

UNIVERSITY OF CALGARY  
DEPARTMENT OF BIOLOGICAL SCIENCES  
COURSE OUTLINE

1. Course: **CMMB 413 – Human Genetics**

Lecture Sections: L01 TR 8:00-9:15 am ST 135 Winter 2019

**Course Coordinator/**

**Instructors:**

Dr. Chris Wang	<a href="mailto:clcwang@ucalgary.ca">clcwang@ucalgary.ca</a>
Dr. Judy Chernos	<a href="mailto:judy.chernos@albertahealthservices.ca">judy.chernos@albertahealthservices.ca</a>
Dr. Ryan Lamont	<a href="mailto:ryan.lamont@albertahealthservices.ca">ryan.lamont@albertahealthservices.ca</a>
Dr. Bob Argiropoulos	<a href="mailto:bob.argiropoulos@albertahealthservices.ca">bob.argiropoulos@albertahealthservices.ca</a>

D2L course name: CMMB 413 L01 - (Winter 2019) - Human Genetics

NOTE: Students must use their UofC account for all course correspondence.

Biological Sciences Department BI 186; (403) 220-3140; biosci@ucalgary.ca

2. **PREREQUISITES:** Biology 311 or MDSC 341

**NOTE:** Students may not register in a course unless they have a grade of at least C- in each prerequisite course.

See section 3.5.C in the Faculty of Science section of the online Calendar

(<http://www.ucalgary.ca/pubs/calendar/current/sc-3-5.html>)

3. **GRADING:** The University policy on grading and related matters is described in “Academic Regulations, sections F.1 and F.2” of the online University Calendar (<http://www.ucalgary.ca/pubs/calendar/current/f-1.html> and <http://www.ucalgary.ca/pubs/calendar/current/f-2.html>) In determining the overall grade in the course the following weights will be used:

<b>Midterm Exam #1</b>	<b>30 %</b>	<b>In-Class</b>	<b>February 5, 2019</b>
<b>Midterm Exam #2</b>	<b>30 %</b>	<b>In-Class</b>	<b>March 12, 2019</b>
<b>Final Exam</b>	<b>40%</b>		

(There will be a final exam scheduled by the Registrar's office.)

Each component (midterm exams, or final exam) submitted by the student will be assigned a percentage score. The student's weighted percentage scores for the various components listed above will be combined to produce an overall percentage for the course, which will be used to determine the course letter grade.

Letter Grade	A+	A	A-	B+	B	B-	C+	C	C-	D+	D
Min. Percent Required	90	85	80	77	73	70	67	63	60	55	50

4. **Missed Components of Term Work:** The regulations of the Faculty of Science pertaining to this matter are found in the Faculty of Science area of the Calendar in [Section 3.6](#). It is the student's responsibility to familiarize himself/herself with these regulations. See also [Section E.3](#) of the University Calendar

5. Dates and times of class exercises held outside of class hours: N/A

**REGULARLY SCHEDULED CLASSES HAVE PRECEDENCE OVER ANY OUT-OF-CLASS-TIME-ACTIVITY.** If you have a clash with this out-of-class-time-activity, please inform your instructor as soon as possible so that alternative arrangements may be made for you.

Department Approval \_\_\_\_\_ ORIGINAL SIGNED \_\_\_\_\_ Date \_\_\_\_\_

## 6. Course Materials:

**REQUIRED TEXTBOOK:** Medical Genetics, L. Jorde, J. Carey and M. Bamshad, 5<sup>th</sup> Edition - 2016, Elsevier.

**Top HAT JOIN CODE** **729258**

**PIAZZA LINK** [piazza.com/ucalgary.ca/winter2019/cmmb413](https://piazza.com/ucalgary.ca/winter2019/cmmb413)

7. **Examination Policy:** No electronic or written aids (e.g. cell phones, tablets, computers, PDAs, notes, textbooks) will be allowed during writing of any exams. Non-programmable calculators will be permitted to answer quantitative questions on exams, if applicable, and permission to do this will be clearly indicated on the examination paper.

Students should also read the Calendar, [Section G](#), on Examinations.

8. **Writing across the curriculum statement:** In this course, the quality of the student's writing will be a factor in the evaluation of this course. See also [Section E.2](#) of the University Calendar.

## 9. Human & living organism studies statements:

Students will not participate as subjects or researchers in human studies.

See also Section E.5 of the University Calendar.

