

BIOINFORMATICS - MINOR

College of Arts and Sciences
Department of Computer Science
www.kent.edu/cs

Contact Information

- Program Coordinators: **Fedor F. Dragan** and **Augustine Samba** | ugradinfo@cs.kent.edu | 330-672-9120
- Speak with an Advisor
 - Kent Campus
 - Stark Campus

Fully Offered

- **Delivery:**
 - In person
- **Location:**
 - Kent Campus
 - Stark Campus

Description

The Bioinformatics minor provides a foundation in computer science and computational data processing for students in any field of biological sciences, allowing students to work with substantial computing and data science-oriented cyber systems. The minor enables students to competitively manage the computing and cyber aspects of their professions.

Students in the Bioinformatics minor will use Python programming language to import, clean, analyze, visualize and learn data from their real-world applications.

Admission Requirements

Admission to a minor is open to students declared in a bachelor's degree, the A.A.B. or A.A.S. degree or the A.T.S. degree (not Individualized Program major). Students declared only in the A.A. or A.S. degree or the A.T.S. degree in Individualized Program may not declare a minor. Students may not pursue a minor and a major in the same discipline.

Program Learning Outcomes

Graduates of this program will be able to:

1. Understand the essential facts, concepts, principles and theories related to computer science and data science.
2. Understand Python programming basics and data structures in Python.
3. Solve practical problems over real-world data using Python (e.g., data collection, cleaning, manipulation, visualization and machine learning.)
4. Apply hands-on experience in Python projects for scientific data processing.
5. Collaborate with other team members in groups to complete scientific data processing projects.

Program Requirements

Minor Requirements

Code	Title	Credit Hours
Minor Prerequisites		
MATH 11010	ALGEBRA FOR CALCULUS (KMCR)	
Minor Requirements		
BSCI 40218 or BSCI 40224	INTRODUCTION TO GENOMICS ¹ QUANTITATIVE METHODS IN BIOLOGY	3
BSCI 40220 or BTEC 40220	BIOINFORMATICS BIOINFORMATICS	3
CS 10051	COMPUTER SCIENCE PRINCIPLES (KMCR)	4
CS 10062	PROGRAMMING FOR PROBLEM SOLVING IN SCIENCES	4
CS 20062	ADVANCED PROGRAMMING WITH PYTHON	4
CS 30062	PYTHON FOR DATA SCIENCE	3
Minimum Total Credit Hours:		21

¹ Students may seek an approved substitute to BSCI 40218 or BSCI 40224 in the same department.

Graduation Requirement

Minimum Minor GPA	Minimum Overall GPA
2.000	2.000

- Students must complete at least two upper-division (30000 or 40000 level) courses in the minor at Kent State on a graded basis (A-F).
- Minimum 6 credit hours in the minor must be upper-division coursework (30000 and 40000 level).
- Minimum 6 credit hours in the minor must be outside of the course requirements for any major or other minor the student is pursuing.
- Minimum 50 percent of the total credit hours for the minor must be taken at Kent State (in residence).