Bioinformatics and Computational Biology (BCB)

Courses primarily for undergraduates:

BCB 444. Introduction to Bioinformatics.
(Dual-listed with BCB 544). (Cross-listed with CBIO, 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: database searching, sequence alignment, gene prediction, RNA and protein structure prediction, construction of phylogenetic trees, comparative and functional genomics, systems biology.

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

BCB 544. Introduction to Bioinformatics.
(Dual-listed with BCB 444). (Cross-listed with COM S, CPR E, GDCB). (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: database searching, sequence alignment, gene prediction, RNA and protein structure prediction, construction of phylogenetic trees, comparative, functional genomics, and systems biology.

BCB 567. Bioinformatics I (Fundamentals of Genome Informatics).
(Cross-listed with COM S, CPR E). (3-0) Cr. 3. F. Prereq: COM S 226; COM S 330; STAT 341; credit or enrollment in BIOL 315, STAT 430


BCB 568. Bioinformatics II (Advanced Genome Informatics).
(Cross-listed with COM S, GDCB, STAT). (3-0) Cr. 3. S. Prereq: BCB 567, BBMB 301, BIOL 315, STAT 430, credit or enrollment in GEN 411


BCB 569. Bioinformatics III (Structural Genome Informatics).
(Cross-listed with BBMB, COM S, CPR E). (3-0) Cr. 3. F. Prereq: BCB 567, GEN 411, STAT 430


BCB 570. Bioinformatics IV (Computational Functional Genomics and Systems Biology).
(Cross-listed with COM S, CPR E, GDCB, STAT). (3-0) Cr. 3. S. Prereq: BCB 567, BIOL 315, COM S 311 and either 208 or 228, GEN 411, 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.S. 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, open to qualified undergraduates:

BCB 644. Introduction to Bioinformatics.
(Dual-listed with BCB 444). (Cross-listed with COM S, CPR E, GDCB). (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: database searching, sequence alignment, gene prediction, RNA and protein structure prediction, construction of phylogenetic trees, comparative, functional genomics, and systems biology.

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