FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Anatomy & Histology (PHL 101)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	(Pharmacology & Toxicology)
Academic year:	2014/2015
Approval Date:	October 2014

A. Basic Information

Course Title: Anatomy & Histology **Course Code: PHL 101**

Prerequisites: N/A

Students' Level/Semester: First Level/ Second Semester

Credit hours: **3 (2+1)**

Actual teaching hours per week:

Lectures: 2/week **Practical:** 2/week **Tutorial:** N/A **Total:** 4/week

B. Professional Information

1. Overall Aim of Course

The histology course aims to teach the students the basic histological structure of different cells and tissues of human body and in addition make a correlation between function and structure of various tissues and their clinical significance. The anatomy course introduces the anatomy of the human body including the human skeleton (bones – joints & cartilage - muscles) and the various human body systems: digestive, respiratory, cardiovascular, urinary and nervous systems.

2. Intended Learning Outcomes (ILOs)

By the end of the course, the student should be able to:

a- Knowledge and Understanding:

a.1 Describe the ultra-structure of the human cell and mention the functions of each structure.

a.2 Describe the normal histological structure of different cells and tissues of human body.

a.3 Mention the functions of different cells and tissues of human body.

a.4 Describe the advanced histological structure of cardiovascular, lymphatic systems in relation to function.

a.5 State the advanced histological structures of respiratory, digestive and endocrine systems in relation to function.

a.6 Recognize the advanced histological structures of urinary, male and female genital systems in relation to function.

a.7 Describe the basic principles of structure of the different tissues, organs and systems of the human body.

a.8 Describe basic structure of the different systems of the body and its correlation to its functions.

a.9 Outline the clinical applications of the given anatomical facts.

a10. Recognize organelles structure.
a11. Identify the different anatomical structure of organs in the human body.
a12. Identify anatomical structures of the different body systems.

b- Intellectual Skills:

b.1 Correlate cell organelles structure with functions.
b.2 Differentiate between different types of the basic tissues.
b.3 Recognize the structure of different tissue cells.
b.4 Distinguish tissue subtypes.
b.5 Correlate advanced histological structure of cardiovascular, lymphatic and related clinical conditions.
b.6 Differentiate between parts of respiratory and digestive systems.
b.7 Distinguish cytogenetics applications and methods.
b.8 Recognize molecular biology applications.
b.9 Compare the different anatomical structure of organs in the human body
b.10 Compare anatomical structures of the different body systems.

c- Professional and Practical Skills:

c.1 Assess the ultrastructure of the different components of cell.
c.2 Categorize the different types of tissues and organs
c.3 Argue about the different surface markings.
c.4 Predict the position of the internal viscera.
c.5 Interpret some of the clinical findings and its correlations to the anatomical & histological facts known.

d- General and Transferable Skills:

d.1 Use recent references to update his knowledge in anatomy and histology.
d.2 Communicate effectively with others.
d.3 Use presentational techniques to present topics clearly.
d.4 Use the sources of biomedical information to remain current with advances in knowledge and practice.
d.5 Apply studied knowledge to be a life-long learner.
d.6 Relate effectively to colleagues and instructors.

3. Contents

Teaching Weeks	Topic	No. of hours	Lecture	Practical
One	Introduction & Cytology	3	1	1
	Anatomical positions and terms		1	
Two	Cytology& Epithelial Tissue	3	1	1
	Human Skeleton		1	
Three	Connective Tissue proper	3	1	1
	Types of bones & joints		1	
Four	Blood & Skin + First Midterm Exam	3	1	1
	Types of cartilage+ **First Midterm Exam**		1	
Five	Muscular Tissue	3	1	1
	Muscular System		1	
Six	Nervous Tissue	3	1	1
	Nervous system		1	
Seven	Cardiovascular system –Histology	3	1	1
	Cardiovascular System-Anatomy		1	
Eight	**Second Midterm exam**			
Nine	Lymphatic System - Histology	3	1	1
	Lymphatic System - Anatomy		1	

Ten	Respiratory System - Histology	3	1	1
	Respiratory system - Anatomy		1	
Eleven	Digestive Glands & endocrine glands	3	1	1
	Digestive system – Anatomy		1	
Twelve	Urinary system Anatomy & histology	3	1	1
	Practical Exam		1	
Thirteen	Genital system - Histology	2	1	0
	Genital system - Anatomy		1	
Total No. of hours		35	24	11
Fourteen	**Final Exams of Faculty**			
Fifteen				
Sixteen				

4. Teaching and Learning Methods

4.1 Power point lectures.
4.2 White board illustrations
4.3 Power point practical slides.
4.4 Open discussion.
4.5 Human system model

5. Student Assessment Methods

5.1. Written exams to assess knowledge & understanding as well as intellectual skills.
5.2. Practical exam to assess professional and practical skills.
5.3. Assignment to assess general and transferable skills.
5.4. Semester Work (Text Book Summarizing) to assess intellectual skills.

Assessment Schedule

Assessment 1: First midterm Week Four
Assessment 2: Assignment Week Seven

Assessment 3: Second Midterm	Week Eight	
Assessment 4: Practical exam	Week Twelve	
Assessment 5	Final Written Exam	Week 15/16
Assessment 6	Semester Work	(During the semester)
	(Text Book Summarizing)	

Weighting of Assessments

First Mid-term Examination	5%
Second Mid-Term Examination	20%
Final-Term Examination	30%
Practical Examination	30%
Assignment	5%
Semester Work	10%
Total	**100%**

6. List of References

6.1. Course Notes

Anatomy & Histology handouts
Practical Notes

6.2. Essential Books (Text Books)

Anthony L. Mescher ,Basic Histology : Text and Atlas 13 edition, 2013

Richard L. Drake ,Gray's anatomy for students, 2 nd edition ,2009

6.3. Recommended Books

a) Richard S Snell ,Clinical anatomy by regions,9th edition 2012
b) Chummy S.Sinnatamby ,Last Anatomy: Regional and applied, 12 edition, 2011
c) Barbara Young, Wheater's functional histology**,**6 th edition, 2014

6.4. Periodicals, Websites, ……etc

http://www.Lumen
http:/ /. www. Blue Histology

7. Facilities Required for Teaching and Learning

Smart board, projector setup, lecture rooms
Library furnished with textbooks
White board and required colored drawing pens.

Human system model

Course Coordinator
Dr. Tamer Shawky, Dr. Nagwa Abdel Wahab

Head of Department
Prof. Dr Maha El-Sawalhi
Department Approval Date: October 2014

Medical Terminology (PHL 102)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	(Pharmacology, Toxicology)
Academic year:	2014/2015
Approval Date:	October 2014

A. Basic Information

Course Title: Medical Terminology **Course Code:** PHL 102

Prerequisites: N/A

Students' Level/Semester: First Level/ First Semester

Credit hours: 1 (1+0)

Actual teaching hours per week:

Lectures: 1/week **Practical:** 0/week **Tutorial:** N/A **Total:** 1/week

B. Professional Information

1. Overall Aim of Course

The course scope covers the language used by medical health care professionals and students. A medical word consists of some or all of the following elements: word root, combining form, suffix, and prefix. To teach the students that combining these elements and whether all or some of them are present in a medical word, determines the meaning of a word.

2. Intended Learning Outcomes (ILOs)

By the end of this course, students should be able to:

a- Knowledge and Understanding:

a1. List different components of a medical word

a2. Identify the most commonly used prefixes and their meanings

a3. Recall the most commonly used suffixes and their meanings

a4. Memorize the prefixes, suffixes and medical terms used to describe GIT system

a5. Identify the prefixes, suffixes and medical terms used to describe respiratory system

a6. Label the prefixes, suffixes and medical terms used to describe cardiovascular system

a7. Relate the prefixes, suffixes and medical terms used to describe blood and lymph system

a8. Identify the prefixes, suffixes and medical terms used to describe central nervous system

b- Intellectual Skills:

b1. Categorize medical terms into different body systems.

b2. Correlate the medical terms with pathological, diagnostic and symptomatic meanings.

.

c- Professional and Practical Skills:

c1. Integrate previously acquired knowledge of English linguistics with newly acquired concepts of biological sciences.

c2. Express pharmaceutical knowledge in correct medical terms

c3. Communicate with others using proper medical language and expressions.

c4. Use the pharmaceutical terminology properly.

c5. Construct medical words to express specific meanings.

d- General and Transferable Skills:

d1. Work effectively within a team frame.

d2. Justify appropriate solutions in a case-based or vignette module

d3. Develop self-learning capacitance skills to enhance independent thinking

d4. Use different resources to encourage Knowledge management skills.

3. Contents:

Week	Topic	No. of hours	Lecture
One	Course Outline Parts of Medical Terms	1	1
Two	Suffixes	1	1
Three	Prefixes	1	1
Four	Digestive System **1st Mid-Term**	1	1
Five	Digestive System	1	1
Six	Respiratory System	1	1

Seven	Cardiovascular System	1	1
Eight	**2nd Mid-Term**		
Nine	Central Nervous System	1	1
Ten	Central Nervous System	1	1
Eleven	Blood, Lymph, and Immune Sys	1	1
Twelve	Blood, Lymph, and Immune Sys	1	1
Thirteen	Musculoskeletal System	1	1
Total No. of hours		12	12
Fourteen	**Final Exams of Faculty**		
Fifteen			
Sixteen			

4. Teaching and Learning Methods

4.1. Modified Lectures

5. Student Assessment Methods

5.1. Written exams to assess knowledge and understanding, intellectual skills as well as professional skills.

5.2. Semester Work (Participation) to assess general and transferrable skills.

Assessment Schedule

Assessment 1 Midterm-1 Exam Week **4**
Assessment 2 Midterm-2 Exam Week **8**
Assessment 3 Final Written Exam Week **15/16**

Weighting of Assessments

1st Mid-Term Examination	10%
2nd Mid-Term Examination	30%
Final-Term Examination	50%
Semester Work	10%

Total	**100%**

6. List of References

6.1. Course Notes

Lectures' handouts

6.2. Essential Books (Text Books)

Davi Ellen Chabner ,Medical Terminology: A short course , 6th Edition, 2011

6.3. Recommended Books

Ann Ehrlich, Carol L. Schroeder , Medical terminology for health professions,7th edition, 2013

6.4. Periodicals, Websites, ……etc

http://www.merriam-webster.com/

7. Facilities Required for Teaching and Learning

Computer and Data Show
White board

Course Coordinator
Dr. Suzan Mohamed

Head of Department
Prof. Dr. Maha El- Sawalhy

Department Approval Date: October 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Physiology (PHL 203)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	Pharmacology and Toxicology
Academic year:	2014/2015
Approval Date:	September 2014

A. Basic Information

Course Title: Physiology **Course Code: PHL 203**

Prerequisites: N/A

Students' Level/Semester: Second Level/ Third Semester

Credit hours: **2(2+0)**

Actual teaching hours per week:

Lectures: 2/week **Practical:** N/A **Tutorial:** N/A

Total: 2/week

B. Professional Information

1. Overall Aim of Course

- To allow the student acquire an appropriate functional background of cells, tissues& systems.
- To make the student integrate physiological data & mechanisms with the ongoing basic sciences: anatomy, histology & biochemistry and clinical applications.
- To help the student to explore in detail the functions of the blood components and autonomic, endocrine, renal, gastric, CNS and cardiovascular systems as well as their integration to achieve homeostasis.
- to allow the student to develop the basic scientific research skills as well as effective communication and team work attitudes.

