Course Specifications
(2016 –2017)

Pharmacy administration
PT 506

Course Specifications
(2016 –2017)
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	five level, ten semester
Course title	Pharmacy administration
Course code	PT 506
Contact hours (credit hours)	Lecture 2 (2) + Practical ٠ (٠): Total ٢ (٢)
Pre-requisite of the course:	Registration
Course coordinator	Dr. Hany Mohamed Gamal
Major or Minor element of program	Major
Date of specification approval	17/09/2016

B. Professional Information

1. Overall Aims of Course

1. Understanding Pharmacy Operations: Equip students with knowledge of the organizational structure and functions of pharmacy practice, including retail, hospital, and clinical settings.
2. Management Principles: Introduce fundamental management theories and practices relevant to pharmacy, including leadership, human resources, and strategic planning.
3. Financial Acumen: Teach students about financial management, budgeting, and economic principles as they apply to pharmacy settings to ensure sustainable practice.
4. Regulatory Knowledge: Provide an understanding of the legal and ethical frameworks governing pharmacy practice, including regulatory compliance and policy development.
5. Quality Assurance: Instill concepts of quality improvement and patient safety in pharmacy services, emphasizing the importance of medication management and error reduction.
6. Marketing Strategies: Explore marketing and business development strategies tailored for pharmacy services to enhance patient engagement and community health.

Intended Learning Outcomes of Course (ILOs)

a. Knowledge and Understanding

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

a_1- Pharmacy Operations: Demonstrate an understanding of the organizational structure and functions of various pharmacy settings (retail, hospital, clinical).

a_2- Regulatory Framework: Explain the key legal and ethical principles governing pharmacy practice and the implications for patient care.

a_3- Financial Management: Describe fundamental financial concepts relevant to pharmacy, including budgeting, cost analysis, and revenue management.

a_4- Quality Assurance: Understand the principles of quality improvement and patient safety in pharmacy services.

a_5- Healthcare Systems: Identify the roles and responsibilities of pharmacists within the broader healthcare system and interprofessional teams.

b. Intellectual Skills

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

b_1- Critical Analysis: Analyze and evaluate pharmacy operations, policies, and procedures to identify areas for improvement.

b_2- Problem-Solving: Apply problem-solving techniques to address challenges in pharmacy management and practice.

b_3- Research Application: Critically assess research findings and apply evidence-based practices to enhance pharmacy services.

b_4- Decision-Making: Make informed decisions based on data analysis and ethical considerations in pharmacy administration.

c. Professional and Practical Skills

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

c_1- Leadership: Demonstrate leadership skills in managing pharmacy teams and promoting a positive work environment.

c_2- Communication: Effectively communicate with patients, healthcare professionals, and stakeholders about pharmacy services and patient care.

c_3- Project Management: Plan and implement projects related to pharmacy practice improvement and service delivery.

c_4- Regulatory Compliance: Conduct audits and ensure compliance with pharmacy regulations and standards.

d. General and Transferable Skills

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

d_1- Teamwork: Collaborate effectively in interprofessional teams to achieve common healthcare goals.

d_2- Adaptability: Demonstrate flexibility in adapting to changing healthcare environments and emerging pharmacy practices.

d_3- Time Management: Manage time efficiently to balance multiple tasks and responsibilities in a pharmacy setting.

d_4- Lifelong Learning: Engage in continuous professional development and lifelong learning to stay current in pharmacy administration and practice.

2. Contents

Teaching week	TOPIC	No. of lecture hours	No. of practical hours	Assessment of ILOs
1	Introduction to Pharmacy Administration	2		a2, b1, d1
	-		-	
2	Pharmacy Operations Management	2		a1, a2, a3, b1, b2, c1, c2, d2
	-		-	
3	Regulatory and Legal Framework	2		a1, a2, a4, b1, b2, c1, c2, d2
	-		-	
4	Financial Management in Pharmacy	2		a1, a5, a3, b1, b3, c1, c3, d1, d2
	-		-	
5	Human Resource Management	2		a1, a2, a4, b1, b2, c1, c3, d2, d3
	-		-	
6	Quality Assurance and Improvement	2		a1, a2, a3, b1, b3, c1, c2, d1
	-		-	
7	Pharmacy Marketing and Business Development	2		a1, a2, a4, b1, b2, c1, c3, d2

	-		-	
8	Health Informatics and Technology	2		a1, a2, a3, b2, c1, c2, d1
	-		-	
9	Interprofessional Collaboration	2		a2, a3, b1, c1, c2, d1
	-		-	
10	Leadership and Professional Development	2		a1, a4, a4, a5, b1, b2, c1, c3, c4 d2
	-		-	
11	Research and Evidence-Based Practice	2		a2, a4, a5, b1, c1, c2, c4, d1
	-		-	
Total no of hours		22		
11 & 12	FINAL Exam			

3. 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) √

4. 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.

Assessment Schedule

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

Weighting of Assessments

Periodical	25%
Practical	0%
Final exam	75%
Oral exam	0%
Total	100%

5. List of References

6.1- Course Notes

Complied by the department

6.2- Essential Books (Textbooks)

1-"Pharmacy Management: Essentials for All Practice Settings" by Shane P. Desselle, David P. Zgarrick, Greg L. Alston

2-"Health Care Systems Around the World: A Comparative Guide" by Sarah Thomson, Elias Mossialos, Robin Gauld

3-"Pharmacoeconomics: From Theory to Practice" by Renee J.G. Arnold

4-"Essentials of Law and Ethics for Pharmacy Technicians" by Kenneth M. Strandberg

5-"Leadership and Management in Pharmacy Practice" by Andrew M. Peterson, William N. Kelly

6-"Pharmacy Informatics: Essentials" by Doina Domitru, Michael S. Brown

7-"Managing Pharmacy Practice: Principles, Strategies, and Systems" by Andrew M. Peterson

8-"Pharmacy Administration: Practice and Policy" by Dinkar M. Srivastava

9-"Hospital Pharmacy" by Martin Stephens

6.3- Periodicals

-Analytical letters

- Journal of Managed Care & Specialty Pharmacy (JMCP)

- American Journal of Health-System Pharmacy (AJHP)

6.4- Web Sites

DOI: https://doi.org/10.3390/admsci12010005

https://link.springer.com/book/10.1007/978-1-4419-1191-9

https://academic.oup.com/edited-volume/38168

https://open.umn.edu/opentextbooks/textbooks/introduction-to-entrepreneurship

6. Facilities required for teaching and learning

1. Classrooms
2. Laboratory facilities.
3. white board, smart board, Data show.
4. Library.
5. Computers.
6. Online educational platforms for teaching, discussing research projects and E-exams (Google classrooms, Google drive and Microsoft Teams).

Course Coordinator: Dr. Hany Mohamed Gamal

Head of Department: Pr. Mona Hetta

Date: 17 /09/2016

Course Specifications
(2016 –2017)

Phytochemistry II

206

Course Specifications
(2016 –2017)

Pharmacognosy department

A-Basic Information

Program(s) on which the course is given	Bachelor of 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, seconed semester
Course title	Phytochemistry II
Course code	206
Contact hours (credit hours)	Lecture (2) + Practical (1): Total (3)
Pre-requisite of the course:	Pharmacognosy 1
Course coordinator	Prof. Dr/ Abd El-Salam Ibraheem
Major or Minor element of program	Major
Date of specification approval	17/09/2016

B-Professional Information

1-Overall aims of the course:

Upon successful completion of this course the students should be able to illustrate the biosynthetic pathways, chemical classes, chemical structures, methods of extractions and isolations, methods of identification and assays and chemical reactions of alkaloids and glycosides. The students should be also able to discuss the principles of different chromatographic methods for identifications and isolations of these constituents.

