Bi 341 – Introduction to Genetics

Spring – 2020
Portland State University
Lecture MW 2:00-3:50

Course Description:

Introduction to Genetics (Bi 341) is a 4 credit course that will cover mechanisms of inheritance in Eukaryotic organisms

Instructor: Kim Brown, Ph. D.

Contact Information:

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TA: Zach Dietz
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Prerequisite:

Introductory Biology Series including Bi 211, Bi 212 and Bi 213.

Required materials:

Text: Hartl and Jones. Essential Genetics: A Genomic Perspective Any Edition. Jones and Bartlett Publishers, (20XX) Sudbury, MA. NOTE: **Access Code is NOT REQUIRED**

TopHat student subscription ($30/term) for attendance, participation, and assignments.

Online access to Zoom. You have this through your pdx account and can access it using pdx.zoom.us from off campus devices.

Learning Objectives/Goals:

This class is designed to provide an understanding of the genetics and inheritance including mastering the language. You will learn how traits are inherited and how to use this to understand genetic disease and lethality. You will use these concepts to analyze basic problems and to understand the molecular basis of genetics and genetic techniques, cloning, transgenic organisms, population analysis, and variation.

Attendance:

There will be three class exams, a final exam, and Homework Exercises. Do not take this course if you cannot attend all 4 exams. See schedule below for dates. Lowest exam score will be dropped. As such, **Makeup exams will be granted under ONLY extreme circumstances (at my discretion). Do NOT skip exams as you will NOT be given any leeway if unforeseen circumstances force you to miss another.**

Grading Scheme:

Grading	Points
Exam 1	Top 2
Exam 2	25%
Exam 3	each
Final Exam	30%
Problem Sets and Online Assignments	15%
Attendance and Participation using TopHat	5%

Exams: Exams will be given online through TopHat and focus on specific chapters only. The Final will be cumulative covering all presented material, problems sets and chapters. The lowest of the 3 regular exam scores will be thrown out when determining final grade. All online exams will have time limits and will be closed when time limits are exceeded.

Problem Sets:

1. Problem sets must be completed using the TopHat online system.
2. Problem sets are due by 11:59pm on the Friday of the week they are due (see schedule on last page of syllabus). Problem sets will still be due on holidays, and can be submitted early.
3. Late submissions will be accepted up to 1 day late with a 5 point penalty applied. Contact the course TA to arrange late submission.
4. In the event of rare technical difficulty, you may submit a hard copy to the TA mailbox in SRTC 246.
5. Problem sets are graded based on completeness.

Attendance and Participation: Attendance (2.5% of grade) and Participation (2.5% of grade) will be based on the number of times you are present (i.e., sign in via TopHat; attendance) and actively participate in imbedded questions during live lectures. All students having at least 80% attendance and 80% participation in questions will get full credit followed by 10% increments.

Grading: Final grades will be based on your total performance in the course with grades assessed using the following scale. **No curve** will be used to determine final grades.

Final Exams will NOT be given early under any circumstances

Grading Scale

Letter Grade	A	A-	B+	B	B-	C+	C	C-	D+	D	D-
Percentage	>92	≥90	≥87	≥83	≥80	≥78	≥73	≥70	≥65	≥60	≥55

Recitations:

This time period is designed to answer student questions, discuss and review the problem sets, discuss current topics related to course material, and receive and review graded exams and problem sets. Attendance in sections other than that in which you are registered is at the discretion of the course TA. **You must attend the first recitation to maintain your spot in this class.**

Academic Courtesy:

1. Students are expected to arrive for class on time so that lectures start and end according to schedule.
2. Respect the rights of fellow students during the class period.
3. Please avoid talking or other distracting behavior, and **TURN PHONES OFF**.
4. Everyone is expected to help maintain the appearance of the classroom. After class, all trash should be removed and discarded appropriately.

Academic honesty statement:

If caught in an act of academic dishonesty, you will receive an F for the course and be reported to student affairs as described in the Code (577-031-0142: Procedures for Complaints of Academic Dishonesty). **NO cheating** (including plagiarism-lifting sentences, paragraphs or phases from **ANY** source) of any kind will be tolerated! See the PSU "Code of Student Conduct and Responsibility" for more information: http://www.pdx.edu/dos/codeofconduct. If cheating is observed, the grade for the

Students with Disabilities:

