

Major Progress Tracker: **Bioinformatics**

BIOSC #	Cr	Grade	Notes
0150 Foun. Bio 1 (UHC0715)	3		
0160 Foun. Bio 2 (UHC0716)	3		
0350 Genetics	3		
1540 Computational Biology	3		
1810 Macromol. Struct/Func	3		Fall only
CS #	Cr	Grade	Notes
0401* Intermed. Prog Java	4		
0441 Discrete Structures	3		
0445 Data Structures	3		
1501 Algorithm Impl. (+W)	3		

* Students without a programming background are encouraged to take Introduction to Programming CS 0007 prior to CS 0401.

CHEM #	Cr	Grade	Notes
0110 General Chemistry 1	4		
0120 General Chemistry 2	4		
0310 Organic Chemistry 1	3		
0320 Organic Chemistry 2	3		
MATH / STAT #	Cr	Grade	Notes
Math 0220 Calculus I	4		
Stat 1000 Applied Stats	4		
Stat 1221# Regression	3		Spring only
Interdisciplinary	Cr	Grade	Notes
BIOSC/CS 1640 Bioinf. Software Design	3		
BIOSC 1903/CS 1950* Undergrad Research	Total 4 cr.	S/NC	List terms & credits of research below
Research*			
Research*			
Research*			

Pre-req for this course is a minimum grade of B- in STAT 1000

* 4 credits **must** be spread over at least 2 terms starting as early as sophomore year. **Research must be pre-approved by Kirk Pruhs or Paula Grabowski.**

Electives (12 cr total) See list on other side	Cr	Grade	Notes
	3		
	3		
	3		
	3		
WRIT: CS 1501 or 1510	0		

General Education Requirements

Wrkshp Comp _____ Sem in Comp _____

Writ #1 _____ Writ #2 _____ (in BIOSC)

Algebra _____ Quant Formal Reas. _____

2nd Language _____

Diversity Course _____

The Diversity course may be used to fulfill another General Education Requirement.

Division Requirements (Humanities, Arts, Social Sciences, Natural Sciences)

Literature _____

The Arts _____

Creative Work _____

Philosophical Thinking/Ethics _____

Social Science _____

Historical Analysis _____

Natural Sciences *Fulfilled by Major*

Global Awareness & Cultural Understanding

Global Issues _____

Geographic Region _____

Cross-Cultural Awareness _____

Grade and QPA requirements:

A grade of C (not C-) or better is required in all major courses.

A minimum GPA of 2.0 in all major courses taken is required for graduation.

If a C- or lower is earned in an elective course for the major but is not repeated, the course will not be counted toward the 12 elective credits required for the major, but will be used to calculate the overall GPA.

Need 120 credits TOTAL for any Bachelor's Degree

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Core Courses

Core Courses	Term Offered	Pre-Req
CS 0401 Intermediate Programming with Java	F, Sp, Sum	High school programming or CS 0007
CS 0441 Discrete Structures for Computer Science	F, Sp, Sum	Two years of high school algebra
CS 0445 Data Structures	F, Sp, Sum	CS 0401
CS 1501 Algorithm Implementations	F, Sp, Sum	CS 0441, CS 0445
CS/BIOSC 1640 Bioinformatics Software Design	F, Sp	BIOSC 1540 or CS 1501
STAT 1221 Applied Regression	Sp	Min grade B- in STAT 1000
BIOSC 0350 Genetics	F, Sp, Sum	BIOSC 0160; CHEM 0120
BIOSC 1540 Computational Biology	F	BIOSC 0160
BIOSC 1810 Macromolecular Structure & Function	F	BIOSC 0160; CHEM 0320

Approved Elective Courses by Department

Biological Sciences (BIOSC)

Any upper division BIOSC course including 0370, 0390, and courses numbered ≥1005 except 1010, 1690, 1900-1907

BIOSC 1903 and 1904 count ONLY toward the 4 research credits and NOT as elective credits.

If a BIOSC upper division lab is used as an elective, the prerequisite labs (005X and 006X) will be counted to give up to a total of 3 credits.

For students who need a Biochemistry course, **do not take BIOSC 1000**. Take BIOSC 1810 (required for the major) and BIOSC 1820 (counts as a 3-credit elective for the major).

For more information on BIOSC electives, get a Course List in Langley A258 or look online at: biology.pitt.edu/undergraduate/courses

Computer Science (CS)

Any CS course at the 1500-level and 1600-level.

For more information on CS electives, view the Course List online at: cs.pitt.edu/schedule/courses

Chemistry (CHEM)

	Term Offered	Pre-Req
1410 Physical Chemistry 1	F,Sp,Sm	MATH 0240, CHEM 0120, PHYS 0111/0175
1420 Physical Chemistry 2	F,Sp,Sm	CHEM 1410
1460 Computational Drug Discovery	F	CHEM 0320
0250 Intro Analytical Chemistry	F,Sp,Sm	CHEM 0120

Statistics (STAT)

	Term Offered	Pre-Req
1301 Statistical Packages	infrequently	STAT 1221
1311 Applied Multivariate Analysis	infrequently	STAT 1221
1321 Applied Time Series	infrequently	STAT 1221

Bioinformatics Major Notes:

1. Research must be **PRE**-approved by Kirk Pruhs or Paula Grabowski.
2. With approval of the Bioinformatics Program Committee, may take electives in other departments.
3. Students who have completed CS 0401 may not enroll in CS 0004, 0007 or 0110.
4. BIOSC 1000 cannot be substituted for BIOSC 1810.
5. CHEM 1810 can only be substituted for BIOSC 1810 if it is not possible for the student to schedule BIOSC 1810.
6. No Bioinformatics major courses may be taken on an S/NC basis.
7. Bioinformatics advising is available in both the Department of Biological Sciences and the Department of Computer Science. Bioinformatics majors must select an official advisor from one of the two departments.

These courses have sections to fulfill the Departmental WRIT requirement for the Bioinformatics Major:

- CS 1501 Algorithm Implementation
- CS 1510 Algorithm Design