Clinical Pharmacy Program
(2015-2016)

Course Specifications

A-Basic Information	
Course code:	EN 302
Course name:	Medical terminology
Credit hours of the course:	Lecture: 2 hr Practical:--- Total:2 hr
Pre-requisite of the course:	Registration
Department teaching the course:	Pharmacology & Toxicology
Program for which the course is given:	Clinical Pharmacy
Course Co-ordinator:	Dr Mohamed Hamzawy
Head of the Department:	Professor. Mona Hetta
Date of specifications approval:	٠٩/09/2015

B-Professional Information
1-Overall aims of the course:
The aim of this course is to enable the students to analyze a medical term into its component parts, root(s), prefix and suffix, that maintain the same meaning whenever they appear. By learning these meanings, the student will be able to recognize those term parts in totally new combinations and come to understand the meaning of even unfamiliar term to foster an attitude of advising the physician based on basic knowledge of therapeutics.
2-Intended learning outcomes (ILO's):

a-Knowledge and Understanding:

By the end of this course, the student should be able to:
a1- Display knowledge and understanding of the main principles of term analysis.
a2- Describe the meanings of a given prefix, suffix and combining form.
a3- State medical terms pertaining to normal and abnormal functions of human body systems.

b-Intellectual Skills:

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

b1-Work constructively and cooperatively within a team. (4-1-2-3)

b2- Enhance auto-learning abilities.

b3- Translate and express pharmaceutical and medical terms and abbreviations

c-Professional and Practical Skills:

By the end of this course, the student should be able to:
c1- Improve usage of scientific terms and presentation.
c2- Demonstrate parts of a medical term.

d-General Skills:

By the end of this course, the student should be able to:
d1- Communicate using medical scientific terms
d2-

3-Course contents:

Topic	No. of hours		
	Lecture	Practical	Total
Introduction, basic information of medical word; prefix, root, suffix.	2	-	2
Basic rules for building medical Terms	2	-	2
Medical terms related to Gastrointestinal system	2	-	2
Medical terms related to Respiratory system	2	-	2
Medical terms related to Nervous system	2	-	2

Medical terms related to Musculoskeletal system	2	-	2
Medical terms related to Cardiovascular and Lymph system	2	-	2
Medical terms related to Reproductive system	2	-	2
Medical terms related to Urinary system	2	-	2
Medical terms related to Endocrine system	2	-	2
Total	**20**	**-**	**20**

4-Teaching and Learning Methods (lectures, open discussion, role plays, ..etc):

1-Lectures
2-Open discussion
3-Presentations

5- Student Assessment:

a. Class work:
1. Quizzes and assignment
b. Final exam
Written theoretical

a-Assessment Methods and Weighing:

a. Class work (20%) distributed as:
1. Quizzes and assignment (20%)
b. Final exam (80%) distributed as:
1. Written theoretical (80%)
Total percentage 100%

b-Assessment Schedule:

- Class participation: Quiz 1: Week 4-5
  Quiz 2: Week 8-9
  Other activities: throughout the semester
- Final exam: According to semester timetable

6-List of References:

Fayoum University

Faculty of Pharmacy

Clinical Pharmacy Program
(2015-2016)

Course Notes	Uploaded on Faculty drive
Required Books	Medical Terminology Simplified by Barbra AGylys, Regina M. Masters; 4th edition
Recommended Books	Medical Terminology: a Living Language by Bonnie F. Fremgen, Suzanne S. Frucht An Introduction to Medical Terminology for Health Care bY Andrew R. Mutton 3rdEDITION Medical terminology for health professions BY ANN EHRLICH and CAROL L. SCHROEDER 6th Edition
Periodicals& Web Sites	http://www.abebooks.com/Mosbys-Medical-Nursing-Allied-Health-Dictionary/812631228/bd

Course Coordinator: Dr Mohamed Hamzawy

Head of Department: Prof. Mona Hetta

Date: /09/2015

Clinical Pharmacy Program
(2015-2016)

Course Specifications

A-Basic Information	
Course code:	**HU 30**
Course name:	**Psychology**
Credit hours of the course:	Lecture: 2 PracTotal:2
Pre-requisite of the course:	No
Department teaching the course:	Faculty of Arts, Psychology Department
Program for which the course is given:	Clinical Pharmacy Program
Course Co-ordinator:	
Head of the Department:	Prof. Mona Hetta
Date of specifications approval:	20/09/2015

B-Professional Information
1-Overall aims of the course:
The objective of this course is to help understand the behavior of the people around us. Including: different psychological processes, sensation, perception, conditioned learning, motivation and secondary psychological processes: Learning, memory, language and cognition, intelligence, personality, developmental psychology, environmental and child psychology. Mental Health: signs of good mental health and disturbances (neuroses and psychoses), conflicts and frustration as precursors to the neuroses, genetic predisposition and diseases as precursors to the psychoses, some of the main therapies in psychology.

Clinical Pharmacy Program
(2015-2016)

2-Intended learning outcomes (ILO's):

a- Knowledge and Understanding:

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

a1- List different principles and theories.

a2- Identify basic concepts of social psychology

b-Intellectual Skills:

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

b1- Analyze different behaviors of people.

c-Professional and Practical Skills:

By the end of this course, the student should be able to:
c1- Apply interpersonal; communication which relate to the pharmacy practice system that involves patient.

c2- Apply interpersonal; communication which relate to the pharmacy practice system that involves physicians.

c3- Apply interpersonal; communication which relate to the pharmacy practice system that involves nurses.

d-General Skills:

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

d1- Develop communication with the internet critically as a source of information about human psychology.

3-Course contents:

	No of hours		
	Lecture	**Practical**	**Total**
Different principles, theories and vocabulary of psychology as a science	2	0	2
Different principles, theories and vocabulary of psychology as a science	2	0	2
Basic concepts of social psychology	2	0	2

Basic concepts of medical psychology	2	0	2
Basic concepts of medical psychology	2	0	2
Basic concepts of medical psychology	2	0	2
Interpersonal communication which relate to the pharmacy practice system that involves patients	2	0	2
Interpersonal communication which relate to the pharmacy practice system that involves physician	2	0	2
Interpersonal communication which relate to the pharmacy practice system that involves nurses	2	0	2
Interpersonal communication which relate to the pharmacy practice system that involves other healthcare providers	2	0	2
Signs of good mental health and disturbances (neuroses and psychoses)	2	0	2
Revision	2	0	2
Total	**24**		**24**

4-Teaching and Learning Methods (lectures, open discussion, role plays, ..etc):

- Lectures.
- Open discussion.
- Assignments.
- Role plays.

5- Student Assessment:

a-Assessment Methods and Weighing:

- Written exams evaluate the levels of knowledge and understanding and Intellectual Skills.
- Periodic exams evaluate the levels knowledge and understanding and Intellectual Skills.
- Class participation: 10. %
- Final exam: 90. %

b-Assessment Schedule:

- Class participation: Quiz 1: Week 4- Quiz 2: Week 8-9
  Other activities: throughout the semester

- Final exam:	According to semester timetable

6-List of References:	
Course Notes	- Staff lectures handouts
Recommended Books	- British psychological society standards for undergraduate accreditation.

Course Coordinator:

Head of Department: Prof. Mona Hetta

Date: 20/09/2015

Course Specifications
(2015 –2016)

Pharmaceutical Analytical Chemistry II

PC 306

Course Specifications
(2015 –2016)
Pharmaceutical Analytical Chemistry

A. Basic Information

Program(s) on which the course is given	Bachelor of clinical pharmacy
Department offering the course	Pharmaceutical Analytical Chemistry department
Faculty offering the program	Faculty of pharmacy, Fayoum University
Dept. responsible for teaching the course	Pharmaceutical Analytical Chemistry department
Academic year / level	Second level, first semester
Course title	Pharmaceutical Analytical Chemistry II
Course code	PC306
Contact hours (credit hours)	Lecture 2 (2) + Practical 2 (1): Total 4 (3)
Pre-requisite of the course:	Pharmaceutical Analytical Chemistry I
Course coordinator	Dr/ Ragab Ahmed
Major or Minor element of program	Major
Date of specification approval	09/09/2015

B. Professional Information

1. Overall Aims of Course

1) The aim of the course is to provide students with an introduction to statistical analysis
2) Study oxidation-reduction titrations, (electrical properties of redox systems, factors affecting oxidation potential, redox titration curves).
3) Study complexometry (importance complex ones stability titration curves, application, direct EDTA titrations, masking and de-masking, non EDTA titrations).

2. Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

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

a_1- Illustrate the basic principles of volumetric analysis

a_2- Acquire much information about different quantitative analytical methods.

a_3- Recognize the suitable analytical methods for identification of different

pharmaceuticals

a_4- Understand the basics of oxidation-reduction titrations.

a_5-Understand complexometry (importance complex ones stability titration curves, application, direct EDTA titrations

b- Intellectual Skills

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

b_1- . Select appropriate analytical methods required for conformity of specifications of raw material.

b_2. Assess different methods for quanitative chemical analysis of different substance.

b_3 - Write a report on analysis of a chemical substance.

b_4- Demonstrate the principles and limitations of practical techniques.

c- Professional and Practical Skills

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

c_1. Apply the safe handling and safe disposal of chemicals according to the ethical and legal guidelines.

c_2. Apply the practical methods required for quantification of different compounds.

c_3- Standardize chemical reagents used in REDOX quantitative analysis.

c_4- Analyze different pharmaceutical substances through REDOX& complexometric analysis.

d- General and Transferable Skills

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

d_1. Interact and communicate by verbal and written means with other health care professionals in their own specialized language.

d_2. Team-working in diverse pharmaceutical & social settings.

d_3. Keep up with the pharmacy profession and pharmaceutical industry as a life -long independent continuing education post-graduation

d_4. Apply proper safety measures according to standard guidelines

work efficiently in laboratory.

