

Biology 230 Genetics, Winter Semester 2016

Place and time: Bob Wright Science Building Lecture Hall B-150, Tues, Wed & Fri 10.30-11.20 a.m.

Course coordinator and lecturer: Dr. Francis Choy, Cunningham Building Room 062; tel. 721-7107; email: fchoy@uvic.ca

Lecturer: Dr. Barbara Ehling, Petch Building Rm 007; tel. 472-4066; email: behling@uvic.ca

Senior Laboratory Instructor: Ms. Kim Curry, Cunningham Rm. 110; tel. 721-7136; email: cellbiol@uvic.ca

Textbook: Concepts of Genetics by Klug, Cummings et al, 11th (2014) edition, Pearson Publisher. Since the pre-requisites for Biol. 230 are Biol. 225 & Chem 231, & Biochemistry 299 is strongly recommended, students are expected to have fundamental knowledge of DNA structure & function, transcription & translation, amino acids, proteins, carbohydrates, and lipids.

Method of grade assignment: Laboratory: 35%; lectures: 65%

Lecture component - 1st and 2nd midterm examination 17.5% each; final lecture examination, 30%. **Students must pass both the lecture & lab by scoring at least an overall 50% in both components in order to pass the course.**

Grades:

A+	A	A-	B+	B	B-	C+	C	D	F
90-100%	85-89.9%	80-84.9%	77-79.9%	73-76.9%	70-72.9%	65-69.9%	60-64.9%	50-59.9%	0-49.9%

There is NO E grade assigned and subsequently no supplementary exam.

Tentative lectures schedule

Dr. Choy will cover the eukaryotic cell cycle, mitosis, meiosis, cytogenetics, Mendelian genetics and extension, pedigree analysis, biochemical genetics, non-Mendelian inheritance, quantitative genetics, the Lyon's hypothesis, epigenetics, & molecular basis of mutations

Jan 5, Introduction, chromosomes, and the cell cycle

Jan 6 and 8, Reproduction and chromosome transmission, mitosis and meiosis

Jan 12, 13, Mendelian inheritance, probability and statistics

Jan 15, 19 Extension of Mendelian inheritance I and II

Jan 20 Non-Mendelian inheritance; Cytogenetics

Jan 22, 26 Pedigree analysis and biochemical genetics I

Jan 29 Pedigree analysis and biochemical genetics II

Feb 2 First mid-term examination

Feb 3, 5 The Lyon's hypothesis and molecular mechanism of X chromosome inactivation; epigenetics

Feb 8-12 Reading Break

Feb 16, 17 Molecular mechanism of DNA mutations and repair

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- **Dr. Barbara Ehling** will lecture for the second half of the course, covering transcription (about 3-4 lectures), translation (2 lectures), regulation of gene expression (3 lectures), recombinant DNA technologies including modern approaches in genomics and proteomics and applications in biotechnology (6 lectures), population genetics (2 lectures).

March 8 Second mid-term examination (covering the lectures from February 3 to March 4)

Final examination in April, date and place TBA