

Biology110 - Syllabus

Course Description

BIOL 110, **Human Genetics and Evolution**, introduces students to genetics and evolutionary processes as they relate to the human condition. The course is intended as an elective for students from all academic disciplines with the exception of biology. No scientific background is required for enrolment. The goal is to provide non-biologists with a basic understanding of the relevance of genetics to many important issues in modern society. Some of the topics considered include basic concepts of inheritance, cell biology, genetic diseases, cloning, genetic modification of organisms, and the study of whole genomes (i.e. genomics).

The course combines directed readings, independent investigation of topics of interest, and online interaction with peers and instructors. Participants will be expected to learn basic concepts through the readings and to engage at a deeper level with a topic of choice and produce an essay. In a series of online roundtables, students will interact with peers and contribute actively to discussions of assigned topics.

University Operating Dates

Please visit the [Faculty of Arts and Sciences Sessional Dates website](#) for all academic deadlines.

Learning Outcomes

Students successfully completing BIOL 110 will be able to,

- identify and define basic concepts in genetics such as inheritance, gene, and chromosome
- appreciate the relevance of genetics to important societal issues such as stem cell research, longevity research, genetic testing, cancer, and other genetic diseases
- appreciate how genetic concepts apply at the level of the individual and the level of populations
- apply genetic concepts in the understanding of human evolution
- distinguish between “older-school” research approaches and more cutting-edge approaches
- evaluate how life might be affected by new technologies in the Genomics Age.

Course Materials

The following material is available from the [Queen's Campus Bookstore](#):

Human Genetics, Concepts and Applications (Ricki Lewis, 13th edition, McGraw-Hill)

Timeline

The Course Timeline shows all relevant course dates, including assessments, as well as links to other important course information. As dates may change, you should consult the Timeline each time you log in to the course.

Please note, some students may see an onQ Calendar for their course. However, the onQ calendar does not display all dates associated with your course assignments. For complete information on all of your assignments in this course and the start and close dates, please refer to the **Course Timeline**.

If there are discrepancies between dates in the course onQ site, the Timeline will be considered accurate.

All times are in Kingston time (Eastern Time).

Suggested Time Commitment

Students should plan to devote approximately 10 hours per week completing relevant readings, assignments, and course activities.

Topics

- **Weeks 1-3:** What are genes and genomes? Introduction to DNA structure, chromosomes, cell biology, meiosis, reproduction, and development.
- **Weeks 4-6:** How are genes transmitted across generations? Consideration of single-gene inheritance, multi-gene inheritance, Mendell's observations, exceptions to Mendell's Laws, genetics of sex, and genetics of behaviour.
- **Weeks 7-9:** How do genes behave in a population context? Topics include gene frequency, Hardy-Weinberg equilibrium, evolutionary factors affecting gene frequencies, human origins and evolution.
- **Weeks 10-12:** How does genetics impinge on society? Introduction to cancer, DNA modification/technology, genetic testing, and genomics.

Weighting of Assessments & Final Exam

Assessment	Weight
Paper proposal	5%
Quizzes (3 X 5%)	15%
Discussions Forums (2 X 10%)	20%
Final Paper	25%
Final Exam	35%

Once the exam schedule has been finalized the exam date will be posted on your SOLUS account.

Assessment and Activity

We design quality courses with the primary goal to actively engage our learners with the learning materials. Research suggests that learners who actively participate in the learning environment take more responsibility for their performance in the course and consider the course as more valuable and more directly related to their goals. This is the reason we integrate active learning strategies in all our courses.

Paper Proposal

The Paper Proposal is the first step to writing your final essay in the course. The purpose of this assessment is for you to provide a detailed overview of how you intend to carry out your proposed essay so you can receive feedback from the teaching team and act upon it in your final essay. The Proposal should be based on some initial literature review and a clear statement of the topic of your essay. The proposal should state the objectives of your essay and how you plan to achieve those objectives.