2-Intended learning outcomes (ILO's):

a-Knowledge and Understanding:

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

a1- Determine the chemical class of each constituents.

a2- Give an idea about isolation, identification, quantitative determination and their chemical reactions.

a3-Understand which of these constituents are biologically active and their structure activity

relationship (SAR).

b-Intellectual Skills:

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

b1-Solve problems encountered during extraction and isolation.

b2-Design a suitable method for identification and assays.

b3-Evaluate which of these constituents are biologically active.

c-Professional and Practical Skills:

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

c1-Apply the suitable technique for qualitative and quantitative determination.

c2-Select the proper solvents and technique for extraction.

c3-Estimate the percentage of these constituents in the plant and crude extract.

d-General Skills:

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

d1-Have the power to work effectively in team.

d2- Demonstrate written and oral skills.

D3- Performing on-line computer search to developed information technology skills.

3. Contents

Teaching week	TOPIC	No. of lecture credit hours	No. of practical credit hours	Assessment of ILOs
1	Introduction to alkaloids	2	1	
2	Proto and pseudo-alkaloids	2	1	
3	Tropane, pyridine and piperidine alkaloids	2	1	
4	Phenantherine and indole alkaloids	2	1	
5	Imidazole, quinoline and isoquinoline alkaloids	2	1	
6	Introduction to glycosides	2	1	
7	Simple phenolic glycosides	2	1	
8	Flavonoids and anthraquinones glycosides Cyanogenic, sulfur and saponin glycosides	6	3	
9	Tannins and catechins	4	2	
	Total	**24**	**12**	

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

1. Lectures (Tools, board, data show).
2. Practical session (Tools, labs, boards, instruments, chemicals, glassware).
3. Assignments, seminars, researches and posters.

5- Student Assessment:

a-Assessment Methods and Weighing:

Methods

- 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.

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

b-Assessment Schedule:

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

6-List of References:

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

Course Coordinator: Prof. Abd El-Salam Ibraheem

Head of Department: Prof. Mona H. Hetta

Date: 17/09/2016

Course Specifications
(2016 – 2017)

Pathophysiology

MD 507

Course Specifications
(2016 – 2017)

Department of Pharmacology and Toxicology

A. Basic Information

Program(s) on which the course is given:	Bachelor of Pharmacy (Clinical Pharmacy)
Department offering the course	Department of Pharmacology and Toxicology, Faculty of Pharmacy, Fayoum University
Faculty offering the program	Faculty of Pharmacy, Fayoum University
Dept. responsible for teaching the course	Department of Pharmacology and Toxicology, Faculty of Pharmacy, Fayoum University
Academic year / level	2020/2021 (Level 3)
Course title	Physiology & Pathophysiology
Course code	MD507
Contact hours (credit hours)	Lecture:(2), Practical: (0), Total: 2(2+0)
Pre-requisite of the course:	Physiology
Course coordinator	Dr Mona El Naa
Major or Minor element of program	Major
Date of specification approval	09/2016

B. Professional Information

1. Overall Aims of Course

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

The aim of the course is to ensure that the graduated pharmacist achieved the competencies of integration of the knowledge concerning the pathophysiological basis of variable body disorders and clinical conditions.

2. Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

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

a1-Understanding basic concepts of pathophysiology related to causes of cell injury, cellular response to injury, Aging and carcinogenesis.

a2-Understanding pathophysiological basis of different disorders of blood, cardiovascular, respiratory, digestive system, immune system as well as endocrine and renal systems both grossly and at the molecular level

a3- Understanding physiological basis of treatment of the studied disorders.

a4- Understand signs and symptoms of the disorders

b- Intellectual Skills
By the end of this course, the student should be able to:

b1- Apply the principles of pathophysiology basis to participate in improving health care services using evidence-based data

c- Professional and Practical Skills
By the end of the course, the student should be able to:

c1- Integrate pathophysiology with other basic sciences and clinical conditions

c2- Use the principles of anatomy, histology, physiology, pathophysiology and pathology to manage different diseases

d- General and Transferable Skills
By the end of the course, the student should be able to:

d1- Work separately or in a team to research and prepare a scientific topic

d2- Present clearly and effectively a scientific topic among groups.

3. Contents

Teaching week	TOPIC	No. of lecture hours	Assessment of ILOs
1	Cellular response to stress and injury	2	a1,b1, c1, d1
2	Aging and carcinogenesis	2	a1,b1, c1, d1
3	Endocrine system associated disorders	2	a2, a3, a4, b1,c2, d1, d2
4	Immune system associated disorders	2	a2, a3, a4, b1,c2, d1, d2
5	Inflammation	2	a2, a3, a4, b1,c2, d1, d2
6	Cardiovascular system associated disorders	2	a2, a3, a4, b1,c2, d1, d2
7	Kidney associated disorders	2	a2, a3, a4, b1,c2,

			d1, d2
8	Respiratory system associated disorders	2	a2, a3, a4, b1,c2, d1, d2
9	Digestive system associated disorders	2	a2, a3, a4, b1,c2, d1, d2
10	Blood associated disorders	2	a2, a3, a4, b1,c2, d1, d2
Total no of hours	**20**		
12	**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 skills practice.

Assessment Schedule

Quiz 1 — 4th or 5th week

Quiz 2 — 8th or 9th week

Final exam — 12th week; according to semester schedule

Oral exam — 12th week; according to semester schedule

Weighting of Assessments

Periodical — 20%

Final exam — 65%

Oral exam — 15%

Total — 100%

6. List of References

6.1- Course Notes: Lecture notes in Pathophysiology by Staff Members of the Department of Pharmacology &Toxicology.

6.2- Essential Books (Textbooks)

1. Tkacs N, Herrmann L, Johnson R. Advanced Physiology and Pathophysiology: Essentials for Clinical Practice. Springer Publishing Company; 1st edition. 2020
2. Hammer GD, McPhee SJ. Pathophysiology of Disease. An Introduction to Clinical Medicine . 8th edition 2018, New York: McGraw-Hill
3. Robinson JM. Pathophysiology Made Incredibly Easy. 5th edition, 2015, Philadelphia: Lippincott Wiliams & Wilkins.
4. Sherwood, Lauralee. Human physiology: from cells to systems. Belmont, CA: 8th edition, 2013, Brooks/Cole, Cengage Learning.

❋ **6.4- Web Sites** www.ekb.eg

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 Mona El Naa

Head of Department: Ass. Prof. Mona El Naa

Date: 17 / 09/2016

Course Specifications
(2015 – 2016)

Course: Pharmacology 1

Course code: PO 701

Course Specifications
(2015 – 2016)

A. Basic Information

Program(s) on which the course is given:	Clinical
Department offering the course	Pharmacology & Toxicology department
Faculty offering the program	Pharmacy
Dept. responsible for teaching the course	Pharmacology & Toxicology department
Academic year / level	2nd
Course title	Pharmacology 1
Course code	PO 701
Contact hours (credit hours)	3
Pre-requisite of the course:	Physiology
Course coordinator	Dr/ Mona Mohamed El-Naa
Date of specification approval	17/09/2016

B. Professional Information

1. **Overall Aims of Course**

The aims of the course are to study the principle of pharmacokinetics and pharmacodynamics and to deliver deep knowledge about commonly used drugs affecting different biological systems and their proper use in the management of various diseases as well as improve the health state of the patient. In addition, the course aims to apply the basic information regarding the pharmacokinetics, pharmacological actions contraindications and drug interactions of the major drug groups in order to utine therapeuticents in a rational way for the treatment of patients.

