University of Connecticut College of Liberal Arts and Sciences
Department of Molecular and Cell Biology--Bioinformatics Minor Plan of Study
Last revised: November 15, 2017

Instructions to students: Students must take at least 15 credits of the following courses, including at least one course from each of the following four groups. Courses may be listed under more than one category; these courses **cannot** be used to fulfill both categories simultaneously. Courses used to satisfy requirements for the student's major may be used to satisfy group requirements but may not be used towards the 15 credits for the minor.
NOTE: Completion of a minor requires that a student earn a C (2.0) or better in each of the required courses for that minor. A maximum of 3 credits towards the minor may be transfer credits of courses equivalent to University of Connecticut courses.

A. **Bio-Computing/Computer Science**. Check at least **one** of these courses.
   ☐MCB 3421. Introduction to Molecular Evolution and Bioinformatics (3 credits)
   ☐MCB 3602W. Introduction to Bioinformatic Tools for Microbial Genome Annotation (1 credit)
   ☐MCB 3637. Practical Methods in Microbial Genomics (3 credits)
   ☐MCB 5429. Theory and Practice of High Throughput Sequence Analysis (2 credits)
   ☐MCB 5430. Analysis of eukaryotic functional genomic data (3 credits)
   ☐MCB 5472/EEB 5372. Computational Methods in Molecular Evolution (3 credits)
   ☐EEB 4100. Big Data Science for Biologists
   ☐EEB 4230W. Methods of Ecology (4 credits)
   ☐EEB 5348. Population Genetics (3 credits)
   ☐EEB 5350. Molecular Systematics (2 credits)
   ☐CSE 2102. Introduction to Software Engineering (3 credits)
   ☐CSE 2300W. Digital Logic Design (4 credits)
   ☐CSE 3500. Algorithms and Complexity (3 credits)
   ☐CSE 3502. Theory of Computation (3 credits)
   ☐CSE 3800/BME 4800. Bioinformatics (3 credits)
   ☐CSE 3810/BME 3810. Computational Genomics (3 credits)
   ☐CSE 4102. Programming Languages (3 credits)

B. **Data Banks/Statistics**. Check at least **one** of these courses.
   ☐STAT 2215Q. Introduction to Statistics II (3 credits)
   ☐STAT 3025Q. Statistical Methods (Calculus level I) (3 credits)
   ☐STAT 3375Q and 3445. Introduction to Mathematical Statistics (3 credits each)
   ☐CSE 4701. Principles of Data Bases (3 credits)

C. **Protein Structure/Biochemistry**. Check at least **one** of these courses.
   ☐MCB 2000. Introduction to Biochemistry (4 credits)
   ☐MCB 3010. Biochemistry (5 credits)
   ☐MCB 3421. Introduction to Molecular Evolution and Bioinformatics (3 credits)
   ☐MCB 4009. Structure and Function of Biological Macromolecules (3 credits)
   ☐MCB 5011. Enzyme Structure and Function (3 credits)
   ☐PNB 6420. Physiological Proteomics (3 credits)

D. **Genetics**. Check at least **one** of these courses.
   ☐MCB 2400 or MCB 2410 Genetics / Human Genetics (3 credits)
   ☐MCB 3201. Gene Expression (3 credits)
   ☐MCB 3412. Genetic Engineering (3 credits)
   ☐MCB 3413. Concepts of Genetic Analysis (4 credits)
   ☐MCB 3617. Molecular Biology and Genetics of Prokaryotes (4 credits)

☐MCB 3637 Practical Methods in Microbial Genomics
☐MCB 5429. Theory and Practice of High Throughput Sequence Analysis (2credits)
☐EEB 5300. Practical Genomics in Ecology and Evolution. (3 credits)
☐EEB 5348. Population Genetics (3 credits)

The following courses can count towards the 15 credits requirement if approved by a member of the oversight committee:
☐MCB 3895. Special Topics
☐MCB 3899. Independent Study in Molecular and Cell Biology
☐MCB 3989. Introduction to Research in Molecular and Cell Biology
☐MCB 4989. Introduction to Honors Research in Molecular and Cell Biology
☐PNB 3299 Independent Study in Physiology and Neurobiology
☐EEB 3899. Independent Study
☐EEB 5895. Investigations in Special Topics
☐CSE 4095. Special Topics in Computer Science and Engineering
☐CSE 4099. Independent Study in Computer Science and Engineering

Total Credits. List and sum credits for all courses taken that are 2000s level or higher.
_____ credits for _____ [Example: "*3* credits for *MCB 2410*"]
_____ credits for _____
_____ credits for _____
_____ credits for _____
_____ credits for _____
_____ credits for _____
_____ **Total credits** (must be **15** or more) with a grade of C or better.

*Bioinformatics Oversight Committee:
MCB: J. Peter Gogarten, 486-4061
CSE: Ion Mandoiu, 486-3784

Student Name (print) _____ PeopleSoft #: _____

Expected graduation month/year _____ Cell/Local Phone: _____

 e-mail: _____

I approve the above program for the Minor in Bioinformatics. Advisor (print)_____

Advisor's signature _____ Dept. _____ Date _____