2. Intended Learning Outcomes (ILOs)

By the end of the course, the student should be able to:

a- Knowledge and Understanding

a1. Classify the functional organization of sympathetic and parasympathetic nervous systems on different systems of the body and receptors for action.

a2. Recognize classification of drugs acting on autonomic nervous system.

a3. Explain the functions of different components of blood, plasma proteins, factors needed for formation of RBCs ,types of anemia and hemostasis process with its abnormalities.

a4. Describe the properties of cardiac muscle (action potential of ventricular muscle, contraction, rhythm and conduction),cardiac output.

a5. Memorize the functional anatomy of the kidney, physiology of glomerular filtration and reabsorption of different substance by renal tubules.

a6. Describe the function of some endocrine glands and their action on different system of the body.

b- Intellectual Skills:

b1. Distinguish a physiological from a pathological condition.

b2. Detect abnormality in hormonal levels.

b3. Integrate physiology with other basic and clinical sciences.

c- Professional and Practical Skills:

c1. Apply gained knowledge in precautions during blood transfusion.

c2. Detect clinical manifestation of abnormal hormone levels

d. General and Transferable Skills:

d1. Present clearly and effectively a scientific topic

d2. Present physiological data in a graphical form.

d3. Communicate effectively with others.

3. Contents

Teaching Weeks	Topic	No. of hours	Lecture
One	Blood	2	2

Two	Blood (cont.)	2	2
Three	Blood (cont.)	2	2
Four	Autonomic system + **First midterm exam**	2	2
Five	Autonomic system	2	2
Six	Autonomic system (cont.)	2	2
Seven	Kidney	2	2
Eight	**Second midterm exam**		
Nine	Kidney	2	2
Ten	Endocrine system + Quiz	2	2
Eleven	CVS	2	2
Twelve	CVS (cont.)	2	2
Thirteen	CVS (cont.)	2	2
Total No. of hours		**24**	**24**
Fourteen	**Final exams of Faculty**		
Fifteen			
Sixteen			

4. Teaching and Learning Methods

4.1 –Lectures

4.2- Group Discussion

4.3 -Data Analysis

4.4 -Active learning: interacting with students (for example teaching students how to measure blood pressure practical).

5-Student Assessment Methods

5.1. Written exams to assess knowledge and understanding as well as intellectual skills.
5.2. Quiz to assess professional skills.
5.3. Semester Work (Participation and Discussions) to assess all types of skills and mainly general and transferrable skills.

Assessment Schedule

Assessment 1	First Midterm Exam	Week 4
Assessment 2	Second Midterm Exam	Week 8
Assessment 3	Quiz (Sheet)	Week 10
Assessment 4	Final Written Exam	Week 15/16
Assessment 5	Semester Work (Participation and Discussions)	During the semester

Weighting of Assessments

Mid-Term Examinations	40%
Final-Term Examination	50%
Quizz	5%
Semester Work (Participation and Discussions)	5%
Total	**100%**

6. List of References

6.1. Course Notes

Handouts of power point presentations.

6.2 Essential Books (Text Books):

- John E. Hall , Guyton and hall textbook of Medical physiology 12th edition ,2010

6.3 Recommended Books

Kim E. Barrett, Ganong's review of medical Physiology , 24th edition, 2012

6.4 Periodicals, Websites, ……etc

www.Wikipedia.org

7. Facilities Required for Teaching and Learning

- Lecture halls: provided by the faculty.
- Computers and data show.

Course Coordinator: Pr.Dr Heba Shawky

Head of Department: Prof.Dr Maha El-Sawalhi

Department Approval Date: October 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Biochemistry-1 (PHL 351)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	(Pharmacology& Toxicology)
Academic year:	2014/2015
Approval Date:	October 2014

A. Basic Information

Course Title: Biochemistry-1 **Course Code: PHL 351**

Prerequisites: Physiology PHL 203, Organic Chemistry 2 PHC 112

Students' Level/Semester: **Third Level/ Fifth Semester**

Credit hours: **4 (3+1)**

Actual teaching hours per week:

Lectures: 3/week **Practical:** 2/week **Tutorial:** N/A **Total:** 5/week

B. Professional Information

1. Overall Aim of Course

The course introduces the students to basic concepts and fundamentals of Biochemistry. This includes the outlines and functions of cell components, proteins chemistry, enzymology, nucleic acids and nucleotides structure, DNA, RNA and protein biosynthesis. In addition, the course includes concepts of biogenetics, biological oxidation, electron transport chain, and oxidative phosphorylation. Besides, a brief on the biochemical pathophysiological relevance and possible protective machineries is illustrated, as deems necessary, all by applying up-to date manner.

2. Intended Learning Outcomes (ILOs)

By the end of the course, student should be able to:

a- Knowledge and Understanding:

a1. Recognize structure and nomenclature of enzymes.

a2. Outline the kinetic properties of enzymes.

a3. Outline the process of enzyme regulation.

a4. Recognize the diagnostic role of enzymes.

a5. Describe the concepts of human cell biology, its structure, and types.

a6. Recognize different cell components and their functions.

a7. Identify the structure of amino acids, and proteins.

a8. Outline the process of protein denaturation.

a9. Identify the concept of bioenergetics and oxidative phosphorylation.

a10. Recognize the concept of free energy change, ATP as energy carrier, and electron transport chain.

a11. Recognize different concepts of molecular biology; DNA and RNA.

a12. Identify the concepts of DNA repair, condensation, replication, and gene expression.

a13. Outline the process of RNA synthesis, transcription, translation, protein biosynthesis, and mutation.

a14. Recognize the types of cell membrane, cell components, and transport biology.

b- Intellectual Skills:

b1. Apply the above knowledge in analyzing different states of health and disease.
b2. Compare the utility of subsystems within the cellular and biological systems mentioned above.
b3. Point out the biochemical triggers and anomalies that are related to enzymes.
b4. Compare various structures of the cell, DNA, RNA, and oxidative stress.
b5. Point out the biochemical triggers and anomalies that are related to proteins.

c- Professional and Practical Skills:

c.1 Assess the differential methods of testing and quantitation of biological samples.
c.2 Predict the presence/absence of proteins.
c.3 Quantify the concentration of proteins in blood samples.
c.4 Detect specificity and sensitivity of enzymes, and enzymes in biological materials.
c.5 Assess enzyme activity through chromic period measurement.
c.6 Interpret the effect of changing physical conditions (pH, substrate/ enzymes concentrations, temp., and activators/inhibitors).
c.7 Interpret laboratory data in a scientific way.
c.8 Predict a disease situation based on critical differential diagnosis and results obtained from laboratory analysis done.

d- General and Transferable Skills:

d.1 Work in a team effectively.
d.2 Apply optimal means of getting independent/critical opinions on definitive problems.
d.3 Judge ways of calculating and expressing concentrations of biological materials.
d.4 Develop different ways of examination and assessments
d.5 Apply professional, efficient and prompt means to collect information using web resources.

d.6 Demonstrate methods to prepare and present topics/data in a professional manner applying level (I) presentation skills.

d.7 Apply accuracy and precision in using various analysis equipments and in undergoing laboratory analysis.

3. Contents

Teaching Weeks	Topic	No. of hours	Lecture	Practical
One	Introduction to the course: topics, objectives, grading and assessments. Cell biology/ Enzymology.	5	3	
	Qualitative analysis of protein.			2
Two	Cell biology/ Enzymology.	5	3	
	Denaturation of proteins.			2
Three	Amino acids and protein chemistry/ Enzymology.	5	3	
	Conjugated proteins			2
Four	Amino acids and protein chemistry/Enzymology + **First Midterm Exam**	5	3	
	Quantitative determination of total plasma proteins			2
Five	Amino acids and protein chemistry/ Enzymology.	5	3	
	Enzymology + **First Practical Quiz**			2
Six	Amino acids and protein chemistry/ Enzymology.	5	3	
	Kinetic properties of enzymes			2
	Nucleic acids and protein		3	

Seven	chemistry/ Biological oxidation	5		
	Kinetic properties of enzymes			2
Eight	**Second Midterm Exam**			
Nine	Nucleic acid/ Biological oxidation	5	3	
	Blood			2
Ten	Nucleic acid/ Biological oxidation	5	3	
	Revision			2
Eleven	Nucleic acid/ Biological oxidation	5	3	
	Practical exam + Second Practical Quiz			2
Twelve	Nucleic acid/ Biological oxidation	3	3	
				0
Thirteen	Revision	3	3	
				0
Total No. of hours		56	(12*3) 36	(2*10) 20
Fourteen	Final Exams of Faculty			
Fifteen				
Sixteen				

4. Teaching and Learning Methods

4.1. Didactic lectures
4.2. Different types of exams (Pop quiz, Open book exam)
4.3. Non-conventional, out of the box questions.
4.4. Research and presentation
4.5. Laboratory experiments

5. Student Assessment Methods

5.1. Written exam to assess the student's understanding and comprehension in addition to intellectual skills

5.2. Oral exam to assess all types of skills mainly general and transferable skills.

5.3. Practical exam to assess the students' practical skills in the field of Biochemistry.

5.4. Assignments/ presentations to assess the students' analysis and appraise his ability to conduct & present a research.

5.5. Semester Work (Participation) to assess all types of skills.

Assessment Schedule

Assessment 1	First midterm	**Week** 4
Assessment 2	Second midterm exam	**Week** 8
Assessment 3	First Practical quiz	**Week** 5
Assessment 4	Second Practical quiz	**Week** 11
Assessment 5	Practical Exam	**Week** 11
Assessment 6	Final written Exam	**Week** 15
Assessment 7	Oral Exam	**Week** 15
Assessment 8	Assignments/Presentations	**During the semester**

Weighting of Assessments

-First Midterm Examination		**5%**
-Second midterm Examination:		**15 %**
-Practical Examination:		**30%**
• Practical Experiment	15%	
• First practical sheet	5%	
• Second practical sheet	5%	
• Presentations	5%	
-Semester Work:		**10%**
-Final-Term Examination:		**30 %**
-Oral Examination:		**10%**
Total		**100%**

6. List of References

6.1. Course Notes:

Lecture handouts -Practical notes

6.2. Essential Books (Text Books):

-Lippincott's illustrated Reviews: Biochemistry, 6th edition 2013.
Authors: Pamela C. Champe, Richard A. Harvey, and Denise R. Ferrier
Publisher: Lippincott Williams & Wilkins.