Quizzes

Multiple choice online quizzes are designed to help you practice concepts learned in the course. The quizzes contain questions that are based on both the video tutorials and the relevant course readings. Make sure you are aware of the times when the quizzes are open and the timeframe you have to take the quiz.

Discussion Forums

The forum discussions provide you the opportunity to collaborate and learn from your peers. The forum discussions will take place in a small group settings. You will be placed into a group of approximately five students and will be provided a topic to explore and discuss with your peers. You are expected to engage in dialogue and exchange of ideas. You will be expected to offer information relevant to the discussion topic and to respond to your peers' posts in a way that contributes to the overall discussion. We believe that your engagement in the forum discussion will contribute to your own understanding of the material so we encourage you to be an active member and contribute as much as you can.

Final Paper

The final paper assignment provides you with the opportunity for in-depth investigation of a topic related to the course. Your topic will be selected from a list provided by the course instructor or a self-selected topic that has been approved by the instructor. Your paper will be submitted using Turnitin.

Late Assignment Submission Policy

Activities and assignments must be submitted by the due dates (see [course timeline](#)) unless prior authorization has been granted by the course instructor. Late submissions are not accepted without extenuating circumstances.

Grading

All components of this course will receive numerical percentage marks. The final grade you receive for the course will be derived by converting your numerical course average to a letter grade according to Queen's Official Grade Conversion Scale:

Queen's Official Grade Conversion Scale

Grade	Numerical Course Average (Range)
A+	90-100
A	85-89
A-	80-84
B+	77-79
B	73-76
B-	70-72
C+	67-69
C	63-66
C-	60-62
D+	57-59

D	53-56
D-	50-52
F	49 and below

Proctored Exams

Location

Students enrolled exclusively in online courses will have two options to write their proctored exams:

1. You may choose to write your exam(s) online using Examity proctoring services where you will be charged the additional \$100 exam fee to your Solus account;
2. You may choose to write your exam(s) in-person on Queen's campus in Kingston where you will NOT be charged the additional \$100 exam fee

Students enrolled in at least one on-campus course are expected to write all their exams on-campus during the scheduled exam time.

Remote Proctoring (if applicable)

Selected assessments in this course will use remote proctoring provided by Examity, which is a third-party, cloud-based service that enables the completion of a proctored exam or test from an off-campus location, through onQ. This cloud-based proctoring solution was chosen as part of the approach to maintaining academic integrity when remote proctoring is required. Queen's has conducted an extensive privacy and security review of Examity and has entered into a binding agreement with terms that address the appropriate collection, use and disclosure of personal information in accordance with Ontario's privacy legislation. You should also take measures yourself to protect your information by keeping your NetID password and challenge questions private, closing all applications prior to starting an exam/test, and ensuring your device is updated and safeguarded against malware. For more information about remote proctoring, please see <http://www.queensu.ca/registrar/students/examinations/exams-office-services/remote-proctoring>

If you registered to write online with Examity, all information pertaining to the technical requirements and preparation for writing online with Examity will be posted in onQ well in advance of your exam.

In order to become familiar with the authentication process and test out your technology, you will have a chance to take practice test to help prepare you for your proctored exam via Examity. There is no need to study for this test; it will focus on your general Queen's trivia knowledge and

will not count towards your course grade. **The questions provided are merely to help you test and potentially troubleshoot your system in advance of your exam.**

Timing of Final Examinations

Once the exam schedule has been finalized the exam date will be posted on your SOLUS account. The exam dates for each Term are listed on the Faculty of Arts and Science webpage under "[Important Dates](#)." Student exam schedules for the Fall Term are posted via SOLUS immediately prior to the Thanksgiving holiday; for the Winter Term they are posted on the Friday before Reading Week, and for the Summer Term they are individually noted on the Arts and Science Online syllabi. **Students should delay finalizing any travel plans until after the examination schedule has been posted. Exams will not be moved or deferred to accommodate employment, travel/holiday plans or flight reservations. For more information regarding what is considered extenuating circumstances and qualifications for Academic Consideration, please visit <https://www.queensu.ca/artsci/undergrad-students/student-services/academic-consideration-for-students> or email asc.consideration@queensu.ca.**