Analyze, evaluate information and solve problems

ntents

ching eek	TOPIC	No. of lecture hours	No. of practical hours	Assessment of ILOs
1	Introduction to REDOX	2		a2, b1, d1
	Lab safety		2	
2	Quantitative analysis methods	2		a1, a2,a3,b1,b2, c1, c2, d2
	Standerdization		2	
3	Oxidation number	2		a1, a2,a4,b1,b2, c1, c2, d2
	Assay of oxalate		2	
4	Standards used in REDOX	2		a1, a5,a3,b1,b3, c1, c3, d1,d2
	Assay of ferrous		2	
5	Application-1 of REDOX	2		a1, a2,a4,b1,b2, c1, c3, d2, d3
	Assay of hydrogen peroxide		2	
6	Application-2 of REDOX- **Quiz 1**	2		a1, a2,a3,b1,b3, c1, c2, d1,d5
	Assay of nitrite		2	
7	Introduction to electro	2		a1, a2,a4,b1,b2, c1, c3, d2, d6
	Electro problems I		2	
8	Indicator Electrodes	2		a1, a2,a3,b2, c1, c2, d1
	Electro problems II		2	
9	Reference Electrodes	2		a2,a3,b1, c1, c2, d1,d6
	Electro problems III		2	
10	Application-1 of electro **Quiz 2**	2		a1, a4,a4, a5, b1,b2, c1, c3, c4, d2
	Revision		2	
11	Application-2 of electro	2		a2,a4, a5, b1, c1, c2, c4, d1, d5, d6
	Final practical exam			
otal no f hours		22	20	
1 & 12	**FINAL Exam**			

4. Teaching and Learning Methods

4.1- Lectures (board, data show, power point)	√
4.2- Interactive learning (Discussions, brain storming)	√
4.3- Self-study (Tutorials)	-
4.4- Practical (labs, tools, chemicals, glassware, equipment and instruments)	√
4.5- Other methods (Assignments)	√

5. Student Assessment Methods

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

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

5.3. Practical exams

Assessment Schedule

Quiz 1	5th week
Quiz 2	9th week
Practical exam	11th week
Final exam	12th week
Oral exam	12th week

Weighting of Assessments

Periodical	10%
Practical	25%
Final exam	50%
Oral exam	15%
Total	100%

6. List of References

6.1- Course Notes

Complied by the department

- Essential Books (Textbooks)

J. Mendham, R.C. Denney, J.D. Barnes and M.J.K. Thomas "Vogel's Textbook of quantitative chemical analysis" by Pearson education (6th edition) 2004

R.de Levie "principles of quantitative chemical analysis" by Mc Graw-HillCompanies.inc.1997.

G. D. Christin "Analytical chemistry" by John Wiley & sons inc. (5th edition) 1994

.3- Periodicals

Analytical letters

. pharmaceutical and biomedical analysis

Analytical chemistry

.4- Web Sites

ttps://pubs.acs.org/journal/ancham

ttps://www.degruyter.com/view/journals/revac/revac-overview.xml

Facilities required for teaching and learning

ecture rooms with data show

rocurement of latest edition of the above-mentioned texts and others to update the education

ess

Course Coordinator: Dr/ Ragab Ahmed

Head of Department: Prof/ Mona Hetta

Date: 09/09/2015

Course specifications

A-Basic Information	
Course code	PC304
Course name	Pharmaceutical organic Chemistry III
Credit hours of the course	Lecture: 2 Practical: 1 Total: 3
Pre-requisite of the course	Pharmaceutical organic Chemistry II
Department teaching the course	Pharmaceutical Medicinal Chemistry Department
Program for which the course is given	Clinical Pharmacy Program
Course coordinator	Dr. Mohammed Ibrahim Abd El Latif Hamed
Head of the department	Prof / Mona Hetta
Date of specifications approval	09/9/2015

B-Professional Information
1-Overall aims of the course: The aim of the course is to provide students with the fundamental principles of stereochemistry, in addition to chemistry of heterocyclic compounds with particular reference to heterocyclic of biological interest. The laboratory work involves purification of organic compounds by different methods. In addition to synthesis of some selected examples of heterocyclic organic compounds
2-Intended learning outcomes (ILO's):

مدير وحدة ضمان الجودة

a-Knowledge and Understanding:
By the end of this course, the student should be able to:
al- Recognize the nomenclature, structure, and physical properties of the different classes of theoretical basis of chemistry of heterocyclic compounds

a2-Know the methods of purification and preparation of some heterocyclic organic compour

b-Intellectual Skills:
By the end of this course, the student should be able to:
Bl. Sketch the structure and name the heterocyclic compounds

B2 .Apply the reaction mechanisms and employ the effect of condition on the type of produ

B3. Synthesize more complex classes of organic compounds.

c-Professional and Practical Skills:
By the end of this course , the student should be able to:
.cl. Synthesize preliminary heterocyclic compounds of different drug categories

.c2. Purify and identify the newly synthesized chemical compounds or drugs

.c3. Use spectral data to confirm the synthesized organic compounds

d-General Skills:
By the end of this course, the student should be able to:
D1. Communicate clearly by verbal and written means

.D2- Demonstrate self-learning needed for continuous professional development

3. Course content

Topics	lecturer	lecture	practical	tot
Introduction of stereochemistry and types of isomers Introduction and safety. Calculation	Dr/Farag Farouk	2	1	

moles of reactions and the				
representation and on of organic compounds by ation and sublimation and ation of its m.p	Dr/Farag Farouk	2	1	3
stereochemistry reactions on of some alcohol es and addition to carbonyl nds	Dr/Farag Farouk	2	1	3
iemistry of cyclohexane ring ion of some aldehydes and	Dr/Farag Farouk	2	1	3
clature, Synthesis, preparation emical reactions of aromatic de and ketone.	Dr/Farag Farouk	2	1	3
nclature of heterocyclic unds ation of some phenols tives	Dr/Farag Farouk	2	1	3
nclature of fused heterocyclic	Dr/Mohammed Ibrahim	2	1	3

Preparation of acids and amides derivatives				
Reaction and biological activity of 5-membered rings contain one heteroatom Preparation of some pyridine derivatives	Dr/Mohammed Ibrahim	2	1	3
Synthesis, reaction and biological activity of derivative of 5-membered rings Preparation of some diazine derivatives	Dr/Mohammed Ibrahim	2	1	3
Synthesis, reaction and biological activity of 5-membered rings contain more than one heteroatom Preparation of some imidazole derivatives	Dr/Mohammed Ibrahim	2	1	3
Synthesis, reaction and biological activity of 6-membered rings Preparation of some coumarin derivatives	Dr/Mohammed Ibrahim	2	1	3

sis fused five membered ycles (indole) n and practical schemes	Dr/Mohammed Ibrahim	2	1	3
sis fused six membered ycles(quinolone) al exam	Dr/Mohammed Ibrahim	2	1	3

hing and Learning Methods (lectures, open discussion, role plays . etc.):-

ctures (board, overhead projector, molecular models ,software chemistry programs and ıow)

torial and discussion sessions

actical sessions

ent Assessment:

ssment methods and weighing :

iz to assess the knowledge, understanding and intellectual skills of the course.

d-term written exam to assess the knowledge, understanding and intellectual skills of the previously studied sections course.

ıctical exam to assess the practical and professional skills gained by the students.

ıl written exam to assess all the knowledge and understanding of the different sections of the course.

al examination to assess all the intellectual skills and knowledge of the different sections of the course. -

ss participation: 10% .

ctical exam: 25% .

