

Genome Medicine, Certificate

Learn more about the undergraduate certificate in Genome Medicine (<https://www.temple.edu/academics/degree-programs/genome-medicine-certificate-undergraduate-st-gnmd-cert>).

The Genome Medicine certificate program is designed with maximum flexibility to accommodate students with different backgrounds and interests, including medicine, science, technology, and public health. Two core classes and 6 to 8 credits of related elective courses are required. This certificate is available to all undergraduate students and professional non-degree-seeking students.

Undergraduate Contact Information:

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Certificate Requirements

Prerequisites

Students desiring a Certificate in Genome Medicine must have already completed the following or have equivalent industry experience:

Code	Title	Credit Hours
Select one of the following:		4
CHEM 1031 & CHEM 1033	General Chemistry I and General Chemistry Laboratory I	
CHEM 1951 & CHEM 1953	Honors General Chemical Science I and Honors Chemical Science Laboratory I (F)	
Select one of the following:		4
CHEM 1032 & CHEM 1034	General Chemistry II and General Chemistry Laboratory II	
CHEM 1952 & CHEM 1954	Honors General Chemical Science II and Honors Chemical Science Laboratory II (S)	
Select one of the following:		4
CHEM 2201 & CHEM 2203	Organic Chemistry I and Organic Chemistry Laboratory I	
CHEM 2211 & CHEM 2213	Organic Chemistry for Majors I and Organic Majors Laboratory I (F)	
CHEM 2921 & CHEM 2923	Organic Chemistry for Honors I and Organic Honors Laboratory I (F)	
BIOL 2112 or BIOL 2912	Introduction to Cellular and Molecular Biology Honors Introduction to Cellular and Molecular Biology	4
MATH 1022	Precalculus	4

Required Courses

Students desiring a Certificate in Genome Medicine must complete the following courses:

Code	Title	Credit Hours
Biology		
BIOL 3111	Genomics in Medicine (F)	3
BIOL 3112	Fundamentals of Genomic Evolutionary Medicine (S)	3
Genome Medicine Electives		
Select two from the following: ¹		6-8
ANTH 3743	Human Biology of Modern Populations	
ANTH 3744	Human Evolutionary Genetics	
ANTH 3746	Human Reproduction: Evolutionary Perspectives	
ANTH 3772	Evolutionary Medicine	
ANTH 3796	Evolutionary Biology	
ANTH 4796	Biocultural Adaptations in Human Populations	
ANTH 4798	Seminar in Human and Primate Evolution	
BIOL 2296	Genetics (S)	
BIOL 3101	Evolution (F)	
BIOL 3128	Genomics and Infectious Disease Dynamics (F)	
BIOL 3201	Human Genetics (F)	
BIOL 3211	Human Evolution	
BIOL 3212	Introduction to Bioinformatics and Computational Biology	
BIOL 3225	Evolutionary Genetics (S)	
BIOL 3241	Genomics and Evolutionary Biology of Parasites and Other Dependent Species (S)	
BIOL 3368	Biology of Cancer (S)	
BIOL 3379	Biotechnology	
BIOL 3403	Genomic Biology	
CHEM 3405	Physical Chemistry of Biomolecules (S)	
CHEM 4401	Biochemistry I	
CIS 1053	Programming in Matlab	
or CIS 1057	Computer Programming in C	
or CIS 1068	Program Design and Abstraction	
CIS 2033	Computational Probability and Statistics	
CIS 3223	Data Structures and Algorithms	
CIS 3308	Web Application Programming	
CIS 3715	Principles of Data Science (S)	
CIS 4330	Current Topics in Information Science & Technology	
CIS 4331	Principles of Database Systems (F)	
CIS 4517	Data-Intensive and Cloud Computing (S)	
CIS 4523	Knowledge Discovery and Data Mining	
CIS 4526	Foundations of Machine Learning (F)	
ECE 3522	Stochastic Processes in Signals and Systems	
ECE 3822	Engineering Computation II	
ECE 4532	Data and Computer Communication	
EES 4696	Vertebrate Paleontology and Taphonomy (F)	
EPBI 3101	Introduction to Epidemiology	
EPBI 3102	Introduction to Research Methods	
HIM 3101	Health Record Documentation	
HIM 3106	Pathophysiology	
HIM 3111	Statistics and Research in Health Care	
HIM 3113	Healthcare Database Design and Development	

HIM 3203	Electronic Health Record Systems
HIM 3208	International Classification of Diseases
HIM 3214	
HIM 4101	Health Informatics: Infrastructure and Standards
HIM 4121	Healthcare Data Analytics
MATH 3031	Probability Theory I
MATH 3032	Mathematical Statistics (S)
MATH 3043	Numerical Analysis I (F)
MATH 3046	Differential Equations with Computer Lab (S)
MATH 4033	Probability Theory II (F)
MATH 4043	Applied Mathematics (F)
PSY 3003	Advanced Undergraduate Statistics
PSY 3141	Neurobiology and Evolution of Social Behavior
SOC 3201	Statistical Methods in Sociology
SOC 3521	Global Health
SOC 3525	Urban Health
SOC 3559	Health and Reproduction
SOC 4002	Data Analysis
STAT 3501	Statistics for Engineers
STAT 3502	Regression and Predictive Analytics
STAT 3503	Applied Statistics and Data Science
STAT 3504	Time Series and Forecasting Models
STAT 3506	Nonparametric and Categorical Data Analysis

Total Credit Hours

12-14

Code	Title	Credit Hours
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(F) - Fall only course

(S) - Spring only course

¹ Many of these courses require additional prerequisites.

Residency Requirements: At least 2 courses required for the certificate must be completed at Temple.