6.3. Recommended Books:

-Harper's Biochemistry, Harper's Illustrated Biochemistry 2012
Authors: Robert K. Murray, Daryl K. Granner, Peter A. Mayes, and Victor W. Radwel
Publisher: Appelton & lange

-Biochemistry, 6th edition (May 19, 2006)
Authors: Jeremy M. Berg, John L. Tymoczko, Lubert Stryer
Publisher: W. H. Freeman

6.4. Periodicals &Websites

1. Journal of Biological Chemistry
2. http://wolfweb.unr.edu/homepage/chuckd/bookmark.htm
3. http://pdfdatabase.com/index.php?q=medical+biochemistry+lectur
4. http://www.indstate.edu/thcme/mwking/lectures09.html
5. http://themedicalbiochemistrypage.org/

7. Facilities Required for Teaching and Learning

-Smart Board, Projector setup, Lecture rooms.
-Library furnished with textbooks.
-Internet facility, office hours.
-Chemicals, relevant lab equipments.

Course Coordinator
Prof. Dr. Maha El-Sawalhi

Head of Department
Prof.Dr Maha El-Sawalhi

Department Approval Date: October 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Pharmacology-1 (PHL311)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	Pharmacology and Toxicology
Academic year:	2014/2015
Approval Date:	September 2014

A. Basic Information

Course Title: Pharmacology 1 **Course Code: PHL 311**

Prerequisites: physiology PHL (203), Anatomy &Histology PHL (101)

Students' Level/Semester: Third level / Sixth semester

Credit hours: 3 (2+1)

Actual teaching hours per week:

Lectures: 2 h/week **Practical: 2h/week** **Tutorial: N/A**

Total: 4 h/week

B. Professional Information

1. Overall Aim of Course

The course starts with basic introduction about Molecular Drug Action explaining drugs' specificity. This is followed by establishing understanding of the international Pharmacologic concepts and terms (agonists, antagonists, efficacy as well as the pharmacokinetics of the drugs).

The second part of the course involves basic Pharmacology of the Autonomic Nervous System (ANS), including both Adrenergic and Cholinergic NS. In the third part, pharmacology of autacoids will be covered.

2. Intended Learning Outcomes (ILOs)

By the end of the course, the student should be able to:

a- Knowledge and Understanding:

a1. Recognize different types of molecular targets for drugs.

a2. Identify the main Four Classes of Receptors, their structure & operation.

a3. Identify the different types of cholinergic agonists both direct-acting and indirect-acting agonists**.**

a4. Recognize the different types of cholinergic antagonists including muscarinic antagonists, neuromuscular blockers and ganglionic blockers**.**

a5. List the actions, uses and adverse effects of each group

a6. Categorize adrenergic receptors and their agonists and antagonists that are commonly used for the treatment of many visceral diseases.

a7. Correlate pharmacological actions of adrenergic agonists/antagonists with possible therapeutic uses and adverse effects.
a8. Identify different types of autacoids, mechanism of action and uses**.**

b- Intellectual Skills:

b1. Categorize autonomic receptors and their agonists and antagonists that are commonly used for the treatment of many visceral diseases.

b2. Discriminate among major drug classes by their mechanism(s) of action at molecular, cellular and organ levels.

b3. Relate the beneficial effects of different pharmacological classes in the respective cardiovascular disease.

b4. Correlate significant toxicities, drug interactions with specific observable and major adverse effects.

b5. Evaluate indications, rationale for clinical use and risks of commonly prescribed drugs.

c- Professional and Practical Skills:

c1. Integrate previously acquired knowledge of physiology and pathophysiology of a specific organ with newly acquired concepts of pharmacology for reaching appropriate therapeutic decisions.

c2. Assess the simulated response of the blood pressure to the effect of ions or drugs (sympathomimetics, parasympathomimetics) using virtual Dog BP Laboratory

c3. Apply cognitive skills needed to evaluate disease case-based scenarios and to select an appropriate pharmacological solution to these situations using case studies.

c4. Apply the gained knowledge of the mechanistic aspects of pharmacology with the rational and successful therapeutic selection in a case-based or clinical vignette module.

c5. Select drug classes or specific drugs according to population considerations.

d- General and Transferable Skills:

d1. Work effectively within a team frame.

d2. Suggest appropriate solutions in a case-based or vignette module

d3. Develop self-learning capacitance skills to enhance independent thinking

d4.Use different resources to encourage knowledge management skills.

3. Contents

Teaching Weeks	Topic	Total No. of hours	Lecture	Practical
One	Introduction to pharmacology (historical overview, general knowledge, prelude to pharmacokinetics)	4	2	
	Introduction to experimental pharmacology			2
Two	- Pharmacokinetics (absorption, distribution, metabolism, elimination)	4	2	
	Drug administration scheme, central nervous system acting drugs (Sc injection of strychnine and chloral hydrate)			2
Three	Pharmacodynamics(receptor families, agonists, antagonists, drug efficacy and potency)	4	2	
	Autonomic nervous system acting drugs (IP injection of atropine and pilocarpine in mice			2
Four	- Drug side effects, adverse reaction, interaction, toxicity, hypersensitivity, Pharmacogenetics, precautions, contraindications **+ First Midterm Exam**	4	2	
	IP injection of caffeine in mice			2
Five	Introduction to autonomic pharmacology	4	2	
	S.C. injection of nicotine in frogs			2
Six	- Cholinergic Agonists	4	2	
	Eye drops + **First practical exam**			2
Seven	Cholinergic Antagonists	4	2	
	Effects of drugs on BP			2
Eight	**Second Midterm exam**			

Nine	Adrenergic Agonists Adrenergic depressants	4	2	
	Dose response relationship			2
Ten	Adrenergic Agonists	4	2	
	Revision			2
Eleven	Neuromuscular blockers Autacoids	4	2	
	Second Practical exam			2
Twelve	autacoids	4	2	
	Second Practical exam			2
Thirteen	Revision	2	2	
Total No. of hours		46	24	22
Fourteen	**Final Exams of Faculty**			
Fifteen				
Sixteen				

4. Teaching and Learning Methods

4.1. Lectures
4.2. Wet laboratories using experimental animals
4.3. Virtual laboratories
4.4. Presentation.

5. Student Assessment Methods

5.1. Written exams to assess understanding & knowledge as well as intellectual skills.
5.2. Practical exams to assess professional and practical skills
5.3. Oral exam to assess all types of skills and mainly general and transferrable skills
5.4. Semester Work (Participation) to assess all types of skills.

Assessment Schedule

Assessment 1 Midterm-1 Exam Week **4**
Assessment 2 Midterm-2 Exam Week **8**
Assessment 3 Practical exam-1 Week 6
Assessment 4 Practical exam-2 Week 11, 12
Assessment 5 Final Exam Week 15/16
Assessment 6 Oral Exam Week 15/16
Assessment 7 Semester Work (Participation) (During the semester)

Weighting of Assessments

1st Mid-Term Examination	5%
2nd Mid-Term Examination	15%
Final-Term Examination	30%
Oral Examination	10%
Practical Examination	30%
Semester Work (Participation)	10%
Total	100%

5. List of References

6.1. Course Notes

Handouts of powerpoint presentations.

6.2. Essential Books (Textbooks)

Richard Finkel, Lippincott's Illustrated Reviews – Pharmacology, 5th edition,2011

6.3. Recommended Books

- Harold Kalant, Principles of Medical Pharmacology, 7th edition, 2006
- Laurence L. Brunton, Bruce A. Chabner ,Goodman and Gileman's the pharmacological basis of therapeutics, 12 th edition ,2011
- Bertram G Katzung , Susan B Masters, Anthony J .Trevor Basic & Clinical Pharmacology, 12 th edition ,2012

6.4. Periodicals, Websites, ……etc

http://www.cvphysiology.com/Intro.htm
British Journal of Pharmacology
www.aspetjournal.org

7. Facilities Required for Teaching and Learning

Computer and Data Show
Experimental laboratory animals

White board , Projector , computer,

Course Coordinator: Prof.Dr Samira Saleh

Head of Department: Prof. Dr. Maha El-Sawalhi

Department Approval Date: October 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Biochemistry-2 (PHL 352)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	Pharmacology& Toxicology
Academic year:	2014/2015
Approval Date:	October 2014

A. Basic Information

Course Title: Biochemistry-2 **Course Code: PHL 352**

Prerequisites: Biochemistry-1 PHL 351

Students' Level/Semester: Third Level/ Sixth Semester

Credit hours: **4 (3 +1)**

Actual teaching hours per week:

Lectures: 3/week **Practical:** 2/week **Tutorial:** N/A **Total:** 5/week

B. Professional Information

1. Overall Aim of Course

It familiarizes the students with metabolic pathways of different food materials and their integration.

It also fortifies the students with essential biochemistry & pharmacy foundation required to master other learning disciplines like pharmacology and microbiology. The course also enables the student to analyze and interpret the different biochemical laboratory data.

2. Intended Learning Outcomes (ILOs)

By the end of the course, students should be able to:

a- Knowledge and Understanding:

a.1. Outline macromolecular metabolism,

a.2. Outline glycolysis, tricarboxylic acid cycle, HMP shunt, gluconeogenesis and glycogen metabolism.

a.3. Recognize the chemistry of lipids. .

a.4. Identify different types of lipoproteins, their formation and functions.

a.5. Describe cholesterol synthesis

a.6. Describe fatty acid synthesis.

a.7. Describe amino acids metabolism and urea cycle.

a.8.Outline β oxidation of fatty acids, ketogenesis, and ketolysis.

a.9. Identify inter-conversion and integration of carbohydrates.

a.10. Recognize the biochemical pathways, their clinical and pathophysiological relevance and how they can be disrupted

b- Intellectual Skills:

b.1. Detect the impact of biochemical reactions.
b.2. Interpret energy production from various macromolecules.
b.3. Analyze different biochemical pathways and the crucial role of enzymes and cofactors in their driving and regulating.
b.4. Infer pathway sites that, when defective, can be translated into clinical disorders.
b.5. Compare inputs and outputs of diverse metabolic pathways and their sites of overlap and inter-conversion.
b.6. Conclude mechanisms and site of hormonal regulations of metabolism.
b.7. Relate metabolites to energy, and metabolite concentrations to disease states.
b.8. Interpret readings of laboratory results into diagnosis.

c- Professional and Practical Skills:

c.1. Estimate levels of key diagnostic molecules in biological fluids.
c.2. Estimate the levels of glucose in the blood.
c.3. Evaluate the levels of lipids in blood samples.
c.4. Test liver and kidney functions in blood samples.
c.5. Analyze urine sample
c.6. Apply the differential methods and principles of testing and quantitation of biological samples.
c.7. Interpret laboratory data in a scientific way
c.8. Predict a disease situation based on critical differential diagnosis

d- General and Transferable Skills:

d.1. Plan ways of calculating and expressing concentrations of different biological molecules in biological materials.
d.2. Apply rules and tactics of developing teamwork coordinated efforts.
d.3. Appraise optimal means of getting independent/critical opinions on definitive problems.
d.4. Present topics/data in a professional manner.
d.5. Collect information using web resources professionally, promptly and efficiently.
d.6. Apply accuracy and precision in using various analysis equipments and in undergoing laboratory analysis.

