



SYLLABUS

MCB 442 Human Genetics: Sex, Crime, and Disease

Instructor Information

<p>Lisa Rezende, Ph.D. Associate Professor of Practice, Molecular and Cellular Biology</p> <p>Office: Life Sciences South (LSS) Room 252 (520) 621-9729 lrezende@arizona.edu</p>	<p>Lisa Elfring, Ph.D. Associate Vice Provost Associate Specialist, Molecular and Cellular Biology</p> <p>Office: Manuel Pacheco Integrated Learning Center (ILC) Room 101F (520) 621-1671 elfring@email.arizona.edu</p>	<p>George Sutphin, Ph.D. Assistant Professor Molecular and Cellular Biology</p> <p>Office: Bioscience Research Laboratory (BSRL) 356 520-621-4174 sutphin@arizona.edu</p>
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Instructor Availability and Communication

Dr. Lisa Rezende (Course coordinator, Co-instructor weeks 1-10)

- I am your “go-to” person for any course logistic questions
- Office Hours: Mondays 1 PM – 2 PM and Thursday 2 PM – 3 PM in LSS 252; Zoom office hours available by appointment.
- Please contact me by email (lrezende@arizona.edu). I generally respond within 24 hours on weekdays; 48 hours on weekends.

Dr. Elfring (Co-instructor weeks 1-10)

- Office Hours: Wednesdays, 1-2 pm by Zoom (<https://arizona.zoom.us/my/lisaelfring>) and Thursdays, 3-4 pm, in ILC 101F; additional Zoom office hours available by appointment.
- Please contact me by email (elfring@arizona.edu). I generally respond within 24 hours on weekdays; 48 hours on weekends.

Dr. George Sutphin (Instructor Weeks 11-16)

- Office Hours: Mondays 1–2 PM (Zoom: <https://arizona.zoom.us/j/9871604346>) and Thursday 2 PM – 3 PM (in-person, BSRL 356; let me know if you are coming or call my

office when you arrive so I can let you into the building); additional Zoom office hours available by appointment.

- Please contact me by email (sutphin@arizona.edu). I generally respond within 24 hours on weekdays; 48 hours on weekends.

Nicole Walker (Teaching Assistant)

- Office Hours: Zoom office hours Wednesday 9-10 AM (<https://arizona.zoom.us/j/83144546640>). Let me know if you are coming so I make sure to let you into the zoom.
- Please contact me by email (nicolewalker@email.arizona.edu). I generally respond within 24 hours on weekdays; 48 hours on weekends.

Savannah Weaver (Teaching Assistant)

- Office Hours: Wednesday from 12:30-2:30 PM sound? Zoom link: <https://arizona.zoom.us/j/82901721367>

Course Meetings

This class is designed to be taught in the **IN-PERSON modality** on Tuesday and Thursdays from 12:30-1:45 PM in the Gittings Building, Room 201.

Preparation before class: Before each Tuesday class meeting, you will complete the assigned reading/viewing of video resources and complete a short reading quiz on D2L.

In-class work: Class attendance is vital as we require group activities that can be accomplished in person (or, with some rearrangement, via Zoom if you are unable to attend in person).

Remain flexible: If pandemic conditions warrant, the University may require that we return to remote operations. If that is the case, we will notify you by D2L Announcement and email that we are moving to remote operations.

Catalog Description

Human Genetics is an advanced genetics course and an introduction to the exciting and rapidly evolving field of human genetics. Through lectures, readings and case studies, students will gain an in-depth understanding of the human genome, current issues in human heredity and genetic diseases, and research methods in human genetics. Students will explore the societal implications of topics such as the human genome project, DNA fingerprinting, genetic testing for disease risk, use of genetics in genealogy and forensics, and gene therapy. Students will also acquire or improve their critical reading skills of primary scientific literature.

Course Objectives and Outcomes

In this course, students will:

- Apply their knowledge of molecular and cellular biology to human genetics.
- Read and analyze primary literature on human genetics.
- Explore current issues in human genetics through case studies.
- Communicate scientific ideas and methods.
- Evaluate the reliability of human-genetics information.

