Philadelphia University		Approval date:
Faculty: Science	PHILADELPHIA UNIVERSITY THE WAY TO THE FUTURE	Issue:
Department: Biotechnology and Genetic Engineering		Credit hours: 3
Academic year: 2022/2023	Course Syllabus	Bachelor

Course information

Course#	Course title		Prerequisite
0240462	Bioinformatics		
Course type		**Class time**	**Room #**
☐ University Requirement ☐ Faculty Requirement ☐ Major Requirement ☐ Elective ☒ Compulsory		8:15-9:30 Mon. & Wed. + 3 hours online	817

Instructor Information

Name	Office No.	Phone No.	Office Hours	E-mail
Tawfiq Froukh	821	2135	8:00-9:45 Sun. & Tue 12:45-14:00 All week days	tfroukh@philadelphia.edu.jo

Course Delivery Method

Course Delivery Method			
☐ **Physical**	☐ **Online**	☒ **Blended**	
Learning Model			
Precentage	**Synchronous**	**Asynchronous**	**Physical**

Course Description

Course Learning Outcomes

Number	Outcomes	Corresponding Program outcomes
Knowledge		
	Define and explain the scope bioinformatics	
	Describe DNA sequencing by dideoxy method (sanger).	
	Explain how nucleotide sequence files are obtained by the automated dideoxy method.	
	Explore nucleotide sequence files using the appropriate software such as chromas and bioedit	
	Identify the good and bad sequences.	
	Identify the common errors in nucleotide sequence files	
	Edit the forward and reverse nucleotide sequence files.	
	Compare the nucleotide sequence files with the reference sequence (reference sequence from databases) and identify the different types of variants (substitutions, insertions and deletions).	
	Compare the sequence files between homozygous and heterozygous individuals.	

	define the types of molecular databases	
	2.2 define accession numbers and the significance of RefSeq identifiers	
	2.3 describe the main genome browsers and use them to study features of a genomic region	
	2.4 use resources to study information about both individual genes (or proteins) and large sets of genes/proteins.	
	search and download nucleotide sequences from the NCBI Nucleotide and UCSC databases	

	search and download amino acid sequences from NCBI Protein and UniProt databases	
	search and download amino acid sequences from NCBI Protein and UniProt databases	

Skills		
S1		
S2		
S3		
Competencies		
C1		
C2		
C3		

Learning Resources

Course textbook	
Supporting References	
Supporting websites	
Teaching Environment	☒Classroom ☐ laboratory ☐Learning platform ☐Other

Meetings and subjects timetable

Week	Topic	Learning Methods	Tasks	Learning Material
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				

12				
13				
14				
15				
16	Final Exam			

* includes: Lecture, flipped Class, project- based learning, problem solving based learning, collaborative learning

Course Contributing to Learner Skill Development

Using Technology
Communication skills
Application of concepts learnt

Assessment Methods and Grade Distribution

Assessment Methods	Grade Weight	Assessment Time (Week No.)	Link to Course Outcomes
Mid Term Exam	% 30		
Various Assessments *	% 30		
Final Exam	% 40		
Total	%100		

* includes: quiz, in class and out of class assignment, presentations , reports, videotaped assignment, group or individual projects.

Alignment of Course Outcomes with Learning and Assessment Methods

Number	Learning Outcomes	Learning Method*	Assessment Method**
Knowledge			
K1			
K2			
K3			
Skills			
S1			
S2			
S3			
Competencies			
C1			
C2			
C3			

* includes: Lecture, flipped Class, project- based learning , problem solving based learning, collaborative learning

** includes: quiz, in class and out of class assignment , presentations , reports, videotaped assignment, group or individual projects.

Course Polices

Policy	Policy Requirements
Passing Grade	The minimum passing grade for the course is (50%) and the minimum final mark recorded on transcript is (35%).
Missing Exams	• Missing an exam without a valid excuse will result in a zero grade to be assigned to the exam or assessment.

	• A Student who misses an exam or scheduled assessment, for a legitimate reason, must submit an official written excuse within a week from the an exam or assessment due date. • A student who has an excuse for missing a final exam should submit the excuse to the dean within three days of the missed exam date.
Attendance	The student is not allowed to be absent more than (15%) of the total hours prescribed for the course, which equates to six lectures days (M, W) and seven lectures (S,T,R). If the student misses more than (15%) of the total hours prescribed for the course without a satisfactory excuse accepted by the dean of the faculty, s/he will be prohibited from taking the final exam and the grade in that course is considered (zero), but if the absence is due to illness or a compulsive excuse accepted by the dean of the college, then withdrawal grade will be recorded.
Academic Honesty	Philadelphia University pays special attention to the issue of academic integrity, and the penalties stipulated in the university's instructions are applied to those who are proven to have committed an act that violates academic integrity, such as: cheating, plagiarism (academic theft), collusion, and violating intellectual property rights.

Program Learning Outcomes to be Assessed in this Course

Number	Learning Outcome	Course Title	Assessment Method	Target Performance level

Description of Program Learning Outcome Assessment Method

Number	Detailed Description of Assessment

Assessment Rubric of the Program Learning Outcome