2. Intended Learning Outcomes of Course (ILOs)

a-Knowledge and Understanding:

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

al-- Mention the basic principles of pharmacology such as pharmacokinetics, pharmacodynamics.

a2-Recognize the pharmacological actions of the drugs acting on specific organs. a3-Identify the basic pharmacokinetics of the selected drugs.

a4- Demonstrate the therapeutic uses, side effects, contraindications, and drug interactions of the selected drugs.

مدير وحدة الجودة

b-Intellectual Skills:

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

b1-Explore the mechanism of action of the selected drugs and the relation to their pharmacological actions.

b2-Defind the proper pharmacological treatment of a specific pathological conditions

c-Professional and Practical Skills:

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

c1-Develop laboratory skills in handling isolated organ preparations.

c2-Excepct the biological response to a specific dose of the drug.

c3- Handle laboratory animals in a correct and safe way to obtain optimum results without harmful effects on animals.

d-General Skills:

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

d1-Communicate properly with professor and lab technicians

d2-Develop the students' skills in dealing with laboratory instruments

d3- Apply safety measures during her/his work in the lab

d4-work coherently and successfully as a part of a team. d5-Apply ethical guidelines in her/his professional carrier.

d6-- Develop online computer search and information technology skills.

3. Contents

Teaching week	TOPIC	No. of hours		
		lecture	Practical	Total
1	General Pharmacology	6	4	10
2	Pharmacology of ANS	8	3	11
3	Pharmacology of CVS	6	3	9

4	Pharmacology of renal system	2	1	3
5	Autacoid	2	1	3
	Total	24	12	36

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

4.1- Interactive Lectures

4.2- Laboratory classes

4.3- Student activates (Assignment, Seminars, Researches and Posters)

5. Student Assessment:

a-Assessment Methods and Weighing:

- Class participation: 10% (assess knowledge and understanding and Intellectual Skills)
Practical exam: 25% ((assess knowledge and understanding and Intellectual and practical Skills)
Oral exam: 15% (assess knowledge and understanding and Intellectual Skills) Final exam: 50% (assess knowledge and understanding and Intellectual Skills)

b-Assessment Schedule:

Class participation: Quiz 1 Week 4-5
Quiz 2 week 8-9
Other------ throughout the semester

Practical exam: week 12

Oral exam: According to semester timetable
Final exam: According to semester timetable

6. List of References

Course Notes: Department notes prepared by instructors

Recommended Books: -Pharmacological Basis of Therapeutics (Goodman & Gilman) -Katzung (Clinical Pharmacology)

Web Sites: www.pubmed.com http://www.biomedcentral.com/bmcpharmacol/

Course Coordinator: Dr. Mona Mohamed El-Naa

Head of Department: Prof. Mona Hetta **Date:** 17 /09/2016

Course Specifications
(2017 –2018)

Pharmaceutical Microbiology

PM704

Course Specifications
(2017 –2018)

Microbiology and Immunology Department

A. Basic Information

Program(s) on which the course is given	Bachelor of Clinical pharmacy
Department offering the course	Microbiology and immunology
Faculty offering the program	Faculty of Pharmacy, Fayoum University
Dept. responsible for teaching the course	Microbiology and immunology
Academic year / level	Level 4, first semester
Course title	Pharmaceutical Microbiology
Course code	PM704
Contact hours (credit hours)	Lecture 3(2+1)
Pre-requisite of the course:	Registration
Course coordinator	DR/ Mahmoud Khalil
Major or Minor element of program	Major
Date of specification approval	07/09/2017

B. Professional Information

1. Overall Aims of Course

Sterilization, sterilization indicators, sterility testing, microbial contamination of pharmaceutical products, aseptic area, the microbiological quality of pharmaceuticals. Antimicrobial agents; classifications, mechanism of action of antimicrobial drugs, drug combination, resistance of microorganisms to antimicrobial agents, assessment of a new antibiotic, microbiological assay of antibiotics, microbiological assay of vitamins, aminoacids and growth factor, mode of action of non-antibiotic antimicrobial agents, chemical disinfectants, antiseptics and preservatives.

2. Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

By the end of the course, the students should be able to demonstrate detailed knowledge and understanding of::

a1- Sterilization processes, their significance and limitations, their applications in pharmaceutical industry

a2- Classification of antimicrobial chemotherapeutic agents, their mechanisms of action, indications, side effects, antibiotic policy and microbial resistance.

a3- Non-antibiotic agents, their pharmaceutical and surgical applications. The use of preservation in pharmaceutical industry.

b- Intellectual Skills

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

b1- Gain acquaintance and training on rationalization of antibiotic use, decontamination.

b2- Build correlation between various biological phenomena and their underlying causes and mechanisms.

c- Professional and Practical Skills

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

c1- Gain practice and training on some sterilization methods.

c2- Practice pharmaceutical microbiological evaluation assays for antibiotics, and non antibiotic antimicrobial agents.

d- General and Transferable Skills

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

d1- Practice skills in fields related to microbiological techniques.

d2- Evaluate antimicrobial agents.

3. Contents

Teaching week	TOPIC	No. of lecture hours	Assessment of ILOs
1	Antibiotics: Mechanisms of resistance, Antibiotics evaluation	3(2+1)	a1, b2, c1, d1
2	Sterilization, Kinetics of microbial killing, Methods of sterilization:	3(2+1)	a1, b2, c1, d1
3	Heat, Radiation, Filtration, Chemicals, Sterilization of air,	3(2+1)	a1, b2, c1, d1

4	Disinfectants, preservatives and antiseptics	3(2+1)	a1, b2, c1, d1
5	Sterilization indicators & Sterility testing. Validation of different sterilization methods	3(2+1)	a1, b2, c1, d1
6	Antibiotics: Classification, Mode of action	3(2+1)	a2, a3, b2,c2, d1,d2
7	Antibiotics: Cell wall inhibitors	3(2+1)	a2, a3, b2,c2, d1,d2
8	Antibiotics: Cell membrane inhibitors	3(2+1)	a2, a3, b2,c2, d1,d2
9	Antibiotics: Antimetabolites, Antimicrobials that interfere with DNA	3(2+1)	a2, a3, b2,c2, d1,d2
10	Antibiotics: Antimicrobials that interfere with protein synthesis, Mechanisms of resistance, Antibiotics evaluation	3(2+1)	a2, a3, b2,c2, d1,d2
Total no of hours	**20+10**		
15	**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	10th week
Final exam	th week
Oral exam	…. th week

Weighting of Assessments

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

6. List of References

6.1- Course Notes: Pharmaceutical Microbiology. Microbiology and Immunology Department.

