# NOTICE

## Value Added Courses

## Registration for Value Added Course-Data Analytics with R

January 24, 2022

Value Added Courses Committee, SRCC invites application for the below mentioned course offered by *ROM Edutech* and certified by **AICPA-CIMA**:

| Course | Duration | Fee |
|---|---|---|
| Data Analytics with R | 35 hours | INR 11,800 (including GST) |

The registrations for the course are open for all the students of Undergraduate and Postgraduate Courses (including GBO). Interested students are required to fill in the registration form latest by **January 28, 2022 till 5:00 p.m.** Students are advised to read the attached General Guidelines carefully before registering for the course.
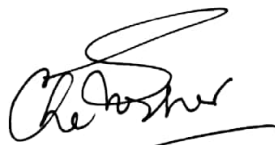
**Registration form can be accessed using the following link:**

**https://forms.gle/WbozEsAXpFqtb76X8**

To acquaint the students with the course content, **an orientation/webinar will be held on January 27, 2022(Thursday) at 6:00 p.m.**

Details regarding the course content and curriculum are attached herewith.

For any queries related to the course, kindly mail to: Valueaddedatsrcc@srcc.du.ac.in

**Prof. C.S. Sharma**
**Convenor**
**Value Added Course Committee**

# General Guidelines for the Course

1. The mode of classes shall be online/offline depending upon the prevailing situation as per the university guidelines.
2. The admission for the course will be done on first come first basis.
3. Minimum 30 successful registrations are required for the course, without which the course shall not be commenced and fee received shall be refunded.
4. The selected candidates will be required to pay the required fee in full upon confirmation of their selection. Applicants will receive the mail for the payment of fee.
5. Fee shall be paid in online mode only. The fee once paid shall not be refundable or transferable.
6. On the commencement of the course, it is mandatory for the students to attend all the classes pertaining to the course.
7. The total duration of the course shall be 35 hours.
8. The classes will be held on weekends during non-teaching hours.
9. AICPA-CIMA/ROM Edutech will conduct the exam and also evaluate the same during the course and at the end of the course.
10. The certificate shall be provided by AICPA-CIMA to the students upon successful completion of the course.
11. AICPA-CIMA/VAC Committee reserves the right to alter, modify or change the content as it deems fit without assigning any reasons to the students.

Tentative Timelines:
- Registration opening date: 25 January, 2022
- Registration closing date: 29 January, 2022
- Announcement of Batch: 4 February, 2022
- Commencement of Classes: 5 February, 2022

**Tentative Schedule of the Sessions**

**Total Duration: 35 hours**

| Sessions | Date | Time |
|---|---|---|
| 1. | 05.02.2022 (Saturday) | 6:00 pm- 8:00 pm |
| 2. | 06.02.2022 (Sunday) | 9:00 am- 12:00 pm |
| 3. | 12.02.2022 (Saturday) | 6:00 pm- 8:00 pm |
| 4. | 13.02.2022 (Sunday) | 9:00 am- 12:00 pm |
| 5. | 19.02.2022 (Saturday) | 6:00 pm- 8:00 pm |
| 6. | 20.02.2022 (Sunday) | 9:00 am- 12:00 pm |
| 7. | 26.02.2022 (Saturday) | 6:00 pm- 8:00 pm |
| 8. | 27.02.2022 (Sunday) | 9:00 am- 12:00 pm |
| 9. | 05.03.2022 (Saturday) | 6:00 pm- 8:00 pm |
| 10. | 06.03.2022 (Sunday) | 9:00 am- 12:00 pm |
| 11. | 12.03.2022 (Saturday) | 6:00 pm- 8:00 pm |
| 12. | 13.03.2022 (Sunday) | 9:00 am- 12:00 pm |
| 13. | 19.03.2022 (Saturday) | 6:00 pm- 8:00 pm |
| 14. | 20.03.2022 (Sunday) | 9:00 am- 12:00 pm |

*There will be a break of 10-15 minutes in each of the sessions. Classes can be scheduled on Gazetted Holidays as well (if required) so that it do not overlap with 1st semester examinations.