3.Oral exam: 15% . 4.Final exam: 50% .
b-Assessment Schedule: Class participation: Quiz 1: Week 4-5 Quiz 2: Week 8-9 Other activities: throughout the semester Practical exam :Week 13-14 Oral exam : According to semester timetable Final exam : According to semester timetable

6-list of references

Course notes	On ELS
Required books	Essential organic chemistry, paula YurkanisBruice.
Recommended books	- Fundamental of organic chemistry, J . McMurry and E.simanek , 6th edition - Organic chemistry , R.T Morrison and R.N. Boyd, 6th edition - Chemistry of pharmacy students , satyajit D, sarker - Mechanisms in advanced organic chemistry ,R.P narain (2008) - Stereochemistry , V.M POTAPOV (1979) - Organic stereochemistry , micheal J.T Robinson (1999) - **VOGEL** 'S 'textbook of practical organic

	chemistry ' brian S, furniss 5th edition .
Periodicals	Different pharmacopoeias (Egyptian & British).
Web sites	- Journal of organic chemistry - http://www.pubmed.com

Course Coordinator: Dr/Mohammed Ibrahim Abd El Latif Hamed

Head of Department: Prof/ Mona Hetta

Date: 09/9/2015

Course Specifications
(2015 –2016)

Pharmacognosy 2

PG303

Course Specifications
(2015 –2016)

Pharmacognosy Department

A. Basic Information

Program(s) on which the course is given	Bachelor of pharmacy (Pharm. D)
Department offering the course	Pharmacognosy department
Faculty offering the program	Faculty of Pharmacy, Fayoum University
Dept. responsible for teaching the course	Pharmacognosy department
Academic year / level	second level, first semester
Course title	Pharmacognosy 2
Course code	PG 303
Contact hours (credit hours)	Lecture 2 (2) + Practical 2 (1): Total 4 (3)
Pre-requisite of the course:	Pharmacognosy 1
Course coordinator	Prof. Mona Hetta
Major or Minor element of program	Major
Date of specification approval	9/09/2015

B. Professional Information

1. Overall Aims of Course

Based on the Egyptian flora and other florae of wild and cultivated medicinal plants that are used in the pharmaceutical, cosmetic and food industries in the global & Egyptian market. The course introduces students to some botanical drugs of subterranean, herbs, and unorganized drugs of marine and animal origin. During the lectures and practical sessions, students learn to identify examples of these drugs in their entire and powdered forms. Student will learn about the major constituents, folk uses, clinically proven uses, benefits, precautions of those medicinal plants. Possible herbal-drug interactions of selected examples of these drugs.

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2.Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

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

a1-Describe the histological structure of the different medicinal plant parts, subterranean and herbs

a2-Give an account on the biologically active principles in each plant part subterranean, herbs, and unorganized drugs of marine and animal origin as well as their biological activity.

a3-Define Complementary therapies, including herbal therapies.

a4-Explain the concepts of medicinal drugs from plant kingdom, their identification as well as, their proper collection, storage and marketing.

b- Intellectual Skills

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

b1-Determine unknown drugs subterranean, herbs, and unorganized drugs of marine and animal origin as (morphologically, microscopically and phytochemically)

b2-Judge whatever the powdered drug is related to subterranean, herbs, and unorganized drugs of marine and animal origin

c- Professional and Practical Skills

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

c1-Use the microscope to decide a given unknown plant powder and investigate its characteristic elements.

c2-Identify unknown powdered drug sample of subterranean, herbs, and unorganized drugs of marine and animal origin(morphologically, microscopically and phytochemically)

c3-Design and perform experiments for detection of adulteration

d- General and Transferable Skills

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

d1-Work effectively in team.

d2-Demonstrate written and oral communication skills.

d3-Performing online computer search to develop information technology skills and knowing how to retrieve information from a variety of sources.

d4-Keeping up with the pharmaceutical literature and with new developments of the pharmacy profession and pharmaceutical industry and appreciating the need for independent life-long continuing education, starting the day after the student graduates.

3. Contents

Teaching week	TOPIC	No. of lecture credit hours	No. of practical credit hours	
1	Introduction to Herb, Mentha, Thyme and Lobelia	2	1	
2	Herb: Cannabis, Datura, Hyoscymus, Belladonna	2	1	
3	Herb: Vinca, Ephedra, Cymbopogon, Fucus, Carrageen and Ergot	2	1	
4	-Unorganized drugs: Introduction, Opium, Aloes, Catechu, Agar, Gelatin and Gums, -(quiz. 1)	2	1	
5	Unorganized drugs: Colophony, Asafoetida, Myrrh, Benzoin, Cod-liver oil, Beeswax, Honey, Royal jelly, Musk and Ambergris	2	1	
6	Introduction Subterranean organs – Rhubarb	2	1	
7	Liquorice, Ginger and Curcuma	2	1	
8	Ipeca, Senega, Sarsaparilla, Colchicum and Jalap	2	1	
9	Rawolfia, Calumba, , Echinacea Squill -(quiz. 2)	2	1	
10	Animal drugs	2	1	
11	Practical Exam		1	
12	Final Exam			
	Total	**20**	**11**	

4. Teaching and Learning Methods]

4.1- Lectures (Tools: board, overhead projector, data show, online teaching).

4.2- Assignments: open discussion, seminars, researches and posters.

4.3- Practical Session (Tools: labs., boards, instruments, chemicals, glass wares, equipments).

5. Student Assessment Methods

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

5.2. Oral exams to assess all types of skills and mainly general, understanding and transferrable skills.

5.3. Practical examsto assess practical skills.

5.4. Periodic exam(s) to assess understanding and intellectual skills.

Assessment Schedule

Quiz 1	4th or 5th week
Quiz 2	8th or 9th week
Practical exam	11th week
Final exam	12th week
Oral exam	12th week

Weighting of Assessments:

Periodical	15%
Practical	25%
Final exam	50%
Oral exam	10%
Total	100%

5. List of References

6.1- Course Note: Lecture and practical notes prepared by instructors

6.2- Essential Books (Textbooks): Trease, G.E. & Evans, W.C.; "Pharmacognosy", W.B. Saunders Publishers, Ltd, 15th ed., 2002.

6.3- Periodicals:Pharmacognosy and phytochemistry journals

6.4- Web Sites: http://www.pubmed.com

http://www.botanical .com

http://www.herbmed.com

6. Facilities required for teaching and learning

1. Lecture rooms with data show
2. Computers and internet facilities for online teaching
3. Practical Session (Tools: labs., boards, instruments, chemicals, glass wares, equipments).
4. Procurement of latest edition of the above-mentioned texts and others to update the education process

Teaching Staffs: Prof. Mona Hetta& Prof. Khaled Elghondakly

Course Coordinator: Prof. Mona Hetta

Head of Department: Prof. Mona Hetta

Date: ٠٩/09/2015

Course Specifications
(2015 – 2016)

Course: Physiology

Course code: MD 305

A. Basic Information

Course title	Physiology
Course code	MD 305
Dept. responsible for teaching the course	Pharmacology & Toxicology
Credit hours of the course:	Lecture: 3
	Practical: 1
	Total: 4
Program(s) on which the course is given:	Clinical Pharmacy program
Pre-requisite of the course:	Registration
Course coordinator	Dr. Mohamed Hamzawy
Head of the Department	Prof. Mona Hetta
Date of specification approval	09/9/2015

B. Professional Information

1. Overall Aims of Course

The course aims to ensure that students have the necessary knowledge regarding homeostasis, body functions, and regulations.

2. Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

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

a1. Know homeostasis

a2. Know blood composition and functions.

a3. Understand physiological functions of cardiovascular, renal, respiratory, endocrine, and other systems.

b- Intellectual Skills

b1. Solve problems related to changes of homeostasis.

b2. Design the proper approach for maintaining the normal body functions.

b3. Evaluate the importance of the different functions of the body components.

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

c- Professional and Practical Skills

c1. Apply the proper techniques for evaluation of body functions.

c2. Select suitable tools for assessment of different physiological functions.

c3. Estimate the credibility of evidence based on knowledge of physiology.

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

c- General and Transferable Skills

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

d1. Have the power to work in team spirit condition.

d2. Show and practice critical thinking, problem solving.

3. Contents

Topic	No. of hours		
	Lecture	Practical	Total
Homeostasis	3	1	4
Cell membrane and structure	3	1	4
Nervous system	6	2	8
blood	3	1	4

Cardiovascular	6	2	8
Respiratory	3	1	4
Endocrinology	3	1	4
Renal system	3	1	4
Reproductive system	6	2	8
Total	39	12	48

4. Teaching and Learning Methods

4.1- Lectures.

4.2- Practical sections.

4.3- Open discussion.

4.4- Assignments.

4.5- Role plays.

Student Assessment Methods

5.1. Written exams evaluate the levels of knowledge, understanding and intellectual skills.

5.2. Practical exams evaluate the levels of practical skills.

5.3. Periodic exams evaluate the levels of knowledge, understanding, and intellectual skills.

Assessment Schedule

Class participation: Quiz 1: week 4-5

Quiz 2: week 8-9

Practical Exam: week 12

Practical exam: week 13-14

Oral exam: according to semester timetable

Final exam: according to semester timetable

Weighting of Assessments

Class participation: 10%

Practical exam: 25%

Final exam: 65%

Total: 100%

5. List of References

6.1- Course Notes: Course note prepared by staff members of the department.

6.2- Required Books: Essentials of Human physiology for pharmacy.

6.3- Recommended Books:

Guyton and Hall. (2016).

Textbook of Medical Physiology, 13th edition, Philadelphia, PA, El Sevier.

6.4- periodicals: Clinical and Experimental pharmacology and physiology.

