2022-2023 Computational and Systems Biology Concentration Worksheet

Major in Biological Sciences

To complete this concentration, Biological Sciences Majors must complete 1 coding sequence requirement and any 3 additional concentration courses from the list below:

Coding Requirement

- COMP_SCI 110-0
- COMP_SCI 111-0
- NICO 101-0
- NICO 102-0

Biological Sciences and Related Courses

- BIOL_SCI 323-0  Bioinformatics: Sequence and Structure Analysis - Use of informational and modeling techniques to explore evolutionary and other problems related to the genome. Prereq: BIOL_SCI 241-0 OR BIOL_SCI 301-0.
- BIOL_SCI 345-0  Topics in Biology: Principle's & Methods in Systems Biology - This course uses current and classical literature to teach students about the major principles of systems biology. Prerequisites: BIOL_SCI 201-0 OR 215-0; BIOL_SCI 202-0 OR 219-0; and BIOL_SCI 234-0 OR 222-0.
- BIOL_SCI 354-0  Quantitative Analysis of Biology - Random genetic processes, gene expression, cell adaptation, cell cycle, developmental morphogens, phylgenomics. Prereqs: BIOL_SCI 201-0 OR 215-0 and BIOL_SCI 202-0 OR 219-0.
- CHEM_ENG 379-0  Computational Biology: Principles & Applications - Introduction to the development and application of data-analytical and theoretical methods, mathematical modeling, and computational simulation techniques to the study of biological systems.
- ES_APPM 495-0  Topic: Introduction to the Analysis of RNA Sequencing Data - This course will give an introduction to the theory and practice of analyzing high-throughput RNA sequencing through lectures and hands-on exercises.