MINOR IN BIOINFORMATICS

At the intersection of biology and computer science, bioinformatics is the study of applying computational tools to collect and analyze complex biological data such as genomic sequences.

A minor in Bioinformatics will give students interested in biology a foundation in programming that will complement their biology backgrounds. In addition to programming, students will take basic courses in statistics and machine learning, leading up to coursework in bioinformatics. Computer Science has competitive entrance requirements.

Please contact a department advisor for more information.

Requirements

Effective Spring 2022

Students must satisfactorily complete the total credits required for the minor. Minors and interdisciplinary minors require 12 or more upper-division (300- to 400-level) credits.

Additional coursework may be required due to prerequisites.

A minimum grade of a C (2.000) is required in all courses required for the minor.

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BZ 360</td>
<td>Bioinformatics and Genomics</td>
<td>3</td>
</tr>
<tr>
<td>CS 220</td>
<td>Discrete Structures and their Applications</td>
<td>4</td>
</tr>
<tr>
<td>CS 345</td>
<td>Machine Learning Foundations and Practice</td>
<td>3</td>
</tr>
<tr>
<td>CS 425</td>
<td>Introduction to Bioinformatics Algorithms</td>
<td>4</td>
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Select one course from the following:

- MATH 155 Calculus for Biological Scientists I (GT-MA1) 4
- MATH 156 Mathematics for Computational Science I (GT-MA1) 4
- MATH 160 Calculus for Physical Scientists I (GT-MA1) 4

Select one course from the following:

- CS 150B Culture and Coding: Python (GT-AH3) 2-3
- CS 152 Python for STEM 2-3

Select one course from the following:

- BZ 110 Principles of Animal Biology (GT-SC2) 3-4
- BZ 120 Principles of Plant Biology (GT-SC1) 3-4
- LIFE 102 Attributes of Living Systems (GT-SC1) 3-4

Select one course from the following:

- CS 163 CS1—No Prior Programming Experience 2-4
- CS 164 CS1—Computational Thinking with Java 2-4
- DSCI 235 Data Wrangling 4

Select one course from the following:

- STAT 315 Intro to Theory and Practice of Statistics 28-32
- STAT 301 Introduction to Applied Statistical Methods 3
- STAT 303/ ECE 303 Introduction to Communications Principles 3
- STAT 307 Introduction to Biostatistics 3

Program Total Credits: 28-32