



DEPARTMENT OF SCIENCE
COURSE OUTLINE – Winter 2010

GN 2700
Foundations of Molecular Genetics

INSTRUCTOR: Dr. Sean Irwin, Ph.D. **PHONE:** 539-2860 (W); 567-2226 (H)
OFFICE: J 221 **E-MAIL:** sirwin@gprc.ab.ca

OFFICE HOURS: Tues. and Wed. 10 - 11:20
Thurs. 1 – 2:20

PREREQUISITES: BI 2070

REQUIRED TEXT/RESOURCE MATERIALS:

Molecular Genetics of Bacteria, 3rd Edition, by Larry Snyder and Wendy Champness, ASM Press (2007).

Selected Readings in Molecular Genetics

DESCRIPTION: Basic concepts on the organization of genetic material and its expression will be developed from experiments on bacteria and viruses during the course.

CREDIT/CONTACT HOURS: 3 Credits (3-1.5-0) UT

DELIVERY MODE(S): Lectures – Mon. 1 – 2:20 and Fri. 11:30 – 12:50, Rm. J229
Seminar - Tues. 10 – 11:20, Rm. J229

TRANSFERABILITY: UA, UC*, UL, AU, AF, CU

* Check Alberta transfer guide.

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

STATEMENT ON PLAGIARISM AND CHEATING:

Pages 49-50 of the College calendar.

GN 2700 Course Outline

<u>Date</u>	<u>Topic</u>	<u>Textbook Readings</u>
Jan. 8	Introduction	
Jan. 11	DNA Structure	pg.13-25
Jan. 15	Genetic Concepts	pg. 139-144
Jan. 18	Genetic Concepts	pg. 167-174
Jan. 22	T4 Genetic Analysis	pg. 295-296; 320-332
Jan. 25	T4 Genetic Analysis	pg. 332-336
Jan. 29	Transduction	pg. 181-184; 336-338; 359-362
Feb. 1	Transformation	pg. pg. 181-184; 277-290
Feb. 5	Conjugation	pg. 176-181; 243-259
Feb. 8	Transposition	pg. 377-395; 397-400
Feb. 12	DNA Replication	pg. 29-53
Feb. 15	Family Day	
Feb. 19	Midterm	
Feb. 22	DNA Replication	pg. 306-318
Feb. 26	Mutation	pg. 25; 153-167
Mar. 1	Mutation	pg. 153-167
Mar. 5	Winter Break	
Mar. 8	Winter Break	
Mar. 12	Winter Break	
Mar. 15	DNA Repair	pg. 459-471
Mar. 19	DNA Repair	pg. 471-495
Mar. 22	Recombination	pg. 430-446
Mar. 26	Recombination	pg. 446-453
Mar. 29	Gene expression; Lambda	pg. 343-361
Apr. 2	Gene expression; Lambda	pg. 343-361
Apr. 5	DNA cloning	pg. 55-61; 229-235
Apr. 9	DNA sequencing, PCR	pg. 61-64
Apr. 12	Review	

GN 2700 Seminar Schedule

Date	Paper	Subject
Jan. 12	1.1	DNA
Jan. 19	2.1	T4 Phage - Quiz
Jan. 26	5.1	Fine Structure Mapping
Feb. 2	15.2	DNA Replication - Quiz
Feb. 9	11.1, 13.1	Mutagenesis
Feb. 16	No Seminar – Study for midterm	
Feb. 23	11.2, 12.2	The Genetic Code / Mutation - Quiz
Mar. 2	13.2	DNA Repair
Mar. 9	Winter Break	
Mar. 16		Recombination – Quiz
Mar. 23	23.1, 24.2	The Lac Operon – Polarity/ Promoters
Mar. 30	6.3	Restriction Enzymes - Quiz
Apr. 6	8.2, 9.1	DNA Cloning / Sequencing
Apr. 13		- Quiz

GRADING CRITERIA:

GRANDE PRAIRIE REGIONAL COLLEGE			
GRADING CONVERSION CHART			
Alpha Grade	4-point Equivalent	Percentage Guidelines	Designation
A ⁺	4.0	90 – 100	EXCELLENT
A	4.0	85 – 89	
A ⁻	3.7	80 – 84	FIRST CLASS STANDING
B ⁺	3.3	77 – 79	
B	3.0	73 – 76	GOOD
B ⁻	2.7	70 – 72	
C ⁺	2.3	67 – 69	SATISFACTORY
C	2.0	63 – 66	
C ⁻	1.7	60 – 62	
D ⁺	1.3	55 – 59	MINIMAL PASS
D	1.0	50 – 54	
F	0.0	0 – 49	FAIL
WF	0.0	0	FAIL, withdrawal after the deadline