6.2- Essential Books (Textbooks):

- Pharmaceutical Microbiology, Tim Sandle, 2015

- Essential Microbiology for Pharmacy and Pharmaceutical Science, Geoff Hanlon, Norman A. Hodges, 2013

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: 07/09/2017

Course Specifications

Pharmaceutical dosage form-2 (PT 505)

Level 3

Semester 5

Course Specification

A-Basic Information	
Course code:	PT505
Course name:	Pharmaceutical dosage form(2)
Credit hours of the course:	Lecture: 2 Practical: -- 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-ordinator:	Dr. Doaa Helal
Head of the Department:	Prof Dr.Mona Hetta
Date of specifications approval:	17/09/2016

B-Professional Information
1- Overall aims of the course:
By the end of this course the students should be able to recognize different semisolid dosage forms, parenteral and ophthalmic preparations know the basic composition of transdermal batch and their use .they are capable to choose suitable excipient according to API and according to dosage form required
2-intended learning outcomes (ILO'S)
a- knowledge and understanding by the end of this course .the student should be able to

A1-Define different semi-solid dosage forms, their advantages and disadvantages and recognize different methods of their manufacture
A2-discus factors affecting the stability of a specific dosage forms and its pre-formulation consideration

a3-Idemify different routes of Parenteral administration and consideration for parenteral) formulations

a4-Discuss advantage and disadvantage of parenteral dosage form as.
A5-Discuss advantage and disadvantage of ophthalmic dosage forms

b-Intellectual Skills

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

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

B2-Detect D V value of different semi-solid dosage forms and quantities of ingredients used

.b3-Analyze the results to determine the accepted topical dosage form

.b4- Assess excipients used in parenteral forms

b5. Assess excipients used in ophthalmic preparations.

c-Professional and Practical Skills

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

c1. Demonstrate different Pharmaceutical semi-solid dosage forms.

c2. Prepare different types of suppositories on small scales.

.c3-Use chemical and physical tests on a dosage forms to determine their quality control
c4. Analyze manufacturing requirements for parenteral formulations and ophthalmic dosage forms.

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.

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3- Course contents:			
Topic	**No. of hours**		
	Lecture	**Practical**	**Total**
Rectal and vaginal dosage form	4	2	6
Suppository bases	2	2	4
Quality control of suppository	2	2	4
Topical preparations	4	2	6
Transdermal drug delivery system	4	2	6
Parenteral formulations	2	--	2
Excipient and manufacturing of parental formulations	2	--	2
Ophthalmic preparations	4	2	
Total	24	12	38

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: 17/9/2016

Course Specifications
(2016 – 2017)

Biochemistry-2

PB 502

A. Basic Information

Course Title:	Biochemistry-2		
Course Code:	PB 502		
Program on which the course is given:	Clinical program		
Department offering the course:	Biochemistry		
Academic year/ level:	1st term 2016-2017	Level 3	
Prerequisite:	Biochemistry-1 (PB 401)		
Credit hours:	Lecture:2	Practical:1	Total: 3

B. Professional Information

1. Course Aims:

This course explains how biochemistry relates to wellness and disease processes and its direct relationship to understanding pharmaceutical principles. The course describes the biosynthetic processes leading to the generation of macromolecules and the regulatory processes underlying its biosynthesis and their function in cellular systems. It identifies intermediary metabolism in terms of energy production and maintaining cellular homeostasis. Integration between metabolic control and biochemical disorders is also considered.

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2. Intended Learning Outcomes (ILOs):

a. Knowledge and understanding:

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

A1	a1.	Identify the principles of metabolism, recall the essential facts, and advanced concepts of digestion and absorption.
	a2.	Describe the functions and metabolic pathways of macromolecules (carbohydrates , lipids, proteins), and integration of metabolism during feeding and fasting cycle and their regulatory mechanisms
A4	a3.	Enumerate metabolic disorders that have biochemical and clinical implications, and describe biologically active compounds synthetized from amino acids
A11	a4.	Describe the biochemical basis of some diseases, including diabetes mellitus, glycogen storage diseases and outlines the fate of biological compounds.

b. Intellectual Skills:

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

B14	b1.	Evaluate evidence-based biomedical information and investigate the metabolic disturbance in a given case study report.
B17	b2.	Determine suitable methods of analysis of different levels of glucose, total proteins, ALT, AST, bilirubin, albumin, cholesterol, TG, creatinine and uric acid in biological fluids
	b3.	Formulate a systemic approach for the laboratory experimental diagnosis
B18	b4.	Correlate basic biochemical facts in cases of liver and kidney diseases with laboratory data.
B21	b5.	Interpret laboratory tests with the impact of signs and symptoms in case of metabolic disorders.

c. Professional and Practical Skills:

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

C2	c1.	Handle and dispose laboratory reagents and biological specimen safely utilizing instruments used in biochemistry laboratory
C4	c2.	Select appropriate methods for identification and analysis of active substances in biological fluids (colorimetric estimation using spectrophotometer)
C14	c3.	Employ different quantitative diagnostic tests of some blood parameters (serum levels of glucose, total proteins, albumin, bilirubin, ALT, AST,

		cholesterol, TG, creatinine and uric acid).

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.	Introduction to metabolism; Carbohydrate digestion and absorption, ; Glycolysis	2
2.	Oxidation of glucose & kreb's cycle	2
3.	Glycogenesis & Glycogenolysis	2
4.	Gluconeogenesis and pentose phosphate pathway	2
5.	Fructose & galactose metabolism + **Quiz 1**	2
6.	Lipids digestion & absorption , Beta oxidation of fatty acids	2
7.	Fatty acids synthesis Ketogenesis and ketolysis	2
8.	Amino acids synthesis and degradation + **Midterm**	2
9.	Nitrogenous compounds metabolism and urea cycle	2
10.	Biologically active compound Integration of metabolism during feeding and fasting cycle s synthesized from amino acids	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	1
2.	Determination of blood glucose level	1
3.	Liver function; albumin and total protein determination	1
4.	Liver function; Aspartate transaminase (AST) and alanine transaminase (ALT) Determination	1
5.	Bilirubin determination	1
6.	Urea and uric acid determination	1
7.	Kidney function; creatinine determination	1
8.	Lipid profile; Cholesterol	1
9.	Lipid profile; triglyceride determination	1
10.	Revision	1
11.	Practical Exam	1
12.	Final Exam	Total: 1 credit hour
13.		

