

## **BIOL 436 HUMAN MOLECULAR GENETICS CRN 20368 WINTER SEMESTER, 2020**

**Lectures are given at Clearihue Building 212, Mon & Thur 10:00-11:20a.m.**

Course coordinator and lecturer: Dr. Francis Choy, Cunningham Building Room 062.

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**Textbook: There will be no single assigned textbook since the lecture materials are from current journals and a number of reference textbooks. All lectures notes (PDF) can be downloaded from UVic CourseSpaces for BIOL 436.**

**Reference textbooks are: Human Molecular Genetics** by Strachan & Read, 5th edition, 2019; Taylor & Francis and Garland Science Publishers; **Medical Genetics** by Jorde 6<sup>th</sup> edition 2019, Mosby-Elsevier. **Human Genetics** by Lewis, 12th edition, 2018, McGraw-Hill Publisher.

**Method of grade assignment: Midterm exams, 50%; final exam, 50%. The format of both exams will be essays, short answers, and multiple choice.**

Grades:  $\geq 90\%$  = A+,  $\geq 85\%$  = A,  $\geq 80\%$  = A-;  $\geq 77\%$  = B+,  $\geq 73\%$  = B;  $\geq 70\%$  = B-;  $\geq 65\%$  = C+,  $\geq 60\%$  = C,  $\geq 50\%$  = D; below 50% = F. **There will be no E grade nor supplementary examination.**

### **Tentative Schedule**

Jan 6, 9	Organization and expression of the human mitochondrial genome; biochemical & molecular genetics of mitochondria enzymopathies
Jan 13	Current Prevention of Mitochondria DNA Diseases; Mt genomics & anthropology
Jan 16	Organization and expression of the human nuclear genome
Jan 20, 23	Human multigene families: evolution and implications in genetic diseases
Jan 27, 30	Molecular genetics of the HLA (human leukocyte antigen) and Immunogenetics I
Feb 3, 6	Immunogenetics II and III
<b>Feb 10</b>	<b>1<sup>st</sup> mid-term exam</b>
Feb 13	Guest lecture, topic TBA
Feb 17-21	<b>Reading break for all faculties</b>
Feb 24, 27	Molecular genetics of hemoglobinopathies
March 2, 5	Biochemical and molecular genetics of diabetes I and II
March 9, 12	Genetic screening and population genetics I and II
March 16	<b>2<sup>nd</sup> mid-term exam</b>
March 19, 23	Treatment for genetic disease I and II
March 30	CRISPR-base editors and prime editing, and other technologies for potential treatment of genetic diseases
April 2	Pharmacogenetics and precision medicine

**Final examination, date and place TBA**