ACKNOWLEDGEMENT

UBC's Point Grey Campus is located on the traditional, ancestral, and unceded territory of the xwməθkwəy̓əm (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.

COURSE INFORMATION

Course Title	Course Code Number	Credit Value
Developmental Origin of Human Disorders	MEDG419	3

PREREQUISITES

UBC BIOL234 (72% minimum) and one of either BIOL331 or BIOL335 (72% minimum).

COREQUISITES

None.

CONTACTS

Course Instructor	Contact Details	Office Location	Office Hours
Dr. Cathy Van Raamsdonk (Course coordinator)	cvr@mail.ubc.ca	Life Sciences Centre 2350 Health Sciences Mall Rm 5.504	Instructors will be available upon request by email -Meetings over Zoom are a convenient option
Dr. Louis Lefebvre	louis.lefebvre@ubc.ca	Life Sciences Centre 2350 Health Sciences Mall Rm 5.503	
Dr. Wendy Robinson	wrobinson@bcchr.ca	BC Children's Hospital Research Institute, 938 W 28th Ave, Rm 2082 (off campus)	
4th instructor to be determined			
Glafira Ermakova (Teaching assistant)	germakova@cmmt.ubc.ca	CMMT	

TEACHING ASSISTANT

Glafira Ermakova; germakova@cmmt.ubc.ca

OVERVIEW

MEDG 419 (3 credits) is a 4th year course for undergraduates and first year graduate students in Medical Genetics and covers genetic and epigenetic determinants of development from conception to birth, particularly as they relate to congenital genetic disorders of development and pregnancy complications.

COURSE STRUCTURE

The course consists of lectures in the first half of the term. Instructors alternate giving lectures (see Schedule of Topics below). In the second half of the term, students will sign up in pairs to present a 35 minute slide presentation on an assigned research paper. Presentations occur at the start of each class. Instructors will then lecture for the remainder of the time. The course also includes guest lectures. Marks are given for a written assignment, the midterm exam, class participation, student presentation, discussion questions formulated based on the research papers and the final exam. Seven optional tutorial sessions will be led by the Teaching Assistant. The time and location of the tutorials will be determined at the start of the term. The class is held IN PERSON unless a student is ill and in this case, they should request a zoom link.

Mid-term: **Tuesday, October 24 at 3:30 p.m.**

Covers everything presented in Lectures 1-11

Final exam: **December exam period, TBD.**

Covers everything presented in Lectures 12-23, assigned research papers, all experimental methodology, and all material in the first half of the term that supports the understanding of material in the second half of the term.

SCHEDULE OF TOPICS

The class meets on Tuesday and Thursday from 3:30 pm to 4:50 pm. **Class will take place in the Life Sciences Centre, on the Point Grey campus**. Below is the schedule of topics. The order of lectures may change.

Lecture	Date	Lecturer & Topic	Student presentation
1	Tues. Sep 5 Thurs. Sep 7 Fri. Sep 8	Imagine Day - no class **Lefebvre – Technologies for mouse modeling** No Tutorial	**None**
2 3	Tues. Sep 12 Thurs. Sep 14 Fri. Sep 15	**Lefebvre – Pre-implantation development** **Lefebvre – Embryonic stem cells and chimeras** Tutorial	**None**
4 5	Tues. Sep 19 Thurs. Sep 21 Fri. Sep 22	**Van Raamsdonk – Neural tube defects** **Van Raamsdonk – Teratogens** No Tutorial	**None**
6	Tues. Sep 26 Thurs. Sep 28 Fri. Sep 29	**Van Raamsdonk – Congenital blindness** **Grad student guest talks - Research in Medical Genetics at UBC** Tutorial	**None**

7 8	Tues. Oct 3 Thurs. Oct 5 Fri. Oct 6	**Robinson – Chromosomal abnormalities** **Robinson – Diagnosis of chromosomal and molecular genetic abnormalities** No tutorial	**None**
9	Tues. Oct 10 Thurs. Oct 12 Fri. Oct 13	**Robinson – Reproduction and infertility** **No class: "Make up Monday" day** Tutorial	**None**
10 11	Tues. Oct 17 Thurs. Oct 19 Fri. Oct 20	**TBD - 4th instructor** **TBD - 4th instructor** Tutorial for midterm exam	**None**
12	Tues. Oct 24 Thurs. Oct 26 Fri. Oct 27	**Midterm Exam** **TBD - 4th instructor** No tutorial	**TBD**
13 14	Tues. Oct 31 Thurs. Nov 2 Fri. Nov 3	**TBD - 4th instructor** **Guest lecture** No Tutorial	**TBD**
15 16	Tues. Nov 7 Thurs. Nov 9 Fri. Nov 10	**Lefebvre – Placental development** **Lefebvre – Germ line development** Tutorial	**TBD**
17	Tues. Nov 14 Thurs. Nov 16 Fri. Nov 17	**Fall Break** **Lefebvre – Genomic imprinting** No tutorial	**TBD**
18 19	Tues. Nov 21 Thurs. Nov 23 Fri. Nov 24	**Robinson – Human placenta** **Robinson – Mosaicism and chimerism** Tutorial	**TBD**
20 21	Tues. Nov 28 Thurs. Nov 30 Fri. Dec 1	**Van Raamsdonk – The neural crest** **Van Raamsdonk – Craniofacial abnormalities** No tutorial	**TBD**
22 23	Tues. Dec 5 Thurs. Dec 7	**Van Raamsdonk - Pigmentary disorders** **Guest lecture/Time provided for student evaluations** The tutorial for the Final Exam will be scheduled in November	**TBD**