4. Teaching and Learning Methods:

5.1.	Lectures
5.2.	Practical lab
5.3.	Research in library and web (homework and assignments)
5.4.	Cases study
5.5	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	Midterm	8th week
Assessment 3	Practical exam	11th week
Assessment 4	Oral exam	12th & 13th weeks
Assessment 5	Written exam	12th & 13th weeks

5.3. Weighing of Assessments:

1. Course work:	
- Quiz 1	5
- Midterm	5
2. Final-Term Exam	50
3. Oral Exam	15
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.	Biochemistry, Mary K. Campbell, Shawn O. Farrell. Thomson Brooks/Cole 2014, 8th Edition	On line Textbook
3.	Medical biochemistry by M.D. Chatterjea and Shinde Rana (Jaypee Brothers Medical Pub; 8th edition, 2011)	Textbook
4.	Clinical Chemistry, by W.J. Marshall, Márta Lapsley (8th Edition, 2016).	Textbook
5.	BioEssays https://onlinelibrary.wiley.com/journal/15211878	Periodical

6.	Trends in Biochemical Sciences https://www.journals.elsevier.com/trends-in-biochemical-sciences	Periodical

7. Matrix of course contents versus ILOs:

7.1. Lectures:

Study week	Course Contents	ILOs			
		K&U	IS	P&PS	G&TS
1.	Introduction to metabolism; Carbohydrate digestion and absorption, ; Glycolysis	a1	b1	--	--
2.	Oxidation of glucose & kreb's cycle	a2,a3	b2,b3	c2	d3
3.	Glycogenesis & Glycogenolysis	a2,a3, a4	b1,b2,b3	c2,c3	d2, d3
4.	Gluconeogenesis and pentose phosphate pathway	a2,a3	b1,b2	c3	d2
5.	Fructose & galactose metabolism + **Quiz 1**	a3,a4	b3,b4,b5	c2	d3
6.	Lipids digestion & absorption , Beta oxidation of fatty acids	a2	b2,b3,b4	c2	d1 d2
7.	Fatty acids synthesis Ketogenesis and ketolysis	a2,a3	b2,b3,b5	c3	d1 d2
8.	Amino acids synthesis and degradation + **Midterm**	a2,a3	b2,b3, b5	c3	d1,d3
9.	Nitrogenous compounds metabolism and urea cycle	a2,a3	b1	c2	d1
10.	Biologically active compound Integration of metabolism during feeding and fasting cycle s synthesized from amino acids	a3,a4	b3, b5	c3	d1

7.2. Practical:

Study week	Course Contents	ILOs			
		K&U	IS	P&PS	G&TS
1.	Introduction, handling processes and safety	a1	--	c1 c2	--
2.	Determination of blood glucose level	a4	b2	c2 c3	d1

3.	Liver function; albumin and total protein determination	a3 a4	b2 b4	c2 c3	d1
4.	Liver function; Aspartate transaminase (AST) and alanine transaminase (ALT) Determination	a3	b2 b3	c3	d2
5.	Bilirubin determination	a3 a4	b2 b4	c3	d1,d2
6.	Urea and uric acid determination	a3 a4	b2 b4	c3	d1,d2
7.	Kidney function; creatinine determination	a3 a4	b2 b4	c2 c3	d1,d3
8.	Lipid profile; Cholesterol	a2 a3	b1 b2 b3	c3	d2,d3
9.	Lipid profile; triglyceride determination	a3 a4	b5	c3	d2,d3
10.	Revision	a4	b1	--	d2,d3

ayoum University

Faculty of Pharmacy

Clinical Pharmacy Program
(2016-2017)

Course Specifications

-Basic Information	
ourse code:	**PO802**
ourse name:	**Pharmacology-2**
redit hours of the course:	Lecture: 2 Practical:1 Total:3
re-requisite of the course:	Pharmacology 1
epartment teaching the course:	Pharmacology & Toxicology
rogram for which the course is given:	Clinical Pharmacy Program
ourse Co-ordinator:	Dr. Mohamed Hamzawy
ead of the Department:	Prof. Mona Hetta
ate of specifications approval:	17/01/2017

-Professional Information

Overall aims of the course:

ıe course aims to address the use of different medication in treatment of cardiovascular sorders, cancerous lesions, and CNS diseases.

Intended learning outcomes (ILO's):

Knowledge and Understanding:

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

a1-Know what is the basic treatment of infectious diseases.

a2-Know types of cardio vascular disorders.

a3-Understand criteria for selection of therapeutic medication of cancerous lesions.

b-Intellectual Skills:

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

b1-Solve the problems that may oppose the pharmacologist in selection of proper therapeutic regimen for CNS disorders.

b2-Design methods and solution for safe and effect medication.

b3-Evaluate the drug efficacy against safety.

c-Professional and Practical Skills:

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

c1-Apply the information what attained in practical classes.

c2-Select the best approach for using antibiotics in order to avoid the antibiotics drug resistance.

d-General Skills:

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

d1-Have the power to help in providing recommendation for therapeutic medication.

d2-Show scientific and logical thinking approach.

3-Course contents:

	No of Hours		
	Lecture	Practical	Total
Sedative and hypnotics	2	4	6
Antidepressant	2	2	4
Anti-parkinsonism + antiepileptic	3	2	5

Antipsychotics	2	2	4
Anticancer	2	2	4
Anticancer	4	2	6
Hyperthyroidism, Cortisone+ contraception	4	2	6
Antibiotics	3	4	7
Antibiotics	2	4	6
Total	**24**	**24**	**48**

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.
- Oral exams evaluate the levels knowledge and understanding and Intellectual Skills.
- Class participation: 10. %
- Practical exam: 25 %
- 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
- Oral exam: According to semester timetable
- Final exam: According to semester timetable

6-List of References:	
Course Notes	Pharmacology II Pharmacy Students
Required Books	Harvey, A. R. (2012). Lipencott's Illustrated Review Pharmacology. Philadelphia, PA, Lippincott Williams & Wilkins, a Wolters Kluwer business.
Recommended Books	Basic & Clinical Pharmacology by Katzung, 14th Edition.
Periodicals	European Journal of Pharmacology.
Web Sites	https://biologydictionary.net/pharmacology

Course Coordinator: **Dr.Mohamed Hamzawy**

Head of Department: **Prof. Mona Hetta**

Date: **17/01/2017**

Course Specifications

Pharmaceutical Technology (PT 607)

Level 3

Semester 6

Course Specification

A-Basic Information	
Course code:	PT607
Course name:	Pharmaceutical technology
Credit hours of the course:	Lecture: 2 Practical: 1 Total: 3
Pre-requisite of the course:	Registration
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:	17/1/2017

B-Professional Information
1- Overall aims of the course:
By the end of this course the students should be able to recognize : Outline the design and mechanism of action of the instruments included in: Select unit operation in pharmaceutical practice. Point out the principles of size reduction, size enlargement, supercritical fluid Technology, filtration and centrifugation Review the use and application of supercritical fluid technology, size reduction Size enlargement, size classification, filtration and centrifugation in pharmaceutical industry.
2-intended learning outcomes (ILO'S):
a- knowledge and understanding by the end of this course .the student should be able to :

ا1. .Describe the mechanisms of size reduction and granulation

2. Identify the factors affecting size reduction process

ا3. Identify the factors affecting filtration rate *

4. Describe the equipment's of filtration, centrifugation, size reduction, size *

Enlargement and size classification

ا5- Identify the principles of size separation and supercritical fluid technology *

And its advantages.

ب-Intellectual Skills

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

B1.Compare between different techniques used in production of semi-solid dosage forms

B2-Detect D V value of different semi-solid dosage forms and quantities of ingredients used

b3-Analyze the results to determine the accepted topical dosage form

.b4- Assess excipients used in parenteral forms

b5. Assess excipients used in ophthalmic preparations.

c-Professional and Practical Skills

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

cl. Demonstrate different Pharmaceutical semi-solid dosage forms.

c2. Prepare different types of suppositories on small scales.

.c3-Use chemical and physical tests on a dosage forms to determine their quality control

c4. Analyze manufacturing requirements for parenteral formulations and ophthalmic dosage forms.

d-General Skills:

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

d1..Retrieve analyze and utilize information from different sources

D2.Work effectively in a team.

d3. Develop critical thinking and problem solving ability in the industrial

. Pharmacy field.

d4. Demonstrate continuous self-learning ability.

