DEPARTMENT OF SCIENCE

COURSE OUTLINE – WINTER 2017

BI2010 (A3) – CELLULAR BIOLOGY – 3 (3-0-0), 45 HOURS FOR 15 WEEKS

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

OFFICE HOURS: Monday 11:30 – 1:00, Tuesday 10:00 – 11:30
Wednesday 9:00 – 10:00, Thursday 10:00 – 11:30

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.

PREREQUISITE(S)/COREQUISITE: BI1070

REQUIRED TEXT/RESOURCE MATERIALS:
"The World of the Cell" by Becker *et al.* (8th edition, 2012 or 9th edition, 2015) Benjamin Cummings Publishing Company.

DELIVERY MODE: Lectures – Tues and Thurs, 1:00 – 2:20, Rm J204

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

LEARNING OUTCOMES:

1. To demonstrate knowledge of the techniques used in cell biology.
2. To demonstrate understanding of the structure and function of eukaryotic organelles.
3. To foster critical thinking skills.

TRANSFERABILITY: University of Alberta
University of Calgary
University of Lethbridge
Athabasca University
Augustana Faculty, University of Alberta
Concordia University College
Canadian University College
Grant MacEwan University
King's University College*
MRU

***Warning:** Although we strive to make the transferability information in this document up-to-date and accurate, **the student has the final responsibility for ensuring the transferability of this course to Alberta Colleges and Universities**. Please consult the Alberta Transfer Guide for more information. You may check to ensure the transferability of this course at Alberta Transfer Guide main page http://www.transferalberta.ca or, if you do not want to navigate through few links, at http://alis.alberta.ca/ps/tsp/ta/tbi/onlinesearch.html?SearchMode=S&step=2
** 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.**

EVALUATIONS: Midterm I – 25%
Midterm II – 25%
Online quizzes – 10%
Final Exam – 40%

Midterms I and II will be non-cumulative and held during class on **Thursday February 2** and **Thursday March 16**, respectively. There will be 4 online quizzes (worth 2.5% each), held during the weeks of **January 23**, **February 13**, **March 6** and **April 3**. The final exam will be cumulative and will take place during the scheduled exam period.

GRADING CRITERIA: Please note that most universities will not accept your course for transfer credit **IF** your grade is **less than C-**.

Alpha Grade	4-point Equivalent	Percentage Guidelines		Alpha Grade	4-point Equivalent	Percentage Guidelines
A+	4.0	90-100		C+	2.3	67-69
A	4.0	85-89		C	2.0	63-66
A-	3.7	80-84		C-	1.7	60-62
B+	3.3	77-79		D+	1.3	55-59
B	3.0	73-76		D	1.0	50-54
B-	2.7	70-72		F	0.0	00-49

COURSE SCHEDULE:

	Topics	**Required Text Readings**	
		8th edition	**9th edition**
1.	Introduction to BI 2010		
2.	A preview of the cell	1-14, A1-A26	1-18, A19-A24
3.	The macromolecules of the cell	41-71, 25-7, 32-36	42-71, 31-33, 36-39
4.	Cells and Organelles	78-99	80-99
5.	Membranes	156-89	152-81
6.	Membrane transport	194-216	185-209
7.	The nucleus	536-45	454-60
8.	The cell cycle, DNA replication & mitosis	549-64, 571-89	465-81, 714-38
9.	Transcription	645-75	499-531
10.	Protein synthesis and sorting	679-705	535-66
11.	Mitochondria & chloroplasts	254-8, 293-7	243-9, 283-7
12.	Endomembrane system & peroxisomes	324-60	314-47
13.	Cytoskeletal systems	422-44	351-75
14.	Cellular movement	449-74	377-402
15.	Beyond the cell	477, 481-97	405-28
16.	Signal transduction	372-89, 392-400, 406-12, 591-4	664-81, 684-94, 698-704, 740-3
17.	Cancer cells	758-91	778-810

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. Refer to the College Policy on Student Rights and Responsibilities at https://www.gprc.ab.ca/about/administration/policies/#academic_policies

STATEMENT ON PLAGIARISM AND CHEATING:
Cheating and plagiarism will not be tolerated and there will be penalties. For a more precise definition of plagiarism and its consequences, 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 http://www.gprc.ab.ca/about/administration/policies/

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