3. Contents

Teaching Weeks	Topic	No. of hours	Lecture	Practical
One	Introduction to the course, assessment, topics, objectives. Carbohydrate metabolism+ Lipid chemistry and metabolism	5	3	
	Diagnosis of glucose abnormalities			2
Two	Carbohydrate metabolism+ Lipid chemistry and metabolism	5	3	
	Plasma lipids and lipoproteins (Triglycerides)			2
Three	Carbohydrate metabolism+ Lipid chemistry and metabolism	5	3	
	Plasma lipids and lipoproteins (Total Cholesterol)			2
Four	Carbohydrate metabolism+ Lipid chemistry and metabolism + **First Midterm Exam**	5	3	
	Test for evaluation of liver function(Bilirubin)			2
Five	Carbohydrate metabolism+ Lipid chemistry and metabolism	5	3	
	Test for evaluation of liver function (ALT &AST) **First practical quiz**			2
Six	Carbohydrate metabolism+ Lipid chemistry and metabolism	5	3	
	Determination of serum urea			2
Seven	Amino acid anabolism+ Lipid chemistry and metabolism	5	3	
	Determination of serum creatinine			2
Eight	**Second Midterm exam**			

Nine	Amino acid anabolism+ Lipid chemistry and metabolism	5	3	
	Determination of pathological constituents of urine+ **Second practical quiz**			2
Ten	Amino acid catabolism+ Lipid chemistry and metabolism	5	3	
	Revision			2
Eleven	Urea cycle and the metabolism of some nitrogenous compounds + Lipid chemistry and metabolism	5	3	
	Practical exam			2
Twelve	Urea cycle and the metabolism of some nitrogenous compounds + Lipid chemistry and metabolism	3	3	
				0
Thirteen	Revision	3	3	
				0
Total No. of hours		56	36	20
Fourteen	Final Exams			
Fifteen				
Sixteen				

4. Teaching and Learning Methods

4.1. Didactic lectures
4.2. Assignments
4.3. Presentations
4.4. Laboratory experiments

5. Student Assessment Methods

5.1. Written exam to assess the student's understanding and comprehension as well as the intellectual skills.

5.2. Oral exam to assess all types of skills and mainly general and transferrable skills.

5.3. Practical exam + quizzes to assess the students' practical skills in the field of Biochemistry.

5.4. Assignments (posters)/ presentations to assess the students' analysis and appraise

5.5. Semester Work (Participation) to assess all types of skills.

Assessment Schedule

Assessment 1	First Midterm	**Week**	4
Assessment 2	Second Midterm	**Week**	8
Assessment 3	First practical quiz	**Week**	5
Assessment 4	Second practical quiz	**Week**	9
Assessment 5	Practical Exam	**Week**	11
Assessment 6	Final Written Exam	**Week**	15
Assessment 7	Oral Exam	**Week**	15
Assessment 8	Assignments (posters)	**During the semester**	
Assessment 9	Semester Work (Participation)	**During the semester**	

Weighting of Assessments

- First Midterm Examination		**5%**
- Second Midterm Examination:		**15 %**
-Final-Term Examination:		**30 %**
-Oral Examination:		**10%**
-Practical Examination:		**30%**
First practical sheet	5%	
Second practical sheet	5%	
Practical exam	15%	
Poster	5%	
-Semester Work:		**10%**
Total		**100%**

6. References

6.1. Course notes:

Lecture handouts.

Practical note.

6.2.Essential Books:

Lippincott's Illustrated Reviews: Biochemistry, 6th edition 2013.

Authors: Pamela C. Champe, Richard A. Harvey, and Denise R. Ferrier

Publisher : Lippincott Williams & Wilkins

6.3. Recommended Books:

1. Harper's Biochemistry, 29th edition 2012.

Authors: Robert K. Murray, Daryl K. Granner, Peter A. Mayes, and Victor W. Radwell Publisher: Appelton & Lange.

2. Student Companion: To Accompany Biochemistry International, 7th edition 2012. Authors: Richard Gumport Publisher: W. H. Freeman

6.4. Periodicals and Websites:

Periodicals

1. Journal of Biological Biochemistry
2. Cellular and Molecular Biochemistry

Web Sites:

1. www.PubMed.com
2. www.medline.com
3. http://medicalppt.blogspot.com/2009/09/biochemistry-lectures.html
4. http://www.una.edu/faculty/aecrews/Biochemistry/LectureNotes.htm
5. http://wolfweb.unr.edu/homepage/chuckd/bookmark.html
6. http://pdfdatabase.com/index.php?q=medical+biochemistry+lectures
7. http://www.indstate.edu/thcme/mwking/lectures09.html
8. http://www.biosolutions.info/search/label/biochemistry

7. Facilities Required for Teaching and Learning:

Lecture:

1- Smart board.
2- Data show & computer.
3- White board.
4- Office hours.
5- Internet
6- Well-designed lecture halls.

Practical:

1- Centrifuges.
2- Colorimeters.
3- Spectrofluorophotometer.
4- Electrophoresis
5- Water baths & incubators.
6- Glassware.
7- Wide, air-conditioned, well-lighted laboratories with suitable no. of benches.

Course Coordinator
Prof. Dr. Maha El-Sawalhi

Head of Department
Prof. Dr. Maha El-Sawalhi

Department Approval Date: October 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Pharmacology II (PHL 412)

Program (s) on which the course is given:	Bachelor of Pharmacy
Department offering the program:	All Faculty Departments
Department offering the course:	(Pharmacology and Toxicology)
Academic year:	2014/2015
Approval Date:	October 2014

A. Basic Information

Course Title: Pharmacology II **Course Code**: PHL 412

Prerequisites: Pharmacology 1 PHL (311)

Students' Level/Semester: four / Seventh semester

Credit hours: 3 (2+1)

Actual teaching hours per week:

Lectures: 2/week **Practical:** 2/week **Tutorial:** N/A **Total:** 4/week

B. Professional Information

1. Overall Aim of Course

a. To provide the basic knowledge about commonly used groups of drugs affecting different body systems and their implications in therapy of disease and health promotion.

b. To enable students to understand the safe use of drugs, as regards adverse effects, contraindications, and drug interactions.

c. To enable students to predict the risk/benefit ratio as a base to initiate, discontinue or avoid drug administration.

2. Intended Learning Outcomes (ILOs)

By the end of the course, students should be able to:

a- Knowledge and Understanding:

a1. Describe the mechanism of action of drugs with regard pathophysiology of common diseases to explain the rational basis for proper choice of drugs in treating them.

a2. Explain cardiovascular drugs for hypertension, angina pectoris, Heart failure and arrhythmia.

a3. Explain Central nervous system drugs for Depression, Psychosis, Parkinson's disease, neurodegenerative diseases and epilepsy .

a4. Recognize the relative risks and benefits of options of commonly used drugs and their uses and their side effects.

a5. Explain the best drug of choice for each disease.

a6. Identify any contraindication of drugs with certain diseases and any drug interaction may happen.
a7. Recognize the role of antiplatelet and anticoagulant drugs in the treatment of heart diseases.
a8. Express the anti-inflammatory drugs interaction with the drugs of cardiovascular diseases .
a9. Demonstrate knowledge of drugs used for the treatment of emergency conditions.
a10. Describe the therapeutic dose of the drugs and the side effects which may appear in case of overdose.

b- Intellectual Skills:

b1 Apply different uses of drugs in variable medical condition.
b2. Evaluate effect of medication on patients.
b3. Evaluate drug interaction and risk-benefit ratio.

c- Professional and Practical Skills:

c1. Record a comprehensive drug history of the patient.
c2. Predict drug adverse reactions.
c3. Analyze the effect of drugs on experimental animal tissues.

d- General and Transferable Skills:

d1. Demonstrate compassionate treatment and respect to all patients irrespective of their socioeconomic levels, culture or religious beliefs by using language appropriate to the patient's culture.
d2. Provide appropriate basic drug education to the patient and his family.
d3. Apply learned skills to act as a life-long self-learner showing a strong commitment.
d4. Demonstrate how to counsel the patient and make him oriented with his drug prescription and the doses of the day.

3. Contents

Teaching Weeks	Topic	No. of hours	Lecture	Practical
One	Cardiovascular drugs: Hypertension	5	3	2
	Introduction			
Two	Cardiovascular drugs: Hypertension and Angina Pectoris	5	3	2
	Dose-response using rectus abdominus muscle in mice			

Three	Cardiovascular drugs: Angina Pectoris and Arrhythmia	5	3	2
	Dose-response using rectus abdominus muscle in mice			
Four	Cardiovascular drugs: Heart failure 1st Mid-Term Exam	5	3	2
	Dose-response using rectus abdominus muscle in mice			
Five	CNS drugs: antidepressants	5	3	2
	Dose-response using rectus abdominus muscle in mice			
Six	CNS drugs: Antipsychotics and anxiolytics	5	3	2
	Dose-response using rectus abdominus muscle in mice			
Seven	CNS drugs: Neurodegenerative diseases	5	3	2
	Dose-response using rectus abdominus muscle in mice			
Eight	**2nd Mid-term Exam**			
Nine	CNS drugs: CNS stimulants	5	3	2
	Dose-response using rectus abdominus muscle in mice			
Ten	Epilepsy	5	3	2
	Dose-response using rectus abdominus muscle in mice			
Eleven	Epilepsy	5	3	
	Dose-response using rectus abdominus muscle in mice			2
Twelve	Anti-inflammatory drugs	5	3	
	Dose-response using rectus abdominus muscle in mice			2
Thirteen	Anti-inflammatory drugs	5	3	
	Final Practical exam			2
Total No. of hours		60	36	24
Fourteen	Final Exams			
Fifteen				

Sixteen				

4. Teaching and Learning Methods

4.1. Powerpoint based lecture.

4.2 Interactive teaching supported by actual examples from local and international origin.

4.3. Encouragement of searching, retrieving and analyzing information in the form of assignments.

4.4. Practical sessions.

5. Student Assessment Methods

5.1. Written exam to assess Overall knowledge and intellectual skills.

5.2. Practical exam to assess Professional and practical skills.

5.3. Oral exam to assess all types of skills (mainly general and transferable skills).

5.4. Semester Work (Participation) to assess all types of skills.

Assessment Schedule

Assessment 1 1st Mid-Term exam	Week 4……
Assessment 2 2nd Mid-term exam	Week 8……
Assessment 3 Practical exam	Week 13……
Assessment 4 Final Written Exam	Week 15…….
Assessment 5 Oral exam	Week 15……
Assessment 6 Semester work	During the semester……..

Weighting of Assessments

1st Mid Term Examination	5	%
2nd Mid-Term Examination	15	%
Final-Term Examination	30	%
Oral Examination	10	%
Practical Examination	30	%
Semester Work (Participation)	10	%
Total	100	**%**

6. List of References

6.1. Course Notes

Handout of slides of power point presentations

6.2. Essential Books (Text Books)

Richard Finkel, Lippincott's Illustrated Reviews – Pharmacology, 5th edition, 2011.

6.3. Recommended Books

Humphrey Rang, Maureen Dale, Rang and Dale's Pharmacology, 7th edition, 2012.

Laurence L. Brunton, Bruce A. Chabner, Goodman and Gileman's the pharmacological basis of therapeutics, 12th edition, 2011.

