

# The Master of Science Program in Biostatistics



Department of Mathematical Sciences

College of Science and Liberal Arts

**New Jersey Institute of Technology**

## WHY STUDY BIOSTATISTICS?

With the current explosion of data in the fields of health and life sciences, there is a growing demand for professionals trained in relevant statistical theory and corresponding computational and data-analytic practices, who can communicate with other related fields. Biostatisticians with advanced degrees can look forward to excellent career opportunities in government, industry, and academia. The Seventh Report to the President and Congress on the Status of Health Personnel in the United States and Objectives for the Nation notes that Biostatistics is a crucial technical competency for developing a skilled public health services workforce. Recent graduates of Biostatistics have found positions with employers as diverse as pharmaceutical companies, university research groups, hospitals, health-related industries, and other organizations.

## WHY STUDY BIOSTATISTICS AT NJIT?

The Master of Science in Biostatistics is a program of the Department of Mathematical Sciences at NJIT, which is nationally recognized for quality education and applied research programs. Active participation in the MS programs by more than 40 NJIT mathematical sciences faculty produces a stimulating learning environment. In addition, New Jersey, with its concentration of medical, pharmaceutical, environmental and biotechnology industries, has a great demand for well-trained graduates in biostatistics.

## WHO SHOULD APPLY?

Suitable qualified (see “Admission Requirements”) students interested in applying statistical methods to the area of health sciences in general and clinical studies in particular. The program will have a quantitative focus and will appeal to students wishing to pursue careers in NJ’s thriving healthcare, life sciences, and biomedical industries, as well as in pharmaceutical research. Furthermore, the program is also expected to attract students desiring to pursue advanced studies and research in biostatistics.

## WHAT COURSES ARE AVAILABLE?

### Core Courses

MATH 644	Regression Analysis Methods (3 credits)
MATH 654	Design and Analysis of Clinical Trials (3 credits)
MATH 659	Survival Analysis (3 credits)
MATH 662	Probability Distribution (3 credits)
MATH 663	Introduction to Biostatistics (3 credits)
MATH 665	Statistical Inference (3 credits)
MATH 699	Design and Analysis of Experiments (3 credits)

### Electives

At least three from the following illustrative list:

MATH 664	Methods in Statistical Consulting (3 credits)
MATH 691	Stochastic Processes (3 credits)
MATH 698	Sampling Theory (3 credits)
MATH 707	Advanced Topics (Independent Study) (3 credits)
MATH 786	Large Sample Theory and Inference (3 credits)
MATH 787	Non-Parametric Statistics (3 credits)

### UMDNJ Courses

PHCO-0502J Introduction to Epidemiology (3 credits)

All elective courses chosen must receive approval from the Graduate Advisor. These elective courses may be taken within or outside of the Department of Mathematical Sciences at NJIT, or at Rutgers-Newark or UMDNJ, both of which are located adjacent to the NJIT campus. Choice of an optional project/thesis, if available, is subject to additional eligibility conditions of academic merit, and is in addition to all other degree requirements.

## LEARNING OBJECTIVES

Graduates, upon satisfactory completion of the degree program, are expected to have acquired appropriate skills in data analysis and computing that are typically required in their profession. Specific skills deemed useful in the practice of biostatistics include the following:

- Analysis of categorical data
- Analysis of censored data
- Clinical Trial data analysis

Graduates are also expected to learn and become familiar in the use of industry benchmark statistical softwares such as SAS.

## IS PART TIME STUDY AVAILABLE?

Evening courses accommodate the working professional, who may pursue the degree part time.

## ADMISSIONS REQUIREMENTS:

Admission Requirements:

- 4 year baccalaureate degree

Students applying for admission to this program will usually have a baccalaureate degree in Statistics, Mathematics, Sciences, or Engineering. Applicants with other baccalaureate degrees will be considered and may be subject to a suitable bridge program.

- Undergraduate GPA of at least 2.8 on a 4.0 scale or equivalent
- At least 12 credits in mathematics, including calculus
- At least one upper division course in statistics

Bridge Program: Students who do not satisfy the credit requirement in mathematics and statistics will be required to take a suitable bridge program of appropriate mathematics/statistics courses. Such courses do not count towards the graduate degree.

## IS FINANCIAL AID AVAILABLE?

Financial support for full-time students in the MS program is extremely limited. Full-time domestic and international students may be eligible to receive the Provost Fellowship. For further information on financial aid, visit [www.njit.edu/graduatestudies/finaid.php](http://www.njit.edu/graduatestudies/finaid.php)

## FOR FURTHER INFORMATION

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## TO APPLY:

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800-925-NJIT  
[www.njit.edu/admissions/apply-online.php](http://www.njit.edu/admissions/apply-online.php)