Course Specifications

General Information

Course name	Cytology
Course number	BIOL2310
Faculty	
Department	
Course type	College Needs
Course level	2
Credit hours (theoretical)	3
Credit hours (practical)	0
Course Prerequisites	

Course Objectives

1 - to understand the structure and function of the different types of cell organelles
2 - To determine the main types of membrane Trafficking
3 - To Understand the cell cycle, growth and divisions
4 - To understand the Signaling Mechanisms
5 - to understand the main events in apoptosis and stem cells

Course Contents

1 - Part I : Introduction to cell biology; Properties of life, Cell eukaryotes and prokaryotes
2 - Part II: Cell Organelles; Overview of the cell, Cell types, Cell components, Plasma Membrane, The nucleus, Ribosomes, Endoplasmic reticulum, Gologi apparatus, lysosomes, vacuoles, Other membranous organelles (peroxisomes, mitochondria, chloroplasts), The cytoskeleton , Cell surfaces and junctions
3 - Part III: Membrane Trafficking ; Passive transport, Active transport , Traffic across membranes
4 - PART IV : Cell Growth And Division; Cell Cycle, Cell Growth, Control of Cell Division, Growth Factors
5 - Part V: Signaling Mechanisms, Cell Signaling , Primary and Secondary messengers, Ion, steroid, G-protein, enzyme-linked
6 - Part VI: Apoptosis (programmed cell death) , Part VII: Stem cells

Students Assessment

Assessment Method	TIME	MARKS
Three quizzes	10 minutes	30
Midterm	60 minutes	30
Final exam	120 minutes	40

Books and References

Essential books	Alberts B, Bray D, Hopkin K, Johnson AD, Lewis J, Raff M, et al. Essential cell biology: 5th edition Garland Science; 2019
Recommended books	Hardin J, Bertoni GP, Kleinsmith LJ. Beckers World of the Cell: Pearson 9th edition Higher Ed; 2018.
	Campbell NA, Urry LA, Cain ML, Wasserman SA, Minorsky PV. Biology: 11th edition Pearson New York, NY, USA; 2017