6.4. Periodicals, Websites, ……etc

www.bps.ac.uk/journals/british-journal-of-pharmacology

www.journals.elsevier.com/biochemical-pharmacology

www.ncbi.nlm.nih.gov/PubMed, www.sciencedirect.com

7. Facilities Required for Teaching and Learning

White board, Projector, Computer.

Course Coordinator:
Dr Yousra Abdel-Mottaleb

Head of Department:
Prof Dr Maha El Sawalhy

Department Approval Date: October 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Clinical Pharmacology (PHL421)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	Pharmacology and Toxicology
Academic year:	2014/2015
Approval Date:	September 2014

A. Basic Information

Course Title: Clinical Pharmacology **Course Code:** PHL421
Prerequisites: Pharmacology 2 (PHL 412)
Students' Level/Semester: Fourth Level/ Eighth Semester
Credit hours: 3 (2+1)
Actual teaching hours per week:
Lectures: 2/week **Practical:** 2/week **Tutorial:** N/A
Total: 4/week

B. Professional Information

1. Overall Aim of Course

Following completion of the course, the student should have the knowledge and skills that enable him/her to be aware of the clinical aspects of pharmacotherapy including adverse reaction, contraindication, side effects and precautions. Moreover, students should have the knowledge and skills of dose adjustments of drugs in case of GIT, heart, liver, renal diseases as well as pregnant women. The course covers the scope of antimicrobial and antineoplastic agents. The student should have the knowledge and skills that enable him/her to be aware of the clinical aspects of pharmacotherapy in case of diabetes, cardiovascular diseases and bronchial asthma and immunosuppressant diseases.

This course bridges the gap between laboratory science and the practice of medicine. Its primary aim is the promotion of safe and effective drug use: to optimize benefits and minimize risks.

The current course focuses on many patient-related problems in the clinical setting and gives solutions on how we can tailor drug therapy with each individual subject.

Students will also experience active learning which is the process of having students engaged in activities that require reflection on ideas and how students use them. After going through the active learning process, most students realize that knowledge is easily acquired. Herein, students will be acquainted with clinical cases; their presentations and problem solving know-how.

2. Intended Learning Outcomes (ILOs)

By the end of the course, students should be able to:

a- Knowledge and Understanding:

a1. Define the etiologic, pathophysiology, laboratory findings and clinical pictures of many organ system maladies.

a2. Recall the adverse and toxic effects of commonly used drug groups, and their management

a3. Describe the limitations to the use of drugs such as contraindications and drug interactions.

b- Intellectual Skills:

b1. Design rational therapeutic strategies for both acute and chronic clinical conditions taking into account the various variables that influence these strategies.

b2. Choose the proper drug/s for the proper clinical situation in the proper dosage.

b3. Relate the effectiveness and toxicity of therapy.

b4. Evaluate clinical case problems.

b5. Design tailor drug therapy to individual patients by studying drug algorithms.

b6. Plan to 'bridge the gap' between the acquisition of theoretical knowledge about drugs and its practical application to individual patients through sailing into a myriad of clinical cases in the practical section of the course.

b7. Predict drug adverse reactions.

c- Professional and Practical Skills:

c1. Record a comprehensive drug history of the patient.

c2. Analyze the effects of drugs on patients.

c3. Predict drug-drug interactions.

c4. Detect disease-drug interaction.

c5. Manage food-drug interaction.

c6. Predict disease-disease interaction.

c7. Manage drug withdrawal symptoms.

d- General and Transferable Skills:

d1. Provide appropriate basic drug education to the patient and his family.

d2. Describe the importance of the individual pharmacist/patient relationship appropriately as a mean to tailor individual disease management strategies on an individual basis.

d3. Demonstrate honesty in all interactions with patients, families, colleagues and others with whom physicians must interact with in their professional lives

d4. Communicate effectively with other healthcare professionals to maximize patient benefits and minimize the risk of errors.

d5. Gather information to interpret a treatment plan, while considering the influence of factors such as age, gender, ethnicity, cultural and spiritual values, socioeconomic background, medical conditions and communication challenges.

d6. Apply life-long self-learning showing a strong commitment.

d7. Counsel patients on drug administration, side effects and compliance.

3. Contents:

Teaching Weeks	Topic	No. of hours	Lecture	Practical
One	Adverse drug reaction including drug-drug interaction, drug-disease interaction and disease-disease interaction.	4	2	
	Hypertension follow-up case study			2

Two	Adverse drug reactions including side effects of drugs including photo allergy, photosensitivity and idiosyncratic reactions, etc.	4	2	
	Angina follow-up case study			2
Three	Effect of GIT diseases on drug disposition and dose adjustment	4	2	
	Congestive heart failure follow-up case study			**2**
Four	Effect of heart diseases on drug disposition and dose adjustment + **First Midterm exam.**	4	2	
	Revision			2
Five	Effect of renal impairment on drug disposition and dose adjustment	4	2	
	Parkinson's follow-up case study			2
Six	Effect of liver diseases on drug disposition and dose adjustment.	4	2	
	Bronchial asthma follow-up case study			2
Seven	Diabetes	4	2	
	Diabetes follow-up case study			2
Eight	**Second Midterm exam**			

Nine	Autoimmune disease.	4	2	
	Systemic lupus erythematosus follow-up case study			2
Ten	Chemotherapy	4	2	
	Peptic ulcer follow-up case study			2
Eleven	Chemotherapy (cont'd)	4	2	
	Revision			2
Twelve	Pathophysiology and management of multiple sclerosis.	4	2	
	Revision			2
Thirteen	Treatment protocols of cancer diseases	4	2	
	Final Practical Exam			2
Total No. of hours		**48**	**24**	**24**
Fourteen	**Final Exams of Faculty**			
Fifteen				
Sixteen				

4. Teaching and Learning Methods

Lectures.

Laboratories.

Class discussions

5. Student Assessment Methods

5.1. Written exams: ***to assess*** the student's understanding and comprehension as well as intellectual skills.

5.2 .Practical exams ***to assess*** the student's ability to solve drug-related problems and tailor drug therapy to individual patients i.e. : professional and practical skills.

5.3 .Oral exams: ***to assess*** all types of skills and mainly general and transferrable skills.

5.4 Semester Work (Participation) to assess all types of skills.

Assessment Schedule

Assessment 1	First Midterm Exam	**Week** 4
Assessment 2	Second Midterm Exam	**Week** 8
Assessment 3	Practical Exam	**Week** 13
Assessment 4	Final Exam	**Week** 15
Assessment 5	Oral Exam	**Week** 15
Assessment 6	Semester Work	**(During the semester)**

Weighting of Assessments

First Midterm Exam	**5** %
Second Mid-term Exam	**15** %
Final Written Exam	**30** %
Oral Exam	**10** %
Practical Examination	**30** %
Semester Class Work (Participation)	**10** %
Total	**100** %

6 List of References

6.1. Course Notes

Handout of slides of power point presentations

6.2. Essential Books (Text Books)

- Marilyn Winterton Edmunds, Introduction to clinical pharmacology: A study guide, 7th edition, Publisher CV Mosby, New York, 2013.
- Bertram G Katzung , Susan B Masters, Anthony J .Trevor. Basic & Clinical Pharmacology, 12 th edition ,2012

.

6.3. Recommended Books

Laurence L. Brunton, Bruce A. Chabner ,Goodman and Gileman's the pharmacological basis of therapeutics, 12 th edition ,2011

6.4 Periodicals, Websites, ……etc

- http://www.emedicine.com.
- http://www.medconsilt.com
- http://www.freemedicalbooks.com
- http://www.freemedicaljournals.com

7 Facilities Required for Teaching and Learning

- Data show.
- White Board + Markers.
- Interactive board.
- Lab manuals.
- Teaching software (PCCALS).

Course Coordinator
Prof. Dr. Nabila el Maraghy

Head of Department
Prof. Dr. Maha- El Swalhy

Department Approval Date: October 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Clinical Biochemistry PHL 453

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	Pharmacology and Toxicology
Academic year:	2014/2015
Approval Date:	October 2014

A. Basic Information

Course Title: Clinical Biochemistry **Course Code: PHL 453**

Prerequisites: Biochemistry 2 (PHL 352)

Students' Level/Semester: **Fourth Level/ eighth Semester**

Credit hours: **3 (2+1)**

Actual teaching hours per week:

Lectures: 2/week **Practical:** 2/week **Tutorial:** N/A **Total:** 4/week

B. Professional Information

1. Overall Aim of Course

It emphasizes multifaceted clinical aspects and applications of Biochemistry. As well as providing precise diagnostic means and markers for specific disease situation. The course also enables the student to analyze and interpret the different biochemical data.

2. Intended Learning Outcomes (ILOs)

By the end of the course, the student should be able to:

a- Knowledge and Understanding:

a.1. Identify clinical disorders relating to metabolism.

a.2. Identify production and disorders related to carbohydrates, lipids, proteins, hormones and nucleic acids.

a.3. Recognize the definition and the bases of clinical enzymology.

a.4. Identify the bases of endocrinology and disorders related to endocrine related abnormalities.

a.5. Define the functions and disorders related to the liver on clinical bases.

a.6. Define the functions and disorders related to the kidney on clinical bases.

a.7. Recognize the relation between metabolic disorders and pathophysiological events in the context of disease conditions.

a.8. Identify the basis and mechanisms posed by genetic/hereditary diseases related to systemic disease.

a.9. Define the principles and most relevant biochemical tools in diagnosis and distinction among closely related diseases.

b- Intellectual Skills:

b.1.Apply previously studied disciplines; like pathology, physiology, biochemistry, and pharmacology (using case study scenarios).

b.2. Infer essential concepts and modalities commonly used to define and diagnose a biochemical metabolic disease.

b.3. Develop appropriate plans for deploying biochemical assays to rationally diagnose a disease.

b.4. Evaluate laboratory results towards diagnosis of a disease.

c- Professional and Practical Skills:

c.1. Appraise the differential methods and the principles of testing and quantitation of biological samples.

c.2. Detect levels of glucose, ALT, AST, and creatinine in the blood.

c.2. Estimate levels of key diagnostic molecules in biological fluids.

c.3. Interpret laboratory data in a scientific way.

c.4. Predict the diagnosis, disease progression and prognosis (severity and consequences) of a disease situation based on assaying laboratory data of specific markers.

d- General and Transferable Skills:

d.1. Justify ways of calculating and expressing concentrations of biological materials

d.2. Apply rules and tactics of developing teamwork coordinated efforts.

d.3. Construct independent/critical opinions on definitive problems.

d.4. Present topics/data in a professional manner.

d.5. Collect information professionally, promptly and efficiently using web resources.