3- Course contents:			
Topic	**No. of hours**		
	Lecture	**Practical**	**Total**
Theory of filtration	2	2	4
Design of filtration equipment	2	2	4
Particle size reduction	2	2	4
Granulation	4	2	6
Size separation	4	2	6
Properties of powder	2	2	4
Industrial gases	2	2	4
Drying	2	2	4
Total	20	16	36

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: /01/2017

Course Specifications
(2016 –2017)

Natural products and quality control

207

Course Specifications
(2016 –2017)

Pharmacognosy Department

ɜic Information

ɡram(s) on which the course is given	Bachelor of pharmacy
ɔartment offering the course	Pharmacognosy department
ulty offering the program	Faculty of Pharmacy, Fayoum University
ɔt. responsible for teaching the course	Pharmacognosy department
ɑdemic year / level	Third level, Second semester
ɹrse title	Natural products and quality control
urse code	207
ntact hours (credit hours)	Lecture (2) + Practical (1): Total (3)
ɔ-requisite of the course:	Phytochemistry1 & Phytochemistry 2
ɹrse coordinator	Prof. Mona Hetta
ɑjor or Minor element of program	Major
ɪte of specification approval	17/01/2017

Professional Information

Overall aims of the course:

ɾerall Aims of Course The aim of the course is appraise the pharmacy students with herbs rrently in use in the market as well as to provide them with necessary knowledge concerning ndling, authentication and/or quality assurance of medicinal plants when present either in entire or ɯdered forms. In addition, they should recommend chromatographic methods for qualitative and ɑantitative analysis of herbal drugs.

Intended learning outcomes (ILO's):

Knowledge & Understanding Skills

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

a1. Discuss principles of quality control and different techniques used for quality control of herbal drugs.

a2. Confirm the purity, safety and efficacy of different natural drug, as well as, their common adulterants, diluents, deteriorating and spoiling agents..

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b- Intellectual Skills

At the end of this course, the student must be able to: b1. Evaluate any marketed herbal preparation and write full reports for the analyzed preparation. b2. Point out the herbal drugs and their pharmaceutical preparations in the Egyptian market. b3. Design herbal tea containing similar ingredients and different plant extractives. b4. Distinguish between closely related species. b5. Interpret the GLC and HPLC chromatograms.

c- Professional and/or Practical skills

At the end of this course, the student must be able to: c1. Examine microscopically certain powdered genuine herbal drugs, as well as common adulterants, diluents, deteriorating and spoiling agents and perform the quality control procedures of a herbal drug. c2. Report the main key elements of these genuine herbal powders. c3. Demonstrate and Perform major steps included in quality control scheme of herbal medicine. c4. Estimate qualitatively and quantitatively the main active constituents, present in the crude drugs or any herbal finished products, as chemical marker using chromatographic analysis: TLC, GLC, and HPLC. c5. Preserve drugs in moisture proof, light proof and at low temperature and apply methods for controlling insects in crude drugs.

d- General & transferable Skills

At the end of this course, the student must be able to: d1. Practice team work. d2. Demonstrate professional competence in internet. d3. Mange self-learning uses the full range of available resources.

3. Contents

Teaching week	TOPIC	No. of lecture credit hours	No. of practical credit hours	Assessment of ILOs
1	Principles of quality control	2	1	
2	Major steps included in quality control scheme or herbal medicines	2	1	
3	Quantitative microscopical analysis	2	1	
4	Qualitative analysis of bioactive constituents, Analysis of marketed renal herbal tea	2	1	
5	Qualitative analysis of bioactive constituents, Analysis of marketed laxative herbal medicine + Quiz 1	2	1	
6	Quantitative Chromatographical analysis of herbal medicines (2D - TLC & HPLC analysis)	2	1	
7	Storage and preservation of herbal medicine	2	1	
8	Control on the finished products	2	1	
9	Quality Control of renal herbal tea (Macroscopical investigation, Microscopical investigation)	2	1	
10	Quality Control of renal herbal tea (Chromatographic analysis, Determination of concentration ofeach marker in the herbal tea)	2	1	
11	Quality Control of renal herbal tea (Determination of certain pharmacopeial constants) + Quiz 2	2	1	
12	Revision	2		
	Total	**24**	**12**	

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

- 4.1. Lectures
- 4.2. Practical sessions
- 4.3. Discussion sessions
- 4.4. Seminar / work shop

5- Student Assessment:

a-Assessment Methods and Weighing:

- Class participation: ..... %
- Practical exam: ..... %
- Oral exam: ..... %
- Final exam: ..... %

b-Assessment Schedule:

- Class participation: Quiz 1: Week 4-5
  Quiz 2: Week 8-9
  Other activities: throughout the semester
- Practical exam: Week 12-13
- Oral exam: According to semester timetable
- Final exam: According to semester timetable

6-List of References:

Course Notes	on ELS
Required Books	- Egyptian pharmacopeia " Cairo university press , Cairo, 2005 - Evans, W.C., Trease and Evans " text book of Pharmacognosy WB Saundres Company Ltd, London , Toronto, Sydney, Tokyo, Last edition. - Wallis T.E. " text book of Pharmacognosy " J.A. Churchill Ltd, London, 1960 - Topics in Applied pharmacognosy for fourth year pharmacy students, notes by, Mohamed S. Hifnawy , Seham S. El Hawary - Mohamed A.Selim, Nabaweya M. El Fiki, Omar A. Rashwan.
Recommended Books	------
Periodicals	------
Web Sites	------

7- Facilities required for teaching and learning: -

Student's microscopes - Pocket lenses - fresh and powdered medicinal plants - overhead projector, data show, board

Course Coordinator: Prof. Abd El-Salam Ibraheem

Head of Department: Prof. Mona H. Hetta

Date: 17/01/2017

Clinical Pharmacy Program

Faculty of Pharmacy - Fayoum University

Course Specifications
(2017 –2018)

Quality Control of Pharmaceuticals

PC 707

Course Specifications
(2017 –2018)
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	Third level, Second semester
Course title	Quality Control of Pharmaceuticals
Course code	PC 707
Contact hours (credit hours)	Lecture 2 (2) + Practical 2 (1): Total 4 (3)
Pre-requisite of the course:	Pharmaceutical Analytical Chemistry II
Course coordinator	Dr/ Hany Mohamed
Major or Minor element of program	Major
Date of specification approval	07/01/2018

B. Professional Information

Overall Aims of Course

1. Understanding Quality Control Principles: Equip students with fundamental concepts of quality control and assurance in the pharmaceutical industry, including regulatory standards and guidelines.
2. Analytical Techniques: Teach students about various analytical methods and techniques used to assess the quality and purity of pharmaceuticals, including both traditional and modern methods.
3. Regulatory Compliance: Familiarize students with the legal and regulatory framework governing quality control in pharmaceuticals, including Good Manufacturing Practices (GMP) and other relevant guidelines.
4. Quality Management Systems: Introduce the components of quality management systems (QMS) and their importance in ensuring consistent product quality and safety.

Course Specifications
(2017 –2018)

Risk Management: Develop skills in identifying, assessing, and mitigating risks associated with pharmaceutical production and quality control processes.

Problem-Solving Skills: Enhance students' ability to troubleshoot and resolve quality-related issues that may arise during the pharmaceutical manufacturing process.