Studies in the Biological Sciences involve the use of living and dead organisms. Students taking laboratory- and field-based courses in these disciplines can expect involvement with and experimentation on such materials. Students perform dissections on dead or preserved organisms in some courses. In particular courses, students experiment on living organisms, their tissues, cells, or molecules. Sometimes field work requires students to collect a variety of living materials by many methods, including humane trapping.

All work on humans and other animals conforms to the Helsinki Declaration and to the regulations of the Canadian Council on Animal Care. The Department strives for the highest ethical standards consistent with stewardship of the environment for organisms whose use is not governed by statutory authority. Individuals contemplating taking courses or majoring in one of the fields of study offered by the Department of Biological Sciences should ensure that they have fully considered these issues before enrolling. Students are advised to discuss any concern they might have with the Undergraduate Program Director of the Department.

## 10. Reappraisal of grades:

A student wishing a reappraisal, should first attempt to review the graded work with the Course coordinator/instructor or department offering the course. Students with sufficient academic grounds may request a reappraisal. Non-academic grounds are not relevant for grade reappraisals. Students should be aware that the grade being reappraised may be raised, lowered or remain the same. See Section I.3 of the University Calendar.

- a. **Term Work:** The student should present their rationale as effectively and as fully as possible to the Course coordinator/instructor within **15 days** of either being notified about the mark, or of the item's return to the class. If the student is not satisfied with the outcome, the student shall immediately submit the Reappraisal of Graded Term work form to the department in which the course is offered. The department will arrange for a reassessment of the work if, and only if, the student has sufficient academic grounds. See sections I.1 and I.2 of the University Calendar
- b. **Final Exam:** The student shall submit the request to Enrolment Services. See Section I.3 of the University Calendar.

## 11. Other Important Information For Students:

- a. **Mental Health** The University of Calgary recognizes the pivotal role that student mental health plays in physical health, social connectedness and academic success, and aspires to create a caring and supportive campus community where individuals can freely talk about mental health and receive supports when needed. We encourage you to explore the mental health resources available throughout the university community, such as counselling, self-help resources, peer support or skills-building available through the SU Wellness Centre (Room 370, MacEwan Student Centre, Mental Health Services Website) and the Campus Mental Health Strategy website (Mental Health).
- b. **SU Wellness Center:** The Students Union Wellness Centre provides health and wellness support for students including information and counselling on physical health, mental health and nutrition. For more information, see [www.ucalgary.ca/wellnesscentre](http://www.ucalgary.ca/wellnesscentre) or call 403-210-9355.