LEARNING OUTCOMES

The objectives of this course are to learn key concepts in human and mouse genetics and developmental biology; to critically and effectively read original research papers; and to learn how to present and discuss scientific research.

LEARNING ACTIVITIES

This class is conducted in a combination of instructor lectures, student presentations, discussions of research papers - both in class and on UBC's interactive learning interface (Canvas)- and tutorial sessions. See the "Student Presentation Guidelines" document for more details on the student presentations.

LEARNING MATERIALS

Lecture slides, lecture notes, links to research and review papers, student presentation slides, and one page presentation summaries will be posted on Canvas. Students should check for updates frequently. Students will post questions and respond to questions about the research papers on Canvas in the Discussion area (See the "Student Presentation -Discussion assignment" document for instructions.) There is no text book.

ASSESSMENTS OF LEARNING

The course will be graded based on class participation (5%), a written assignment (10%), the midterm exam (20%), student presentations (15%), the presentation discussion assignments (15%), and the final exam (35%). Exams are written. See the "Class participation" record forms for more information on how class participation is marked.

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 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 on the UBC Senate website**.**

LEARNING ANALYTICS

Learning analytics includes the collection and analysis of data about learners to improve teaching and learning. In this course, we plan to

- Track overall class progress
- Acquire personalized feedback via a mandatory questionnaire at the conclusion of the class

LEARNING RESOURCES

Source material required to cover content in the class should be available through PubMed or the UBC library, or will be posted on Canvas.

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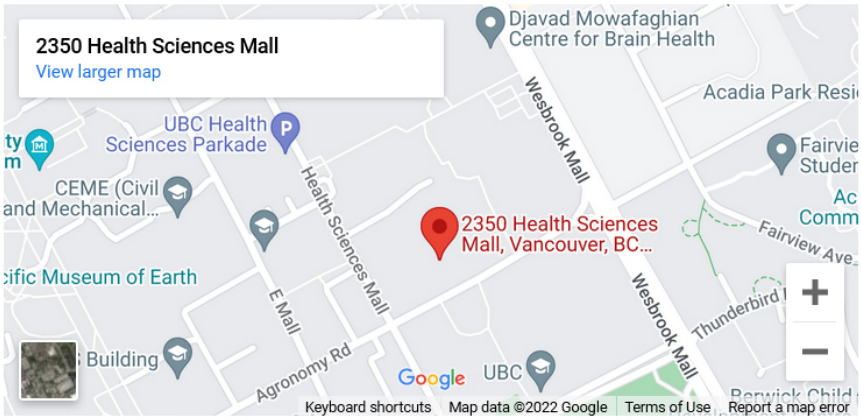
ACCESSING CLASSES

The class meets on Tuesday and Thursday from 3:30 pm to 4:50 pm. Class will take place in the Life Sciences Centre, on the Point Grey campus. The location and time for the optional tutorials will be determined during the first week of class to choose the most accessible option.

LIFE SCIENCES CENTRE

Address

Life Sciences Centre
2350 Health Sciences Mall
Vancouver, BC V6T 1Z3



ADAPTATIONS TO PROMOTE HEALTH

If you are sick, please stay home. We will be providing flexibility in marking so that you can prioritize your health and still succeed. Email the TA to request a Zoom link for the class, if you are well enough to listen remotely. We will drop your participation grade for that day.

To learn missed material, you can:

- Request a Zoom link for the class you will not be able to attend due to illness to listen to the lecture live (email instructor and TA in advance).
- Consult the class resources on Canvas. Slides used in class and lecture notes (for most classes) will be posted.
- Make a connection early in the term to another student or a group of students in the class. You can help each other by sharing notes.
- Request a meeting with the TA.
- Attend the next available Friday tutorial. These will be recorded and posted to Canvas

If you are feeling ill and cannot attend class for the midterm: Please email the course coordinator (Cathy Van Raamsdonk) right away. We will make alternate arrangements with you.

If you are feeling ill and cannot attend class for your student presentation: Please email your partner, the course coordinator (Cathy Van Raamsdonk) and the TA right away. We will try to reschedule your presentation to a later date.

If you are feeling ill at the time of the final exam: You must apply for deferred standing (an academic concession) through Academic Advising. Students who are granted deferred standing (SD) will write a different version of the final exam at an agreed upon time during the next term.