6.5- Web sites: www.pubmed.com

Facilities required for teaching and learning

1. Lecture rooms with data show
2. Procurement of latest edition of the above-mentioned texts and others to update the education process

Course Coordinator: Dr. Mohamed Hamzawy

Head of Department: Prof. Mona Hetta

Date: 09/9/2015

ayoum University

Faculty of Pharmacy

Clinical Pharmacy Program

Course Specifications

-Basic Information	
ourse code:	**MD 304**
ourse name:	**Anatomy**
redit hours of the course:	Lecture: 1 Practical:1 Total:2
re-requisite of the course:	No
epartment teaching the course:	Faculty of Medicine, Anatomy and Histology Department
rogram for which the course is given:	Clinical Pharmacy Program
ourse Co-ordinator:	
ead of the Department:	Prof. Mona Hetta
ate of specifications approval:	20/09/2015

-Professional Information

Overall aims of the course:

ıe course aims to enhance the student's knowledge about anatomy of skeletal system, uscular system, articular system, fascia, cardio-vascular system, lymphatic system, nervous 'stem, digestive system, respiratory system, euro-genital system, endocrine glands, cytology ıd blood as well as structure of liver, spleen, lungs, kidney, lymph nodes, cardiac muscle, ɔmach, intestine and Aorta.

Intended learning outcomes (ILO's):

Knowledge and Understanding:

3y the end of this course, the student should be able to:

a1- Mention basic concepts of human anatomy of systems of the body.

a2- Identify anatomical principles for systems of the body related to human health and diseases

a3- Label human anatomy of systems of the body

b-Intellectual Skills:

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

b1- Summarize information from a number of sources in order to gain a coherent understanding of human anatomy of systems of the body

b2- Analyze the function of systems of the body.

b3- Outline the organs of each system.

c-Professional and Practical Skills:

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

c1- Apply understanding of human anatomy of systems of the body demonstration of evidence based practice.

d-General Skills:

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

d1- Develop communication with the internet critically as a source of information about human anatomy of systems of the body

d2- Organize working as a team member in collecting valuable information of evidence-based practice.

Course contents:

	No of hours		
	Lecture	**Practical**	**Total**
Introduction& terminology	1	1	2
Skin and fascia	1	1	2
Skeletal system and Muscles	1	1	2

Articular system	1	1	2
Cardiovascular system	1	1	2
Respiratory system	1	1	2
Digestive system	1	1	2
Urinary system	1	1	2
Genital system and glandular system	1	1	2
Lymphatic system	1	1	2
Nervous system	1	1	2
Blood and cytology	1	1	2
Total	**12**		**24**

4-Teaching and Learning Methods (lectures, open discussion, role plays, ..etc):

- Lectures.
- Practical sections.
- Open discussion.
- Assignments.
- Role plays.

5- Student Assessment:

a-Assessment Methods and Weighing:

- Written exams evaluate the levels of knowledge and understanding and Intellectual Skills.
- Periodic exams evaluate the levels knowledge and understanding and Intellectual Skills.
- Practical exams evaluate the levels of the practical Skills.
- Class participation: 10. %
- Practical exam: 25 %
- Final exam: 65. %

b-Assessment Schedule:

- Class participation: Quiz 1: Week 4-5

Quiz 2: Week 8-9 Other activities: throughout the semester - Practical exam: Week 12 - Final exam: According to semester timetable

6-List of References:	
Course Notes	- Human Anatomy and Histology department Book - Practical book of Anatomy for medical students' course
Recommended Books	- Snell, R.: Clinical Anatomy, 7th edition, 2002 Lippincott, Williams & Wilkins.q2w - Before we are born. By K.L. Morre and T.V.N. Persaud,
Web Sites	- Gray anatomy - www.innerbody.com - Anatomy & Physiology

Course Coordinator:

Head of Department: Prof. Mona Hetta

Date: 20/09/2015

Course Specifications
(2015 – 2016)

Course: Parasitology

Course code: MD 406

Course Specifications
(2015 – 2016)

Course: Parasitology

Course code: MD 406

Course Specifications
(2015 – 2016)

A. Basic Information

Program(s) on which the course is given:	Clinical
Department offering the course	Microbiology
Faculty offering the program	Pharmacy
Dept. responsible for teaching the course	Microbiology
Academic year / level	2nd
Course title	Parasitology
Course code	MD 406
Contact hours (credit hours)	3
Pre-requisite of the course:	No
Course coordinator	
Major or Minor element of program	Major
Date of specification approval	17/01/2016

B. Professional Information

1. Overall Aims of Course

Introduction, protozoology; amoebae; ciliate; flagellates; blood and tissue protozoa. Medical helminthology; nematodes; custodies; treaties, and arthropods.

2. Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

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

a1 Demonstrate the taxonomic affiliation of specific parasitic examples.

a2. Discuss the adaptations of parasites and their host specificity

a3. Compare the life cycles of various parasites

b- Intellectual Skills

b1. Identify the medical losses due to parasitic infections

b2. Gain the practical skills of identifying, classifying and drawing parasitic examples

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

c- **Professional and Practical Skills**

c1. Correlate parasite infections with certain pathological manifestations

c2. Discuss the relation of parasite infections and environmental factors

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

c- General and Transferable Skills

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

d1. Show the risk factor of parasite infections

3. Contents

Teaching week	TOPIC	No. of lecture hours	No. of Practical hours
1	Introduction	2	1
2	Host-parasitic relationships	2	1
3	Amoeba	2	1
4	Ciliates	2	1
5	Flagellates	2	1
6	First periodic exam	2	1
7	Blood and tissue protozoa	2	1
8	Blood and tissue protozoa	2	1
9	Medical helminthology	2	1
10	Medical helminthology	2	1
11	Medical helminthology	2	1
12	Second periodic exam	2	1
Total no of hours	36		

13	FINAL Exam

Teaching and Learning Methods

1- Lectures (board, data show)

2- Assignments

3- Class discussion

Student Assessment Methods

1. Practical exams to assess knowledge and understanding as well as intellectual skills.

5.2. Written, periodic and oral exams to assess all types of skills and mainly general and transferrable skills practice.

Assessment Schedule

Quiz 1	6th week
Quiz 2	12th week
Final exam	13th week; according to semester schedule

Weighting of Assessments

Oral	15%
Practical	25%
Periodical	10%
Final exam	50%
Total	100%

List of References

6.1- Course Notes: Lecture notes in Parasitology

6.2- Essential Books (Textbooks)

Human Parasitology by Thomas N. Oeltmann, Burton J. Bogitsh and Clint E. Carter

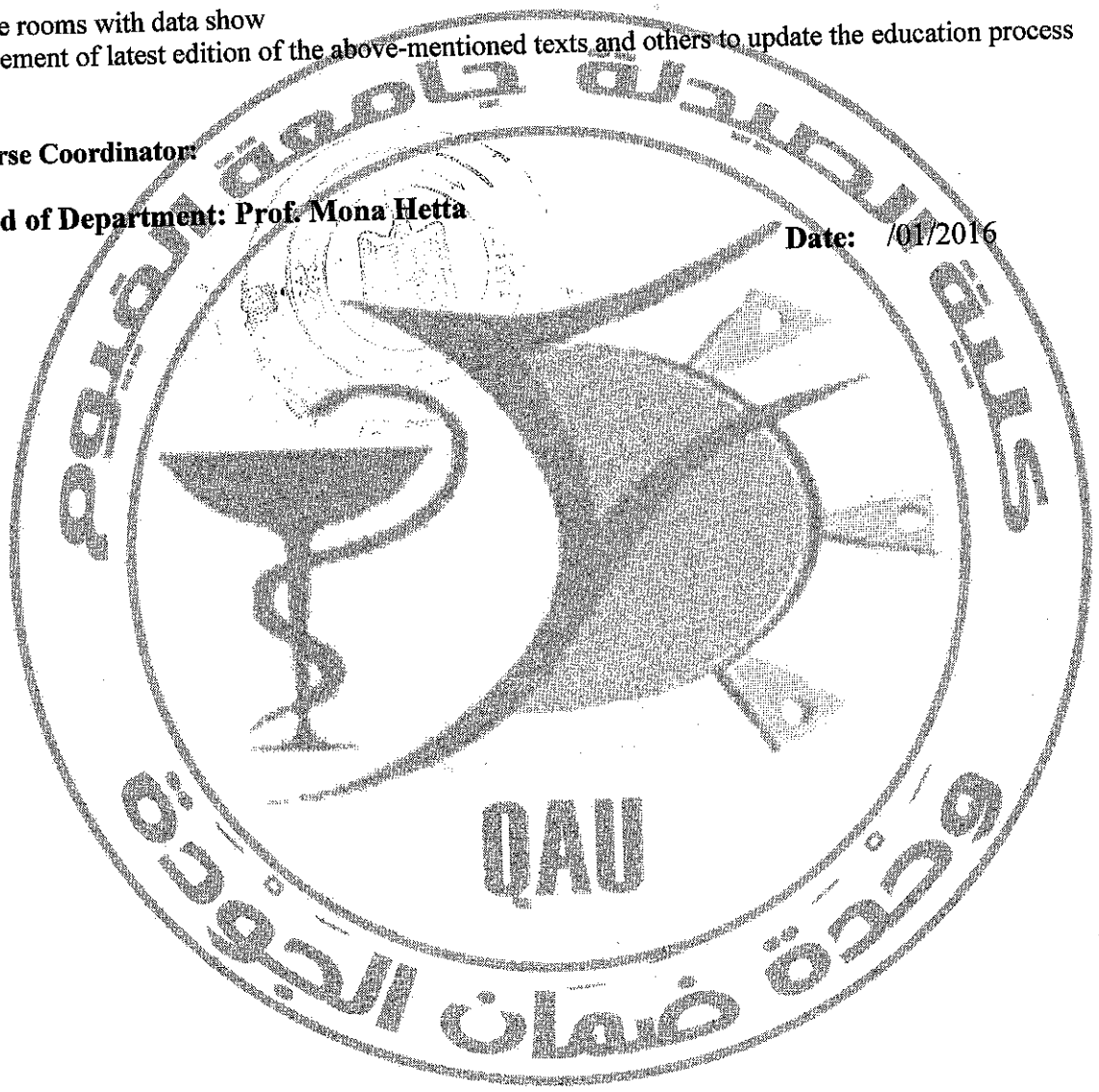
acilities required for teaching and learning

ture rooms with data show
curement of latest edition of the above-mentioned texts and others to update the education process

ourse Coordinator:

lead of Department: Prof. Mona Hetta

Date: /01/2016



Course Specifications
(2015 –2016)