Upon successful completion of the MCB 442, you will be able to:	Which aligns with MCB program outcome*:
Describe what is currently known and what is still being investigated about the inheritance, molecular mechanism, and potential treatment of various human genetic disorders.	Read and interpret primary scientific literature in cell and molecular biology, linking the results to prior understanding of biological processes. Evaluate the reliability of sources of information about biology.
Discuss the use and limits of various techniques used to screen for genetic risk, diagnose genetic disorders, trace ancestry, and identify forensic samples.	Apply analytical thinking to biological problems.
Interpret common data types in human genetics.	Apply analytical thinking to biological problems.
Read primary research literature on human genetics.	Read and interpret primary scientific literature in cell and molecular biology, linking the results to prior understanding of biological processes. Evaluate the reliability of sources of information about biology.
Use scholarly sources to write reports on genetic case studies.	Communicate effectively about scientific ideas and methods.
Identify and discuss historical and current ethical issues surrounding human genetics.	Demonstrate ability to analyze the role of biology in societal decisions and to apply ethical decision-making to evaluate existing and new scientific approaches.

Course prerequisites or co-requisites

MCB 181R and MCB 304 or ECOL 320 or an equivalent upper-division genetics course

Required Materials

- All course readings will be posted to the course D2L site. There is no textbook required.
- Students should bring a writing implement and paper to each class meeting.
- We will be using Slido for in-class questions. This online platform is free to students. Each day's session can be entered through that day's QR code or by entering the session number at (<https://www.sli.do>). Written group activities will be submitted to Gradescope (<https://www.gradescope.com/>).

Course Activities

- *Pre-class reading assignments and quizzes:* Students will read assigned articles on human genetics and complete a short quiz on D2L.
- *Class participation (in-person or virtual):* Each week, students will work in small groups to analyze and discuss primary literature articles, case studies, and/or problem sets that relate to that week's topic. Participation will be submitted through slido questions and group activities submitted to Gradescope.
- *Case Study Assignments:* Students turn in a group written case study report as well as individual analysis of specific issues.
- *Primary-Literature assignments:* Students will read and analyze selected articles on human genetics. The first two reports will be submitted as a group. The third will be submitted individually. Students who wish to replace a low score on a primary-literature assignment will have the opportunity to complete a fourth analysis at the end of the semester.
- *Midterms and Final Exams:* Students will complete three take-home exams. **The final exam is optional and may replace the lowest take-home exam score.**

Grading Scale and Grade Policies

Your course grade will be determined by the following criteria:

Gradable Item	Weight
Exams (3 take-home and a final; final exam may replace lowest score)	45%
Group Case-Study Reports (3 total, drop the lowest)	10%
Individual Case-Study assignments (3 total, drop the lowest)	10%
Group Primary-Literature assignment (2 total, drop the lowest)	10%
Individual Primary-Literature analysis (1 required; score may be replaced with optional additional analysis at the end of the semester)	10%
Weekly Reading Quiz (16 total, drop lowest score)	5%
Participation in daily in-class activities (30 total, drop the five lowest scores)	10%

Your final grade will be based on the total points you earn over the semester, with minimum grade cutoffs as follows:

Grade	Percentage of Points Earned
A	90%-100%
B	80%- 89.9%
C	70%-79.9%
D	60%-69.9%
E	59.9% or below

Point totals will be rounded to the nearest whole point when calculating the final grade. In general, grades are not curved.

Incompletes and Withdrawals

A grade of Incomplete (I) will only be given at the end of the term in the case of an emergency when a minor portion of the course work cannot be completed. The student must contact the instructor before the end of the semester to agree on an incomplete grade contract using the Report of an Incomplete forms as described in the [University of Arizona Course Catalog](#).

Requests for withdrawal (W) must be made in accordance with university policies that are available at <https://catalog.arizona.edu/policy/grades-and-grading-system>.

Grade Appeals

If you believe an error has been made in grading, you must contact Dr. Rezende **within one week** after the scores are posted. Turning in a re-grade request does not guarantee that you will receive more points, and your entire assignment or exam will be rescored.

Extra Credit

From time to time, a small number of extra-credit points may be available to students for work that goes beyond the normal requirements of the class. The instructors will announce when these are available and at all times the opportunity will be available to the entire class. **Please do not contact us requesting an extra-credit assignment.**

Late Assignment

If you will be unable to complete an assignment by the due date, please contact Dr. Rezende (lrezende@arizona.edu) as soon as possible.