Laboratory Skills: Provide hands-on experience in laboratory techniques relevant to quality control, including sample preparation, instrumentation, and data analysis.

Understanding Product Life Cycle: Explain the importance of quality control throughout the product life cycle, from development to post-market surveillance.

Interdisciplinary Collaboration: Emphasize the role of quality control professionals in interdisciplinary teams, fostering collaboration with other departments such as research and development, manufacturing, and regulatory affairs.

. Commitment to Continuous Improvement: Instill a culture of continuous quality improvement and the importance of ongoing education and adaptation to new technologies and methodologies in the pharmaceutical industry.

ended Learning Outcomes of Course (ILOs)

Knowledge and Understanding

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

Principles of Quality Control: Demonstrate knowledge of the fundamental principles and ıcepts of quality control in the pharmaceutical industry.

Regulatory Frameworks: Explain the key regulatory standards and guidelines (e.g., GMP, H) that govern quality control practices.

Analytical Methods: Identify and describe various analytical techniques used in the ality control of pharmaceuticals, including their purposes and methodologies.

· Quality Management Systems: Understand the components and importance of quality ınagement systems in ensuring product quality and compliance.

· Product Stability and Shelf Life: Explain the factors affecting pharmaceutical stability and e significance of stability testing in quality control.

Intellectual Skills

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

- Data Analysis: Analyze quality control data and results to assess product quality and mpliance with specifications.

Course Specifications
(2017 –2018)

Risk Management: Develop skills in identifying, assessing, and mitigating risks associated with pharmaceutical production and quality control processes.

Problem-Solving Skills: Enhance students' ability to troubleshoot and resolve quality-related issues that may arise during the pharmaceutical manufacturing process.

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Knowledge and Understanding

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· Quality Management Systems: Understand the components and importance of quality ınagement systems in ensuring product quality and compliance.

· Product Stability and Shelf Life: Explain the factors affecting pharmaceutical stability and e significance of stability testing in quality control.

Intellectual Skills

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

- Data Analysis: Analyze quality control data and results to assess product quality and mpliance with specifications.

b_2- Critical Thinking: Evaluate quality control processes and outcomes, identifying potential issues and areas for improvement.

b_3- Risk Assessment: Apply risk management principles to evaluate and mitigate risks associated with pharmaceutical manufacturing and quality control.

b_4- Research Application: Critically assess scientific literature related to quality control methods and their applicability to current practices.

c. Professional and Practical Skills

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

c_1- Laboratory Proficiency: Demonstrate proficiency in conducting quality control tests and using laboratory equipment relevant to pharmaceuticals.

c_2- Documentation and Reporting: Prepare and review quality control documentation, including test methods, protocols, and compliance reports.

c_3- Compliance Auditing: Conduct internal audits to evaluate adherence to regulatory requirements and quality standards in pharmaceutical operations.

c_4- Standard Operating Procedures: Develop and implement standard operating procedures (SOPs) for quality control processes and testing.

d. General and Transferable Skills

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

d_1- Teamwork: Collaborate effectively with interdisciplinary teams to achieve quality objectives and solve quality-related challenges.

d_2- Communication: Communicate findings, recommendations, and technical information clearly and effectively to various stakeholders.

d_3- Adaptability: Demonstrate flexibility in adapting to new technologies and methodologies in quality control practices.

d_4- Time Management: Manage multiple tasks and projects efficiently to meet deadlines in a quality control environment.

d_5- Ethical Responsibility: Uphold ethical standards and integrity in conducting quality control practices and reporting results.

d_6- Lifelong Learning: Commit to continuous professional development by engaging in ongoing education and staying updated with industry trends and advancements.

Course Specifications
(2017 –2018)

Contents

Teaching week	TOPIC	No. of lecture hours	No. of practical hours	Assessment of ILOs
1	Introduction to Quality Control in Pharmaceuticals	2		a2, b1, d1
	Assay of Indocid suppository		2	
2	Regulatory Standards and Guidelines	2		a1, a2,a3,b1,b2, c1, c2, d2
	Assay of C-Retard-Zinc caps		2	
3	Analytical Techniques for Quality Control	2		a1, a2,a4,b1,b2, c1, c2, d2
	Assay of Ferrous sulfate oral solution		2	
4	Quality Management Systems (QMS)	2		a1, a5,a3,b1,b3, c1, c3, d1,d2
	Assay of Mebeverine HCL tabs		2	
5	Stability Testing of Pharmaceuticals	2		a1, a2,a4,b1,b2, c1, c3, d2, d3
	Assay of calcimate caps		2	
6	Analysis of raw material & pharmaceutical products **Quiz 1**	2		a1, a2,a3,b1,b3, c1, c2, d1,d5
	Revision titration		2	
7	Validation of Analytical Methods	2		a1, a2,a4,b1,b2, c1, c3, d2, d6
	Presentation 1		2	
8	Quality Control in Raw Materials and Finished Products	2		a1, a2,a3,b2, c1, c2, d1
	Presentation 2		2	
9	Deviation Management and CAPA	2		a2,a3,b1, c1, c2, d1,d6
	Presentation 3		2	
10	Quality Assurance vs. Quality Control - **Quiz 2**	2		a1, a4,a4, a5, b1,b2, c1, c3, c4, d2
	Presentation 4		2	
11	Emerging Trends in Pharmaceutical Quality Control	2		a2,a4, a5, b1, c1, c2, c4, d1, d5, d6
	Final practical exam		2	
Total no of hours		22	20	
11 & 12	**FINAL Exam**			

12. 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)	√

13. 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%

14. List of References

6.1- Course Notes

Complied by the department

6.2- Essential Books (Textbooks)

Juran's Quality Control Handbook, Statististical Process Control, Introduction to Statistical Quality Control.

6.3- Periodicals

-Analytical letters

- Journal of Chemical Education
-Analytical chemistry

6.4- Web Sites

https://pubchem.ncbi.nlm.nih.gov
https://www.degruyter.com/view/journals/revac/revac-overview.xml

15. Facilities required for teaching and learning

1. Classrooms.
2. Laboratory facilities.
3. White board, smart board, Data show.
4. Library.
5. Computers.
6. Online educational platforms for teaching, discussing research projects and E-exams (Google classrooms, Google drive and Microsoft Teams).

Course Coordinator: Dr/ Hany Mohamed

Head of Department: Prof/ Mona Hetta

Date: 07 /01/2018

Course Specifications
(2016 – 2017)

Course: Pathology

Course code: MD 608

Course Specifications
(2016 – 2017)

A. Basic Information

Program(s) on which the course is given:	Clinical
Department offering the course	Pharmacology and toxicology
Faculty offering the program	Pharmacy
Dept. responsible for teaching the course	Pharmacology and toxicology
Academic year / level	3rd
Course title	Pathology
Course code	MD 608
Contact hours (credit hours)	3
Pre-requisite of the course:	No
Course coordinator	
Major or Minor element of program	Major
Date of specification approval	17/01/2017

B. Professional Information

1. Overall Aims of Course

The study of the etiology, principle diagnostic features, and main characteristics of diseases of the cardiovascular system, respiratory tract, central nervous system and other important organ systems of the body.

2. Intended Learning Outcomes of Course (ILOs)

a- Knowledge and Understanding:

a1. Discuss the etiology, principle diagnostic features, and main characteristics of different diseases.