Land Acknowledgement

Queen's University is situated on traditional Anishinaabe and Haudenosaunee Territory. To acknowledge this traditional territory is to recognize its longer history, one predating the establishment of the earliest European colonies. It is also to acknowledge this territory's significance for the Indigenous peoples who lived, and continue to live, upon it – people whose practices and spiritualities were tied to the land and continue to develop in relationship to the territory and its other inhabitants today. The Kingston Indigenous community continues to reflect the area's Anishinaabek and Haudenosaunee roots. There is also a significant Métis community and there are First Peoples from other Nations across Turtle Island present here today.

Equity, Diversity, and Inclusivity Statement

Queen's University recognizes that the values of equity and diversity are vital to and in harmony with its educational mission and standards of excellence. It acknowledges that direct, indirect and systemic discrimination exists within our institutional structures, policies and practices and in our community. These take many forms and work to differentially advantage and disadvantage persons across social identities such as race, ethnicity, disability, gender identity, sexual orientation, faith and socioeconomic status, among other examples. In this class I will work to promote an anti-discriminatory, anti-racist and accountable environment where everyone feels welcome. Students in this class are encouraged to participate during class discussions and to support others in their participation. Because the class will represent a diversity of individuals, beliefs, backgrounds, and experiences, every member of this class is asked to show respect for every other member.

Name/Pronoun

Knowing and applying students' names and pronouns is a crucial part of developing a productive learning environment that fosters safety, inclusion, and personal dignity. This is an important part of the inclusion work here at Queen's.

If you wish to change how your name appears in onQ and on class lists, please follow these steps. You may also use this process to add your pronouns to the appearance of your name.

1. Log into SOLUS.
2. Click on Personal Information tab.
3. Click on the Names tab
4. Click on the Add New Name tab
5. Choose Preferred from the Name Type drop down menu
6. Enter your preferred name.
7. Click Save.

Please allow 24 to 48 hours for your preferred name to be registered within the system. If you have further questions or concerns please contact ITS at Queen's University.

Course Announcements

Throughout the course, I will post announcements to the class, including reminders of upcoming due dates, responses to frequent questions, corrections to broken links, etc. I encourage you to routinely check the Announcements section of the course homepage in onQ. To ensure that you receive these announcements promptly, I also recommend that you [enable email notifications to your Queen's email address](#).

Virtual Meetings

The use of cameras is optional but encouraged during our online synchronous sessions. Turning your camera on allows for a more personal experience. Since the online tutorial is considered a virtual classroom, you are expected to behave as if you were in a classroom. We do, however, understand when pets or family members interrupt!

Live sessions are designed to encourage students to practice using their vocabulary, grammar, comprehension, and oral skills through group activities. Students will be required to participate in synchronous sessions and appear on video because body language helps us to communicate. Each tutorial session will be offered multiple times to accommodate students' schedules.

The Zoom Tutorial Chat function is available to all students. In fact, all students are encouraged to use the chat to ask your TAs questions and communicate amongst yourselves regarding the

tutorial assignment. However, the Zoom Tutorial Chat is intended strictly for questions and dialogues pertaining to course and material.

Notice of Recording

Synchronous (live) classes will be delivered in this course through Zoom and/or Teams, video conferencing platforms supported by the University. Steps have been taken by the University to configure these platforms in a secure manner. Classes will be recorded with video and audio (and, in some cases, transcription) and will be made available to students in the course for the duration of the term. The recordings may capture your name, image or voice through the video and audio recordings. By attending these live classes, you are consenting to the collection of this information for the purposes of administering the class and associated coursework. If you are concerned about the collection of your name and other personal information in the class, please contact the course instructor to identify possible alternatives.

