# M.S. in Bioinformatics

## Degree Requirements

A minimum of 30 credits is required for the degree, excluding bridge courses. The graduate curriculum consists of five core courses and additional elective courses, with an optional thesis (six credits) or research project (three credits).

### Curriculum

#### Core Courses

- **BNFO 601**: Foundations of Bioinformatics I  
  - 3 credits
- **BNFO 602**: Foundations of Bioinformatics II  
  - 3 credits
- **BNFO 615**: Data Analysis in Bioinformatics  
  - 3 credits
- **BNFO 644**: Data Mining and Management in Bioinformatics  
  - 3 credits
- **MATH 663**: Introduction to Biostatistics  
  - 3 credits

#### Electives

Select five of the following:

- **NJIT Electives**
  - **BME 661**: Neural Engineering  
  - **BME 671**: Biomechanics of Human Structure and Motion  
  - **CHEM 658**: Advanced Physical Chemistry  
  - **CHEM 673**: Biochemistry  
  - **CS 631**: Data Management System Design  
  - **CS 632**: Advanced Database System Design  
  - **CS 659**: Image Processing and Analysis  
  - **CS 634**: Data Mining  
  - **CS 681**: Computer Vision  
  - **CS 731**: Applications of Database Systems  
  - **CS 782**: Pattern Recognition and Applications  
  - **IS 634**: Information Retrieval  
  - **ECE 609**: Artificial Neural Networks  
  - **ECE 640**: Digital Signal Processing  
  - **ECE 673**: Random Signal Analysis I  
  - **MATH 635**: Analytical Computational Neuroscience  
  - **MATH 636**: Systems Computational Neuroscience  
  - **MATH 637**: Foundations of Mathematical Biology  
  - **MATH 662**: Probability Distributions  

- **Rutgers-Newark Electives**
  - **R120 512**: Cell Biology: Methods & Appl  
  - **R120 515**: Molecular Bio Of Eukaryotes  
  - **R120 516**: Microbial Ecology  
  - **R120 526**: Topics in Cell Biology  
  - **R120 548**: Biology Of Cancer  
  - **R120 573**: Pharmacology

- **RBHS Electives**
  - **UMD 5002**
  - **UMD 5030**
  - **UMD 5200**

### Total Credits

- 30 credits