Phytochemistry I

PG404

Course Specifications
(2015 –2016)
Pharmacognosy department

A- Basic information

Program(s) on which the course is given	Bachelor of clinical pharmacy
Department offering the course	Pharmacognosy department
Faculty offering the program	Faculty of Pharmacy, Fayoum University
Dept. responsible for teaching the course	Pharmacognosy department
Academic year / level	Third level, first semester
Course title	Phytochemistry 1
Course code	PG 404
Contact hours (credit hours)	Lecture 2 (2) + Practical 2 (1): Total 4 (3)
Pre-requisite of the course:	Pharmacognosy 1
Course coordinator	Prof. Dr/ Mona Hetta
Major or Minor element of program	Major
Date of specification approval	17/01/2016

Professional Information

Overall aims of the course:

Upon successful completion of this course the students should be able to illustrate the synthetic pathways, chemical classes, chemical structures, methods of extractions and lations, methods of identification and assays and chemical reactions of volatile oils, resin d carbohydrates.

Intended learning outcomes (ILO's):

Knowledge & Understanding Skills

the end of this course, the student must be able to:

Discuss principles of quality control and different techniques used for lity control of herbal drugs.

Confirm the purity, safety and efficacy of different natural drug, as well as, r common adulterants, diluents, deteriorating and spoiling agents.

ntellectual Skills

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y the end of this course, the student should be able to:

-Solve problems encountered during extraction and isolation.

- Design a suitable method for identification and assays.

-Evaluate which of these constituents are biologically active.

Professional and/or Practical skills

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

Apply the suitable technique for qualitative and quantitative determination.

Select the proper solvents and technique for extraction.

Estimate the percentage of these constituents in the plant and crude extract.

General & transferable Skills

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

Have the power to work effectively in team.

Demonstrate written and oral skills.

Performing on-line computer search to developed information technology

ls.

ontents

ching eek	**TOPIC**	**No. of lecture credit hours**	**No. of practical credit hours**	**Assessment of ILOs**
1	Volatile oil introduction	2	1	
2	HydrocarbonsAlcohols and Phenols	2	1	
3	Aldehydes and ketones	2	1	
4	Esters- Oxides-peroxides	2	1	
5	Resin and resin combination	2	1	
6	Tannins	2	1	
7	Bitter principles	2	1	
	Carbohydrates introduction	2	1	
	Monosaccharides	2	1	

10	disaccharides and Oligosaccharides	2	1	
11	Polysaccharides	2	1	
12	Drug containing carbohydrates	2	1	
Total		**24**	**12**	

4-Teaching and Learning Methods (lectures, open discussion, role plays, ..etc):

4.1 Lectures (Tools, board, data show).
4.2 Practical session (Tools, labs, boards, instruments, chemicals, glassware).
4.3 Assignments, seminars, researches and posters.

5- Student Assessment:

a-Assessment Methods and Weighing:

- Written exams to access knowledge and understanding and Intellectual Skills.
- Practical exams to access practical Skills.
- Periodic exams to access knowledge and understanding and Intellectual Skills.
- Oral exams to access knowledge and understanding and Intellectual Skills.

Class participation: 10 %
Practical exam: 25 % (Lab exam 15%, Semester Work 5%, Project presentation 5%)
Oral exam: 15 %
Final exam: 50 %

b-Assessment Schedule:

Class participation: Quiz 1: Week 4-5
Quiz 2: Week 8-9
Other activities: throughout the semester
Practical exam: Week 13-14
Oral exam: According to semester timetable
Final exam: According to semester timetable

6-List of References:

Course Notes: on ELS
Required Books: Lectures and practical notes prepared by instructors.
Recommended Books: Phytochemistry, Shafeek Balbaa
Periodicals: Natural Compounds, Shakhnoza S. Azimova, Editor Marat S. Yunusov Co-Editor
Web Sites: Journal of Natural Products and Phytochemistry
http://www.pubmed.com

Course Coordinator: Prof. Mona H. Hetta
Head of the Department: Prof. Mona H. Hetta
Date: 17/01/2016

Course Specifications

Pharmaceutical dosage form-1 (PT 403)

Level 2

Semester 4

Course Specification

A-Basic Information	
Course code:	PT403
Course name:	Pharmaceutical dosage form-1
Credit hours of the course:	Lecture: 2 Practical: 1 Total: 3
Pre-requisite of the course:	Physical Pharmacy
Department teaching the course:	Pharmaceutics
Program for which the course is given:	Clinical Pharmacy Program
Course Co-coordinator:	Dr. Doaa Helal
Head of the Department:	Prof Dr. Mona Hetta
Date of specifications approval:	17/1/2016

B-Professional Information
1- Overall aims of the course:
By the end of this course the students should be able to recognize : study of the system of weights, measures, mathematical expertise and pharmaceutical calculations requisite to the compounding, dispensing, and utilization of drugs in Pharmacy practice. It is also concerned with all manufacturing formulations aspects, packaging ، storage and stability of liquid dosage forms including solutions (aqueous and non-aqueous suspensions, emulsions and colloids with emphasis on the technology and pharmaceutical rational Fundamental to their design and development.
2-intended learning outcomes (ILO'S)
a- knowledge and understanding by the end of this course, the student should be able to :

A1.Understand and apply the fundamental systems of weights and measures used in pharmacy practice (e.g., metric, apothecary, and avoirdupois systems).

A2.Solve problems involving mathematical expertise, such as calculating dose conversions, preparation of solutions, and scaling formulations.

A3.Understand the different types of liquid dosage forms (aqueous solutions, non-aqueous solutions, suspensions, emulsions, and colloidal systems) and their respective applications in pharmacy.

A4.Recognize the factors influencing the selection of liquid dosage forms based on the physicochemical properties of the drug and the intended therapeutic effect.

B. intellectual Skills

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

B1- Compare between different techniques used in production of liquid dosage forms

B2-Critically analyze the properties of different liquid dosage forms (solutions, suspensions, emulsions, and colloids) and synthesize information to determine the most suitable formulation for a given drug or patient condition.

.b3-assess the selection of excipients based on their role in the stability, bioavailability, and patient acceptability of liquid formulations.

.b4- Analyze and predict the stability of liquid dosage forms by considering factors such as temperature, pH, light, and microbial contamination.

c-Professional and Practical Skills

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

C1.Prepare liquid formulations accurately by following standard operating procedures (SOPs) for mixing, dissolving, and homogenizing active ingredients and excipients.

C2.Perform calculations related to formulation preparation, including weight-to-volume, volume-to-volume, and concentration adjustments.

d-General Skills:

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

d1. Use internet in research and communications.

d2. Work effectively in a team during applications of instrumental analysis of different pharmaceutical preparations.

3- Course contents:			
Topic	**No. of hours**		
	Lecture	**Practical**	**Total**
Systems of measurements and inter-systems conversions	2	1	3
Density, specific gravity, specific volume and temperature conversion.	2	1	3
Percentage preparations, ratio strength, and Dilution and concentration.	2	2	4
IV admixture and dose calculation	2	2	4
Pharmaceutical solutions	2	2	4
Colloids	2	2	4
Suspensions	2	2	4
Emulsions	2	2	4
Total	16	14	30

4- Teaching and Learning Methods (lectures, open discussion, role plays…etc.):
- Lectures, using Power point presentation - Open discussion - Practical labs……

a- Assessment Methods and Weighing	
- Class participation: 10% - Practical Exam: 25% - Oral Exam15% - Final Exam: 50%	
b- Assessment Schedule:	
- Class participation:	Quiz 1: Week 4-5 Quiz 2: Week 8-9 Other activities: throughout the semester
- Practical Exam:	Week 13-14
- Oral Exam:	According to semester timetable
- Final Exam:	According to semester timetable

Course Coordinator: Dr. Doaa Helal

Head of Department: Prof. Dr. Mona Hetta

Date: 17/01/2016

Course Specifications
(2015 –2016)

Basic Microbiology and Immunology

PM 401

Course Specifications
(2015 –2016)

Basic Microbiology and Immunology

PM 401

Clinical Pharmacy Program

Course Specifications
(2015 –2016)

Microbiology and Immunology Department

ısic Information

ɔgram(s) on which the course is given	Clinical program
partment offering the course	Microbiology and Immunology
ɔulty offering the program	Pharmacy
ɔpt. responsible for teaching the course	Microbiology and Immunology
ademic year / level	2
ɔurse title	General Microbiology and Immunology
ɔurse code	**PM401**
ɔntact hours (credit hours)	3
ɛ-requisite of the course:	No
ɔurse coordinator	Dr. Mahmoud Khalil
ajor or Minor element of program	Major
ıte of specification approval	17/01/2016

·ofessional Information

ɣerall Aims of Course

he course aim and intended learning outcomes are based on that mentioned in the program ecifications, with more course-related specific details.)