Students with a documented disability and registered with the Disability Resource Center, please contact me immediately, with the documentation, to facilitate arranging academic accommodations. Accommodations are collaborative efforts between students, faculty, and the Disability Resource Center (DRC). Students with DRC approved accommodations are responsible for contacting course instructors prior to or during the first week of the term to discuss accommodations. Students who believe they are eligible for accommodations but who have not yet obtained approval through the DRC should contact the DRC immediately at 503-725-4150. **If you will be taking exam(s) in the DRC, please arrange to do so during the scheduled exam times.**

PSU Fragrance-Free Value Statement

The ingredients in many fragrances and scents are known to irritate the respiratory tract, nervous system and eyes; lower immunity to disease/and trigger allergies and other severe health reactions. In the case of asthma and epilepsy, reactions triggered by exposure to scented products can be ***life-threatening***. PSU supports sustaining healthy indoor air quality. In the interest of promoting the health and safety of the University's students, faculty, staff, and visitors, the campus community is encouraged to maintain a fragrance-free environment. Please refrain from using scented personal care, laundry, and cleaning products. Thank you for your consideration of others in providing an environment in which every person on campus can feel safe and comfortable.

Tips for Success:

1. **Be an active learner.** Read the book ahead of class. Attend all lectures. You are responsible for all topics discussed in the lecture, even if they do not appear in the online notes. Take notes during class – do not rely on the printed-out class notes alone. Write down questions that come to mind during the lecture. Identify points in the lecture that you think are the main points. Review your notes after class, incorporating details that you remember but didn't get written down. While you are reading the textbook, take time to think about what you are reading. How does it fit with what you know already? Combine the information from the lecture and the text into one set of complete notes to review and study. Consider using the Cornell System of note-taking and review: a simple but powerful method for studying. See: http://lsc.cornell.edu/LSC_Resources/cornellsystem.pdf.
2. **Figure out and use your learning strengths.** Learning styles vary from person to person. You might do your best studying through reading, writing, drawing, or through discussion with fellow students. Most likely, it will take some of each to be most successful. Experiment, and use the techniques that work best for you.
3. **Spend time on this course.** Schedule and spend time reading and reviewing course materials. Revisit your notes and think about the logical structure underlying the subjects. Plan on spending a significant amount of time (10-12 hours/week) working on this course. Later topics build upon earlier portions of the course: please do not let yourself fall behind.
4. **ASK FOR HELP if you need it.** Come to my office hours, talk to your TA, find a study partner or study group, use the Discussions board on D2L, etc. You'll make the best progress when you work to identify the areas you need to work on and are active about seeking guidance.
5. **Use the University resources.** Campus services are available to help you with all aspects of your education, see http://www.pdx.edu/studentaffairs. PSU's undergraduate advising website is http://www.pdx.edu/advising. The Undergraduate Advising and Support Center (UASC), 425 Smith Center, http://www.pdx.edu/advising/academic-resources-and-services, offers academic advising and referral, academic support programs, community college relations, disability resource center, athletics advising, study skills workshops, tutorial programs, and student veteran services. The Peer Tutoring and Learning Center offers tutoring in many subjects (including Biology), as well as various workshops, see http://www.pdx.edu/tutoring/.

Course Lecture Schedule:

Week	Date	Topic	Chapter
1	March 30 - April 3	Introduction, Genes Due: Nothing	1
2	April 6-10	Mendelian Genetics Chromosomal Basis of Heredity **Due: Problem Set 1**	2-3
3	April 13-17	Gene Linkage and Mapping; **Due: Problem Set 2**	3-4
4	April 20-24	**Exam 1 (Chapters 1-4) Monday April 20th** Human Chromosomes and Behavior **Due: Problem Set 3**	5
5	April 27 - May 1	DNA Structure, Replication and Manipulation Bacterial Genetics **Due: Problem Set 4**	6-7
6	May 4-8	Bacterial Genetics Molecular Genetics of Gene Expression **Due: Problem Set 5**	7-8
7	May 11-15	**Exam 2 (Chapters 5-8) Monday May 11th** Genomics, Proteomics, and Genetic Engineering **Due: Problem Set 6**	10
8	May 18-22	Molecular Mechanisms of Mutation and DNA Repair Cancer Biology **Due: Problem Set 7**	13-14
9	May 25-29	Molecular Evolution and Population Genetics **No Class Monday May 25th** **Due: Problem Set 8**	14-15
10	June 1-5	**Exam 3 (Chapters 10, 13-15) Wednesday June 3rd** Quantitative Genetics **Due: Problem Set 9**	15
11	June 8	**Final Exam (Chapters 1-8, 10, 13-15)** **Monday June 8th 10:15-12:05**	