

Bemidji State University

BIOL 4448: Genomics Lab

A. COURSE DESCRIPTION

Credits: 2

Lecture Hours/Week: *.*

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: None

All students in the Biology Baccalaureate Partnership at North Hennepin Community College are expected to co-enroll in this 2 credit face-to-face section on the NHCC campus when taking BIOL4447 online. This lab section consists of a hands-on genome annotation project in collaboration with the national Genomics Education Partnership, as well as practice using other bioinformatics tools and databases. Prerequisites: BIOL2360, co-enrollment with BIOL4447.

B. COURSE EFFECTIVE DATES: 08/21/2017 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Evolution and phylogenetic trees
2. Group Annotation
3. Introduction to Drosophila and the 4th chromosome
4. Introduction to annotation and genome browsers
5. Solo Annotation

D. LEARNING OUTCOMES (General)

1. . complete a package of sequence annotations of sufficient quality to be included in the Genome Education Project's next group publication; any students completing this objective will qualify as authors on any publication that uses their annotations.
2. . use software to infer evolutionary relationships between and within species and understand the biological and mathematical basis for these inferences.
3. . use genome browser software to analyze and annotate raw genome sequence, including searching for and identifying most likely homologs, identifying transcriptional and translational start sites and intron/exon boundaries, and depositing processed sequence annotations in genome databases.
4. . understand the mathematical and computational principles underlying common bioinformatics tools like BLAST, CLUSTAL, etc.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted