

# Bioinformatics Major

## Learning Goals and Objectives

Canisius College

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### **Student Learning Goal 1: Majors will effectively develop and implement computational solutions to problems.**

Students will:

- Objective A: Specify and design acceptable computational solutions
- Objective B: Implement and test acceptable computational solutions
- Objective D: Describe which data structures would be appropriate to use and explain why, given a problem
- Objective E: Describe which algorithms would be appropriate to use and explain why, given a problem
- Objective E: Design effective data representations for the storage and manipulation of large datasets where needed
- Objective F: Utilize and understand statistical methods for the analysis of large datasets where appropriate

### **Student Learning Goal 2: Majors will be competent with respect to biology and biotechnology:**

Students will:

- Objective A: Describe information transfer within cells and between generations
- Objective B: Understand high-throughput laboratory technologies used in biology to generate large datasets

### **Student Learning Goal 3: Majors will analyze legal, social, and ethical considerations related to bioinformatics:**

Students will:

- Objective A: Understand and analyze issues using different ethical frameworks
- Objective B: Understand social, legal, and privacy implications of electronic storage and sharing of biological information