Class attendance and participation

Participating is vital to the learning process. As such, participating in the course activities during the week they are assigned is critical. You may opt to attend via Zoom rather than in-person at any time. (Zoom link: <https://arizona.zoom.us/j/86902979241> Password: Chromosome)

- If you feel sick, or if you need to isolate or quarantine based on [University protocols](#), stay home. Except for seeking medical care, avoid contact with others and do not travel.
- Notify your instructor(s) if you will be missing a course meeting or an assignment deadline.
- Non-attendance for any reason does **not** guarantee an automatic extension of due date or rescheduling of examinations/assessments.
- Please communicate and coordinate any request directly with your instructor.
- If you must miss the equivalent of more than one week of class, please contact the Dean of Students Office DOS-deanofstudents@email.arizona.edu to share documentation about the challenges you are facing.
- Voluntary, free, and convenient [COVID-19 testing](#) is available for students on Main Campus.
- If you test positive for COVID-19 and you are participating in on-campus activities, you must report your results to Campus Health. To learn more about the process for reporting a positive test, visit the [Case Notification Protocol](#).
- The COVID-19 vaccine and booster is available for all students at [Campus Health](#).
- **Visit the [UArizona COVID-19](#) page for the most up-to-date information.**

The UA's policy concerning Class Attendance and Administrative Drops is available at: <https://catalog.arizona.edu/policy/class-attendance-participation-and-administrative-drop>

The UA policy regarding absences on and accommodation of religious holidays is available at <http://deanofstudents.arizona.edu/religiousobservanceandpractice>

Absences pre-approved by the UA Dean of Students (or Dean's designee) will be honored. Available at: <https://deanofstudents.arizona.edu/faqs> See "Absences" section.

Syllabus, Schedule, and Assignment Changes

Information contained in the course syllabus, other than the grade and absence policies, may be subject to change.

Course Policies

Face coverings are required in our classroom

Per the [University of Arizona's Administrative Directive](#), **surgical grade or higher** face coverings that cover the nose, mouth, and chin are required to be worn in all learning spaces at the University of Arizona (e.g., in classrooms, laboratories and studios). Any student who violates this directive will be asked to immediately leave the learning space and will be allowed to return only when they are wearing a face covering. Subsequent episodes of noncompliance will result in a Student Code of Conduct complaint being filed with the Dean of Students Office, which may result in sanctions being applied. The student will not be able to return to the learning space until the matter is resolved.

The Disability Resource Center is available to explore face coverings and accessibility considerations if you believe that your disability or medical condition precludes you from utilizing any face covering or mask option. DRC will explore the range of potential options as well as remote course offerings. Should DRC determine an accommodation to this directive is reasonable, DRC will communicate this accommodation with your instructor.

Physical distancing is required in our classroom: During our in-person class meetings, we will respect CDC guidelines, including restricted seating to increase physical distancing and appropriately-worn face coverings. Per the University of Arizona's Administrative Directive, **surgical grade or higher** that cover the nose, mouth, and chin are required to be worn in all learning spaces at the University of Arizona (e.g., in classrooms, laboratories and studios). Any student who violates this directive will be asked to immediately leave the learning space, and will be allowed to return only when they are wearing a face covering. Subsequent episodes of noncompliance will result in a Student Code of Conduct complaint being filed with the Dean of Students Office, which may result in sanctions being applied. The student will not be able to return to the learning space until the matter is resolved.

Class Recordings

For lecture recordings, which are used at the discretion of the instructor, students must access content in D2L only. Students may not modify the content or re-use content for any purpose other than personal educational reasons. All recordings are subject to government and university regulations. Therefore, students accessing unauthorized recordings or using them in a manner inconsistent with UArizona values and educational policies (Code of Academic Integrity and the Student Code of Conduct) are also subject to civil action.

Academic advising

If you have questions about your academic progress this semester, please reach out to your academic advisor (<https://advising.arizona.edu/advisors/major>). Contact the Advising Resource Center (<https://advising.arizona.edu/>) for all general advising questions and referral assistance. Call 520-626-8667 or email to advising@arizona.edu.

Life challenges

If you are experiencing unexpected barriers to your success in your courses, please note the Dean of Students Office is a central support resource for all students and may be helpful. The Dean of Students Office can be reached at 520-621-2057 or DOS-deanofstudents@email.arizona.edu.

Physical and mental-health challenges

If you are facing physical or mental health challenges this semester, please note that Campus Health provides quality medical and mental health care. For medical appointments, call (520-621-9202. For After Hours care, call (520) 570-7898. For the Counseling & Psych Services (CAPS) 24/7 hotline, call (520) 621-3334.

Code of Conduct

Please review the University's Code of Conduct information, which can be found at:
<https://deanofstudents.arizona.edu/policies-codes>

Classroom Behavior

The Arizona Board of Regents' Student Code of Conduct, ABOR Policy 5-308, prohibits threats of physical harm to any member of the University community, including to one's self.

