



# Bhaskaracharya Pratishthana, Pune

## Certificate Course in Statistical Machine Learning using R

### About the Institute

Bhaskaracharya Pratishthana is a Pune based Mathematics Institute founded in 1976 by the world famous **Indian Mathematician Professor Shreeram Abhyankar** for conducting research in Higher Mathematics. Over the years a number of students studied under the guidance of Professor Abhyankar and obtained their Ph.D. degree in India or abroad. Since 1992 the Pratishthana has also been a recognised centre for conducting Regional Mathematics Olympiad (RMO) under the National Board for Higher Mathematics (NBHM) for Maharashtra and Goa Region. This has enabled the Pratishthana to train lots of students from std. V to XII for this prestigious examination. Many students who received training at BP have won medals in the International Mathematical Olympiad. The Pratishthana has experienced that out of these students who were initially attracted to Mathematics because of job opportunities in the fields of Engineering, Computer Science and Information Technology, many got inspiration to undertake research in Higher Mathematics. Over the last few years it is conducting seminars, lectures and workshops in Applied Mathematics and Statistics to promote the applications of Mathematics in various other Sciences. The institute also promotes the use of Open Source Software and Applications among the students. Several lectures and workshops promoting the use of such tools are conducted on a periodical basis in the institute.

### About the course

This course is specifically designed for those students/professionals aspiring to do their career in data science. The course intensively covers the Fundamentals of Mathematics and Statistics required to learn Machine learning along with some practical application using R Programming Language. It is scheduled to start from the **18th May 2019**.

### Eligibility

**Student/Professional** who is **Graduate/Final Year Under Graduate** with a basic exposure to Mathematics and interested to pursue data science is highly encouraged to apply for the course. **Note that no programming background is required to join the course.** However an exposure to C++ will be an advantage.

### Topics to be covered

Mathematics and Statistics play an important and integral part in data science. A very strong background in these two subjects can prove to be beneficial to students aspiring to do career in data science. With this aim the course is divided into four components:

- Introduction to R, Statistical Programming Language.
- Basic Statistics, Probability and Inference.
- Applied Linear Algebra and Matrix Computations.
- Basic Algorithms in Machine Learning.
- Design of Flex boards using Shiny in R will be discussed for Data Presentation.

### Course Duration

It is a 3 month long course which will be mostly conducted on weekends (Saturdays & Sundays) compatible for working professionals. The sessions will be for 3 hours a day which includes theoretical background preparation along with hands on Programming with R. The maximum intake for the batch is **30 students**.

### Basic Algorithms in Machine Learning

The following is the list of the topics that will be covered in the above section along with the case studies.

- Simple and Multiple Linear Regression.
- Advanced Linear Regression which includes Ridge Regression, LASSO and Elastic Net.
- Logistic Regression.
- Naive Bayes Classifier.
- Clustering using K Means.
- ARIMA Modelling Technique (Time Series).
- Market Basket Analysis.

A more detailed description on the sessions and topics related to the course is available on the link <https://www.bprim.org/>

### Logistics Required

Students need to carry their own Laptops for the course. Since R is an Open Source Language the Software and its libraries can be downloaded free from its CRAN repository. We will assist you with all the possible installations required related to our course.

### Course Fees and Other Information

**The fee for the course is 12,000 ₹.** The course will be conducted at Bhaskaracharya Pratishthana. A certificate will be awarded to every participant on the successful completion of the course. Those interested to join the course should kindly send us an email at [statisticalmachinelearningbp@gmail.com](mailto:statisticalmachinelearningbp@gmail.com) with the following details: **Name, Current College/Organization, Latest Qualification and Contact No**

### Course Faculty

Several Faculties associated with **Fergusson College, Bhaskaracharya Pratishthana** along with some **Industry Experts** will conduct the course.

### Contact Details

For more any queries or details related to the course kindly contact the Course Coordinator Mr. Hrishikesh Khaladkar ( Faculty, Fergusson College) on the contact below.

**Contact No: 8149432374/ 7262998610**

**Email: [hrishi.paradox@gmail.com](mailto:hrishi.paradox@gmail.com)**