STANDARD COURSE OUTLINE

Annex 3

Hashemite University	 	Course name and number **Gene Expression** **1801042326**
Faculty of Science		Pre-requisite: **2401042322**
Department of Biology and Biotechnology	**Course Syllabus**	

Course Information	
Lecture's Time	Sunday and Tuesday (9.30-10.30 am)
Lecture Room	Physics 121
Instructor	Seba Shbailat
Office Location	Bio 202
Office Hours	11.30-12.30 Monday and Wednesday
Text Book Lodish et al. 2016. Molecular Cell Biology. 8th edition, W. H. Freeman and Company, NY, USA.	
References(s)	Urry L.A., Cain M.L., Wasserman S.A., Minorsky P.V. and Orr R.B. 2020. Campbell Biology. 12th Or 11th edition, Pearson, New York, USA. Sean B. Carroll, Jennifer K. Grenier and Scott D. Weatherbee. 2005. From DNA to Diversity: Genetics and the Evolution of Animal Design. 2nd edition, Blackwell, New Jersey, USA.

Grading Policy:

Theory		**Practical**	
1st Exam	15 %	Reports	8%
2nd Exam	15 %	Midterm	10%
Final Exam	40%	Final	12%

Course Objectives

- This course studies the process of gene expression and explores how the information in living cells flows from DNA to RNA to protein.
- Several topics will be covered including: mechanisms of genome condensation, transcription of DNA to mRNA, processing of RNA and translation of mRNA into protein.
- Regulation of gene expression in prokaryotic and eukaryotic cells as well as the mechanisms of post-transcriptional control in eukaryotes will be discussed.
- Finally, the regulation of eukaryotic cell cycle will be explained.

Teaching and Learning Methods

Lectures.

PowerPoint Slides and data show.

Lectures using Microsoft Teams.

Accompanying lab that confirms and explains the concepts of lectures.

Course Contents

Week	Topic
1	Basic molecular genetic mechanisms
2	Basic molecular genetic mechanisms
3	Genes, genomics and chromosomes
4	Genes, genomics and chromosomes
5	Genes, genomics and chromosomes
6	Control of gene expression in prokaryotes
7	Control of gene expression in prokaryotes
8	Transcriptional control of gene expression (Eukaryotic gene control)
9	Transcriptional control of gene expression (Eukaryotic gene control)
10	Post-transcriptional gene control
11	Post-transcriptional gene control
12	The eukaryotic cell cycle

13	The eukaryotic cell cycle
14	The genetic toolkit for development
15	The genetic toolkit for development
16	Final Examination