ıe students should know different categories of microorganisms including bacteria, viruses fungi. They should understand their classification, structure, growth characteristics & ɔlication. Students should understand basics of microbial genetics, including DNA, RNA & ɔteins structure, gene transfer in bacteria and gene expression & control.They should also ırn about human immune system, innate and acquired immune response.

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2. Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

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

a1-Know and describe the classification, morphology, and physiology of different categories of microorganisms (bacteria, viruses & fungi).

a2. Discuss the main information about bacterial metabolism and bacterial growth.

a3. Discuss the basics of microbial genetics.

a4. Explain basics of immunology and immunological response.

b- Intellectual Skills

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

b1. Differentiate between different microbial categories & Distinguish techniques for isolation and identification of microorganisms.

b2. Understand basic microbial genetics

b3. Realize how the immune system respond to exogenous and endogenous antigen

c- Professional and Practical Skills

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

c1- Perform different techniques for bacterial staining.

c2. Learn how to work in a septic area to perform different microbiological tasks such as pour plate technique, Isolate and identify pure colonies of a mixture of micro-organisms viable count.

d- General and Transferable Skills

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

d1. Communicate clearly by verbal means through group discussions.

d2. Retrieve and evaluate information from different sources.

d3. Team work through working as groups in the practical part.

3. Contents

Teaching week	TOPIC	No. of lecture hours	Assessment of ILOs
1	Historical overview and Fungi	2	a1, a2, , b1,b2,c1,c2
2	Viruses	2	a1, a2,a3, b1,b2,c1, d1
3	Prokaryotic & bacterial cell structure	2	a1, a2,a3, b1,b2,c1,c2, d1
4	Microbial metabolism	2	a1, a2,a3, b1,b2,c1,c2, d1
5	Bacterial Structures and function Out Side cell wall	2	a1, a2,a3, b1,b2c1,c2, d1
6	Bacterial Structures and function inside cell wall	2	a1, a2,a3, b1,b2,c1,c2, d1
7	Microbial growth	2	a1, a2,a3, b1,b2,c1,c2, d1
8	Microbial genetics1	2	a1, a2,a3, b1,b2,c1,c2, d1
9	Microbial genetics2	2	a1, a2,a3, b1,b2,c1,c2, d1
10	Host parasite relationship & Innate (natural) immunity	2	a1, a2,a3, b1,b2,c1,c2, d1
11	Adaptive immunity& Active & passive immunization	2	a1, a2,a3, b1,b2,c1,c2, d1
12	Hypersensitivity reactions, Autoimmunity immunodeficiency and organ transplantation	2	a1, a2,a3, b1,b2,c1,c2, d1
Total no of hours	24		
13	FINAL Exam		

4. Teaching and Learning Methods

4.1- Lectures (board, data show)

4.2- Assignments

4.3- Class discussion

5. Student Assessment Methods

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

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

5.3. Practical exams

Assessment Schedule

Quiz 1	4th or 5th week
Quiz 2	8th or 9th week
Practical exam	….th week
Final exam	….th week
Oral exam	….th week

Weighting of Assessments

Periodical	15%
Practical	25%
Final exam	50%
Oral exam	10%
Total	100%

6. List of References

6.1- Course NotesHandouts will be given

6.2- Essential Books (Textbooks).

- **Brown, A. E. (2005) Benson`s Microbiological Applications. Laboratory Manual in General Microbiology. 9th edn.**

. McGraw-Hill: Boston.W.B. Hugo & A.D. Russell, 2009, Pharmaceutical Microbiology (18th edition) Blackwell Scientific Publication

6.3- Periodicals …

6.4- Web Sites …..

7. Facilities required for teaching and learning

1. Lecture rooms with data show
2. Procurement of latest edition of the above-mentioned texts and others to update the education process

Course Coordinator: Dr. Mahmoud Khalil

Head of Department: Prof. Mona Hetta

Date: /01/2016

Course Specifications
(2015 –2016)

Instrumental analysis

PC 407

Course Specifications
(2015 –2016)
Pharmaceutical Analytical Chemistry

A. Basic Information

Program(s) on which the course is given	Bachelor of pharmacy
Department offering the course	Pharmaceutical Analytical Chemistry department
Faculty offering the program	Faculty of pharmacy, Fayoum University
Dept. responsible for teaching the course	Pharmaceutical Analytical Chemistry department
Academic year / level	Second level, second semester
Course title	Instrumental analysis
Course code	PC 407
Contact hours (credit hours)	Lecture 1 (1) + Practical 2 (1): Total 3 (2)
Pre-requisite of the course:	Registration
Course coordinator	Dr/ Ragab Ahmed
Major or Minor element of program	Major
Date of specification approval	17/01/2016

B. Professional Information

1. Overall Aims of Course

1. Understand the principles behind major analytical instruments such as UV-Vis spectrophotometers, HPLC, GC, and mass spectrometry.
2. Apply instrumental techniques for the qualitative and quantitative analysis of pharmaceutical compounds.
3. Develop the ability to select appropriate instrumental methods based on the nature of the sample and the required analysis.
4. Interpret and analyze data generated from various instruments to identify and quantify substances.
5. Demonstrate proficiency in the use of laboratory equipment for chromatographic and spectroscopic analysis.
6. Troubleshoot common issues in instrumental analysis, ensuring accurate and reliable results.
7. Critically evaluate the limitations and advantages of different instrumental techniques in pharmaceutical research and quality control.
8. Apply theoretical knowledge to real-world pharmaceutical problems, enhancing understanding of drug purity, concentration, and interactions using modern analytical tools.

2. Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

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

a_1- Describe the basic principles and theory behind major instrumental analysis techniques such as spectroscopy, chromatography, and electrochemical methods.

a_2- Identify the appropriate analytical techniques for specific types of pharmaceutical samples and substances.

a_3- Understand the role of instrumental analysis in quality control and drug development within the pharmaceutical industry.

a_4- Explain the scientific basis of quantitative and qualitative analysis of drugs using instrumental methods.

b- Intellectual Skills

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

b_1- Critically evaluate the advantages and limitations of different instrumental techniques for drug analysis.

b_2- Interpret and analyze data obtained from various instrumental methods to ensure accuracy and reliability.

b_3 - Apply problem-solving skills to select the best analytical technique for a given pharmaceutical problem.

b_4- Develop strategies for optimizing instrumental conditions to achieve accurate and reproducible results.

c- Professional and Practical Skills

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

c_1. Operate a range of instrumental analysis equipment, such as HPLC, UV-Vis spectrophotometers, and GC, with proper calibration and maintenance.

c_2. Conduct experiments to assess the purity, potency, and concentration of pharmaceutical substances using instrumental methods.

c_3- Ensure compliance with Good Laboratory Practices (GLP) and safety standards during instrumental analysis procedures.

c_4- Record, analyze, and present experimental results following the scientific method and professional reporting standards.

d- General and Transferable Skills

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

d_1. Collaborate effectively with peers and multidisciplinary teams to perform and interpret experimental analyses.

d_2. Communicate complex scientific data and interpretations in a clear, concise manner through written reports, presentations, and discussions.

d_3. Demonstrate efficient time management skills in balancing laboratory work, data analysis, and report writing to meet deadlines.

d_4. Use relevant software and digital tools for data analysis, result interpretation, and graphical representation of experimental findings.

d_5- Develop problem-solving strategies for troubleshooting technical issues with instruments and analyzing unexpected data results.

d_6. Engage in self-directed learning to stay updated on new analytical technologies and methodologies, promoting lifelong learning and professional growth.

