



Course Outline

Dr. Aida Abu-Baker

Elementary Genetics BIOL 206 (3 credits) Winter Semester 2022 (Virtual) Biology
Department Concordia University, Montreal, Canada

Lectures:

Tuesday and Thursday: 8:45 am – 10:00 am

Delivery: Lectures will be pre-recorded and uploaded on Moodle if the semester continues online.

First Lecture will be live on zoom.

All lecture material will be delivered asynchronously (pre-recorded lectures). There will, however be monthly virtual check-in classes via Zoom (links found on Moodle) that will occur during our scheduled class time.

Lectures will be delivered in the class (in person) if the semester continues in person.

Email address: aida.abu-baker@concordia.ca

Please write Biol 206 in the subject line

You can email me for any question related to the course.

Office Hours by appointment:

If the semester continues online: Thursday 4:30 pm- 5:30 pm (zoom).

If the semester continues in person: Thursday 10:00-11:00 after the class (in person).

Course Description

The course will provide students with a basic foundation in human genetics. Fundamental principles of classical, molecular and population genetics will be covered with a strong focus on their application to human inheritance and the genetic basis of human diseases. The course will also focus on the application of molecular genetics in medicine and biotechnology. The relevance of genetics in law, ethics and society will be highlighted. The course will focus on four themes 1) Genetic Transmission, 2) Molecular Genetics & Mutation, 3) Biotechnology and Genomics, and 4) Population Genetics and Evolution

Course Objectives

- To provide a solid understanding of basic genetics concepts and principles.
- To develop appreciation of scientific methods of modern genetics as it applies to humans.
- To improve students' critical thinking skills on the impact of genetics in our society.

Tentative Class Schedule

Genetic Transmission

Week 1	Course Overview & Introduction to Genetics	Chapters 1 & 2
Week 2	Cells and Meiosis	Chapters 2 & 3
Week 3	Single-Gene Inheritance	Chapter 4
Week 4	Beyond Mendel's Laws	Chapters 5 & 6
Week 5	Complex Traits	Chapters 7 & 8

Molecular Genetics & Mutation

Week 6	DNA Structure and Replication	Chapter 9
Week 7	Gene Action, Gene Expression & Epigenetics	Chapters 10 & 11
Week 8	Gene Mutation	Chapters 12 & 13

Biotechnology & Genomics

Week 9	Genomics	Chapter 14
Week 10	The Genetics of Identity	Chapter 18
Week 11	Genetic Technology	Chapter 21
Week 12	Genetic Testing and Treatment	Chapter 22

Human Evolution & Genetics

Week 13	Human Evolution	Chapter 17
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The professor reserves the right to revise information contained in this course outline.

Extraordinary circumstances: In the event of extraordinary circumstances and pursuant to the Academic Regulations, the University may modify the delivery, content, structure, forum, location and/or evaluation scheme. In the event of such extraordinary circumstances, students will be informed of the changes.

Resources

Required Textbook: Human Genetics. 13th edition. By Ricki Lewis. **McGrawHill.**
ISBN10: 1260240894 ISBN13: 9781260240894

All other reading materials and videos will be posted on Moodle.

Recordings of all lectures will be available for students to view in Moodle. Students are responsible to review every recorded lecture, study the associated textbook material,

attend the live lectures, and watch all the posted genetic videos.

Grading

Video assignments (15%)

Midterm Exam (25%)

Genetic Poster (25%)

Final Exam (35%)

All components must be completed in order to successfully complete the course. There will be no make-up exams or assignments.

Grading Details

Video assignments (weekly basis) due every Monday at 11:59 pm (Moodle).

You need to watch 1-2 videos a week and answer the associated questions for each video.

Midterm Feb 24th 8:45 am-10:00 am (will be on Moodle if the semester continues online, but will be in person if the semester continues in person).

*The midterm exam covers the material covered **until the date of the midterm exam**. The midterm exam consist of MCQs, True and False, genetic problems and short answer questions.*

Genetic Poster (genetic discovery in the news): **due March 31st at 11:59 pm (Moodle).**

*Students will write a poster (**only 2 slides**) on one of the topics related to genetics in the news. The students need to use **one scientific research paper**, and **the course materials** to review, and evaluate the topic. More details will be given in the class.*

Final Exam: The date and time will be announced by Concordia University.

(will be on Moodle if the semester continues online, but will be in person if the semester continues in person).

*The final exam covers **all materials covered in the class (i.e. before and after the midterm)**. The final exam consist of MCQs, True and False, genetic problems and short answer questions.*

The final examination is cumulative.

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Technical Support

If you are having technical problems please contact the ITS at Concordia University for assistance.

Code of Rights and Responsibilities

http://web2.concordia.ca/Legal_Counsel/policies/english/BD/BD-4.html

It is not acceptable to do the following:

- Copy from ANYWHERE without saying from where it came.
- Omit quotation marks for direct quotations.
- Let another student copy your work and then submit it as his/her own. · Hand in the same assignment in more than one class without permission.
- Have unauthorized material in an exam, such as cheat sheets, or crib notes. **YOU DON'T HAVE TO BE CAUGHT USING THEM - JUST HAVING THEM WILL GET YOU INTO TROUBLE!**
- Copy from someone else's exam.
- Communicate with another student during an exam by talking or using some form of signals. · Add or remove pages from an examination booklet or take the booklet out of an exam room.
- Get hold of or steal an exam or assignment answers or questions.
- Write a test or exam for someone else or have someone write it for you.
- Hand in false documents such as medical notes, transcript or record.
- Falsify data or research results.

Source: The Academic Integrity Website

<http://provost.concordia.ca/academicintegrity/misconduct/>

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from books, journals, internet sites, professor's course notes, etc. It could be material that is paraphrased but closely resembles the original source. It could be the work of a fellow student, for example, an answer on a quiz, data for a lab report, a paper or assignment completed by another student. It might be a paper purchased through one of the many available sources. Plagiarism does not refer to words alone - it can also refer to copying images, graphs, tables, and ideas. "Presentation" is not limited to written work. It also includes oral presentations, computer assignments and artistic works. If you translate the work of another person into French or English and do not cite the source, this is also plagiarism. If you cite your own work without the correct citation, this too is plagiarism.

In Simple Words:

NOT COPY, PARAPHRASE OR TRANSLATE ANYTHING FROM ANYWHERE WITHOUT SAYING FROM WHERE YOU GOT IT! DON'T FORGET TO USE QUOTATION MARKS!

This information is an adaptation of the material produced by the Code

Administrator of the Faculty of Arts and Science at Concordia University Source: The Academic Integrity Website: <http://provost.concordia.ca/academicintegrity/plagiarism/>

List of Student Services

<http://www.concordia.ca/info/currentstudents/studentservices/> • Concordia Counselling and Development: <http://cdev.concordia.ca/> (offers career psychological services, student learning services, etc.)

• The Concordia Library Citation and Style Guides:

<http://library.concordia.ca/help/howto/citations.html> • Advocacy and Support Services <http://supportservices.concordia.ca/> • Student Transition Centre <http://stc.concordia.ca/> • New Student Program <http://newstudent.concordia.ca/> • Access Centre for Students with Disabilities <http://supportservices.concordia.ca/disabilities/> • Student Success Centre <http://studentsuccess.concordia.ca/> • The Academic Integrity Website <http://provost.concordia.ca/academicintegrity/> • Financial Aid & Awards <http://web2.concordia.ca/financialaid/> • Health Services <http://www-health.concordia.ca/>