



DEPARTMENT OF SCIENCE

COURSE OUTLINE – WINTER 2012

BI 2010 – CELLULAR BIOLOGY

INSTRUCTOR: Dr. Shauna Henley, **PHONE:** 539-2439
PhD
OFFICE: J215 **E-MAIL:** SHenley@gprc.ab.ca

OFFICE HOURS: Wednesday 10:00-11:30, Friday 9:30 -11:00

PREREQUISITE(S)/COREQUISITE: BI 1070

REQUIRED TEXT/RESOURCE MATERIALS:

“The World of the Cell” by Becker *et al.* (7th edition, 2009 or 8th edition, 2012)
Benjamin Cummings Publishing Company.

CALENDAR DESCRIPTION: A structural and functional dissection of a eukaryotic cell with emphasis on the techniques of modern cell biology. Detection of specific molecules at the ultrastructural level; plasma membrane structure and function; cytoskeletal involvement in intracellular transport, mitosis and cytokinesis; the endomembrane system, protein targeting, exocytosis and endocytosis; nuclear structure and function; cell cycle control and cancer.

CREDIT/CONTACT HOURS: 3 Credits (3-0-0) UT, 45 hours

DELIVERY MODE: Lectures – Tues and Thurs, 1:00 – 2:20, Rm J229

COURSE OUTCOME: Students will gain a deeper understanding of how eukaryotic cells work and an appreciation for important experiments and techniques in cellular biology.

TRANSFERABILITY: University of Alberta
 University of Calgary
 University of Lethbridge
 Athabasca University
 Augustana Faculty
 University of Alberta
 Concordia University College
 King's University College

** Grade of D or D+ may not be acceptable for transfer to other post-secondary institutions. Students are cautioned that it is their responsibility to contact the receiving institutions to ensure transferability.

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

EVALUATIONS: Exam I – 20%
Exam II – 20%
Online quizzes – 20%
Final Exam – 40%

Exams I and II will be non-cumulative and held during class on **Thursday February 2** and **Thursday March 15**, respectively. There will be 4 online quizzes (worth 5% each), held during the weeks of **January 23, February 13, March 5** and **April 1**. The final exam will be cumulative and will take place during the scheduled exam period.

STUDENT RESPONSIBILITIES: Students are expected to attend all classes and complete all assigned readings. Failure to write a quiz or exam will result in a grade of zero unless appropriate documentation is provided.

STATEMENT ON PLAGIARISM AND CHEATING:

Refer to the Student Conduct section of the College Admission Guide at <http://www.gprc.ab.ca/programs/calendar/> or the College Policy on Student Misconduct: Plagiarism and Cheating at www.gprc.ab.ca/about/administration/policies/

**Note: all Academic and Administrative policies are available on the same page.

COURSE SCHEDULE:

Topics

Required Text Readings

	8th edition	7th edition
1. Introduction to BI 1070		
2. A preview of the cell	1-14, A1-A26	1-14, A1-26
3. The macromolecules of the cell	41-71, 25-7, 32-6	41-71, 25-7, 32-6
4. Cells and Organelles	78-99	78-99
5. Membranes	156-89	156-89
6. Membrane transport	194-216	194-216
8. The nucleus	536-45	538-46
9. The cell cycle, DNA replication & mitosis	549-64, 571-89	551-66, 572-91
10. Transcription	645-75	645-75
11. Protein synthesis and sorting	679-705	679-705
12. Mitochondria & chloroplasts	254-8, 293-7	254-8, 293-7
13. Endomembrane system & peroxisomes	324-60	324-60
14. Cytoskeletal systems	422-44	425-48
15. Cellular Movement	449-74	452-76
16. Beyond the cell	477, 481-97	480, 484-500
17. Signal transduction	372-89, 392-418	371-88, 392-419
18. Cancer cells	788-91	757-89