

Biology II: Human Genetics

Instructor Information

Dr. Jeff Smith – Emeritus Director

Office- Elliott B009C

Contact – please contact me at jsmith4@bsu.edu as I do not have an office phone.

Office hours – 2:00 MWF and by arrangement. Zoom office hours available by request.

Course Meeting Information

1:00 MWF (lecture) and 2:00 – 3:50 T (lab)

Class and lab will meet in B211 unless otherwise announced.

Course Description

Human Genetics is an introductory genetics course that examines classical Mendelian genetics and modern examples as they relate to the human genome. Specific topics include: Mendelian genetics, the inheritance patterns of genes, pedigree analysis, chromosomal aberrations, behavioral genetics and genetic screening. Laboratory activities emphasize techniques used to detect and analyze genetic information.

Course Goals

The goals of this course are to:

- A. Acquaint the student with principles and processes in Genetics.
- B. Learn to detect and interpret patterns in the inheritance of genetic traits with an emphasis on human examples.

Suggested Student Prerequisites

- Self-motivated and independent learner.
- 1 or 2 years of Biology.
- Algebra I or higher math background.
- Willing and able to spend the time necessary for success.

Laboratory

A number of laboratory exercises are planned for the course and directions will be provided. In some instances, the students will need to work on the lab assignment on their own at other times. The data may be collected and the analysis and report will use the pooled data. Lab reports and grades will vary with the activity.

Texts

- Human Genetics by R. Lewis
- The Cartoon Guide to Genetics by L. Gonick and M. Wheelis
- Abraham Lincoln's DNA and other Adventures in Genetics by P. Reilly
- Mutants by A. M. LeROI
- Other materials as assigned. (Scanned documents posted to BlackBoard etc.)

Course Pacing

This course will use a combination of lecture materials, class discussions, video clips etc. to

present the materials. Because the field of Genetics is changing so rapidly, a great deal of attention will also be given to news releases, recent publications etc. so that the materials will be as current as possible. Students are encouraged to answer and ask questions and participate in discussions.

Assessments

The name of the game in learning Genetics is "practice, practice, and practice". Because of this, there will be weekly summary assignments so that students can "practice" the topics presented in class. Emphasis will be on "thinking" and "justification" of answers. Pay close attention to what happens in class and take good notes. Your course progress will come mainly from these weekly assessments.

Indiana Academy Unexcused Absence Policy

It is the policy of the Indiana Academy that any absence from class is unexcused, except for illness, death in the family, college or school-related activities, and extenuating circumstances . When a student is absent from a class, the instructor reports the student absence to the Faculty Attendance Coordinator in the Office of Academic Affairs. Unless the absence is excused by a school official, it is considered unexcused. The decision as to whether an absence is excused is not determined by the instructor.

*You are expected to attend every class. You are allowed one unexcused absences without penalty. Each additional unexcused absence will be penalized as follows: Unexcused absence (1) = 1-point subtraction from final grade. Unexcused absence (2) = 3-point subtraction from final grade. Unexcused absence (3) = 5-point subtraction from final grade. (For example, if you have an 89 final average with (3) unexcused absences your final grade will be 84). Four (4) or more unexcused absences will lead to academic and residential consequences beyond the scope of this class determined by the Office of Academic Affairs (i.e., residential groundings, parent/principal conference, and/or detention).

**Any minor assignment/test/project/presentation missed due to an unexcused absence will be handled according to the late work policy of this class. You will be given an opportunity to retake any missed assignment/test/project/presentation worth more than 20% of the final grade but will be docked a full letter grade as a result."

Late work policy for Genetics

All assignments are expected by class time on the due date. Any assignment will be accepted without penalty within 24 hours. For example, if an assignment is due on Friday at class time, it must be submitted by 1:00 on Saturday. If you need additional time, please make your request **BEFORE** the assignment is due.

Additional Assignments

There will be a number of quizzes, projects or additional assignments that will be given in the course. All of these will have their own point value added to the total points available for the course. Some of these may include, but are not limited to:

1. Pedigree Assignment - Each student will be expected to study and complete a detailed pedigree assessment of an inherited human trait of their choice within their own families.

Students who are unable to work a pedigree for their family will be offered a choice of alternate assignments.

2. Medical Flyer - Each student will choose a medical condition that has an inherited basis and prepare a "doctor's office" style tri-fold pamphlet that describes that disease and the method of its inheritance.

3. In the News - The area of genetics is changing rapidly. Many of the new advances are published in newspapers, magazines, or on the web. Students will watch for these publications, and create a resource guide of scanned documents, links etc.

Grading

Grades will be calculated on the percentage of points obtained out of points available. The letter grade equivalent will be:

A = 90%, B = 80%, C = 70%, D* = <70%. Each student starts the course with 100% or an A. The challenge is to maintain as high a percent grade as you can during the course. Students should be able to follow their grades in PowerSchool.

Computer Use Policy

Computers are encouraged for class work, note taking etc. We will also be using a number of web sites during class for lab work etc. However, students are expected to close their computers when requested and stay on only authorized sites. Computer use is a privilege, not a right and can be removed if abused.

Academic Integrity Policy

Academic dishonesty in any form will not be tolerated. The student is responsible for knowing the policies and consequences as stated in the Academy handbook. Specifically for this course, cooperative group work on homework assignments is appropriate and is encouraged, but simple copying of an assignment from another or allowing another to copy your homework without collaboration is not acceptable. Additionally, exchanging ANY information about the content of quizzes or tests with students yet to take the exam or solicitation of such information is a severe violation of academic honesty standards.

If you have any questions regarding what constitutes cheating, please come to see me. In order to preserve the credibility of all students' grades, I encourage you to tell me if you observe violations of the integrity policy.

Diversity and Inclusion Policy

Ball State University aspires to be a university that attracts and retains a diverse faculty, staff, and student body. We are committed to ensuring that all members of the community are welcome, through valuing the various experiences and worldviews represented at Ball State and among those we serve. We promote a culture of respect and civil discourse as expressed in our Beneficence Pledge and through university resources found at <http://cms.bsu.edu/campuslife/multiculturalcenter>

As such, it is important to ensure that your comments and behavior in class is respectful and inclusive. Discriminatory comments or behavior will not be tolerated and may result in disciplinary action, in accordance with Indiana Academy and Ball State University policy.

Mask Policy

The Indiana Academy will follow [Ball State University's mask policy](#) (see Section IV). Based on current CDC guidance recommending the wearing of face masks for all people—regardless of vaccination status—in public indoor settings in communities where the rate of coronavirus transmission is high or substantial, all employees, students, and campus visitors are required to wear a mask while inside any University building. This requirement is effective on August 9, 2021. Fully vaccinated people are not required to wear masks outdoors.

Individuals who are not fully vaccinated for COVID-19 are required to wear face masks while inside campus buildings and outside when physical distancing cannot be maintained.

If a student declines to wear a face mask as required, the student will be referred to the Director of Academic Affairs or the Director of Residential Affairs. If the situation occurs in a classroom or other academic setting, it is considered a classroom management issue, and the teacher will remind the student of the requirement and give the student a chance to comply with it prior to referring the matter to the Director of Academic Affairs or the Director of Residential Affairs. Wearing masks is crucial to preventing the spread of COVID-19 to others.