BIOL 436 HUMAN MOLECULAR GENETICS WINTER SEMESTER, 2017
Lectures are given at ECS Building 124, Mon & Thur 10:00-11:20 a.m.

Course coordinator and lecturer: Dr. Francis Choy, Cunningham Building Room 062.
Tel. 721-7107, Email: FCHOY@UVIC.CA.

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, 11th edition, 2015, 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: ≥90% = A+, ≥85% = A, 80% = A-; ≥77% = B+; ≥73% = B; ≥70% = B-; ≥65% = C+, ≥60% = C, ≥50% = D; below 50% = F. There will be no E grade nor supplementary examination.

Tentative Schedule
Jan 5, 9 Organization and expression of the human mitochondrial genome; biochemical & molecular genetics of mitochondria enzymopathies
Jan 12 Current Prevention of Mitochondria DNA Diseases; Mt genomics & anthropology
Jan 16 Organization and expression of the human nuclear genome
Jan 19, 23 Human multigene families: evolution and implications in genetic diseases
Jan 26, 30 Molecular genetics of the HLA (human leukocyte antigen) and Immunogenetics I
Feb 2 1st mid-term exam
Feb 6, 9 Immunogenetics II
Feb 13-17 Reading break
Feb 20, 23 Molecular genetics of hemoglobinopathies
Feb 27, March 2 Biochemical and molecular genetics of diabetes
March 6, 9 Genetic screening and population genetics I & II
March 13 2nd mid-term exam
March 16 Treatment for genetic diseases I: Molecular basis of gene therapy
March 20 Treatment for genetic disease II & III: Gene therapy in cancer & new approaches in enzyme-replacement therapy
March 23 Guest lecture by Chloe Christensen, M.Sc. candidate in Biology: CRISPR-Cas9 technology for genome editing and DNA repair
March 27 Treatment of brain disease: Overcoming the blood brain barrier
March 30 Guest lecture by Dr. Graham Sinclair: Integrating genomics into the investigation of inborn errors of metabolism
April 3 Pharmacogenetics

Final Examination, date and place TBA