3. Contents

Teaching week	TOPIC	No. of lecture hours	No. of practical hours	Assessment of ILOs
1	Introduction to Instrumental Analysis: Basic Concepts and Importance	1		a2, b1, d1
	Introduction to Lab Safety and Instrumental Analysis Tools		2	
2	UV-Visible Spectrophotometry: Theory and Applications	1		a1, a2,a3,b1,b2, c1, c2, d2
	Calibration and Operation of UV-Visible Spectrophotometers		2	
3	Fluorescence and Phosphorescence Spectroscopy	1		a1, a2,a4,b1,b2, c1, c2, d2

	Quantitative Analysis of a Drug by UV-Vis Spectrophotometry		2	
4	Atomic Absorption and Emission Spectroscopy	1		a1, a5,a3,b1,b3, c1, c3, d1,d2
	Fluorescence Measurement of Pharmaceutical Compounds		2	
5	Infrared (IR) Spectroscopy: Molecular Vibrations and Functional Groups	1		a1, a2,a4,b1,b2, c1, c3, d2, d3
	Analysis of Metals using Atomic Absorption Spectroscopy		2	
6	Nuclear Magnetic Resonance (NMR) Spectroscopy: Principles and Applications	1		a1, a2,a3,b1,b3, c1, c2, d1,d5
	Interpretation of IR Spectra for Functional Group Identification		2	
7	Mass Spectrometry: Ionization Techniques and Data Interpretation	1		a1, a2,a4,b1,b2, c1, c3, d2, d6
	NMR Spectrum Interpretation of Organic Compounds		2	
8	High-Performance Liquid Chromatography (HPLC): Separation Principles	1		a1, a2,a3,b2, c1, c2, d1
	Mass Spectrometry Data Interpretation for Drug Fragmentation		2	
9	Gas Chromatography (GC): Techniques and Pharmaceutical Applications	1		a2,a3,b1, c1, c2, d1,d6
	Separation of Compounds by High-Performance Liquid Chromatography (HPLC)		2	
10	Capillary Electrophoresis: Fundamentals and Applications in Drug Analysis	1		a1, a4,a4, a5, a6, b1,b2, c1, c3, c4, d2
	Analysis of Volatile Compounds		2	

	using Gas Chromatography (GC)			
11	Electrochemical Methods: Potentiometry, Voltammetry, and Applications	1		a2,a4, a5, a6, b1, c1, c2, c4, d1, d5, d6
	Final practical exam			
Total no of hours		11	20	
11 & 12	**FINAL Exam**			

4. Teaching and Learning Methods

4.1- Lectures (board, data show, power point) √

4.2- Interactive learning (Discussions, brain storming) √

4.3- Self-study (Tutorials) -

4.4- Practical (labs, tools, chemicals, glassware, equipment and instruments) √

4.5- Other methods (Assignments) √

5. Student Assessment Methods

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

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

5.3. Practical exams

Assessment Schedule

Quiz 1 5th week

Quiz 2 9th week

Practical exam 11th week

Final exam 12th week

Oral exam 12th week

Weighting of Assessments

Periodical 10%

Practical 25%

Final exam	50%
Oral exam	15%
Total	100%

6. List of References

6.1- Course Notes

Complied by the department

6.2- Essential Books (Textbooks)

[1] D. A. Skoog, F. J. Holler, and S. R. Crouch, Principles of Instrumental Analysis, 7th ed. Belmont, CA: Brooks/Cole Cengage Learning, 2017.

[2] H. H. Willard, L. L. Merritt, J. A. Dean, and F. A. Settle, Instrumental Methods of Analysis, 7th ed. New Delhi: CBS Publishers, 2012.

[3] D. L. Pavia, G. M. Lampman, and G. S. Kriz, Introduction to Spectroscopy, 5th ed. Boston, MA: Cengage Learning, 2014.

[4] D. C. Harris, Quantitative Chemical Analysis, 9th ed. New York, NY: W. H. Freeman, 2016.

[5] D. A. Skoog, D. M. West, F. J. Holler, and S. R. Crouch, Fundamentals of Analytical Chemistry, 9th ed. Belmont, CA: Cengage Learning, 2014.

6.3- Periodicals

-Analytical letters

-J. pharmaceutical and biomedical analysis

-Analytical chemistry

6.4- Web Sites

https://www.journals.elsevier.com/journal-of-pharmaceutical-and-biomedical-analysis

https://pubs.acs.org/journal/ancham

https://www.degruyter.com/view/journals/revac/revac-overview.xml

7. Facilities required for teaching and learning

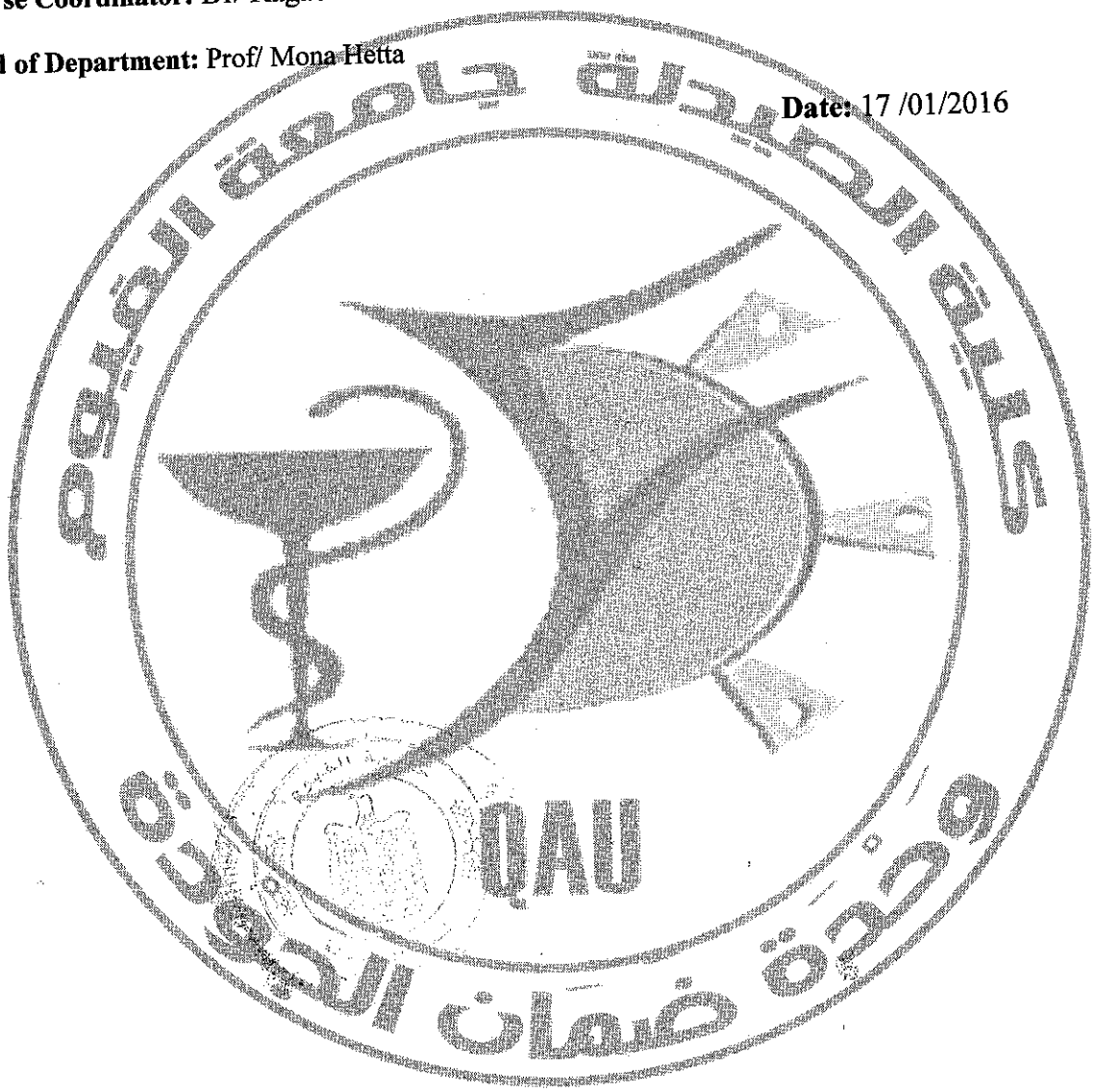
1. Lecture rooms with data show

2. Procurement of latest edition of the above-mentioned texts and others to update the education process

Course Coordinator: Dr/ Ragab Ahmed

Head of Department: Prof/ Mona Hetta

Date: 17 /01/2016



Course Specifications
(2015 – 2016)

Course title: Biochemistry-1

Course code: PB 401

A. Basic Information:

Course Title:	Biochemistry-1		
Course Code:	PB 302		
Program on which the course is given:	Clinical		
Department offering the course:	Biochemistry		
Academic year/ level:	2nd Semester 2015/2016	Level:2	
Prerequisite:	Organic chemistry		
Credit hours:	Lecture:2	Practical:1	Total:3

B. Professional Information

1. Course Aims:

The course aims to understand the basic principles of biochemistry and its importance for living organisms and integrates chemical structure of macromolecules (carbohydrates, proteins, lipids) with its functions. It describes the general characters of enzymes, functions, mechanisms of action, kinetics, and regulation. It explains concepts as vitamins, porphyrins and biological oxidation.

2. Intended Learning Outcomes (ILOs):

a. Knowledge and understanding:

At the end of this course, student should be able to:

A1	a1.	Identify the basic principles of biochemistry, including chemistry of carbohydrates and their classification, structure and function.
A4	a2.	List the chemical structures of proteins and lipids macronutrients and illustrate their functions.
	a3.	Enumerate the theories of enzyme action, enzymes inhibition and the role of enzymes in disease diagnosis.
	a4.	Describe vitamins; chemical structure, function, properties and deficiency problems, and recognize porphyrins, biological oxidation and electron transport chain.

b. Intellectual Skills:

At the end of this course, student should be able to:

B18	b1.	Correlate basic biochemical facts of carbohydrates with its importance in the formation of nucleic acid and immune response in the body
	b2.	Evaluate the importance of lipids as precursor of prostaglandins, leukotrienes and thromboxane
	b3.	Integrate basic biochemical facts concerning body peptides, proteins, nucleoprotein and enzymes with its role in human body functions.
B21	b4.	Predict symptoms end effects of vitamins deficiencies in a given case study report

c. Professional and Practical Skills:

At the end of this course, student should be able to:

C2	c1.	Handle and dispose laboratory reagents safely using instruments in biochemistry laboratory
C11	c2.	Conduct research studies concerning important molecules (lipoproteins, porphyrins, mucopolysaccharides and enzymes) in the body including presentation, and interpretation of biochemical data.
C14	c3.	Employ different qualitative diagnostic tests for different types of carbohydrates, proteins and lipids.

d. General and Transferable Skills:

At the end of this course, student should be able to:

D3	d1.	Work effectively as a part of a team to perform the required tasks.
D4	d2.	Collect, evaluate and present data.
D6	d3.	Develop the skills required for continued self-professional development and self-learning.

