

MICROBIAL GENETICS 65434

BI 410 and BI 510
Tu Th 2:00-3:50PM
FAB Rm 10

INSTRUCTOR	COURSE DESCRIPTION
Justin Courcelle 725-3866 justc@pdx.edu	The genetics of bacteria and their viruses including: replication, rearrangement, repair, transfer, regulation, and methods of manipulation and analysis of DNA.

Textbook: Molecular Genetics of Bacteria by L. Snyder and W. Champness 3rd Ed.

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

Office hours: Mon 2:00-4:00 SB2 Rm B2-04 or by appointment

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: One third of the final will be based on the material from the first two exams and two thirds of the final will be based on new material

Grading:

Exam I	30%
Exam II	30%
Final	40%

GLOBAL OUTLINE

I. THE BASIC MACHINERY

Chromosome Structure and Replication (Ch1)
Gene Expression, Transcription, Translation (Ch2)

II. ASEXUAL GENETIC CHANGE Parent to Daughter Cells (Vertical)

Mutations and Genetic Analysis (Ch3)

III. "SEXUAL" GENETIC CHANGE Cells Exchanging Genetic Information (Horizontal)

Plasmids (Ch4)
Conjugation (Ch5)
Transformation (Ch6)
Viral Transduction and Lytic Cell Cycles (Ch7)
Viral Lysogeny (Ch8)
Transposition (Ch9)

IV. Molecular Mechanisms of Change

The Molecular Mechanisms of Recombination (Ch10)
DNA Repair and Mutagenesis (Ch11)

There are NO makeup exams. You must take both exams and the final or you cannot earn a passing grade. If caught in an act of academic dishonesty, you will receive a zero for the assignment and be reported to student affairs.

If you are a student with a documented disability and registered the Disability Resource Center, please contact me immediately to facilitate arranging academic accommodations.

Tentative Schedule

Week	Date	Topic	Chapter
1	Sept 27	Biochemistry of Replication	1
	Sept 29	Replication Fidelity	1
2	Oct 04	Transcription/Translation	2
	Oct 06	Mutants	3
3	Oct 11	Mutants	3
	Oct 13	Mutation Rates	3
4	Oct 18	Mutational Selection and Screens	3
	Oct 20	EXAM I	
5	Oct 25	Plasmid Copy Number and Compatibility	4
	Oct 27	Conjugation	5
6	Nov 01	Conjugational Analysis	5
	Nov 03	Transformation	6
7	Nov 08	Viral Transduction	7
	Nov 10	EXAM II	7
8	Nov 15	Phage Genetics	7
	Nov 17	Phage Genetics	7
9	Nov 22	Transposition	9
	Nov 24	No Class, Thanksgiving	
10	Nov 29	Molecular Mechanisms of Recombination	10
	Dec 01	Molecular Mechanisms of Repair	11
	Dec 8	FINAL 10:15-14:05	