

BIOL 2230 WA - Cell Biology

Instructors:

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Course Description:

Study cell structure and their functions, cellular energetics, cellular trafficking, tissue formation, cellular processes, response to external stimuli and intracellular signalling. Introduction to key cell types and their functions. The course will also introduce essential methods used in cell biology and tools used by research scientists.

Time and place:

Lectures - Monday & Wednesday, 8:30AM - 10:00AM

Labs - Thursday, 2:30PM - 3:30PM

Learning outcomes:

- Understand the functions of essential organelles and structures in animal and plant cells.
- Understand proteins trafficking.
- Understand how information is propagated into cells.
- Understand key molecular and cell biology techniques used to investigate cellular processes.
- Developed the ability to think critically.
- Developed the ability to read scientific literature and interpret data.

Course evaluation:

Midterms: 2 x 20%

Lecture quizzes: 10%

Reading assignments and Paper quizzes: 20%

Final exam: 30%

Recommended textbooks:

- Molecular Cell Biology, 9th edition. Published by Macmillan Learning
- Essential Cell Biology, 6th edition. Published by Norton

Week-by-week schedule:

Week	Lecture	Lab
1	Introduction to cell biology	
2	Gene expression, protein structure, folding and regulation	Reading assignment
3	The ER and the Golgi, vesicular transport, protein sorting and lysosome	
4	Endocytosis and phagocytosis	
5	Midterm 1	
6	Plasma membrane structure and functions, cellular energetics	Paper Quiz 1
READING WEEK		
7	The cytoskeleton function	
8	The extracellular matrix and cell-cell interactions	Paper Quiz 2
9	Midterm 2	
10	Responding to the cellular environment and intracellular signalling	
11	Stem cells and nerve cells	Paper Quiz 3
12	Immune system and cancer	

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