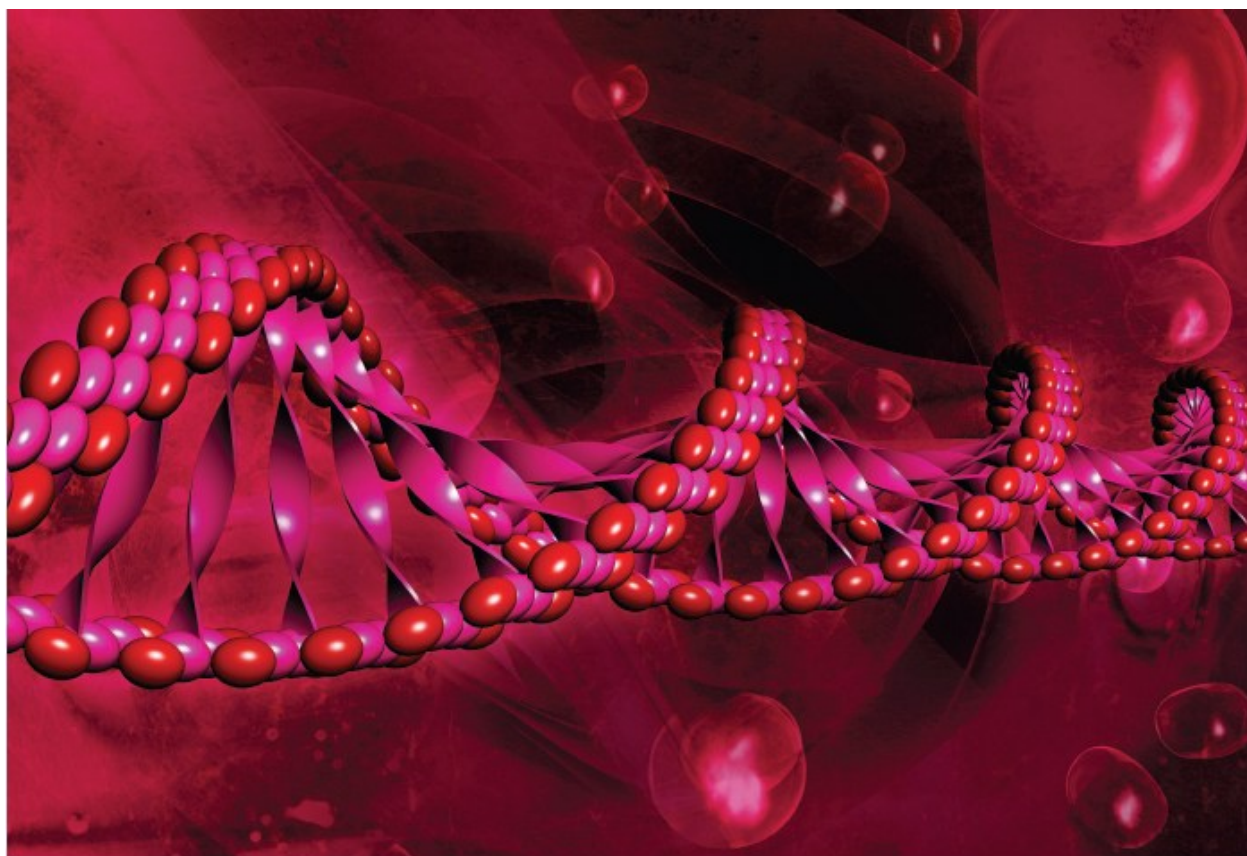




THE EDGE IN KNOWLEDGE

Master of Science in Bioinformatics



Department of Computer Science

College of Computing Sciences

New Jersey Institute of Technology

WHY PURSUE A MASTER'S DEGREE IN BIOINFORMATICS?

Bioinformatics is a new and exciting field that stands at the intersection of biology, computer science and information technology. Computation is doing for biology today what the microscope did four centuries ago - allowing scientists to peer deeper into the fundamental processes of life and to extract and to utilize tremendous quantities of bioinformation for medical and other practical purposes. Decoding the human genome, for example, which contains three billion "letters" organized into 25,000 genes, would have been impossible without the contribution of this young field. The next steps toward understanding the human genome and applying this knowledge will also require bioinformatics.

