

Grande Prairie Regional College
Department of Science and Technology

Course Outline : Genetics 2700 - Foundations of Molecular Genetics Winter 2007

Description : Genetics 2700 is a course dealing with the molecular genetics of prokaryotes. Basic concepts on the organization of genetic material and its expression will be developed from experiments on bacteria and viruses.

Instructor : Dr. Sean Irwin
Office - J223
Telephone - 539-2860 (office)
 - 567-2226 (home)

Prerequisites : BI 2070

Required Text : Fairbanks, D.J. and Andersen, W.R., Genetics: The Continuity of Life, International Thompson Publishing Company, New York, 1999.

Selected readings in Molecular Genetics

Lectures : Place : J202
Time : Mon. 13:00-14:20
 Fri. 11:30 – 12:50

Seminar : Place : J204
Time : Tues. 10:00 – 11:20

Evaluation :	Presentations/Quizzes	- 20%
	Midterm Exam	- 35%
	Final Exam	- 45%

Students are advised to attend all lectures and seminars as they will be responsible for all course material presented in the lectures and seminars.

Office Hours : Monday - 11:30 - 12:50 pm
Tuesday - 11:30 - 12:50 pm
Thursday -11:30 - 12:50 pm

GN 2700 Course Outline

	<u>Date</u>	<u>Topic</u>	<u>Text</u>
1.	Jan. 5	Introduction: Genetic Concepts	
2.	Jan. 8	DNA Structure / The Central Dogma	2.2
3.	Jan. 12	Bacteria and Phage	7.1-2, 7.7
4.	Jan. 15	T4 Genetic Analysis	
5.	Jan. 19	T4 Genetic Analysis	16.6
6.	Jan. 21	Transformation	7.4
7.	Jan. 26	Conjugation	7.5
8.	Jan. 29	Transduction	7.7-8
9.	Feb. 2	Transposition	22.3
10.	Feb. 5	DNA Replication	2.4-5
11.	Feb. 9	Mutation	5.1-3
12.	Feb. 12	Mutation	
	Feb. 16	Midterm I	
13.	Feb. 19	Family Day	
	Feb. 20	Winter Break	
	Feb. 23	Winter Break	
14.	Feb. 26	DNA Repair	5.4
15.	Mar. 2	DNA Repair	
16.	Mar. 5	Recombination	7.3
17.	Mar. 9	Recombination	
18.	Mar. 12	Gene expression; <i>lac</i>	8.1-2
19.	Mar. 16	Gene expression; <i>lac</i> , <i>trp</i>	8.3
20.	Mar. 19	Gene expression; Lambda	8.4
21.	Mar. 23	DNA cloning	9.1-9.2
22.	Mar. 26	DNA cloning	9.3-9.4
23.	Mar. 30	DNA sequencing, PCR	9.6, 9.9
24.	Apr. 2	DNA sequencing, PCR	
	Apr. 6	Good Friday	
25.	Apr. 9	Review	

GN 2700 Seminar Schedule

Date	Paper	Subject
Jan. 11	1.1	DNA
Jan. 18	2.1	T4 Phage - Quiz
Jan. 25	5.1	Fine Structure Mapping
Feb. 1	15.2	DNA Replication - Quiz
Feb. 8	11.1, 13.1	Mutagenesis
Feb. 15	11.2, 12.2	The Genetic Code / Mutation - Quiz
Feb. 22	Winter Break	
Mar. 1	13.2	DNA Repair
Mar. 8	17.1	Recombination - Quiz
Mar. 15	23.1, 23.3	The Lac Operon - Polarity
Mar. 22	24.1, 24.2	The Lac Operon – Promoters / Repressors - Quiz
Mar. 28	6.3	Restriction Enzymes
Apr. 5	8.2, 9.1	DNA Cloning / Sequencing - Quiz
Apr. 10	TBA	

Alpha Grade	Approximate Percentage
A+	90 – 100
A	85 – 89
A-	80 – 84
B+	76 – 79
B	73 – 75
B-	70 – 72
C+	67 – 69
C	64 – 66
C-	60 – 63
D+	55 – 59
D	50 – 54
F	0 – 49