- c. **Sexual Violence:** The University of Calgary is committed to fostering a safe, productive learning environment. The Sexual Violence Policy (<https://www.ucalgary.ca/policies/files/policies/sexual-violence-policy.pdf>) is a fundamental element in creating and sustaining a safer campus environment for all community members. We understand that sexual violence can undermine students' academic success and we encourage students who have experienced some form of sexual misconduct to talk to someone about their experience, so they can get the support they need. The Sexual Violence Support Advocate, Carla Bertsch, can provide confidential support and information regarding sexual violence to all members of the university community. Carla can be reached by email (svsa@ucalgary.ca) or phone at 403-220-2208.
- d. **Misconduct:** Academic misconduct (cheating, plagiarism, or any other form) is a very serious offence that will be dealt with rigorously in all cases. A single offence may lead to disciplinary probation or suspension or expulsion. The Faculty of Science follows a zero tolerance policy regarding dishonesty. Please read the sections of the University Calendar under Section K. Student Misconduct to inform yourself of definitions, processes and penalties. Examples of academic misconduct may include: submitting or presenting work as if it were the student's own work when it is not; submitting or presenting work in one course which has also been submitted in another course without the instructor's permission; collaborating in whole or in part without prior agreement of the instructor; borrowing experimental values from others without the instructor's approval; falsification/fabrication of experimental values in a report. **These are only examples.**
- e. **Assembly Points:** In case of emergency during class time, be sure to FAMILIARIZE YOURSELF with the information on assembly points.
- f. **Academic Accommodation Policy:** Students needing an accommodation because of a disability or medical condition should contact Student Accessibility Services in accordance with the procedure for accommodations for students with disabilities available at [procedure-for-accommodations-for-students-with-disabilities.pdf](#). Students needing an accommodation in relation to their coursework or to fulfill requirements for a graduate degree, based on a protected ground other than disability, should communicate this need, preferably in writing, to the Associate Head, Undergraduate of the Department of Biological Sciences, Heather Addy by email [addy@ucalgary.ca](mailto:addy@ucalgary.ca) or phone 403 220-6979. Religious accommodation requests relating to class, test or exam scheduling or absences must be submitted no later than **14 days** prior to the date in question. See Section E.4 of the University Calendar.
- g. **Safewalk:** Campus Security will escort individuals day or night (See the Campus Safewalk website). Call 403-220-5333 for assistance. Use any campus phone, emergency phone or the yellow phones located at most parking lot pay booths.
- h. **Freedom of Information and Privacy:** This course is conducted in accordance with the Freedom of Information and Protection of Privacy Act (FOIPPA). Students should identify themselves on all written work by placing their name on the front page and their ID number on each subsequent page. For more information, see Legal Services website.
- i. **Student Union Information:** VP Academic, Phone: 403-220-3911 Email: [suvcapa@ucalgary.ca](mailto:suvcapa@ucalgary.ca). SU Faculty Rep., Phone: 403-220-3913 Email: [sciencerep@su.ucalgary.ca](mailto:sciencerep@su.ucalgary.ca). Student Ombudsman, Email: [suvcapa@ucalgary.ca](mailto:suvcapa@ucalgary.ca).
- j. **Internet and Electronic Device Information:** Unless instructed otherwise, cell phones should be turned off during class. All communication with other individuals via laptop, tablet, smart phone or other device is prohibited during class unless specifically permitted by the instructor. Students that violate this policy may be asked to leave the classroom. Repeated violations may result in a charge of misconduct.
- k. **Surveys:** At the University of Calgary, feedback through the Universal Student Ratings of Instruction (USRI) survey and the Faculty of Science Teaching Feedback form provides valuable information to help with evaluating instruction, enhancing learning and teaching, and selecting courses. Your responses make a difference - please participate in these surveys.

## **COURSE OBJECTIVES:**

### **upon successfully completion of this course, students will be able to**

1. to provide an understanding of the genetic basis of human disease and current approaches to diagnose, treat, and prevent the genetic disorders
2. to relate the study of human genetics to major advances in molecular, biochemical, and cellular genetics
3. to provide an awareness of the relationship of the individual genome to the genetic makeup of the human population and its ramifications to human diversity
4. to relate human genetics to current issues in genetic screening, genetic counseling and genetic engineering

**CMMB 413 Human Genetics**  
**Tentative Lecture Schedule for Winter 2019 Semester**

**Location: ST 135**

<b>Date</b>	<b>Topic</b>	<b>Lecturer</b>
Jan. 10	Introduction to the Course	CW
Jan. 15	Introduction to Human Genome	CW
Jan. 17	Principles of Clinical Cytogenetics and Genome Analysis	CW
Jan. 22	Principles of Clinical Cytogenetics and Genome Analysis	CW
Jan. 24	Principles of Clinical Cytogenetics and Genome Analysis	CW
Jan. 29	Principles of Clinical Cytogenetics and Genome Analysis	CW
Jan. 31	The Chromosomal and Genomic Basis of Disease	CW
Feb. 05	<b>Mid-term Exam # 1 – In Class</b>	
Feb. 07	The Chromosomal and Genomic Basis of Disease	CW
Feb. 12	The Chromosomal and Genomic Basis of Disease	CW
Feb. 14	The Molecular, Biochemical, and Cellular Basis of Genetic Disease	CW
Feb. 19	<b>Reading Week (NO CLASS)</b>	
Feb. 21		
Feb. 26	Population Genetics	JC
Feb. 28	Complex Traits	JC
Mar. 05	Complex Traits	JC
Mar. 07	Career Panel	JC
Mar. 12	<b>Mid-term Exam # 2 – In Class</b>	
Mar. 14	Molecular Genetics	RL
Mar. 19	Molecular Genetics	RL
Mar. 21	Molecular Genetics	RL
Mar. 26	Epigenetics	BA
Mar. 28	Epigenetics	BA
Apr. 02	Cancer Genetics	RL
Apr. 04	Cancer Genetics/Personalized Medicine	RL
Apr. 09	Medical Genetic Counseling	TBD
Apr. 11	Lecture Overflow/Review (Q/A)	

Other Important Dates:

Jan. 17: last day to drop Winter Term courses without financial penalty

Jan. 18: last day to add, edit or swap Winter Term courses