Computer Science Major, Bioinformatics Emphasis Plan

The following suggested four-year plan is for students working toward a Bachelor of Science or Bachelor of Arts degree in Computer Science with a Bioinformatics Emphasis. Students should consult with their advisor to develop a plan of study tailored to their individual needs and interests.

Freshman Year (32 credits)

Fall Semester (17 credits)

CHEM 1210 Principles of Chemistry I (4 cr) **and**
CHEM 1215 Chemical Principles Laboratory I (1 cr) 5
CS 1400 Introduction to Computer Science—CS 1 3
CS 1405 Introduction to Computer Science—CS 1 Lab 1
MATH 1210 (QL) Calculus I 4
USU 1010 University Connections 2
One University Studies breadth course 3

Spring Semester (15 credits)

CS 1410 Introduction to Computer Science—CS 2 3
ENGL 1010 (CL1) Introduction to Writing: Academic Prose 3
MATH 1220 (QL) Calculus II 4
CHEM 1220 (BPS) Principles of Chemistry II (4 cr) **and**
CHEM 1225 Chemical Principles Laboratory II (1 cr) 5

Sophomore Year (31-32 credits)

Fall Semester (15-16 credits)

CHEM 2300 Principles of Organic Chemistry (3 cr) **or**
CHEM 2310 Organic Chemistry I (4 cr) ..... 3 or 4
CS 2420 (QI) Algorithms and Data Structures—CS 3 3
CS 2810 Computer Systems Organization and Architecture I 3
MATH 3310 Discrete Mathematics 3
ENGL 2010 (CL2) Intermediate Writing: Research Writing in a Persuasive Mode 3

Spring Semester (16 credits)

CHEM 3700 Introductory Biochemistry 3
CS 2450 (CI) Introduction to Software Engineering I 3
CS 3000 Undergraduate Seminar 1
CS 3810 Computer Systems Organization and Architecture II 3
STAT 3000 (QI) Statistics for Scientists 3
One University Studies breadth course 3

Junior Year (32-33 credits)

Fall Semester (16-17 credits)

BIOL 1610 Biology I 4
CS 3450 Introduction to Software Engineering II 3
CS 4700 Programming Languages 3
MATH 2250 (QI) Linear Algebra and Differential Equations (4 cr) **or**
MATH 2270 (QI) Linear Algegra (3 cr) ..... 3 or 4
One University Studies breadth course 3

Spring Semester (16 credits)

BIOL 3060 (QI) Principles of Genetics 4
CS 3100 Operating Systems and Concurrency 3
CS 5050 Advanced Algorithms 3
SPCH 1020 (BHU/CI) Public Speaking (3 cr) **or**
ENGL 3080 (CI) Introduction to Technical Communication (3 cr) 3
One University Studies breadth course 3

Senior Year (25 credits)

Fall Semester (13 credits)

CS 3410 (QI) Computational Science: JAVA/Internet (F,Sp) (3 cr) **or**
CS 3420 (QI) Computational Science: C# and .NET (F,Sp,Su) (3 cr) **or**
CS 3430 (QI) Computational Science: Python and Perl Programming (Sp,Su) (3 cr) 3
CS 5070 Computer Science Capstone I 1
CS 5660 Bioinformatics I 3
CS 5800 Introduction to Database Systems 3
One University Studies depth course 3

Spring Semester (12 credits)

BIOL 3100 (CI) Bioethics 3
CS 5071 Computer Science Capstone II 3
CS 5670 Bioinformatics II 3
One University Studies depth course 3

Note: BIOL 1610 and 3060 will fulfill the Breadth Life Sciences (BLS) requirement for students in the Bioinformatics Emphasis who complete the chemistry sequence (CHEM 1210, 1215, 1220, and 1225).