Courses primarily for undergraduates:

**BCB 444: Bioinformatic Analysis**
(Cross-listed with BCBIO, BIOL, COM S, CPR E, GEN). (4-0) Cr. 4. F.
Prereq: MATH 165 or STAT 401 or equivalent.

Broad overview of bioinformatics with a significant problem-solving component, including hands-on practice using computational tools to solve a variety of biological problems. Topics include: bioinformatic data processing, Perl programming, genome assembly, database search, sequence alignment, gene prediction, next-generation sequencing, comparative and functional genomics, and systems biology.

**BCB 490: Independent Study**
Cr. 1-5. Repeatable, maximum of 9 credits. F.S.SS.
Prereq: Permission of instructor

Courses primarily for graduate students, open to qualified undergraduates:

**BCB 544: Fundamentals of Bioinformatics**
(Cross-listed with COM S, CPR E, GDCB). (4-0) Cr. 4. F.
Prereq: MATH 165 or STAT 401 or equivalent

A practical, hands-on overview of how to apply bioinformatics to biological research. Recommended for biologists desiring to gain computational molecular biology skills. Topics include: sequence analysis, genomics, proteomics, phylogenetic analyses, ontology enrichment, systems biology, data visualization and emergent technologies.

**BCB 567: Bioinformatics I (Bioinformatics Algorithms)**
(Cross-listed with COM S, CPR E). (3-0) Cr. 3.
Prereq: COM S 228; COM S 330; credit or enrollment in BIOL 315, STAT 430

Biology as an information science. A review of the algorithmic principles that are driving the advances in bioinformatics and computational biology.

**BCB 569: Bioinformatics III (Structural Bioinformatics)**
(Cross-listed with BBMB, COM S, CPR E, GDCB). (3-0) Cr. 3. F.
Prereq: BCB 567, BBMB 316, GEN 409, STAT 430


**BCB 570: Bioinformatics IV (Systems Biology)**
(Cross-listed with COM S, CPR E, GDCB, STAT). (3-0) Cr. 3. S.
Prereq: BCB 567 or COM S 311, COM S 228, GEN 409, STAT 430


**BCB 590: Special Topics**
Cr. arr. Repeatable.
Prereq: Permission of instructor

**BCB 593: Workshop in Bioinformatics and Computational Biology**
(1-0) Cr. 1. Repeatable. F.S.

Current topics in bioinformatics and computational biology research. Lectures by off-campus experts. Students read background literature, attend preparatory seminars, attend all lectures, meet with lecturers.

**BCB 598: Cooperative Education**
Cr. R. Repeatable. F.S.SS.
Prereq: Permission of the program chair

Off-campus work periods for graduate students in the field of bioinformatics and computational biology.

**BCB 599: Creative Component**
Cr. arr.

Courses for graduate students:

**BCB 660: Selected Topics in Bioinformatics and Computational Biology**
(3-0) Cr. 1-4. Repeatable, maximum of 4 times. F.S.SS.
Prereq: Permission of Instructor

Topics of interest in the major research areas of computational molecular biology, including genomics, structural genomics, functional genomics, and computational systems biology.
BCB 690: Student Seminar in Bioinformatics and Computational Biology  
Cr. 1. Repeatable. S.  
Student research presentations.

BCB 691: Faculty Seminar in Bioinformatics and Computational Biology  
(1-0) Cr. 1. Repeatable.  
Faculty research series.

BCB 697: Graduate Research Rotation  
Cr. arr. Repeatable. F.S.S.  
Graduate research projects performed under the supervision of selected faculty members in the Bioinformatics and Computational Biology major.

BCB 699: Research  
Cr. arr. Repeatable.