Disruptive Student Behavior

Students are expected to be familiar with the UA Policy on Disruptive Student Behavior in an Instructional Setting found at:

<http://policy.arizona.edu/education-and-student-affairs/disruptive-behavior-instructional-setting>

Threatening Student Behavior

The University of Arizona seeks to promote a safe environment where students and employees may participate in the educational process without compromising their health, safety or welfare. The Arizona Board of Regents' Student Code of Conduct, ABOR Policy 5-308, prohibits threats of physical harm to any member of the university community, including to one's self. Threatening behavior can harm and disrupt the University, its community and its families.

Threatening behavior means any statement, communication, conduct or gesture, including those in written form directed towards any member of the university community that causes a reasonable apprehension of physical harm to a person or property. A student can be guilty of threatening behavior even if the person who is the object of the threat does not observe or receive it, so long as a reasonable person would interpret the maker's statement, communication, conduct or gesture as a serious expression of intent to physically harm. You are encouraged to read more on this at:

<http://deanofstudents.arizona.edu/accountability/disruptive-student-behavior>

The Policy on Threatening Behavior by Students found at:

<http://policy.web.arizona.edu/education-and-student-affairs/threatening-behavior-students>

Student Code of Academic Integrity

Academic Integrity at the University of Arizona is the principle that stands for honesty and ethical behavior in all homework, tests and assignments. All students should act with personal integrity and help to create an environment in which all can succeed.

Dishonesty will not be tolerated in this course. This includes, but is not limited to, cheating, plagiarizing, fabricating information or citations, facilitating acts of academic dishonesty by others, having unauthorized possession of examinations, submitting work of another person or work previously used without informing the instructor, or tampering with the academic work of other students. Students who are found to be dishonest will be reported to the Dean of Students Office and receive a sanction, such as a failing grade on the assignment, exam, and/or in the course. Students with questions on this policy should refer to the UA Code of Academic Integrity, available at:

<http://deanofstudents.arizona.edu/policies-and-codes/code-academic-integrity>

Plagiarism

This course will be using Turnitin, a plagiarism-detection software, for some assignments.

The University Libraries have some excellent tips for avoiding plagiarism, available at:

<http://www.library.arizona.edu/help/tutorials/plagiarism/index.html>

Discrimination and Harassment

Policies against discrimination and harassment, along with offices for reporting concerns related to discrimination or harassment,

<http://policy.arizona.edu/human-resources/nondiscrimination-and-anti-harassment-policy>

Communication

You are responsible for reading emails sent to your UA account from your instructors' UA accounts and the announcements that are placed on the course D2L site. Information about readings, news events, your grades, assignments and other course related topics will be communicated to you with these electronic methods. The official policy can be found at: <http://www.registrar.arizona.edu/emailpolicy.htm>

Accessibility and Accommodations

At the University of Arizona, we strive to make learning experiences as accessible as possible. If you anticipate or experience barriers based on disability or pregnancy, please contact the Disability Resource Center (520-621-3268, <https://drc.arizona.edu/>) to establish reasonable accommodations.

Grievance Policy

Should a student feel they have been treated unfairly, there are a number of resources available. With few exceptions, students should first attempt to resolve difficulties informally by bringing those concerns directly to the person responsible for the action, or with the student's graduate advisor, Assistant Dean for Student and Alumni Affairs, department head, or the immediate supervisor of the person responsible for the action. If the problem cannot be resolved informally, the student may file a formal grievance.

Information can be found at:

<http://deanofstudents.arizona.edu/policies-and-codes/code-academic-integrity>

University Final Grade Appeal Policy

<http://catalog.arizona.edu/2015-16/policies/gradappeal.htm>

Notice of Potentially Objectionable Materials

As this is a biology course, we will be discussing biological evolution, sexual reproduction, and ethical implications of biotechnology in a scientific manner.

Confidentiality of Student Records

Family Educational Rights and Privacy Act of 1974 (FERPA) is the federal law that governs the rights of students and institutional responsibilities with respect to student records. FERPA is a federal law designed to protect the privacy of a student's educational record. More details on what FERPA is about and specifics of what constitutes an Education Record can be accessed at: <http://www.registrar.arizona.edu/ferpa/default.htm> . If you have any questions regarding any of the information provided on this site, please contact the University of Arizona Office of the Registrar via email: reghelp@email.arizona.edu.