

BIOL 436 HUMAN MOLECULAR GENETICS WINTER SEMESTER, 2018

Lectures are given at **ECS Building 124**, 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 of the lectures note (PDF) can be downloaded from UVic CourseSpaces for **BIOL 436**. Reference textbooks are: **Genetics and Genomics in Medicine 1st edition, 2014** and **Human Molecular Genetics** by Strachan & Read, 4th edition, 2011; Garland Sci Publishers; **Medical Genetics** by Jorde et al, 2010, 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.4, 8	Organization and expression of the human mitochondrial genome; biochemical & molecular genetics of mitochondria enzymopathies
Jan 11	Current Prevention of Mitochondria DNA Diseases; Mt genomics & anthropology
Jan 15	Organization and expression of the human nuclear genome
Jan 18, 22	Human multigene families: evolution and implications in genetic diseases
Jan 25, Feb 1	Molecular genetics of the HLA (human leukocyte antigen) and Immunogenetics I
Feb 5	Immunogenetics II
Feb 8	1st mid-term exam
Feb 12-16	Reading break
Feb 19, 22	Molecular genetics of hemoglobinopathies
Feb 26, March 1	Biochemical and molecular genetics of diabetes
March 5, 8	Genetic screening and population genetics I & II
March 12	2nd mid-term exam
March 15	Treatment for genetic diseases I: Molecular basis of gene therapy
March 19	Treatment for genetic disease II & III: Gene therapy in cancer & new approaches in enzyme-replacement therapy
March 22	Guest lecture by Chloe Christensen and Rhea Ashmead on current research for potential treatment of genetic diseases
March 26	Treatment of brain disease: Overcoming the blood brain barrier
March 29	Guest lecture by Dr. Graham Sinclair: Integrating genomics into the investigation of inborn errors of metabolism
April 2, 5	Pharmacogenetics

Final Examination, date and place TBA