

Milken Institute School of Public Health

THE GEORGE WASHINGTON UNIVERSITY

Department of Biostatistics and Bioinformatics

GW Undergraduate Students

Minor in Bioinformatics 2026-2027

Background

The Minor in Bioinformatics requires 18 credits. Upon successful completion of all requirements, the title of Minor and the courses taken in support of the Field are entered on the student's transcript.

Program Director

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Overview

The Milken Institute School of Public Health (SPH) offers the Minor in Bioinformatics. [Bioinformatics](#) is an interdisciplinary minor offering focused training that integrates concepts in health, biology, statistics, and computer science. The program develops and integrates skills across the core competency areas in bioinformatics, including computation, biology, statistics/mathematics, and foundational knowledge in bioinformatics. The Bioinformatics Minor consists of at least 18 credits (12 credits of required public health courses and six (6) credits of bioinformatics related elective courses). Students who complete this program enhance their core undergraduate program to add significant additional skills that aid in entry to the top graduate programs in bioinformatics and computational biology in the world, leading professional schools (including public health, law school, medical school, or dental school), or employment in public health, biotechnology, pharmaceutical, or software development companies.

Admissions Requirements

Applicants must have a 2.5 cumulative GPA or above. To add the minor, students must complete a [declaration form](#). Prior to submitting the form, prospective students should speak with a GWSPH Undergraduate Advisor or the Bioinformatics Minor Program Director to plan their course of study. GWSPH will not process requests to add a Minor in Bioinformatics during the registration period.

Graduation Requirements

All students accepted to this minor must follow the policies and regulations outlined in the [GW Bulletin](#) and the [GWSPH Student Handbook](#). These include, but are not limited to:

- Minimum Grade Point Average (GPA)
- Minimum Course Grades
- Maximum Credit Allowances
- Minor Declaration
- Double Counting
- Continuous Enrollment
- Maximum Time to Degree
- Required Minimum Degree Credits
- Transfer Credit Policy
- Field Experience, Undergraduate Research, Independent Study, and Study Abroad
- CITI Training
- Integrity Quiz and Plagiarism
- Professional Enhancement (PE) Hours

Required Foundational Courses (12 credits)		
Courses	Credits	Title
PUBH 3201	3	Introduction to Bioinformatics
PUBH 3202	3	Introduction to Genomics
PUBH 4201	3	Practical Computing (or CSCI 1012 or CSCI 1121 or CSCI 1131)
PUBH 4202	3	Bioinformatics Algorithms and Data Structures (or CSCI 1112)
Approved Bioinformatics Elective Courses (6 credits)		
Students may take any course on the Approved Elective Course List shown below. Any course not on this list requires written approval by the Program Director in advance.		
Courses	Credits	Course Title
ANTH 2406	3	Human Evolutionary Genetics
BISC 2207	3	Genetics
BISC 3209	3	Molecular Biology
BISC 4234	3	Microbial Genomics Laboratory
BME 2820	3	Biomedical Engineering Programming I
BME 2825	3	Biomedical Engineering Programming II
BME 3820	4	Principles and Practice of Biomedical Engineering
CHEM 3165	3	Biochemistry I
CHEM 3166	3	Biochemistry II
CSCI 3212	4	Algorithms
CSCI 4364	3	Machine Learning
CSCI 4366	3	Neural Networks and Deep Learning
CSCI 4511	3	Artificial Intelligence Algorithms
EMSE 3760	3	Discrete Systems Simulation
EMSE 3850	3	Quantitative Models in Systems Engineering
EMSE 4765	3	Data Analysis for Engineers & Scientists
MATH 3359	3	Introduction to Mathematical Modeling
MATH 3553	3	Introduction to Numerical Analysis
MATH 3613	3	Introduction to Combinatorics
MATH 3730	3	Computability Theory
MATH 3740	3	Computational Complexity
PUBH 3131	3	Epidemiology: Measuring Health and Disease
PUBH 3151(W)	3	Current Issues in Bioethics
PUBH 3242	3	Health Data Visualization
PUBH 3995	Up to 3 credits	Undergraduate Research
PUBH 4199	1-3	Undergraduate Independent Study
PUBH 6859	3	High Performance and Cloud Computing
STAT 2183W	3	Intermediate Statistics Lab/Packages
STAT 3119	3	Analysis of Variance
STAT 3187	3	Introduction to Sampling
STAT 4157	3	Introduction to Mathematical Statistics I
STAT 4158	3	Introduction to Mathematical Statistics II
STAT 4181	3	Applied Time Series Analysis
STAT 4188	3	Nonparametric Statistics Inference
STAT 4189	3	Mathematical Probability and Applications I