

MEDG 505 2023W GENOME ANALYSIS

Investigation of genetic information as it is organized within genomes, genetic and physical map construction, sequencing technologies, gene identification, proteomics, database accessing and integration, applications to medicine, functional organization of genomes from contemporary, historic, and evolutionary perspectives.

Credit value: 3

Prerequisite: BIOL 234 (Fundamentals of Genetics).

COURSE COORDINATORS

Dr. Phil Hieter

Dr. Inanc Birol

Dr. Mike Kobor

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Office hours: By appointment (all coordinators)

COURSE TEACHING ASSISTANT

Shaima Hourani

shaima99@student.ubc.ca

Office hours: **Monday 9:30 am - 11:30 pm and Tuesday 3:00 pm - 5:00 pm through Zoom. Daily by e-mail.**

CLASS FORMAT

Classes are held in person on **Fridays, from 9:30am to 12:30pm**, Room GEOG214. The course consists of guest lectures by invited speakers on their field of interest within genomics. Each speaker selects two papers for students to present and discuss with the class.

09:30am	Lecture by faculty member and on-going discussion
10:35am	More discussion
10:50am	Break
11:10am	Student presentation #1: 25 minutes +10 min discussion
11:45am	Student presentation #2: 25 minutes +10 min discussion

LEARNING MATERIALS

All reading materials will be available as online documents in the course home page on Canvas.

2020W SCHEDULE

Week	Date	Speaker and topic	E-mail
1	Jan 12, 2024	Phil Hieter, Shaima Hourani Intro to Genome Analysis, Genetic Variation, 1000 genomes	hieter@mssl.ubc.ca
2	Jan 19, 2024	Steve Jones Personal Genomics	sjones@bcgsc.ca
3	Jan 26, 2024	Gregg Morin Proteomics for cancer biology and gene function	gmorin@bcgsc.ca
4	Feb 2, 2024	Mike Kobor Epigenomics	michael.kobor@ubc.ca
5	Feb 9, 2024	Marco Marra Cancer Genomics	mmarra@bcgsc.ca
6	Feb 16, 2024	Jan Friedman Rare Disease Genomics	jan.friedman@ubc.ca
7	Feb 23, 2024	Midterm break	
8	Mar 1, 2024	Midterm assignment All students: presentations of Wikipedia articles	shaima99@student.ubc.ca
9	Mar 8, 2024	Inanc Birol Antimicrobial Resistance	ibirol@bcgsc.ca
10	Mar 15, 2024	Colin Ross Personalized Medicine: Pharmacogenomics and Gene Therapy	colin.ross@ubc.ca
11	Mar 22, 2024	John Tyson Microbial Genomics and Public Health	john.tyson@bccdc.ca
13	April 5, 2024	Holly Longstaff Ethical, legal, social issues: Genomes	holly.engageassociates@gmail.com
14	Apr 12, 2024	Final project TBD	shaima99@student.ubc.ca

COURSE ASSIGNMENTS

▪ Student presentations

Students will give a 25-minute presentation of a paper assigned by the guest speaker and then lead 5 to 10 minutes of discussion with the class. Presentations should include the following items:

- Background
- Methods
- Results, analysis
- Conclusion
- Critique
- Discussion points

▪ Midterm assignment

Students will work in pairs to write and publish a Wikipedia article on a novel technology in genomics. They will present their work in class on March 3, 2023.

▪ Final project

To be determined each year before the mid-term break, and due after classes are completed.

GRADING

The grading scheme is a simple formula. Come prepared for class, read the papers carefully, ask questions, contribute.

25%	Paper presentation
25%	Class participation
25%	Midterm assignment: Wikipedia article
25%	Final project

UNIVERSITY POLICIES

UBC provides resources to support student learning and to maintain healthy lifestyles but recognizes that sometimes crises arise and so there are additional resources to access including those for survivors of sexual violence. UBC values respect for the person and ideas of all members of the academic community. Harassment and discrimination are not tolerated nor is suppression of academic freedom. UBC provides appropriate accommodation for students with disabilities and for religious, spiritual and

cultural observances. UBC values academic honesty and students are expected to acknowledge the ideas generated by others and to uphold the highest academic standards in all of their actions. Details of the policies and how to access support are available at <https://senate.ubc.ca/policies-resources-support-student-success>.

ACKNOWLEDGEMENT

UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xwməθkwəy̓m (Musqueam) people. The land it is situated on has always been a place of learning for the Musqueam people, who for millennia have passed on in their culture, history, and traditions from one generation to the next on this site.