: numeric, character, logical
- Factor, Matrix, Data frame, List
- **Operation**
- Mathematical, Statistical, Logical, Relational, Conditional, ifelse
- String Operation, Date operation, etc...
- **Exploratory Data Analysis**
- External data import & export
- Data Summary, Transformation
- Subset, Rename, Reshape,
- Sort, Merge, Append
- Tabulation, Aggregation
- Handling missing values, etc...

Day - 6 (31.3.2019) R programming

- **Data Munging with 'dplyr'**
- All kind of data manipulation with 'dplyr'
- **Loop & User Defined Function**
- Control flow: if-else-if, for loop, while loop, next, break
- User defined function to build algorithm

Day - 7 (6.4.2019) R programming

- **Advanced graphics with 'ggplot2'**
- Advanced and fancy charting
- Color and theme manipulation
- **Statistical Science (Descriptive)**
- Central tendency: Mean, Median
- Dispersion: variance, std.deviation
- Quartiles, IQR, covariance, correlation
- Different Distribution Analysis
- Box-plot, Outlier treatment
- **Statistical Science (Inferential)**
- Null & Alternative hypothesis, P-value
- Type-I, Type-II error, power of test
- Confidence Interval, Significance Level
- T-tests (one and two sample, paired)
- F-test, Chi-square test, ANOVA

Day - 8 (7.4.2019) R programming and Machine learning

- Machine Learning & Modeling
- **Supervised Learning Models**
- Hands-on case study for below algorithm
- **Multivariate Linear Regression**
- Univariate analysis & Variable Selection
- Model Assumptions & Diagnostic Checks
- **Logistic Regression for Classification**
- Logit function, odds ratio,
- Model Estimation, Confusion Matrix
- Accuracy, Sensitivity, Specificity
- ROC curve, AUC, Gini-coefficient
- **Decision Tree & Random Forest**
- Building & Pruning a Decision Tree model
- Complexity Parameter and Error

Day - 9 (13.4.2019)

- **Time Series Modelling**
- AR, MA, ACF, PACF, ARIMA model
- **Unsupervised Learning Models**
- Hands-on practice for all below algorithm
- Principal Component Analysis (PCA)
- Data Dimension Reduction
- Cluster Analysis
- Anomaly Detection, Image Classification
- **Q&A Session**

Classes will be held on weekends on Saturday and Sunday from 9.00 am to 5.00 pm

Seats are limited to 30 participants only so hurry and register to

