INFORMATICS AND MODELING MINOR

MINOR DESCRIPTION

The Minor in Informatics and Modeling offers students two distinct pathways to develop computational, analytical, and quantitative reasoning skills that are becoming increasingly important in many fields of study: Computational Science and Quantitative World Modeling (CSM), and Integrative Genomic Sciences (IGS).

The#CSM pathwayintroduces students to modeling techniques, providing them with a solid foundation in the quantitative simulation, evaluation, and prediction of natural and social phenomena such as the collision of galaxies, protein folding, and the behavior of markets.

The#IGS pathway#introduces students to the emerging interdisciplinary field of bioinformatics and its relationships to molecular genomics, evolution, structural biology, and bioethics.

Each pathway requires five or six courses including courses that introduce computational thinking and modeling applied in several disciplines.

ADMISSION TO THE MINOR

There are no admission requirements for this program.

MINOR REQUIREMENTS

The CSM pathway requires the following:

Code	Title	Hours
PHYS113	General Physics I	1
or PHYS116	General Physics II	
COMP112	Introduction to Programming	1
or COMP211	Computer Science I	
Select one of the following advanced computer science courses:		1
COMP212	Computer Science II	
COMP331	Computer Structure and Organization	
COMP312	Algorithms and Complexity	
PHYS221		1
or PHYS340	Computational Physics	
Select one course from the list of applied modeling courses in chemistry, computer science, economics, or science.		1

The IGS pathway requires the following:

Code	Title	Hours
BIOL/MB&B181	Principles of Biology I: Cell Biology and Molecular Basis of Heredity	1
Select one of the following introductory computer science courses		1
COMP112	Introduction to Programming	
COMP211	Computer Science I	
COMP113	Bioinformatics Programming	
an approved alternative		
Select one of the following advanced computer science courses or three 0.5 credit QAC courses:		1 or 1.5
COMP212	Computer Science II	
COMP331	Computer Structure and Organization	
COMP312	Algorithms and Complexity	
QAC150	Working with SQL and Databases	
QAC151	Working with Excel and VBA	
QAC154	Working with MATLAB	
QAC156	Working with R	
QAC157	Working with SAS	
QAC158	Working with Stata	
an approved alternative		
Select one upper-level bioinformatics course (from a list of approved courses)		1
Select one course in each of two of the following categories (from a list of approved courses):		2
Molecular Genetics and Cell Biology		
Evolutionary Biology		
Structural Biology		
Bioethics and Philosophy of Biology		
Applied Quantitative Reasoning		

ADDITIONAL INFORMATION

CONTACT

- Students interested in the CSM pathway should contact Reinhold Blumel (rblumel@wesleyan.edu).
- Students interested in the IGS pathway should contact Michael Weir (mweir@wesleyan.edu) or Danny Krizanc (dkrizanc@wesleyan.edu).