BIOINFORMATICS AND COMPUTATIONAL BIOLOGY GRADUATE ACADEMIC CERTIFICATE

There is a large and growing demand for graduates with training in bioinformatics and computational biology. These areas are vital to the biotechnology industry, the medical sciences, and conservation biology. This certificate will provide graduate students who are pursuing graduate degrees in other areas with recognition for taking multiple courses of the BCB curriculum, and thus building a strong foundation in bioinformatics and computational biology. For more information, please email bcb@uidaho.edu or visit the BCB Program office in Life Sciences South (Room 441D).

All required coursework must be completed with a grade of B or better (O-10-b (https://catalog.uidaho.edu/general-requirements-academic-procedures/o-miscellaneous/)).

Code	Title	Hours
BIOL 522	Molecular Evolution	3
CS 515	Computational Biology: Sequence Analysis	3
MATH 563	Mathematical Genetics	3
Select 3 credits from the following: [1]		3
BIOL 421	Advanced Evolution	
BIOL 444	Genomics	
BIOL 456	Computer Skills for Biologists	
BIOL 545	Phylogenetics	
BIOL 547	Virology	
BIOL 585	Prokaryotic Molecular Biology	
BIOL 587	Cellular and Molecular Basis of Disease	
CS 511	Parallel Programming	
CS 570	Artificial Intelligence	
CS 572	Evolutionary Computation	
CS 575	Machine Learning	
MATH 428	Numerical Methods	
MATH 451	Probability Theory	
MATH 452	Mathematical Statistics	
MATH 538	Stochastic Models	
PLSC 542	Biochemistry	
PLSC 588	Genetic Engineering	
PHYS 533	Statistical Mechanics	
STAT 519	Multivariate Analysis	
STAT 565	Computer Intensive Statistics	
Total Hours		**12**

Courses to total 12 credits for this certificate

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Three credits in a different area than the student's disciplinary focus. This course must be approved by the BCB director or another member of the BCB governing board.

1. The student will demonstrate an augmented understanding in bioinformatics, mathematics, and computational sciences.
2. The student will have the capability to participate in interdisciplinary research and industry projects and be able to explain Bioinformatics and Computational Biology (BCB) concepts (from the biological, mathematical, and computational sciences) to people with widely varying backgrounds, from professionals in other fields to lay people.
3. The student will use and understand a common 'language' that allows those with a background in one of the BCB disciplines to communicate and collaborate in interdisciplinary projects with colleagues from other disciplines.