

Syllabus for Biology 4515B
Selected Topics in Genetics - Genome biology and genome interactions

Overview. The aim of this course is to present concepts, techniques and approaches currently in use in genomics. We will focus on the power of genomic and whole genome sequencing as a tool to understand whole genome regulation, expression and interactions between different genomes. Students will be familiarized with concepts and approaches used for the development of whole genome sequencing of the Two spotted spider mite *Tetranychus urticae*; <http://www.jgi.doe.gov/sequencing/why/50028.html> as well as other model genomes. The course will be based on the current topics covered in journals such as *The Nature Review Genetics* and *Trends in Genetics*.

Instructor: Dr. Mike Grbic, Rm WSC 342 mgrbic@uwo.ca; technical questions related to the poster presentation Dr. Vlad Zhurov: vzhurov2@uwo.ca

Lectures: There will be a combination of formal lectures (to be given by M. Grbic) and student presentations.

Date and place: Thursday: 16:30-18:30 BG 1056

Text: There is no text for this course as we will be covering material from the primary literature.

Evaluation:

- oral presentation (30%)
- written essay (30%)
- poster (30%)
- participation (10%)

Program:

Jan. 13 Introduction: Genomic technologies: basis for knowledge-based economy/ Covid genomics

Jan. 20 Genome sequencing: from biological problem to the whole genome sequence / preparation of poster preparation and use of ORCA web site

Jan. 27 New developments in genome sequencing technologies

Feb. 03 The genome annotation: from scrambled A,T,G,C to meaningful genome

Feb. 10 Genomic tools

Feb. 17 Poster presentation discussion technical questions

Mar. 03 Poster presentations

Mar. 10 Genome presentation 1/2

Mar. 17 Genome presentation 3/4

Mar. 24 Genome presentation 5/6

Mar. 31 Genome presentation 7/8

April 7 Genome presentation 9/10

Apr. 18 Due date for the genome sequencing proposal