3. Contents

Teaching Weeks	Topic	No. of hours	Lecture	Practical
One	Introduction to the course, assessment, topics, objectives. Carbohydrate disorders/Lipids mrtabolism disorders	4	2	
	Laboratory diagnosis of glucose abnormalities			2
Two	Carbohydrate disorders/Lipids disorders	4	2	
	Clinical cases on glucose.			2
Three	Clinical enzymology/Protein	4	2	

	metabolism disorders			
	Lipids levels and lipoproteins			2
Four	Clinical enzymology/Protein metabolism disorders	4	2	
	Clinical cases on lipids. **First midterm exam**			2
Five	Endocrinology /Liver function	4	2	
	Practical Exam (Sheet 1)			2
Six	Endocrinology /Liver function	4	2	
	Evaluation of liver function			2
Seven	Endocrinology /Renal function	4	2	
	Clinical cases on liver.			2
Eight	**Second midterm exam**			
Nine	Endocrinology /Renal function	4	2	
	Evaluation of kidney function.			2
Ten	Endocrinology/ Tumor markers and gene expression	4	2	
	Clinical cases on kidney function.			2
Eleven	Endocrinology ;Tumor markers and gene expression	4	2	
	Endocrinology cases			2
Twelve	Revision	4	2	
	Practical Exam (sheet 2)			2

Thirteen	**Revision**	2	2	
Total No. of hours		46	24	22
Fourteen	**Final Exams of Faculty**			
Fifteen				
Sixteen				

4. Teaching and Learning Methods

4.1. Didactic lectures
4.2. Different types of exams (Pop quiz, Open book exam)
4.3. Non-conventional, out of the box questions.
4.4. Research and presentation
4.5. Laboratory experiments

5. Student Assessment Methods

5.1. Written exam to assess the student's understanding and comprehension in addition to intellectual skills.
5.2. Oral exam to assess all types of skills and mainly general and transferrable skills.
5.3. Practical exam to assess the students' practical skills in the field of Biochemistry.
5.4. Assignments/ presentations to assess the students' analysis and appraise his ability to conduct & present a research.
5.5. Semester Work (Participation) to assess all types of skills.

Assessment Schedule

Assessment 1	First midterm	**Week**	4
Assessment 2	Second midterm exam	**Week**	8
Assessment 3	Practical Exam (Sheet 1**)**	**Week**	5
Assessment 4	Practical Exam (sheet 2**)**	**Week**	12
Assessment 5	Final Exam	**Week**	15
Assessment 6	Oral Exam	**Week**	15
Assessment 7	Assignments/ presentations	**During the semester**	
Assessment 8	Semester Work (Participation)	**During the semester**	

Weighting of Assessments

-First Midterm week Examination		5%
-Second midtrerm Examination:		15 %
-Final-Term Examination:		30 %
-Oral Examination:		10%
-Practical Examination:		30%
-Sheet 1	12%	
-Sheet 2	12%	
-Presentations	6%	
-Semester Work:		10%
Total		**100%**

6. List of References

6.1. Course Notes:

Case study and questions.
Presentation
Lecture handouts -Practical notes

6.2. Essential Books:

Lectures notes on clinical biochemistry: Geoffrey Beckett, Simon W. Walker, Peter Rae, and Peter Ashby. Publisher: Wiley; 8th edition (June 24, 2008).

6.3. Recommended Books:

i- Tietz Fundamentals of Clinical Chemistry (Fundamentals of Clinical Chemistry (Tietz). Carl A. Burtis PhD (Author), Edward R. Ashwood MD (Author), David E. Bruns MD (Author). Publisher: Saunders; 6th edition (November 6, 2007). ISBN: 978-0721638652.

ii- Tietz Textbook of Clinical Chemistry and Molecular Diagnostics. Carl A. Burtis, Edward R. Ashwood, David E. Bruns, 4th edition, 2006. Elsevier Inc. ISBN: 978-0-7216-0189-2.

iii- Fundamentals of Clinical Chemistry Tietz, 6th edition., Carl A. Burtis, Edward R. Ashwood, David E. Bruns, W.B. 2008. Saunders, Elsevier Inc. ISBN: 978-0-7216-3865-2.

7. Periodicals and websites:

Periodicals

- Clinical Biochemistry - Journal - Elsevier

Web Sites:

http://www.Clinical Chemistry.net
/http://www.pathology.med.umich.edu/handbook
http://www.aacc.org/Pages/default.aspx

/http://www.acb.org.uk
http://www.healthsystem.virginia.edu/UVAHealth/adult_path/clinchem.cfm
http://www.labexplorer.com/chemistry.htm

Facilities Required for Teaching and Learning:

Lecture:

1- Smart board.
2- Data show & computer.
3- White board.
4- Office hours.
5- Internet.
6- Well-designed lecture halls.

Practical: Same as under lecture (for tutorials, case study teaching)

Course Coordinator
Prof. Dr. Zeinab Abd EL Tawab Hassan

Head of Department
Prof. Dr. Maha EL-Sawalhi

Department Approval Date: October2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Toxicology and Forensic Chemistry (PHL 541)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	(Department of Pharmacology and Toxicology)
Academic year:	2014/2015
Approval Date:	October 2014

A. Basic Information

Course Title: Toxicology And Forensic Chemistry **Course Code:** PHL541

Prerequisites: Pharmacology 1 (PHL 311)

Students' Level/Semester: Fifth Level / Ninth

Credit hours: 4 (3+1)

Actual teaching hours per week:

Lectures: 3/week **Practical:** 2/week **Tutorial:** N/A **Total:** 5/week

B. Professional Information

1. Overall Aim of Course

Following the completion of the course the student should have the knowledge and skills that enables him/her to be aware of the basic concepts of toxicology; history, mechanisms of toxicity, factors affecting toxicity, different types of intoxication and different toxic episodes; accidental, suicidal, homicidal and non-accidental poisoning. The course combines an accessible and engaging approach with coverage of essential introductory concepts providing a solid grounding in basic and medical toxicology. The course also covers the specific effects of a wide range of toxic chemicals, gases, corrosives, metal poisoning, hydrocarbons, alcohols, asphyxiants and pesticides as well as the basic principles of forensic toxicology. Many other sub-disciplines will be provided such as plant and animal poisons, food toxicology, environmental toxicology with its multifacets of air, water and soil pollution. It also includes the study of congenital malformation and syndromes caused by toxic agents during pregnancy.

2. Intended Learning Outcomes (ILOs)

By the end of this course, students should be able to:

a- Knowledge and Understanding:

a1. Define the principles of medical, health and environmental sciences.

a2. Recognize factors affecting toxicity, ways of exposure of toxic agents.

a3. Outline general mechanisms of toxicity and how different chemicals are taken up, processed, eliminated from the body and management.

a4. Define the most toxic agents and mechanisms behind the effects.

a5. Describe the bio-effects of various toxic chemicals on the environment and the current pollution problems.

a6. Distinguish plant and animal toxins, the underlying mechanisms of toxicity and management.

a7. List contra-indications, drug interactions, adverse effects and other properties of different drugs from various origins.

a8. State the causes and management of food toxicity.

a9. Recognize the different pesticides, their mechanisms of toxicity and management.

a10. Recognize safe drugs during pregnancy.

a11. Identify congenital malformations caused by toxic agents and drugs during pregnancy.

a12. Express chromosomal aberrations causing teratogenic syndromes.

a13. Describe the basic principles of forensic toxicology, post-mortem examination and analysis of toxic agents.

b- Intellectual Skills:

b1. Identify factors affecting toxicity.

b2. Discriminate between different toxicities and syndromes.

b3. Recognize the role of the forensic chemist with regard to the medico-legal aspects.

b4. Select different antidotes for different toxic agents.

c- Professional and Practical Skills:

c1. Explain toxic mechanisms of action of all toxins confirmed or suspected in all cases in the daily case log.

c2. Relate toxic mechanisms at a cellular/molecular level, and their overall effect on each body system.

c3. Assess toxicity of various xenobiotics.

c4. Apply this knowledge to how specific antidotes and treatments will effectively work to improve patient outcomes.

c5. Apply medical ethics, etiquette, duties, rights, medical negligence and legal responsibilities of the pharmacists towards patients, profession, society, state and humanity at large.

c6. Prepare report in medico-legal cases/situations.

d- General and Transferable Skills:

d1. Appraise the sources of biomedical information to remain current with advances in knowledge and practice.

d2. Collect information and data search from different sources.

d3. Participate actively in a team.

d4. Apply self-learning to develop profession continuously.

d5. Apply safety measures in practice.

d6. Apply gained skills to be lifelong learner showing a strong commitment to it.

d7. Communicate effectively with colleagues and mentors.

d8. Express creativity and innovation.

3. Contents

Teaching Weeks	Topic	No. of hours	Lecture	Practical
One	General introduction	5	3	
	Introduction, lab animal handling			2
Two	General principles of toxicology	5	3	
	CNS drugs			2
Three	CNS drugs	5	3	
	CNS drugs			2
Four	Paracetamol & Salicylates + **First Midterm Exam**	5	3	
	CNS drugs			2
Five	Toxic effects of solvents & vapors	5	3	
	Hemolytic agents			2
Six	Toxic effects of pesticides	5	3	
	Hemolytic agents			2
Seven	Corrosive poisons & hydrocarbons	5	3	
	Irritants & corrosives			2
Eight	**Second Midterm exam**			
Nine	Teratogenicity	5	3	
	Irritants & corrosives			2
Ten	Toxic effects of heavy metals	5	3	
	Case studies			2
Eleven	Food, plant & animal toxicity	5	3	
	Practical Exam			2
Twelve	Pollution & ecotoxicology	3	3	
Thirteen	Forensic toxicology	3	3	
Total No. of hours		56	36	20
Fourteen	Final Exams of Faculty			
Fifteen				
Sixteen				

4. Teaching and Learning Methods

4.1Power point based lecture

4.2 Interactive humor-based teaching supported by actual examples from local and international origin

4.3 Encouragement of searching and retrieving information in the form of assignments

4.4 Practical sessions

5. Student Assessment Methods

5.1 Written Exams to assess knowledge and understanding as well as intellectual skills.
5.2 Practical exam to assess the students' professional and practical skills in the field of toxicology.
5.3. Oral exam to assess all types of skills and mainly general and transferrable skills.

5.4. Semester Work (Researches and oral presentations) to assess all types of skills.

Assessment Schedule

Assessment 1	1st Mid-term Exam	Week 4
Assessment 2	2nd Mid-term Exam	Week 8
Assessment 3	Research & presentation	Each lab
Assessment 4	Practical Exam	Week 11
Assessment 5	Final Exam	Week 15/16
Assessment 6	Oral exam	Week 15/16

Weighting of Assessments

1st Mid-Term Examination	5 %
2nd Mid-Term Examination	15 %
Final-Term Examination	30 %
Oral Examination	10 %
Practical Examination	30 %
Semester Work (Research & presentation)	10 %
Total	**100 %**

6. List of References

6.1. Course Notes

Handout of slides of power point presentations

6.2. Essential Books (Text Books)

Casarett & Doull's: Essentials of Toxicology, 2nd edition, McGraw Hill, 2010.

ISBN 978-0-07-174274-0

6.3. Recommended Books

Casarett & Doull's Toxicology, The Basic Science of Poisons, 8th edition, 2013,

ISBN 978-0-07-176923-5

6.4. Periodicals, Websites, ……etc

www.pubmed.org

www.toxicology.org

http://toxsci.oxfordjournals.org/

www.nature.com

7. Facilities Required for Teaching and Learning

Data show, White board, white board markers, laboratory equipment, laboratory animals.

