



DEPARTMENT OF SCIENCE

COURSE OUTLINE – WINTER 2013

BI 2010 – CELLULAR BIOLOGY

INSTRUCTOR: Dr. Shauna Henley, **PHONE:** 539-2439

PhD

OFFICE: J215

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OFFICE HOURS: Mon. 2:30 – 3:30; Tues 11:00 – 12:00; Thurs 10:00 – 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: Midterm I – 20%
Midterm II – 20%
Online quizzes – 20%
Final Exam – 40%

Midterms I and II will be non-cumulative and held during class on **Tuesday February 5** and **Tuesday March 19**, respectively. There will be 4 online quizzes (worth 5% each), held during the weeks of **January 21, February 18, March 11** 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 2010		
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, 591-594	371-88, 392-421
18.	Cancer cells	758-91	757-89