Philadelphia University	PHILADELPHIA UNIVERSITY THE WAY TO THE FUTURE	**Approved Date:**
Faculty: Pharmacy		**Issue:1**
Department:		**Credit Hours:3**
Academic Year: 2021/2022	**Course Syllabus**	**Bachler:**

Course Information

Course No.	Course Title	Prerequisite
0510415	**Clinical Biochemistry**	**0510220**

Course Type	Class Time	Room No.
☐ Univirsity Requirement ☐Fuclty Requirement √ Major Requirement ☐ Elective ☐ Compulsory		

Instructure Information

Name	Office No.	Phone No.	Office Hours	E-mail

Course Delivery Method

☐ Blended	☐ Online	√ Physical
Learning Model		
Percentage	**Synchronous**	**Asynchronous**	**Physical**
		100%

Course Description

This course discusses the biochemical methods for the diagnosis of different metabolic disorders of human body that occur from different diseases. Topics include the role of plasma enzymes, plasma proteins, carbohydrates, lipids, and hormones in diagnosis, monitoring, and prognosis. Kidney function tests, liver function test and tumor markers are also covered in this course.

تتناول هذه المادة الطرق البيوكيميائية المستخدمة لتشخيص اضطرابات التمثيل الغذائي المختلفة للجسم البشري التي تنتج من أمراض مختلفة. وتشمل الموضوعات التي سيتم تناولها دور الانزيمات والبروتينات في بلازما الدم، والكربوهيدرات، والدهون، والهرمونات في التشخيص ومتابعة المرض، ويتم أيضا تغطية اختبارات وظائف الكلى، واختبار وظائف الكبد وعلامات الورم.

Course Learning Outcomes

Number	Outcome	Corresponding Program Outcomes	
Knowledge			
K1	Interpret physicians order for Biochemical diagnostic and Endocrine function tests/therapy	**Kp1, Kp2**	**C1, C2**
K2	Identify biochemical function tests useful in Diagnosis, Monitoring response to therapy, prognosis and screening	**Kp1,Kp3**	**C1, C3**
K3	Define, interpret, or apply biochemical terminology as it relates to, Disease state ,Metabolic functions (or organs) and Endocrine function	**Kp1, Kp2**	**C1, C2**
K4	Interpret the clinical significance of biochemical lab test results	**Kp1, Kp3**	**C1, C3**
Skills			
S1	Cognitive skills to be developed by enabaling the student to Explain molecular basis of diseases and Relate the signs and symptoms to the molecular basis of diseases.This will be achieved through solving case studies.	Sp1, Sp2	**C2, C8**
S2	Communication skills. In lecture, worksheets are given to students to enable them to develop team work and help them to improve their communication skills	Sp6	**C12**
S3	Transferable skills by enabeling the students To Select appropriate test to diagnose disorders of metabolism. And To Select the tests to assess the abnormal changes in macromolecules in a disease This will be achieved through solving case studies in groups.	Sp4	**C10**

Learning Resources

Course Textbook	Clinical Chemistry: William J. Marshall and Stephen K. Bangert, Mosby, 2012, 7th edition
Supporting References	Clinical Biochemistry : Lecture notes, by Geoffery Beckett, Simon Walker, Peter Rae, Peter Ashby, Blackwell publishing, 7th edition, 2005, ISBN, 978-1-4051-2959-6 Clinical Biochemistry: an Illustrated color text, by Allan Gaw, Robert Cowan, Denis O'Reilly, and Michael Stewart Edinburgh: Churchill Livingstone, 3rd Edition, 2004,. ISBN 0-443-07269-8 Clinical Chemistry: Principles, Procedures, Correlations by Michael L. Bishop, Edward P. Fody, Larry E. Schoeff Publisher: Lippincott Williams & Wilkins; 5th edition (July 6, 2004) ISBN: 0781746116
Supporting Websites	http://www.clinchem.org/
Teaching Environment	■ **Classroom** ☐ **laboratory** ■ **Learning Platform** ☐ **Other**

Meetings and Subjects Time Table

Week	Topic	Learning Method*	Task	Learning Material
1	Faculty Vision and mission Introduction Biochemical investigation in clinical medicine- Establishment ,specimen collections and sampling errors	Lecture		Vision mission of faculty of Pharmacy Chapter 1
2	use of Normal Reference Values and the factors affecting interpretation of results	Lecture		**Chapter 1**
3	Plasma proteins and	Lecture		**Chapter 13**
4	Plasma enzymes	Lecture Lecture collaboration learning,.	**Case study**	**Chapter 13**
5	The Liver	Lecture collaboration learning	**Case study**	**Chapter 5**
6	Water, sodium and Potassium	Lecture		**Chapter 2**
7	The kidneys, renal function + General urine	Lecture		**Chapter 4 and handout**
8	Disorder of carbohydrate metabolism	Lecture		**Chapter 11**
9	Calcium regulation, hypo and hyper calcemia	flipped classs	**Presentation**	**Chapter 12**
10	Lipids, lipoproteins	Lecture		**Chapter 14**
11	Lipid profile, disorders and cardiovascular disease	Lecture Problem solving based learning	**Case study**	
12	Hypothalamus and pituitary gland, Dynamic function tests	Lecture		**Chapter 7**
13	Thyroid function Tests Adrenal gland Function Tests	Lecture collaboration learning	**Case study**	**Chapters 8 and 9**
14	Disorders of purine metabolism Malignancy and tumor markers	Lecture		**handout**
15	Pregnancy & birth	Lecture		**handout**
16	**Final Exam**			

