



Foundation of Statistics & Applications

Aims & Scopes

Join our intensive 9-day online workshop on Foundation of Statistics & Applications in Finance, queuing etc, specially crafted for PG/Research Scholars/Faculty. Over 30 hours, we'll dive deep into the fundamentals, catering to participants with minimal background knowledge. Some of the theory session will seamlessly transition into practical demonstrations using the statistical software R. This program offers a well-balanced mix of Foundation of Statistics & applications. Grab this opportunity to accelerate your skills in Foundation of Statistics & applications.

Registration Fees:

For UG/PG/Research Scholars/Faculty: Rs 1500.00

Limited number of students will be taken ~ 50

Venue & Dates:

Venue: Online

Duration: 19 September 2026 to 26 September 2026

Registration: Opens on 28 July 2026 Closes on 16 August 2026



Course Content

Duration	Content
Day1: 19th September2026, 0930-1100	Inaugural Session : History of Statistics
Day1: 19th September2026, 1115-1215	Introduction to R
Day1: 19th September2026, 1400-1500	Descriptive Statistics
Day1: 19th September2026, 1515-1645	Discrete & continuous distributions
Day2: 20th September2026, 0930-1100	Point Estimation
Day2: 20th September2026, 1115-1215	Sampling distribution & Interval Estimation
Day2: 20th September2026, 1400-1530	Testing of Hypothesis
Day2: 20th September2026, 1545-1645	R-Lab
Day3: 21th September2026, 1800-2000	Definition and classification of stochastic process
Day4: 22th September2026, 1800-2000	Discrete time Markov chain
Day5: 23th September2026, 1800-2000	Poisson process, continuous time Markov chain, MCMC
Day6: 24th September2026, 1800-2000	Martingales
Day7: 25th September2026, 1800-2000	Brownian Motion and related processes
Day8: 26th September2026, 1800-2000	Stochastic Calculus
Day8: 27 th September2026, 0930-1100	Elements of Mathematical Finance
Day9: 27 th September2026, 11:15-11:45	Valedictory



Materials & Resources

1. Foundation of Statistics

- 1.1. Black, K. (2023). *Business statistics: for contemporary decision making*. John Wiley & Sons.
- 1.2. Freund, J. E., & Miller, M. (2004). *John E. Freund's Mathematical Statistics: With Applications*. Pearson Education India.
- 1.3. Rice, J. A., & Rice, J. A. (2007). *Mathematical statistics and data analysis* (Vol. 371). Belmont, CA: Thomson/Brooks/Cole.

2. Stochastic Modelling

- 2.1. Shreve, S. E. (2004). *Stochastic calculus for finance II: Continuous-time models* (Vol. 11). New York: Springer.
- 2.2. Klebaner, F. C. (2012). *Introduction to stochastic calculus with applications*. World Scientific Publishing Company.
- 2.3. Borovkov, K. (2003). *Elements of stochastic modelling*.

3. R software for data science

- 3.1. Kerns, G. J. (2010). *Introduction to probability and statistics using R*. Lulu. com.
- 3.2. Albert, J., & Rizzo, M. (2012). *R by Example*. Springer Science & Business Media.
- 3.3. http://zoonek2.free.fr/UNIX/48_R/all.html

Certificates will be issued based on the attendance throughout the sessions & performance in the workshop.

Course Instructors

Prof. Somesh Kumar (IIT KGP)

Mr. Subha Halder

Prof. Neeraj Misra (IITK)

Mr. Sarikul Islam

Prof. Swanand Khare (IIT KGP)

Mr. Gaurav Kandpal

Prof. B. Banerjee (IIT KGP)

Prof. N. Jana (IIT KGP)

Prof. A. Biswas (IIT KGP)

Prof. Nitin Gupta (IIT KGP)
(Coordinator)

Organised by :
Department of Mathematics
Indian Institute of Technology Kharagpur
Kharagpur, Dist. Paschim Medinipur,
West Bengal
India , PIN-721302
Contact :
M. 9800113480