

BIOL 2171 FA - Genetics

Instructors:

Course instructor: Dr. Guillem Dayer	Email: gdayer@lakeheadu.ca
GTAs: TBA	Email: TBA

Course Description:

Understand Mendel's genetic laws, experimental design, and how they apply to the heredity patterns which Mendel observed in pea plants. Understand the link between genotype and phenotype. Understand the difference between a character and a trait. Understand the difference between dominant and recessive alleles and the difference between homozygous and heterozygous. Understand extensions to Mendel's laws. Learn chromosome and inheritance and sex chromosomes. Learn gene linkage, recombination, and gene mapping. Learn DNA replication, gene mutation, and gene functional analysis. Learn genome annotation and genomic analysis.

Time and place:

Lectures - Monday & Wednesday - 10:00-11:30 AM

Labs - Thursday 11:30-2:30, Friday 8:30-11:30 & 11:30-2:30

Course evaluation:

Midterms: 2 x 20%

Lecture quizzes: 5%

Final exam: 30%

Labs: 25%

Recommended textbooks:

- Concepts of Genetics, 12th Global Edition. Published by Pearson
- Genetics: A Conceptual Approach, 7th Edition. Published by Macmillan Learning

Week-by-week schedule:

Week	Lecture
1	Introduction to genetics
2	Chromosome and cellular reproduction
3	Mendelian genetics & Extension of Mendelian genetics
4	Sex Determination and Sex Chromosomes
5	Midterm 1
6	Pedigree Analysis
7	Linkage, Recombination & Eukaryotic Gene Mapping
8	Extranuclear Inheritance, Prokaryotic Gene Mapping and Viral genetic
9	Midterm 2
10	Developmental and Medical Genetics
11	Population and Evolutionary Genetics
12	Genomic analysis & Applications of Genetic Engineering and Biotechnology

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