*Includes: lecture, flipped Class, project based learning, problem solving based learning, collaboration learning.

Course Contributing to Learner Skill Development

Using Technology
In collaborative work students will use the internet to lokk foe the required information Power point will be used for preparing presentations when required
Communication Skills
Collaborative work and discussion group
Application of Concept Learnt
Application of concept will be applied by solving case studies

Assessment Methods and Grade Distribution

Assessment Methods	Grade	Assessment Time (Week No.)0	Course Outcomes to be Assessed
Mid Term Exam	**% 30**	**11th week**	**K1, K2, K4**
Term Works*	**% 30**	**continous**	**S2, S3, K**
Final Exam	**% 40**	**16th week**	**K1-K4 and S1**
Total	**%100**		

* Include: quizzes, in-class and out of class assignment, presentations, reports, videotaped assignment, group or individual project.

Alignment of Course Outcomes with Learning and Assessment Methods

Number	Learning Outcomes	Learning Method*	Assessment Method**
	Knowledge		
K1	Interpret physicians order for Biochemical diagnostic and Endocrine function tests/therapy	Lecture, problem solving, colloborative learning	**Exam, In class assignment**
K2	Identify biochemical function tests useful in Diagnosis, Monitoring response to therapy, prognosis and screening	Lecture, problem solving	**Exam**
K3	Define, interpret, or apply biochemical terminology as it relates to, Disease state ,Metabolic functions (or organs) and Endocrine function	lecture	**Exam**
K4	Interpret the clinical significance of biochemical lab test results	Lecture, problem solving, colloborative learning	**Exam**
	Skills		
S1	Cognitive skills to be developed by enabaling the student to Explain molecular basis of diseases and Relate the signs and symptoms to the molecular basis of diseases.This will be achieved through solving case studies.	problem solving, colloborative learning	**Quiz**
S2	Communication skills. In lecture, worksheets are given to students to enable them to develop team work and help them to improve their communication skills	Lecture, problem solving, colloborative learning problem solving,	**In class asignment**

		colloborative learning	
S3	Transferable skills by enabeling the students To Select appropriate test to diagnose disorders of metabolism. And To Select the tests to assess the abnormal changes in macromolecules in a disease This will be achieved through solving case studies in groups.	problem solving, colloborative learning	**In class assignment**
Competencies			
C1			
C2			
C3			

*Include: lecture, flipped class, project based learning, problem solving based learning, collaboration learning.
** Include: quizzes, in-class and out of class assignments, presentations, reports, videotaped assignments, group or individual projects.

Course Polices

Policy	Policy Requirements
Passing Grade	The minimum pass for the course is (50%) and the minimum final mark is (35%).
Missing Exams	• Anyone absent from a declared semester exam without a sick or compulsive excuse accepted by the dean of the college that proposes the course, a zero mark shall be placed on that exam and calculated in his final mark. • Anyone absent from a declared semester exam with a sick or compulsive excuse accepted by the dean of the college that proposes the course must submit proof of his excuse within a week from the date of the excuse's disappearance, and in this case, the subject teacher must hold a compensation exam for the student. • Anyone absent from a final exam with a sick excuse or a compulsive excuse accepted by the dean of the college that proposes the material must submit proof of his excuse within three days from the date of holding that exam.
Attendance	The student is not allowed to be absent more than (15%) of the total hours prescribed for the course, which equates to six lecture days (n t) and seven lectures (days). If the student misses more than (15%) of the total hours prescribed for the course without a satisfactory or compulsive excuse accepted by the dean of the faculty, he is prohibited from taking the final exam and his result in that subject is considered (zero), but if the absence is due to illness or a compulsive excuse accepted by the dean of the college that The article is introduced, it is considered withdrawn from that article, and the provisions of withdrawal shall apply to it.
Academic Integrity	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, intellectual property rights.

Program Learning Outcomes to be Assessed in this Course

Number	Learning Outcome	Course Title	Assessment Method	Targeted Performance level

Description of Program learning Outcomes Assessment Method

Number	Detailed Description of Assessment

Assessment Rubric of the Program Learning Outcomes