To learn more about how your personal information is collected, used and disclosed by Queen's University, please see the [Notice of Collection, Use and Disclosure of Personal Information](#).

Contacting the Teaching Team

The teaching team contact information is located on the Homepage of the course (see "[Teaching Team](#)").

For general questions about the course, please post to the [Questions discussion forum](#) topic, (located in the upper right corner of the homepage of the course).

Throughout this course, you may come upon some general questions about the course and assignments. If you think that your question may benefit other students, you are invited to post your question in the Course Questions discussion forum. Feel free to help answer your peers' questions on this forum. The teaching team will monitor this discussion forum and answer questions. Most questions are answered within 24 hours. Any other questions that you would prefer to share privately, please contact me or your TA at one of the emails listed at the top of this syllabus. The teaching team contact information is located on the homepage of the course.

Course Feedback

At various points during the course, I may ask you to take part in a variety of feedback activities, such as surveys and questionnaires. This feedback enables my teaching team and me to make any adjustments necessary to improve your learning environment. Additional feedback may be

requested throughout the course. All surveys are anonymous and are directly related to activities, assessments, and other course material.

Netiquette

In any course you often communicate with your peers and teaching team through electronic communication. You are expected to use the utmost respect in your dealings with your colleagues or when participating in activities, discussions, and online communication.

Here is a list of netiquette guidelines. Please read them carefully and use them to guide your communication in this course and beyond.

1. Make a personal commitment to learn about, understand, and support your peers.
2. Assume the best of others and expect the best of them.
3. Acknowledge the impact of oppression on the lives of other people and make sure your writing is respectful and inclusive.
4. Recognize and value the experiences, abilities, and knowledge each person brings.
5. Pay close attention to what your peers write before you respond. Think through and re-read your writings before you post or send them to others.
6. It's ok to disagree with ideas, but do not make personal attacks.
7. Be open to being challenged or confronted on your ideas and to challenging others with the intent of facilitating growth. Do not demean or embarrass others.
8. Encourage others to develop and share their ideas.

Queen's Email

The university communicates with students via Queen's email. Please check your email regularly to ensure you do not miss important information related to your course.

Copyright

Course materials created by the course instructor, including all slides, presentations, handouts, tests, exams, and other similar course materials, are the intellectual property of the instructor. It is a departure from academic integrity to distribute, publicly post, sell or otherwise disseminate an instructor's course materials or to provide an instructor's course materials to anyone else for distribution, posting, sale or other means of dissemination, without the instructor's express consent. A student who engages in such conduct may be subject to penalty for a departure from academic integrity and may also face adverse legal consequences for infringement of intellectual property rights.

Academic Accommodations

Queen's University is committed to working with students with disabilities to remove barriers to their academic goals. Queen's Student Accessibility Services (QSAS), students with disabilities, instructors, and faculty staff work together to provide and implement academic accommodations designed to allow students with disabilities equitable access to all course material (including in-class as well as exams). If you are a student currently experiencing barriers to your academics due to disability related reasons, and you would like to understand whether academic accommodations could support the removal of those barriers, please visit the [QSAS website](#) to learn more about academic accommodations or start the registration process with QSAS by clicking *Access Ventus* button at [Ventus | Accessibility Services | Queen's \(queensu.ca\)](#)

VENTUS is an online portal that connects students, instructors, Queen's Student Accessibility Services, the Exam's Office and other support services in the process to request, assess, and implement academic accommodations.

To learn more go to the [Visual Guide to Ventus for Students](#).

Academic Considerations for Students in Extenuating Circumstances

Academic consideration is a process for the university community to provide a compassionate response to assist students experiencing unforeseen, short-term extenuating circumstances that may impact or impede a student's ability to complete their academics. This may include but is not limited to,

- short-term physical or mental health issues (e.g., stomach flu, pneumonia, COVID diagnosis, vaccination, etc.),
- responses to traumatic events (e.g., death of a loved one, divorce, sexual assault, social injustice, etc.),
- requirements by law or public health authorities (e.g., court date, isolation due to COVID exposure, etc.).