3. Contents:

3.1. Lectures:

Study week	Topics	No. of Credit Hours
1.	Basic principles of carbohydrates chemistry; monosaccharaides structure and function	2
2.	Disaccharides and poly saccharides chemistry	2
3.	Simple lipids chemistry	2
4.	Complex lipids chemistry ; lipoproteins+ Quiz 1	2
5.	Amino acids chemistry and function as poercursors for neurotransmitter & nucleotides	2

6.	Chemistry of protein (structure and function)	2
7.	Hemoglobin and myoglobin + Chemistry of porphyrins	2
8.	Introduction to enzymes+ Midterm	2
9.	Enzyme kinetics	2
10.	Role of biological oxidation and electron transport chain in metabolism	2
11.	**Final Exam**	Total: 2 credit hours
12.		

3.2. Practical:

Study week	Topics	No. of Credit Hours
1.	Introduction, handling processes and safety Qualitative determination of monosaccarides; glucose	1
2.	Qualitative determination of monosaccarides; fructose	1
3.	Qualitative determination of disaccharides; sucrose, lactose and maltose	1
4.	Qualitative determination of polysaccharides; starch and dextrin	1
5.	Qualitative determination of albumin	1
6.	Qualitative determination of neutral proteins; peptone and gelatin	1
7.	Qualitative determination of alkaline proteins; metaprotein	1
8.	Qualitative determination of alkaline proteins; Caseinogen	1
9.	Qualitative determination of lipids (fats and cholesterol)	1
10.	Tutorial on enzyme kinetics	1
11.	**Practical Exam**	
12.	**Final Exam**	Total: 1 credit hour
13.		

4. Teaching and Learning Methods:

4.1.	Lectures
4.2.	Practical lab
4. 3	Research in library and web (homework & assignments)
4.4	E-learning

5. Student Assessment Methods:

5.1. Assessment methods:

1. Written exam	to assess knowledge, understanding, intellectual and professional skills.
2. Practical exam	to assess professional and practical skills.
3. Course work	to assess knowledge, understanding, intellectual skills, general and transferable skills.
4. Oral exam	to assess knowledge, understanding, intellectual skills, general skills and confidence.
5. Quizzes	to assess knowledge, understanding and intellectual skills.

5.2 Assessment schedule:

Assessment 1	Quiz 1	4th week
Assessment 2	Mid-Term	8th week
Assessment 5	Practical exam	11th week
Assessment 6	Oral exam	12th & 13th weeks
Assessment 7	Written exam	12th & 13th weeks

5.3 Weighing of Assessments:

1. Course work:	
- Quiz 1	5
- Mid-Tern	10
2. Final-Term Exam	50
3. Oral Exam	10
4. Practical Exam	25
Total	100%

6. List of References:

No.	Reference	Type
1.	Biochemistry (Lippincott Illustrated Reviews Series) by Denise R. Ferrier (Lippincott Williams & Wilkins; 6th Edition, 2013)	Textbook
2.	Medical biochemistry by M.D. Chatterjea and Shinde Rana (Jaypee Brothers Medical Pub; 8th edition, 2011)	Textbook
3.	Biochemistry, Mary K. Campbell, Shawn O. Farrell. Thomson Brooks/Cole 8th Edition, 2014.	Textbook
4.	Clinical Chemistry by W.J. Marshall, Márta Lapsley (8th Edition, 2016).	Textbook
5.	Lehninger Principles of Biochemistry by D.L. Nelson, M.M. Cox (6th edition,2012)	Textbook
6.	Journal of Cellular Biochemistry (https://onlinelibrary.wiley.com/journal/10974644)	Periodical

7. Matrix of course contents versus ILOs:

7.1. Lectures:

Study week	Course Contents	ILOs			
		K&U	IS	P&PS	G&TS
1.	Basic principles of carbohydrates chemistry; monosaccharaides, disaccharides and polysaccharides structure and function	a1	b1	c3	--
2.	Fatty acids chemistry	a1	b1	c3	--
3.	Simple lipids chemistry	a1	b1	c2	d1,d2
4.	Amino acids chemistry	a2	b2	--	d3
5.	Chemistry of protein (structure and function) **Quiz 1**	a2	b2	c2	d3
6.	Lipoproteins chemistry	a2	b2	c2	d2
7.	Introduction to enzymes	a2	b3	c3	d2 d3
8.	Enzyme kinetics	a2 a4	b3	c2	d1 d2

9.	Role of biological oxidation and electron transport chain in metabolism	a3	b4	--	d3
10.	Hemoglobin and myoglobin + Chemistry of porphyrins	a3	b4	c2	d3

7.2. Practical:

Study week	Course Contents	ILOs			
		K&U	IS	P&PS	G&TS
1.	Introduction, handling processes and safety Qualitative determination of monosaccarides; glucose	a1	b1	c1	--
2.	Qualitative determination of monosaccarides; fructose	a1	b1	c1,c3	--
3.	Qualitative determination of disaccharides; sucrose, lactose and maltose	a1	b1	c3	d1
4.	Qualitative determination of polysaccharides; starch and dextrin	a1	b1	c3	d1,d2
5.	Qualitative determination of albumin	a1	b1	c2,c3	d1,d3
6.	Qualitative determination of neutral proteins; peptone and gelatin	a1	b3	c2,c3	d1,d3
7.	Qualitative determination of alkaline proteins; metaprotein	a2	b3	c1,c3	d1,d3
8.	Qualitative determination of alkaline proteins; Caseinogen	a2	b3	c3	d1,d3
9.	Qualitative determination of lipids (fats and cholesterol)	a2	b3	c3	d1,d3
10.	Revision	a1-2	b1-b2	c1-3	d1-3
11.	Practical exam				

	Name	Signature
Course Coordinator:	ASS. Prof. Soha Hamdy	
Head of Department:	Prof. Mona Hetta	
Approval Date		

Course Specifications

Pharmacy legislation (PT 404)

Level 2

Semester 4

A-Basic Information	
Course code:	PT404
Course name:	Pharmacy legislation
Credit hours of the course:	Lecture: 1 Practical: -- Total: 1
Pre-requisite of the course:	-
Department teaching the course:	Department of Pharmaceutics
Program for which the course is given:	Clinical Pharmacy Program
Course Co-ordinator:	Dr. Doaa Helal
Head of the Department:	Prof. Mona Hetta
Date of specifications approval:	17/01/2016

مدير وحدة ضمان الجودة

B-Professional Information

1- Overall aims of the course:

A detailed presentation of law governs and effects the practice of pharmacy-
Knowledge about legal principles for opening pharmacies and dispensing medicine
- pharmacist duties and responsibilities
-pharmacist patient relationship .patient rights and ethical principles and moral roles

2- Intended learning outcomes (ILO's):

a-Knowledge and Understanding

Clinical Pharmacy Program

By the end of this course ,the student should be able to:
A1Know low governs and effects the practice of pharmacy

a2 legal principles for opening pharmacies and dispersing medicines
a3-Understand Pharmacist-patient relationship, potiens rightss and ethical principles and moral rules.

-b-Intellectual Skills

By the end of this course, the student should be able to
Solve problems associated with dispensing OTC and non-OTC drugs

C-Professional and Practical Skills

By the end of this course the student should be able to
C1-Apply the studied rules for registering new medicines
C2--Select the appropriate methods for stoning toxic and flammable drugs in the pharmacy

D -General Skills.

By the end of this course the student should be able to
D1- Have the power to manage a community pharmacy.

d2-Show

3- Course contents:

pic	No. of hours		
	Lecture	Practical	Total
اخلاقيات مهنة الصيدلة ، مزاوله مهنه الص	2	--	2
المؤسسات الصي	2	--	2
المستحضرات الصيدلية الخاصة والدستو	1	--	1
احكام ء	1	--	1
العقو	1	--	1
احكام و	1	--	1
احكام خت	1	--	1
الجد	1	--	1
tal	10		10

Teaching and Learning Methods (lectures, open discussion, role ıys,...etc):

- Presenting lectures using a computer and a projector
- Open discussions

Student Assessment:

Assessment Methods and Weighing:

- Class participation: 10% - Practical Exam: 0% - Oral Exam: 0% - Final Exam: 90%
b- Assessment Schedule:
- Class participation: Quiz 1: Week 4-5 Quiz 2: Week 8-9 Other activities: throughout the semester - Practical Exam: -- - Oral Exam: -- - Final Exam: According to semester timetable

Fayoum University

6- List of References:	
Course Notes	Deliver to students
Required Books	
Recommended Books	Egyptian pharmacopeia
Periodicals	
Websites	

Course Coordinator: Dr. Doaa Helal

Head of Department: Prof. Mona Hetta

Date: /01/2016