# Annexure - Data Sciences and Machine Learning with R

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|---|---|
| **Course Overview** | This course helps the candidate in gaining expertise in Quantitative Analysis, data mining, predictive modelling, and presentation of data to see beyond the numbers thus preparing the candidate for a Data Scientist role. The candidate will learn R programming language, predictive modelling using mathematical and statistical algorithms used in Regression, Clustering, Decision Trees, Random Forest, Naïve Bayes and a number of other models. Throughout the Course, the candidate will have the opportunity to solve real-life case studies. |
| **Learning Outcome** | On successful completion of the course, a candidate will be able to:<br><br>i) Understand characteristics of a dataset and do exploratory data analysis.<br>ii) Decide on an appropriate machine learning algorithm to solve a business problem.<br>iii) Train and build a predictive model using R for aiding business decisions.<br>iv) Test accuracy of model and do predictions on future data using the predictive model. |
| **Course Duration** | 35 hours |
| **Course Delivery** | Instructor led live online classes. Class recordings also to be provided to students. |
| **Certification** | On successful completion of the Course and submission of Certification project, certification will be done by the **Association of International Certified Professional Accountants** (aicpa-cima.com) |
| **Website** | www.romedutech.com |

## Course Curriculum

| Sl. No. | Module Name | Topics |
|---|---|---|
| 1 | Introduction to Data Analytics, Machine Learning and Artificial Intelligence. | ➢ Introduction to Data Analytics, Machine Learning and Artificial Intelligence.<br>➢ Factors driving surge in popularity of Data Analytics and Machine Learning.<br>➢ Data Analytics Use Cases from multiple industries / sectors.<br>➢ Skill set for Data Analytics professional.<br>➢ Languages / Tools used for Data Analytics.<br>➢ Introduction to R Ecosystem and Community for self-support post course completion. |

| 2 | Introduction to and Installation of R and R Studio | ➤ Introduction to R Studio<br>➤ Installation of R and R Studio<br>➤ Basic operations with R Studio.<br>➤ Install packages and libraries in R |
|---|---|---|
| 3 | R programming – Basics I | ➤ Data types in R – vectors, matrix, arrays, lists, data frames.<br>➤ Basic Data manipulation |
| 4 | R programming – Basics II | ➤ Use of built in functions in R like, seq(), cbind(), rbind(), merge()<br>➤ Summarise and interpreting data using functions like, str(), class(), length(), nrow(), ncol()<br>➤ Inspecting data frames with functions like, head(), tail()<br>➤ For and While Loops in R |
| 5 | Data Manipulation | ➤ Steps in Data Cleaning<br>➤ Data Inspection<br>➤ Tackling the issues arising during data cleaning.<br>➤ Use of string manipulation functions like grepl(), grep(), sub()<br>➤ Data coercion<br>➤ Use of apply() family of functions. |
| 6 | Data Visualisation and Exploratory Data Analysis. | ➤ Exploratory Data Analysis (EDA) – Concepts<br>➤ Performing EDA on datasets<br>➤ Co-relation function cor() in R<br>➤ Use of packages for EDA in R<br>➤ Use of Plot function<br>➤ Creating various graphs like, boxplot, density plot and histogram. |
| 7. | Advanced Visualization | ➤ GGplot2 package for visualisation<br>➤ Decision making through plots |
| 8. | Machine Learning - I: Segmentation | ➤ K-Means Clustering<br>➤ Hierarchical Clustering |
| 9. | Machine Learning - II: Regression | ➤ Linear Regression<br>➤ Decision Tree – Regression<br>➤ Random Forest - Regression |
| 10. | Machine Learning - III: Classification | ➤ Logistic Regression<br>➤ Decision Tree – Classification<br>➤ Random Forest - Classification |
| 11. | Machine Learning - IV: Recommendation System | ➤ Association Mining Rule (Market Basket Analysis) |