Course Coordinator:
Prof.Dr./ Nabila Nour El Din El Maraghy

Head of Department
Prof.Dr./ Maha El Sawalhi

Department Approval Date: October 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Biostatistics (PHL 531)

Program (s) on which the course is given:	Bachelor of Pharmacy
Department offering the program:	All Faculty Departments
Department offering the course:	Pharmacology and Toxicology
Academic year:	2014/2015
Approval Date:	October 2014

A. Basic Information

Course Title: Biostatistics **Course Code: PHL 531**

Prerequisites: Pharmacology 2 (PHL 412)

Students' Level/Semester: Fifth Level/ tenth Semester

Credit hours: 3 (2+1)

Actual teaching hours per week:

Lectures: 2/week **Practical:** 2/week **Tutorial:** N/A **Total:** 4/week

B. Professional Information

1. Overall Aim of Course

At the end of the course the candidate will be able to identify the basic concepts of Biostatistics and data analysis as well as the basis of biological assay.

2. Intended Learning Outcomes (ILOs)

By the end of the course, the student should be able to:

a- Knowledge and Understanding:

a1. Recognize basic concepts of Biostatistics and data analysis.
a2. Identify the basis of biological assay.
a3. Recognize drug development.
a4. Select experimental animals to estimate the potency of drugs.
a5. Outline screening of different drug groups.
a6. Outline the role of hormones in the regulation of biological activities.
a7. Recognize which drug should be monitored.

b- Intellectual Skills:

b1. Interpret dispersion of data and normal distribution curve.
b2. Select proper method of sampling and sample types.
b3. Interpret the meaning of different data presentation types.
b4. Predict role of Biostatistics in medical research.

c- Professional and Practical Skills:

c1. Apply methods of graphical presentation.
c2. Use results of applied statistics to make informed decisions.

c3. Discriminate between various experimental models to select the best one used for biological assay.
c4. Perform experiments in the lab and field within proper technical, safety and ethical framework.
c5. Handle laboratory animals properly and humanly.
c6. Manipulate an isolated organ.

d- General and Transferable Skills:

d1. Use computer to analyze data effectively.
d2. Work effectively in a team.
d3. Apply gained knowledge to enhance life-long, self-directed working.
d4. Value precision and correctness.

3. Contents:

Teaching Weeks	Topic	No. of hours	Lecture	Practical
One	Introduction to laboratory safety and animal handling	**4**	**2**	
	Introduction to laboratory safety and animal handling			**2**
Two	Neuropharmacological (TETRAD System), cardiovascular screening (Langendorff's), nerve muscle preparation (Finkelmann, Cat nictitating membrane)	**4**	**2**	
	Isolation and preparation of Frog rectus abdominis muscle			**2**
Three	Screening/assay of opioids**,** Screening/assay of non-steroidal anti-inflammatory drugs	**4**	**2**	
	Biological assay of Ach on Frog rectus abdominis muscle using matching technique			**2**
Four	Models of epilepsy and screening/assay of anti-epileptics **+ First Midterm exam**	**4**	**2**	
	Biological assay of Ach on Frog rectus abdominis muscle using matching technique			**2**

Five	Models of heart failure and screening/assay of cardiotonics/ hypertension	**4**	**2**	
	Biological assay of Ach on Frog rectus abdominis muscle using matching technique			**2**
Six	Introduction to Biostatistics (normal distribution of data,	**4**	**2**	
	Biological assay of Ach on Frog rectus abdominis muscle using matching technique			**2**
Seven	Assessment of data variability, scatter and location (Arithmatic mean, Median, Mode, Range)	**4**	**2**	
	Biological assay of Ach on Frog rectus abdominis muscle using matching technique			**2**
Eight	**Second Midterm exam**			
Nine	Confidence limits, Variation coeffient, Variance and Co-Variance)	**4**	**2**	
	Biological assay of Ach on Frog rectus abdominis muscle using matching technique			**2**
Ten	Graphical presentation of a data (histogram, bar chart, polygon), Normal distribution (Gauss)	**4**	**2**	
	Final Practical Exam			**2**
Eleven	Statistical analysis of data (Independent non-paired and dependent paired Student' *t*-test)	**2**	**2**	
Twelve	**Revision**	**2**	**2**	

Total No. of hours		**40**	**22**	**18**
Thirteen	**Final Exams**			
Fourteen				
Fifteen				

4. Teaching and Learning Methods

4.1. Power point based lecture.

4.2. Interactive teaching supported by actual examples from local and international origin.

4.3. Encouragement of searching and retrieving information in the form of assignments.

4.4. Practical sessions.

5. Student Assessment Methods

5.1. Written exams to assess knowledge and understanding as well as intellectual skills.

5.2. Oral exam to assess all types of skills and mainly general and transferrable skills.

5.3. Practical exam to assess the students' practical skills in the field of bioassay.

5.4. Semester Work (Participation) to assess all types of skills.

Assessment Schedule

Assessment 1	First Midterm Exam	**Week** –4
Assessment 2	Second Midterm Exam	**Week** 8
Assessment 3	Practical Exam	**Week** 10
Assessment 4	Final Written Exam	**Week** 15
Assessment 5	Oral exam	Week 15
Assessment 6	Semester Work (Participation)	During the semester

Weighting of Assessments

First Midterm Exam	**5** %
Second Mid-term Exam	**15** %
Final Written Exam	**30** %
Oral Exam	**10** %
Practical Examination	**30** %
Semester Class Work	**10** %
Total	**100** %

6.List of References

6.1. Course Notes

Handout of slides of power point presentations

6.2. Essential Books (Text Books)

Qualitative and quantitative evaluation of drugs and hormones, 2003, Alexandria Univ. press.

Biostatistics, Basic concepts and methodology for the health sciences, 9th Edition, Wiley.

6.3. Recommended Books

a. Bioassay technique for drug development, Atta-ur-Rahman, Choudhary and Thomsen, W.J (2001), Hardwood medical publishers
b. Drug discovery and evaluation: Pharmacologic assays, Vogel and Vogel (1997), Springer

6.4. Periodicals, Websites, ……etc

www. Pubmed.org
www.Sciencedirect.com
www. Googlescholar.com

7. Facilities Required for Teaching and Learning

- Data show.
- White Board + Markers.
- Interactive board.
- Lab manuals.
- Teaching software (PCCALS).

Course Coordinator
Dr. Yousra Abdel-Mottaleb

Head of Department
Prof. Dr. Maha El Sawalhy

Department Approval Date: October 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Clinical Toxicology (PHL 642)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	Department of Pharmacology & Toxicology
Academic year:	2014/2015
Approval Date:	October 2014

A. Basic Information

Course Title: Clinical toxicology **Course Code:** (PHL 642)

Corequisites: Toxicology and forensic chemistry PHL 541

Students' Level/Semester: Elective course

Credit hours: 2(2+0)

Actual teaching hours per week:

Lectures: 2/week **Practical:** 0 **Tutorial:** N/A **Total:** 2/week

B. Professional Information

1. Overall Aim of Course

Following the completion of this course the student should have a solid foundation in clinical toxicological concepts and principles including the proper diagnosis and management of poisoning from drugs usually used for therapeutic purposes as well as chemical wastes with no medical purposes, in addition to food, plant and animal poisons, household products and drugs of abuse.

2. Intended Learning Outcomes (ILOs)

By the end of this course the student should be able to:

a- Knowledge and Understanding:

a1.Describe the steps of clinical assessment of poisoning (physical signs: odor, skin, temperature, blood pressure, and eye).

a2.Describe the various poison management protocols (airway, breathing, circulation, and altered mental status)

a3.Outline the general and specific methods for approach of a poisoned patient in normal and critical situations (decontamination, enhanced removal, disposition)

a4..Outline the toxicity and management of typical drugs present in the medical cabinet

a5..Recognize the toxicity of food, plant and animal poisons

a6.Identify the health hazards of household cleaning products

a7.Describe the maladaptive pattern of use of drugs that alter the behavior and management of the poisoned patient.

b- Intellectual Skills:

b1.Construct integrated approaches to analyze and interpret complex and contradictory scientific information autonomously to solve special problems in clinical toxicology

b2.Evaluate his own and others' work accurately.

b3. Plan for innovative and creative performance in the field of clinical toxicology.

b4.Consider the ethical constraints and risks associated with the subject and the ability to relate these to own experience.

b5. Manage the toxicity of food, plant and animal poisons

c- Professional and Practical Skills:

c1..Construct appropriate management strategies both diagnostic and therapeutic for patients with acute and chronic toxicity.

c2. Resolve problems independently to react effectively to unusual and unexpected toxicological situations.

c3..Communicate effectively with professional and academic members in toxicology field.

c4.Construct the development of the subject through applied study or research.

d- General and Transferable Skills:

d1. Utilize information (from electronic database and other resources), for solving problems and making decisions that are relevant to care for poisoned patients.

d2. Use different resources to be a life-long self-directed learner to catch up the scientific evolution.

d3. Counsel compassionately patients and their families.

d4. Work in a team in different professional situation.

d5. Develop good presentation skills.

d6. Criticize his work and other's effectively.

3. Contents

Teaching Weeks	Topic	No. of hours	Lecture
One	Poison clinical assessment	2	2
Two	Poison clinical assessment	2	2
Three	Poison management	2	2

Four	..... Poison management + First Midterm Exam	2	2
Five	Toxidromes	2	2
Six	Toxidromes	2	2
Seven	Medicinal cabinet	2	2
Eight	Second Midterm exam		
Nine	Food poisons	2	2
Ten	Plant and animal poisons	2	2
Eleven	Household cleaning products	2	2
Twelve	Drug dependence	2	2
Thirteen	Case studies	2	2
Total No. of hours		24	24
Fourteen	Final Exams	24	24
Fifteen			
Sixteen			

4. Teaching and Learning Methods

4.1Power point lectures.

4.2. White board illustrations.

4.3. Open discussion.

4.4. Case studies

5. Student Assessment Methods

5.1**.** Written exams to assess all types of skills

5.2. Semester Work (Assignments) to assess general transferable skills

Assessment Schedule

Assessment 1 …… 1st Mid-term…… Week …4…….
Assessment 2 …… 2nd Mid-term ……Week …8…….
Assessment 3 …… Semester work **(**assignments)… …during the semester
Assessment 4 …… Final exam ……Week …15…….

Weighting of Assessments

1st Mid-term Examination	10%
2nd Mid-Term Examination	30%
Final-Term Examination	50%
Oral Examination	-
Practical Examination	-
Semester Work (assignments)	10%
Total	100**%**

6. List of References

6.1. Course Notes

Handouts for Pharmacy students

6.2. Essential Books (Text Books)

Lewis Goldfrank ,Goldfrank's Mannual of Toxicologic emergencies, 1 st edition 2007

6.3. Recommended Books

Alisonl, Jones,PaulI, Dargan ,Churchill's Pocketbook of Toxicology,1 st edition 2001

6.4. Periodicals, Websites, ……etc

www.medlib.med.utah.edu/webpath/,
www.dundee.ac.uk/facmedden/bmsc

7. Facilities Required for Teaching and Learning

Computer and projector (data show)

White board and required colored drawing pens.

