

## Success Stories

Through collaborations with the industry as well as research institutes, the department provides placement assistance to successful students. We are proud of our alumni who have embarked on a career as biostatisticians, data scientists and researchers through campus placements much in line with the belief "WorldWide Manipal."

### Research Institutions



### Academic Institutions



### Placements in Industry





## Department of Data Science Prasanna School of Public Health



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## Aim of the Programme

The MSc Programme in Biostatistics offered at the Department of Data Science is one-of-a-kind specialized course that nurtures students to pursue a career that encompasses statistics as a decision science along the lines of health and biological sciences. It aims to nurture the students with inter-disciplinary expertise through

- Strong methodological foundations in applied statistics
- Versatile training in data-centric research through statistical consultations
- Competency to work in multiple programming environments (R, STATA, SAS, SPSS, Python, EPI Info)

## Teaching Methodology

- Courses are delivered through regular classroom teaching, learning through case studies, seminars, tutorials, self-directed learning, fine-tuning of pedagogic skills, journal presentations and subsequent research orientation
- Practical courses primarily involve problem-oriented learning with exposure to multiple software environments

## Eligibility Criteria

Graduates with a minimum of 60% marks or equivalent grade in any of the following qualifications from UGC Recognized Universities may apply for MSc (Biostatistics) programme.

- BSc. Statistics/Mathematics/Computer Science
- BE/B. Tech/BCA
- Any other Graduation with a minimum of two years of learning of Mathematics or Statistics

## Course Structure

The programme encourages blended learning paradigm with an amalgamation of regular classes, self-directed learning methods, compulsory journal/seminar presentations, case-study based learning through statistical consultancies. The second year is exclusively devoted to strengthening the employability of the student community through internships in either a corporate or academic institution of repute and research work.

**Duration:** Two-year full-time programme with Modular-based curriculum framework.

## Curriculum Overview

- Probability and Probability Distributions
- Epidemiology
- Computational Mathematics
- Biostatistical Inference
- Linear Regression Models
- Categorical Data Analysis and Logistic Regression Models
- Clinical Trials
- Stochastic Processes
- Design and Analysis of Clinical Experiments
- Event History Analysis
- Hierarchical Models
- Machine Learning Methods
- Data Management and Data Warehousing
- Programming in SAS for Analytics
- Programming with R and Python
- Bayesian Statistical Modelling
- Disease Modelling and Spatial Modelling
- Applied Data Analytics
- Certification in Research Methodology

## Electives

- Time Series Analysis
- Nonparametric and Nonlinear Regression Models

## Selection Criteria

Selection of eligible candidates will be based on merit of rank obtained in the entrance examination and/or personal interview. In the absence of entrance examination/interview, the merit of rank is prepared by using the grade obtained in Mathematics and/or Statistics in the qualifying examinations.

## Talent Recognition

- GlaxoSmithKline Asia Private Ltd., Bengaluru awards cash prizes for the first two rank holders of the outgoing students of MSc (Biostatistics) programme
- Prof. Abhay Indrayan Award for the best outgoing student of MSc (Biostatistics) programme

## About us

The Department of Statistics was established as the first teaching department under Manipal Academy of Higher Education on August 01, 2006. With state-of-the-art computational facilities coupled with the expertise of faculties, the Department has always stridden ahead of times. With a keen eye on the developments around the globe, the department has re-defined its identity and is now; the Department of Data Science. The department also runs a consultancy centre to provide statistical consultation to faculty, researchers and postgraduates of medical/technical institutions as well as the corporate sector.

## Programmes Offered

- Master of Science in Biostatistics programme
- Master of Science in Data Science programme
- Master of Science in Digital Epidemiology programme
- Certificate Course in Biostatistics, Epidemiology and Research Methodology
- Doctoral Degree programme
- PhD programme in collaboration with
  - a) Novartis Health Care Pvt.Ltd., Hyderabad
  - b) GlaxoSmithKline Asia Private Ltd., Bengaluru

## Collaborations

- Indian Statistical Institute, New Delhi
- School of Population Health, University of Melbourne, Australia
- Robert Gordon University, Scotland
- Indian Institute of Public Health, Gandhinagar
- Madras Diabetes Research Foundation, Chennai
- Public Health Foundation of India, New Delhi
- University of Groningen, The Netherlands
- Tata Institute of Social Sciences, Mumbai