Queen's University is committed to providing academic consideration to students experiencing extenuating circumstances. For more information, please see the [Senate Policy on Academic Consideration for Students in Extenuating Circumstances](#).

Each Faculty has developed a protocol to provide a consistent and equitable approach in dealing with requests for academic consideration for students facing extenuating circumstances. For more information, undergraduate students in the Faculty of Arts and Sciences should consult the Faculty's webpage on [Academic Consideration in Extenuating Circumstances](#) and submit a request via the [Academic Consideration Request Portal](#). Students in other Faculties and Schools who are enrolled in this course should refer to the protocol for their home Faculty.

Students are encouraged to submit requests as soon as the need becomes apparent and to contact their instructor and/or course coordinator as soon as possible once Academic Consideration has been granted. Any delay in contact may limit the options available for Academic Consideration.

For more information on the Academic Consideration process, what is and is not an extenuating circumstance, and to submit an Academic Consideration request, please see the Faculty of Arts and Science [Academic Consideration website](#). ASO courses include links to information on **Academic Accommodation** on your **Course Homepage** in onQ.

Please see the Teaching Team page for all contact information regarding Academic Accommodations and Considerations.

The teaching team contact information is located on the Homepage of the course (see “[Teaching Team](#)”).

Academic Integrity

Queen’s students, faculty, administrators and staff all have responsibilities for upholding the fundamental values of academic integrity: [honesty, trust, fairness, respect, responsibility and courage](#). These values are central to the building, nurturing and sustaining of an academic community in which all members of the community will thrive. These five fundamental values enable instructors, students and staff to contribute to a community of knowledge dedicated to the freedom of inquiry and open exchange of ideas that characterizes the educational environment at Queen’s.

Students are responsible for familiarizing themselves with the [Queen’s Senate Academic Integrity Procedures](#) and for ensuring that their assignments and their behaviour conform to the principles of academic integrity. Information on academic integrity is available in the Arts and Science Calendar (see [Academic Regulation 1](#)), on the [Arts and Science website](#), and from the instructor of this course. Departures from academic integrity include plagiarism, use of unauthorized materials, facilitation, forgery, falsification, departure from the core values of the University, contract cheating, unauthorized use of Intellectual property, unauthorized collaboration and failure to abide by academic rules. Any behaviour that results in a departure from academic integrity, may be subject to the remedies and sanctions as established by the Queen’s University Senate. Sanctions are meaningful and appropriate to the severity of the departure and ensure that students understand the importance in maintaining the integrity of degrees granted by the University. The Faculty of Arts and Science is committed to ensuring the Academic Integrity investigation process is fair and supportive and will be carried out in a safe and positive environment. Our intention is that this the academic integrity process will be a learning opportunity promoting student success, growth, and development.

Queen’s [Student Academic Success Services](#) (SASS) offers a self-directed, online academic integrity module which we encourage all students to take which will help with:

- Understanding the nature of the academic integrity departure

- Understanding the expectations of and role of sources in scholarly writing
- Integrating sources into your writing (paraphrasing, quoting, summarizing)
- Understanding when and how to cite your sources
- Managing your time effectively to avoid the need for shortcuts
- Taking effective notes to ensure accuracy of source material and correct attribution

Turnitin Statement

This course makes use of Turnitin, a third-party application that helps maintain standards of excellence in academic integrity. Normally, students will be required to submit their course assignments through onQ to Turnitin. In doing so, students' work will be included as source documents in the Turnitin reference database, where they will be used solely for the purpose of detecting plagiarized text in this course. Data from submissions is also collected and analyzed by Turnitin for detecting Artificial Intelligence ([AI-generated text](#)). These results are not reported to your instructor at this time but could be in the future.

