

## 2025C BIOLOGY 5210, MOLECULAR BIOLOGY & GENETICS

**BIOLOGY 5210 is only available for master or graduate students who have NOT taken an undergraduate Molecular Biology or Genetics course. It is the undergraduate Molecular Biology & Genetics course; Penn undergraduates may not take Biol 2210 as Biol 5210.**

**YOU MUST GET PERMISSION FROM THE INSTRUCTOR TO ENROLL IN BIOL 5210.**

Below is last year's 2210 syllabus. The syllabus will be similar for 2025C semester, and will use a standard molecular genetics textbook, Griffiths Principles of Genetics. There is also a recitation once a week for problem & question solving that students must attend.

**BIOL 5210 STUDENTS ALSO WRITE A TERM PAPER, AND MUST TAKE ALL 4 EXAMS.**

<b>2024C BIOL2210 Syllabus (August 21, 2024 version)</b>			
<i>See Canvas modules for reading materials &amp; lecture slides</i>			
RECITATION	Date	Day	Lecture Topic
Rec 1	8/27/24	Tues	1: Mendel's Rules
	8/29/24	Thurs	2: Chromosome Theory of Inheritance
Rec 2	9/3/24	Tues	3: Pedigrees & Probabilities
	9/5/24	Thurs	4: Risk assessment & genotyping
Rec 3	9/10/24	Tues	5: Multiple alleles, complementation, interactions
	9/12/24	Thurs	6: Epistasis (modified mendelian genetics)
Rec 4	9/17/24	Tues	7: Linkage
	9/19/24	Thurs	8: large chromosome changes; organelle inheritance
Reviews	9/24/24	Tues	9: Bacteria & their viruses
<b>EXAM 1</b>	<b>9/26/24</b>	<b>Thurs</b>	<b>Exam 1 (lectures 1-8)</b>
Rec 5	10/1/24	Tues	10: Cracking the code of life I
	<b>10/3/24</b>	<b>Thurs</b>	<b>FALL BREAK</b>
Rec 6	10/8/24	Tues	11: Cracking the code of life II
	10/10/24	Thurs	12: A messenger between the nucleus & cytoplasm I
Rec 7	<b>10/15/24</b>	<b>Tues</b>	<b>NO CLASS</b>
	10/17/24	Thurs	13: A messenger between the nucleus and cytoplasm II
Rec 8	10/22/24	Tue	14: Translating the genetic code
	10/24/24	Thurs	15: Details of Translation
Rec 9	10/29/24	Tue	16: Gene regulation in Prokaryotes
	10/31/24	Thurs	17: Gene regulation in Eukaryotes
Reviews	11/5/24	Tue	18: Molecular Cloning
<b>EXAM 2</b>	<b>11/7/24</b>	<b>Thurs</b>	<b>Exam 2 (lectures 9-17)</b>
Rec 10	11/12/24	Tue	19: Sequencing to Genomics
	11/14/24	Thurs	20: Molecular Markers
Rec 11	11/19/24	Tues	21: Jumping Genes
	11/21/24	Thurs	22: Mutation & repair
Rec 12	11/26/24	Tues	23: Development/ into techniques (crispr)
	<b>11/28/24</b>	<b>Thurs</b>	<b>NO CLASS - THANKSGIVING</b>
Reviews	12/3/24	Tue	24: Crispr/Cancer
<b>EXAM 3</b>	<b>12/5/24</b>	<b>Thurs</b>	<b>Exam 3 (lectures 18-24)</b>
<b>EXAM 4</b>	<b>12/16/24</b>	<b>Mon</b>	<b>Exam 4 (lectures ALL 1-24)</b>