Course Coordinator: -

Head of Department:
Prof.Dr Maha El-Sawalhi

Department Approval Date: October 2014

Drug Abuse (PHL 643)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	Department of Pharmacology and Toxicology
Academic year:	2014/2015
Approval Date:	October 2014

A. Basic Information

Course Title: Drug Abuse **Course Code:** PHL643
Pre requisites: Toxicology and Forensic Chemistry PHL 541
Students' Level/Semester: Elective
Credit hours: 2 (2+0)
Actual teaching hours per week:
Lectures: 2/week **Practical:** 0/week **Tutorial:** N/A **Total:** 2/week

B. Professional Information

1. Overall Aim of Course

Following completion of the course, the student will have a good knowledge of a variety of abused drugs and substances. The student learns the neurochemical basis of drug dependence. The psychoactive effects of CNS depressant drugs such as opioids, sedative hypnotics (barbiturates, benzodiazepines), alcohol, cannabinoids as well as psychostimulant drugs such as caffeine, cocaine and amphetamines which are discussed in details in the current course. Besides, inhalants, hallucinogens and designer drugs are also an integral part of the curriculum. Recent trends in the management of the aforementioned drug classes are also provided.

2. Intended Learning Outcomes (ILOs)

By the end of the course, student should be able to:

a- Knowledge and Understanding:

a.1. Recognize the basic neurochemistry behind drug dependence.
a.2. Differentiate between physical and psychological dependence.
a.3. Identify the psychoactive effects of CNS depressant drugs such as opioids, sedative hypnotics, alcohol & cannabinoids.
a.4. Identify the psychoactive effects of CNS stimulant drugs such as caffeine, cocaine and amphetamines.
a.5. Recognize the recent trends in the management of dependence.
a.6. List the effects of inhalants, hallucinogens & designer drugs.
a.7. Recognize the different abused stuff in the Egyptian habitat.

b- Intellectual skills:

b.1. Identify the most common features of drug dependence particularly amongst youth.
b.2. Detect the best solution for addiction problems.
b.3. Identify the merits and demerits of various therapeutic interventions for dependence.

c- Professional and practical skills:

c.1. Participate in assessment of various addiction problems.
c.2 Counsel patients on reasonable use of drugs and social health dangers of drug abuse and misuse.

d- General and transferable skills:

d.1. Participate effectively within a team-work during questionnaire assessment.
d.2. Solve problems associated with substance abuse effectively.
d.3. Set targets to fulfill these targets within deadlines.
d.4. Develop self-learning skills
d.5. Communicate effectively with patients and other health professionals.

3. Contents

Teaching Weeks	Topic	No. of hours	Lecture
One	Neurochemistry of brain in health and addiction	2	2
Two	Opioid dependence	2	2
Three	Sedative hypnotics: Barbiturate abuse	2	2
Four	Sedative hypnotics: Benzodiazepines abuse + First Midterm Exam	2	2
Five	Alcohol abuse	2	2
Six	Cannabinoids	2	2
Seven	Psychostimulants: Cocaine abuse	2	2
Eight	Second Midterm exam		
Nine	Psychostimulants: Amphetamines abuse	2	2
Ten	Tobacco smoking and addiction	2	2
Eleven	Designer drugs	2	2
Twelve	Inhalants	2	2
Thirteen	Hallucinogens	2	2
Total No. of hours		24	24
Fourteen	Final Exams of Faculty		
Fifteen			
Sixteen			

4. Teaching and Learning Methods

4.1Power point based lecture

4.2 Interactive humor-based teaching supported by actual examples from local and international origin

4.3 Encouragement of searching and retrieving information in the form of assignments

5. Student Assessment Methods

5.1. Written exams to assess knowledge and understanding skills as well as intellectual and professional skills.

5.2 Assignments to assess the students' ability to search course related issues, thus assessing the general and transferrable skills.

5.3. Semester Work (Participation) to assess all types of skills.

Assessment Schedule

Assessment 1 Written Exam	Week: (4, 8, 15/16)
Handling of Assignment …	.Week: (9)
Semester Work	(During the semester)

Weighting of Assessments

1st Mid-Term Examination	10 %
2nd Mid-Term Examination	20 %
Final-Term Examination	50 %
Assignment	10%
Semester Work	10 %
Total	100 **%**

6. List of References

6.1. Course Notes

Handout of slides of power point presentations

6.2. Essential Books (Text Books)

JH Lowinson, Substance abuse::A Comprehensive text book, lipincott Williams and wilkins 5 th edition ,2011.

6.3. Recommended Books

Marc Galanter & Herbert D. Kleber, Textbook of Substance Abuse Treatment, 3rd Edition Editors: American Psychiatric Publishing, 2004.

6.4. Periodicals, Websites, ……etc

http://www.emedicine.com.
http://www.medconsult.com
http://www.freemedicalbooks.com
http://www.freemedicaljournals.com

7. Facilities Required for Teaching and Learning

Data show, White board, white board markers.

Course Coordinator:
Dr./ Yasser Omar Mossad

Head of Department:
Prof.Dr./ Maha El-Sawalhi

Department Approval Date: October 2014

FUTURE UNIVERSITY IN EGYPT
FACULTY OF PHARMACEUTICAL SCIENCES AND PHARMACEUTICAL INDUSTRIES

Course Specifications

Clinical Nutrition (PHL 654)

Program (s) on which the course is given:	Bachelor of Pharmaceutical Sciences and Pharmaceutical Industries
Department offering the program:	All Faculty Departments
Department offering the course:	(Pharmacology& Toxicology)
Academic year:	2014/2015
Approval Date:	October 2014

A. Basic Information

Course Title: Clinical Nutrition **Course Code:** PHL 654

Prerequisites: Clinical Biochemistry PHL 453

Students' Level/Semester: (Elective)

Credit hours: 2 (2+0)

Actual teaching hours per week:

Lectures: 2/week **Practical:** 0/week **Tutorial:** N/A **Total:** 2/week

B. Professional Information

1. Overall Aim of Course:

The course introduces students to basic concepts of clinical nutrition including detailed information about micro and macronutrients, drug- nutrient interactions, and essential medical nutrition in particular disease conditions.

2. Intended Learning Outcomes (ILOs)

By the end of the course, the student should be able to:

a. Knowledge and Understanding:

a.1. List types of micro and macronutrients

a.2. Identify the basics of energy requirements, and types of healthy and unhealthy food.

a.3. Recognize possible nutrients-drug interactions in order to avoid any undesirable effects.

a.4. Recognize recent Medical Nutrition Therapy (MNT) for diabetes mellitus (DM) and other pathological situations such as renal and bone diseases.

a.5. Describe some human diseases.

a.6. Explain the pathophysiology of ulcers.

a.7. Identify the correlation of diseases with drugs and nutrient intake.

a.8. Discuss major nutritional concerns in certain populations, as in infants, pregnant women, and elderly.

b. Intellectual Skills:

b.1. Outline disorders and risk of nutrient deficiency.

b.2. Appraise the role and needs of nutrients in common metabolic, cardiovascular, and CNS disorders.

b.3. Apply concepts of human body weight standards.

b.4. Control disorders related to nutrients disorders .

b.5. Infer the potential, mechanisms and risk of nutrient interactions with medicines.

b.6. Compare needs for macro- and micronutrients across the human age.

c. Professional and Practical Skills:

c.1. Estimate potential risk for definitive diseases in light of nutrient availability

c.2. Assess the differential needs of vitamins/nutrients in health and disease.

c.3. Interpret nutritional needs in a scientific way

c.4. Predict a disease situation based on nutritional deficiency and needs.

d. General and Transferable Skills:

d.1. Present topics/data in a professional manner.

d.2. Interact effectively when working in team.

d.3. Acquire optimal means of getting independent/critical opinions on definitive problems..

d.4. Apply professional, efficient and prompt means to get reliable data on nutrition.

3. Contents

1. Teaching Weeks	Topic	No. of hours	Lecture
One	Introduction to the course, assessment, topics and objectives.	2	**2**
	The role of nutrients in the human body.		
Two	Energy needs: Assessment and requirements. Diets and therapy: Nutritional assessment and standards.	2	**2**
Three	Role of diets in management of weight control and obesity.	2	**2**
Four	**First Midterm Exam +** Drug- nutrient interaction.	2	**2**

Five	Recent Medical Nutrition Therapy (MNT) for Diabetes Mellitus.	2	**2**
Six	Role of diets in management of cardiovascular diseases.	2	**2**
Seven	Role of diets in management of nervous system disorders.	2	**2**
Eight	Second midterm		
Nine	Role of diets in management of gastrointestinal diseases.	2	**2**
Ten	Role of diets in management of renal diseases	2	**2**
Eleven	Role of diets in management of renal diseases	2	**2**
Twelve	Nutrition and Cancer.	2	**2**
Thirteen	Revision	2	**2**
Total No. of hours		24	**24**
Fourteen	Final Exams of Faculty		
Fifteen			
Sixteen			

4. **Teaching and Learning Methods**
   - **4.1.** Didactic lectures
   - **4.2.** Assignments
   - **4.3.** Presentations.
5. **Student Assessment Methods**
   - **5.1.** Written exams to assess the student's understanding and comprehension as well as intellectual and professional skills..
   - **5.2.** Semester Work (Assignments/ presentations) to assess the students' analysis and appraise his ability to conduct & present a research to assess general and transferrable skills.

Assessment Schedule

Assessment 1 … Written exams … Week 4, 8, 15

Assessment 2 … Semester Work (Assignments/presentations) Throughout the semester

Weighing of Assessments

First Mid-Term Examination	10%
Second Mid-term Examination	20%
Final Examination	50 %
Semester Work (Ass./Presentations)	20%
Total	**100%**

6. List of References

6.1. Course Notes

Lecture handouts.

6.2. Essential Books (Text Books)

Lippincott's Illustrated Reviews: Biochemistry, 6th edition 2013.
Authors: Pamela C. Champe, Richard A. Harvey, and Denise R. Ferrier
Publisher: Lippincott Williams & Wilkins.

6.3. Recommended Books

Clinical Nutrition in practice: 2010. Editors: Nikolaos Katsilambros , Charilaos Dimosthenopoulos , Meropi D. Kontogianni , Evangelia Manglara, Kalliopi-Anna Poulia. Publisher: WILLY-BLACKWELL.

Harper's Biochemistry, 29th edition 2012.
Authors: Robert K. Murray, Daryl K. Granner, Peter A. Mayes, and Victor W. Radwell Publisher: Appelton & Lange.

6.4. Periodicals, Websites, ……etc

-Journal of Nutrition.

-The Journal of Nutritional Biochemistry.

- Journal of Nutrition and cancer.

- Journal of Food Biochemistry.

-www. Pubmed.com

-www.medline.com

-http://medicalppt.blogspot.com/2009/09/biochemistry-lectures.html

7. Facilities Required for Teaching and Learning

1- Smart board.
2- Data show & computer.
3- White board.
4- Internet, e.mail server
5- Well-designed lecture halls.

Course Coordinator
Dr. Mahmoud Mostafa Younis

Head of Department
Prof. Dr. Maha El-Sawalhi

Department Approval Date: October 2014