

# Bioinformatics Courses

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## Courses

### **BINF 5110. Biology Seminar/Bioinformatics.**

Biology Seminar for Bioinformatics: Reading and discussions of various topics in the biological sciences related to bioinformatics. Each student is expected to give at least one presentation during the course. Prerequisite: Department approval.

**Department:** Bioinformatics

**1 Credit Hour**

**1 Total Contact Hour**

0 Lab Hour

1 Lecture Hour

0 Other Hour

### **BINF 5111. Chem. Sem. for Bioinformatics.**

Chemistry Seminar for Bioinformatics: Reading and discussions of various topics in Chemistry related to bioinformatics. Each student is expected to give at least one presentation during the course. Prerequisite: Department approval.

**Department:** Bioinformatics

**1 Credit Hour**

**1 Total Contact Hour**

0 Lab Hour

1 Lecture Hour

0 Other Hour

### **BINF 5112. CS Seminar for Bioinformatics.**

Computer Science Seminar for Bioinformatics: Reading and discussions of various topics in computer science related to bioinformatics. Each student is expected to give at least one presentation during the course. Prerequisite: Department approval.

**Department:** Bioinformatics

**1 Credit Hour**

**1 Total Contact Hour**

0 Lab Hour

1 Lecture Hour

0 Other Hour

### **BINF 5113. Math Sem. for Bioinformatics.**

Mathematics Seminar for Bioinformatics: Reading and discussions of various topics in the mathematical and statistical sciences related to bioinformatics. Each student is expected to give at least one presentation during the course. Prerequisite: Department approval.

**Department:** Bioinformatics

**1 Credit Hour**

**1 Total Contact Hour**

0 Lab Hour

1 Lecture Hour

0 Other Hour

### **BINF 5341. Anal./Model of Bio Structures.**

Analysis and Modeling of Biological Structures: Introduction to the principles and methods used for the three-dimensional structural determination and simulation of macromolecules of biological interest. Molecular determination and simulation of macromolecules of biological interest. Molecular recognition, conformational analysis, and molecular dynamics; ligand design and docking; and modern methods for protein structure determination. Prerequisite: Department approval. BINF 5341 is the same courses as CHEM 5341. Laboratory fee required.

**Department:** Bioinformatics

**3 Credit Hours**

**5 Total Contact Hours**

3 Lab Hours

2 Lecture Hours

0 Other Hours

**BINF 5351. Intro. Bioinformatics I.**

Introduction to Bioinformatics I: Basic Sequence Comparisons: Theory and practice of sequence analysis, with an emphasis on nucleic acid comparisons and homologue determination. Includes understanding and use of Internet and computational tools with both public sequencing databases and experimental data. Prerequisite: Department approval. BINF 5351 is the same course as BIOL 5351. Laboratory fee required. .

**Department:** Bioinformatics

**3 Credit Hours**

**5 Total Contact Hours**

3 Lab Hours

2 Lecture Hours

0 Other Hours

**BINF 5352. Intro. Bioinformatics II.**

Introduction to Bioinformatics II: Gene Finding and Genomic Comparisons: A continuation of BINF 5351 with an emphasis on the analysis of protein structural information. Also includes gene annotation and whole genome comparisons. Prerequisite: Department approval. BINF 5352 is the same course as BIOL 5352. Laboratory fee required.

**Department:** Bioinformatics

**3 Credit Hours**

**5 Total Contact Hours**

3 Lab Hours

2 Lecture Hours

0 Other Hours

**BINF 5353. Internship in Bioinformatics.**

Internship in Bioinformatics: Practical on-the-job experience as an intern academic, industry, or government institution which is a current or potential employer of bioinformatics professionals. No more than 3 hours of BINF 5353 may count toward a graduate degree. Prerequisite: Department approval.

**Department:** Bioinformatics

**3 Credit Hours**

**6 Total Contact Hours**

0 Lab Hours

0 Lecture Hours

6 Other Hours

**BINF 5354. Post-Genomic Analysis.**

Post-Genomic Analysis: The extraction and confirmation of information from entire and partially assembled genome sequences. Includes the design and use of DNA arrays, SNP's and applied proteomics in the identification and verification of expressed genes of interest. Prerequisite: Department approval. BINF 5354 is the same courses as BIOL 5354 and STAT 5354. Laboratory fee required.

**Department:** Bioinformatics

**3 Credit Hours**

**5 Total Contact Hours**

3 Lab Hours

2 Lecture Hours

0 Other Hours

**BINF 5398. Thesis.**

Thesis: Initial work on the thesis. Prerequisite: Department approval.

**Department:** Bioinformatics

**3 Credit Hours**

**3 Total Contact Hours**

0 Lab Hours

0 Lecture Hours

3 Other Hours

**BINF 5399. Thesis.**

Thesis: Continuous enrollment required while work on thesis continues. Prerequisites: BINF 5398 with a grade of "B" or better and department approval.

**Department:** Bioinformatics

**3 Credit Hours**

**3 Total Contact Hours**

0 Lab Hours

0 Lecture Hours

3 Other Hours

**Prerequisite(s):** (BINF 5398 w/P or better)