

# INTRODUCTION TO GENETICS

BI 341 and 341R

MWF 10:15-11:20AM

Fourth Avenue Building Rm 10

INSTRUCTOR	COURSE DESCRIPTION
Justin Courcelle 725-3866 <a href="mailto:justc@pdx.edu">justc@pdx.edu</a>	A study of the mechanism of biological inheritance. Includes one 2-hour recitation period.

**Prerequisites:** BI 251, 252, & 253 or equivalent

**Textbook:** Hartl and Jones. Essential Genetics: A Genomic Perspective Any Edition. Jones and Bartlett Publishers, (20XX) Sudbury MA.

**Websites:** Course homepage <http://web.pdx.edu/~justc/courses/>

**TA:** Raymond Spolek [rspolek@pdx.edu](mailto:rspolek@pdx.edu) Office Hrs: Fri 12:00-2:00PM SRTC Room B2-10

**My Office Hours:** Mon 2:00-4:00 SRTC Room B2-04, in person or virtual, or anytime by appointment  
Zoom Link: <https://pdx.zoom.us/j/88221230764> Meeting ID: 882 2123 0764

**Problem sets:** problem sets will be assigned each Monday in class and can be downloaded from the course website. These should be done each week as they are assigned, but need to be handed in on each exam date. Homework will not be graded, but will be checked for completeness. Points will be deducted based on their level of completeness, or if they are handed in late.

**Recitations:** W 2:00-3:50 Cramer Hall 449  
W 5:00-6:50 Lincoln Hall 247  
F 2:00-3:50 Park Mill-201

This time period is designed to answer student questions, discuss the chapter problems, and explore student interests in the topics covered.

**Exams:** Exams will be in the form of short answer and multiple choice questions looking to determine your understanding of the material as well as your ability to interpret data.

**Final:** The final will be based on new material, as well as building on concepts from previous exams.

<b>Grading:</b>	Exam I	10%	100-90% guaranteed A- or better
	Exam II	25%	89-80% guaranteed B- or better
	Exam III	25%	79-70% guaranteed C- or better
	Final	25%	69-60% guaranteed D- or better
	Problem Sets	15%	

There are NO makeup exams. You must take all exams or you cannot earn a passing grade. If you believe you have a valid excuse for not being able to take an exam, you should see me immediately to reschedule.

**Academic Honesty:** Acts of academic dishonesty will result a grade of zero for the assignment and may be reported to student affairs.

Students with accommodations approved through the Disability Resource Center (DRC) are responsible for contacting me 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. It is the student's responsibility to make sure that their exams and finals at the DRC are scheduled to begin before class finishes on each exam day. If the student cannot schedule their exam before this time, they should see me about arranging for alternative accommodations.

As an instructor, one of my responsibilities is to help create a safe learning environment for my students and for the campus as a whole. Please be aware that as a faculty member, I have the responsibility to report any instances of sexual harassment, sexual violence and/or other forms of prohibited discrimination. If you would rather share information about sexual harassment, sexual violence or discrimination to a confidential employee who does not have this reporting responsibility, you can find a list of those individuals at <https://www.pdx.edu/sexual-assault/get-help>. For more information about Title IX please complete the required student module "Creating a Safe Campus" in your D2L.

**Learning Objectives and Skills development:**

1. To understand the language and basic concepts of genetics.
2. To understand how traits are inherited and to use this understanding in analyses (to solve problems and complete pedigrees)
3. To understand probability concepts and use these concepts to solve problems (including basic statistical problems)
4. To understand how genetic problems may lead to disease or lethality
5. To understand the molecular basis of genetics (including such topics as replication, transcription, translation, and mutation)
6. To understand the workings and importance of major genetics techniques such as PCR
7. To understand current issues regarding genetics (e.g., cloning, use of transgenic organisms)
8. To understand the workings and uses of population genetics, variation, and quantitative techniques

**Schedule**

Week	Date	Topic	Ch
1	Sept 25	<i>*Yom Kippur (no class)</i>	1
	Sept 27	Genes Proteins and Variation	6
	Sept 29	Replication, DNA Manipulation	8
2	Oct 02	Transcription Translation	6
	Oct 04	Applying Molecular Techniques	3.1-
	Oct 06	Chromosome Structure	-3.5
3	Oct 09	<b>Exam I</b>	2
	Oct 11	Asexual/Sexual Cell Cycles	2
	Oct 13	Basic Inheritance	
4	Oct 16	Basic Inheritance	2
	Oct 18	Pedigree Analysis	3.6-
	Oct 20	Sex Chromosomes	3.7
5	Oct 23	Chi-Square test of Progeny	4
	Oct 25	Gene Linkage	4
	Oct 27	<b>Exam II</b>	4
6	Oct 30	Recombination Analysis	4
	Nov 01	Gene Mapping	5
	Nov 03	Chromosome aberrations	5
7	Nov 06	Chromosome aberrations	5
	Nov 08	Genetics of Bacteria	7
	Nov 10	<i>*Veterans Day (no class)</i>	
8	Nov 13	Genetics of Bacteria	7
	Nov 15	Population Genetics Allelic Variation	14
	Nov 17	Variation and Divergence	14
9	Nov 20	<b>Exam III</b>	15
	Nov 22	Variation and Divergence	15
	Nov 24	<i>*Thanksgiving break (no class)</i>	
10	Nov 27	Variation and Divergence	12
	Nov 29	Mutations and DNA Repair	12
	Dec 01	The Biology of Cancer	13
*Wed	Dec 06	<b>FINAL 10:15-12:05</b>	