B.S. Bioinformatics Four-Year Sample Curriculum 2025-2026

Requirements subject to change. See UI Catalog for complete degree requirements and additional information.

1st Year – Fall Semester			1st Year – Spring Semester		
BIOL 1101	**Opportunities in Biological Sciences**	1	**BIOL 1150/1150L**	**Cells & the Evolution of Life & Lab** *Prereq:* CHEM 1101 or CHEM 1111 minimum 'C' required to graduate	4
CHEM 1111/1111L	**Principles of Chemistry I & Lab** *Prereq:* math test or min 'C' in CHEM 1101, MATH 1143 or 1170	4	**CHEM 1120/1120L**	**Principles of Chemistry II & Lab** *Prereq:* Chem 1111/1111L	5
MATH 1170	**Calculus I** *Prereq:* math test or min 'C' in MATH 1143 and MATH 1144 (co-req possible).	4	**MATH 1750**	**Calculus II** *Prereq:* min 'C' in MATH 1170	4
(see below)	**General Education Course/Elective**	3	**CS 1120**	**Computer Science I** *Prereq:* Math 1143 with min grade of 'C'	4
ENGL 1102	**College Writing and Rhetoric** *Prereq:* ENGL 1101 or test scores	3			
	Total Credits	**15**		**Total Credits**	**17**
2nd Year – Fall Semester			**2nd Year – Spring Semester**		
CHEM 2770	**Organic Chemistry I** *Prereq:* CHEM 1120/1120L	3	**CS 2120**	**Practical Python** *Prereq:* Math 143	3
CS 1121	**Computer Science II** *Prereq:* CS 1120 and co-req of MATH 1760	3	**BIOL 3120** *(Spring only)*	**Molecular and Cellular Biology** *Prereq:* BIOL 1150/1150L and BIOL 3100/3150 or GENE 3140 or BIOL 2500	3
BIOL 3100 *(Fall only)*	**Genetics** *Prereq:* Biol 1150/1150L or BIOL 2500	3	**BIOL 4440** *(Spring only)*	**Genomics** *Prereq:* BIOL 3100 or GENE 3140	3
MATH 1760	**Discrete Mathematics** *Prereq:* math test or min 'C' in MATH 1143 and MATH 1144 (co-req possible).	3	*(see below)*	**General Education Course/Elective**	**3**
(see below)	**General Education/Elective**	3	*(see below)*	**General Education Course/Elective**	**3**
	Total Credits	**15**		**Total Credits**	**15**
3rd Year – Fall Semester			**3rd Year – Spring Semester**		
BIOL 3800 *(Fall only)*	**Biochemistry I** *Prereq:* CHEM 1120/1120L and CHEM 2770	4		**General Education Course/Elective**	3
STAT 3010	**Probability & Statistics** *Prereq:* MATH 1750	3	**BIOL 4460 or BIOL 4820 or BIOL 4870**	**Phylogenetics** *odd springs Prereq: BIOL 3100,* **Protein Structure and Function** *even springs Prereq:* BIOL 3800, **Cellular and Molecular Basis of Disease** *fall only Prereq:* BIOL 3800,and BIOL 3100	3
Written Communication	**ENGL 2020** or **2070** or **2080** or **3170 or 3180 or 3200** *Prereq:* ENGL 1102; Junior standing: 3170,3180, 3200	3	**CS 4615** *(Probably offered spring)*	**Computational Biology: Sequence Analysis** *Prereq:* Knowledge of high level programming, basic probability, basic molecular biology	3
CS 3195 or CS 3600	**Analysis of Algorithms** *Prereq:* Math 175 and CS 121 **Database Systems** *Prereq:* CS 1121 and CS 1550	3	**BIOL 4210** *(Spring only*	**Advanced Evolution/Population Dynamics** *Prereq:* BIOL 3100 or 3140 or FOR 2100 or REM 210 or WLF 2200	3
Option for BIOL 4870 fall course, see spring, or *(see below)*	**General Education Course/Elective**	3	*(see below)*	**General Education Course/Elective**	3
	Total Credits	**16**		**Total Credits**	**15**
4th Year – Fall Semester			**4th Year – Spring Semester**		
(see below)	**General Education Course/Elective**	3	**BIOL 400**	**Seminar**	1
(see below)	**General Education Course/Elective**	3	**Capstone Experience**	**BIOL 4010** or **BIOL 4070** or **BIOL 4080** *(Fall or Spring)* or **BIOL 4110** *(Spring only)*	2
(see below)	**General Education Course/Elective**	3	*(see below)*	**General Education Course/Elective**	3
(see below)	**General Education Course/Elective**	3	*(see below)*	**General Education Course/Elective**	3
(see below)	**General Education Course/Elective**	3	*(see below)*	**General Education Course/Elective**	3
	Total Credits	**15**		**Total Credits**	**12**

B.S. Bioinformatics Four-Year Sample Curriculum 2025-2026

Requirements subject to change. See UI Catalog for complete degree requirements and additional information.

Bioinformatics Electives.

Choose a minimum of 12 credits from either category

Biological Electives – Biochemistry II, Pathogenic Microbiology, Mathematical Biology, Prokaryotic Molecular Biology, Cellular and Molecular Basis of Disease, Microbiomes, Phylogenetics, Immunology, Mammalogy, Herpetology, Protein Structure and Function, Microbial Physiology, Neurobiology, Developmental Biology, Virology, Ethics in Science

Computational Electives – Python for Machine Learning, Machine Learning, Evolutionary Computation, Data Science, Foundations of Data Visualization, Communicating with Data, Ordinary Different Equations, Linear Algebra, Multivariate Analysis, Statistical Analysis, Molecular Modeling, Protein Structure and Design

Additional classes may be substituted with prior approval from advisor and chairperson.