WHY STUDY BIOINFORMATICS AT NJIT?

NJIT is one of the first schools in the region to offer a bioinformatics degree. It has an exceptional concentration of faculty in this field, all active researchers who involve students in their work. As a science and technology university, NJIT also offers many possibilities for combining the study of bioinformatics with study of a related field, such as biomedical engineering or biology. The university works to place bioinformatics students in co-op and internship programs in one of the many biotechnology, pharmaceutical and medical companies in the New York/ New Jersey area.

DEGREE OVERVIEW

The Master's Degree in Bioinformatics was designed to address the growing need for professionals with an educational background that blends biology with computer science. This combination of skills is needed both in the pharmaceutical and biotechnology industries and in biomedical research. Students learn about the design, construction and use of software tools that model living things as well as the most important tools of the trade for computational analysis of biodata. Graduates acquire an in-depth knowledge of biological, genomic and medical databases. Students also learn how to mine data to detect underlying patterns and relationships across the vast web of life. Based on the selection of electives, the student can specialize in the life sciences or computing.

DEGREE REQUIREMENTS: 30 CREDITS

5 Core

- BNFO 601 Foundation of Bioinformatics I
- BNFO 602 Foundations of Bioinformatics II
- BNFO 615 Data Analysis in Bioinformatics
- BNFO 644 Data Mining & Management in Bioinformatics
- Math 663 Introduction to Biostatistics

5 Electives

Selected from an approved list.

REAL-WORLD & RESEARCH OPPORTUNITIES

There are abundant co-op and internship opportunities exploring cutting-edge science and technology. Students also have opportunities to get involved in groundbreaking research with NJIT faculty in all areas of computing.

DEVELOP NEW SKILLS & KNOWLEDGE

An MS in Bioinformatics prepares students to work in a biotechnology, pharmaceutical, medical research or at a medical institution. New Jersey is home to the largest concentration of pharmaceutical laboratories in the United States, and the New York metropolitan area has the largest number of medical institutions.

POSSIBLE CAREER OPTIONS

- Biomedical Computer Scientist
- Geneticist
- Biostatistician
- Computational Biologist

WHAT CAREER TRACKERS SAY...

Industry's demand for scientists with skills in bioinformatics far exceeds the supply of qualified specialists in the field.

Science Magazine
recruit.sciencemag.org

Because of the need for a background in biology and computer science, bioinformatics specialists can expect to receive salaries that exceed those of individuals in comparable computer careers.

Madison Magazine
madisonmagazine.com

The fusion of biology and computer science is the hottest of the hot in science right now, and it's going to heat up even more.

Smart Money Magazine
smartmoney.com

FINANCIAL AID

Student Financial Aid Services helps provide NJIT students with every opportunity to obtain funding to support their educational costs. To apply for financial aid please visit: njit.edu/financialaid/

ADMISSION REQUIREMENTS

Applicants are expected to have:

- An undergraduate degree in computing, biology or a related field, with a minimum GPA of 3.0 on a 4.0 scale.
- Computer courses in programming & data structures equivalent to BNFO 135 Programming for Bioinformatics & BNFO 136 Programming for Bioinformatics II.
- One or more courses in genetics or molecular biology, equivalent to BNFO 501 Molecular Biology for CS, R120:352 Genetics, or R120:356 Molecular Biology.
- Mathematics courses equivalent to Math 111 Calculus I & Math 112 Calculus II.
- GRE scores (Verbal 143, Quantitative 151, Analytical 4.0) for all foreign degree holders.
- TOEFL scores (minimum of 79) for all visa holders.

Applicants not satisfying these criteria will be considered for conditional admission on a case-by-case basis and may be required to complete a bridge program outlined in their acceptance letter.

FOR MORE INFORMATION CONTACT:

ccs-advising@njit.edu
cs.njit.edu/academics/graduate/ms-bioinf/index.php

TO APPLY:

Office of Graduate Admissions
(973) 596-3300
njit.edu/admissions/graduate/apply_online.php