Turnitin is a suite of tools that provide instructors with information about the authenticity of submitted work and facilitates the process of grading. The similarity report generated after an assignment file is submitted produces a similarity score for each assignment. A similarity score is the percentage of writing that is similar to content found on the internet or the Turnitin extensive database of content. Turnitin does not determine if an instance of plagiarism has occurred. Instead, it gives instructors the information they need to determine the authenticity of work as a part of a larger process.

Please read Turnitin's [Privacy Policy](#), [Acceptable Use Policy](#) and [End-User License Agreement](#), which govern users' relationship with Turnitin. Also, please note that Turnitin uses cookies and other tracking technologies; however, in its service contract with Queen's University Turnitin has agreed that neither Turnitin nor its third-party partners will use data collected through cookies or other tracking technologies for marketing or advertising purposes.

For further information about how you can exercise control over cookies, see [Turnitin's Privacy Policy](#).

Turnitin may provide other services that are not connected to the purpose for which Queen's University has engaged Turnitin. Your independent use of Turnitin's other services is subject solely to Turnitin's Terms of Service and Privacy Policy, and Queen's University has no liability for any independent interaction you choose to have with Turnitin.

Portions of this document have been adapted, with permission, from the University of Toronto Centre for Teaching Support and Innovation tip sheet "[Turnitin: An Electronic Resource to Deter Plagiarism](#)".

Computer Requirements

Please note that mobile devices are not recommended for the course as they cause several known issues in onQ.

Computer Specifications

- Windows 8.1 or newer
- OS X 10.13 (High Sierra) or newer
- Dual Core 2 GHz processor
- 4 GB RAM
- Soundcard
- USB headset
- Webcam

Supported Browsers

- Chrome (preferred - latest version)
- Firefox (latest version)
- **Safari is not recommended as it causes several known issues in onQ**
- **Edge is not recommended as it causes several known issues in onQ**

Internet Connection

- Wired high speed access: Cable or better
- **Wifi is not recommended**
- A minimum download speed of 10 Mbps and up to 20 Mbps for multimedia is recommended
- Click here for an [Internet speed test](#)

Java

- Latest version

Media Player

- HTML5 compatible

Adobe Reader

- Latest Version

Students Studying or Travelling Abroad

If you plan to travel, we strongly recommend that you confirm Internet availability in your host country prior to departure. In the past, students in other countries have been blocked from accessing certain websites relevant to their courses, as well as onQ. It is the responsibility of all students to book travel around course work, as we cannot change the format or timing on assessments or assignments as a result of travel plans.

Helpful Hints

This course will include several components including assigned readings, forum discussions, quizzes, essay, and a final exam. In a traditional live biology course, students interact with each other during the lecture periods and during lab sessions. In this course, student-to-student interaction will occur mainly through the forum discussions (and, no doubt, through private electronic communication).

For the forum discussions, the class is broken down into groups of approximately six students. Topics are assigned and each group is expected to enter into an online discussion based on information students glean from any source they deem appropriate. You will be graded according to the quality of your participation in the discussion. You will be evaluated not only on the information you bring forward, but also on your discussion of material put forward by others in your group. Therefore, it is critical to the success of the discussions that students get going early. If everyone leaves it to the last moment to post there will be little discussion of ideas (which will be reflected in the grades awarded).

As you will note, the course is broken down into 11 modules (listed on the banner of course Welcome Page). When you click on each module you will see a brief overview followed by learning outcomes, video tutorials, readings, and assignments/activities. Be sure to watch the videos. At the end you will find a more comprehensive summary of the material included in the module. Be sure to read those summaries.

There will be three quizzes in this course. Quizzes will be done online at specified times. Make sure you are aware of the times because there will be no re-writes unless you have a medical reason. You will also be required to submit a final paper using Turnitin.

Please note that I will be paying particular attention to the issue of plagiarism in this course. It is your responsibility to ensure that your submissions adhere to the rules of academic integrity. If you are in doubt, please contact your instructor.

Finally, try your best to avoid procrastination with assignments. Internet service is not always reliable and this can be very frustrating if you are pushing a deadline to the last minute.

Good luck with the course!