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

b- Intellectual Skills

b1. Integrate basic pharmacological knowledge to diagnose different diseases

b2. Differentiate between different diseases on basis of etiology and several diagnostic features

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

c- **Professional and Practical Skills**

c1. Diagnose several diseases of the main body systems

c2. Analyze the etiology of different diseases

By the end of the course, the student should be able t

c- General and Transferable Skills

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

d1. Communicate verbally using pathological ideas to diagnose different diseases

Contents

Teaching week	TOPIC	No. of lecture hours	No. of Practical hours
1	Pathophysiology of cardiovascular system	2	1
2	Pathophysiology of cardiovascular system	2	1
3	Pathophysiology of cardiovascular system	2	1
4	Pathophysiology of central nervous system	2	1
5	Pathophysiology of central nervous system	2	1
6	Pathophysiology of central nervous system	2	1
7	**First periodic exam**	2	1
8	Pathophysiology of respiratory system	2	1
9	Pathophysiology of respiratory system	2	1
10	Pathophysiology of urinary tract	2	1
11	Pathophysiology of endocrines	2	1
12	Second periodic exam	2	1

Total no of hours	36
13	FINAL Exam

3. Teaching and Learning Methods

4.1- Lectures (board, data show)

4.2- Assignments

4.3- Class discussion

4. Student Assessment Methods

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

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

Assessment Schedule

Quiz 1	7th week
Quiz 2	12th week
Final exam	13th week; according to semester schedule

Weighting of Assessments

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

5. List of References

6.1- Course Notes: Lecture notes in Pathology

6.2- Essential Books (Textbooks)

Robbins & Kumar Basic Pathology

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:

Head of Department: Prof. Mona Hetta

Date: 17 /01/2017

Course Specifications
(2016 – 2017)

Course: First aid

Course code: MD 609

Course Specifications
(2016 – 2017)

Course: First aid

Course code: MD 609

Course Specifications
(2016 – 2017)

Course: First aid

Course code: MD 609

Course Specifications
(2016 – 2017)

Course: First aid

Course code: MD 609

Clinical Pharmacy Program

Faculty of Pharmacy - Fayoum University

Course Specifications
(2016 – 2017)

asic Information

ogram(s) on which the course is given:	Clinical Pharmacy Program
epartment offering the course	Pharmacology & Toxicology
iculty offering the program	Faculty of Pharmacy
ept. responsible for teaching the course	Pharmacology & Toxicology
cademic year / level	3 level
ourse title	Traumas and First Aid
ourse code	MD 609
ontact hours (credit hours)	2
e-requisite of the course:	Registration
ourse coordinator	Dr. Mohamed Hamzawy
ate of specification approval	17/01/2017

rofessional Information

verall Aims of Course

he course aims to address the different emergency situations and how to deal with ifferent serious conditions beside transfer several skills in dealing with emergency.

Intended Learning Outcomes of Course (ILOs)

Knowledge and Understanding:

/ the end of the course, the students should be able to

now what is the basic life support & CPR.a2. Apply basic grammatical rules

now types of bleeding types of injury

nderstand the method of transportation of victims during emergency conditions.

Intellectual Skills

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

- Solve the problems that may oppose the students during care of victims.

Design methods and solution for safe who involved in the crisis.

Evaluate the degree of the disaster.

ofessional and Practical Skills

pply the information what attained in CPR training.

elect the best approach for safe the victims during the crisis.

timate the types of bleeding and fracture.

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

eneral and Transferable Skills

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

Have the power to help in providing first aid in critical situations.

Show scientific and logical thinking approach in providing care during emergency conditions.

ntents

eaching week	TOPIC	No. of lecture hours	No. of Practical hours
1	Introduction of First Aid	2	0
2	Soft Tissue Injuries	2	0
3	Soft Tissue Injuries	2	0
4	Injuries to Muscles, Bones, and Joints	2	0
5	Injuries to Muscles, Bones, and Joints	2	0
6	SUDDEN ILLNESS	2	0
7	**First periodic exam**	2	0
8	SUDDEN ILLNESS	2	0
9	Bites and Stings	4	0
10	chocking	2	0
11	Basic life support (BLS)	4	0
12	Second periodic exam	2	0
otal no of		24	

13	FINAL Exam

4. Teaching and Learning Methods

4.1- Lectures (board, data show)

4.2- Assignments

4.3-practical sections

4.3- open Class discussion

4.4-play roles

5. Student Assessment Methods

Written exams evaluate the levels of knowledge and understanding and Intellectual Skills.

Periodic exams evaluate the levels of knowledge and understanding and Intellectual Skills.

Oral exams evaluate the levels of knowledge and understanding and Intellectual Skills.

Class participation: **10%**

Practical exam: **..... %**

Oral exam: **15%**

Final exam: **75%**

6. Assessment Schedule

7. **Class participation:**
   a. Quiz 1: Week 4-5
   b. Quiz 2: Week 8-9
   c. Other activities: throughout the semester
8. **Oral exam:** According to semester timetable
9. **Final exam:** According to semester timetable

Weighting of Assessments

Periodical	10%
Oral exam	15%
Final exam	75%
Total	100%

10.List of References

6.1- Course Notes: First Aid for Pharmacy Students

6.2- Essential Books (Textbooks);

Required Books	First Aid for Colleges and Universities (10th Edition).
Recommended Books	Rosen's Emergency Medicine [2 Volume Set] (7th Edition)

Facilities required for teaching and learning

1. Lecture rooms with data show
2. Procurement of the 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: 17/01/2017

Course Specifications

A-Basic Information	
Course code:	PT608
Course name:	Community pharmacy practice
Credit hours of the course:	Lecture: 2 Practical:1 Total:3
Pre-requisite of the course:	registration
Department teaching the course:	Department of Pharmacy Practice
Program for which the course is given:	Clinical Pharmacy Program
Course Co-ordinator:	Dr. Azza Mancy
Head of the Department:	Prof. Dr. Mona Hetta
Date of specifications approval:	17-01-2017

B-Professional Information
1-Overall aims of the course:
This course aims at familiarizing the student with the role of community pharmacist, introducing the student to the structures, processes & outcomes of the variety of services provided by the community pharmacist, providing knowledge and skills on recommendation of non-prescription medications and building a patient care practice capable of providing a consistent service to every patient.
2-Intended learning outcomes (ILO's):
a-Knowledge and Understanding: By the end of this course, the student should be able to:

a1-Know the difference between simple aliments and major diseases

a2-Know the main outlines of the structured response to symptoms in the community pharmacy for minor and moderate infantile and children diseases

a3-Understand the role of a community pharmacist

a4- Identify patient's primary complain and reason for seeking medical care.

a5-Define the process of patient monitoring for other minor and moderate diseases.

b-Intellectual Skills:

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

b1-Solve the discrepancies between prescribed and over the counter medications

b2- Design non-pharmacological, pharmacological treatments or both for the management of a disease to ensure optimum drug therapy.

b3-Evaluate symptoms in the Community Pharmacy for verification of the degree of illness and hence treatment by non- prescription or prescription medication.

b4: Predict optimal drug therapy for minimizing drug therapy problems.

c-Professional and Practical Skills:

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

c1-Apply learned knowledge to perform his job as a community pharmacist by the best professional and social behaviors

c2-Select the most effective, safe and economic non-prescription medication based on best gathering of information to ensure patient's drug related needs.

c3-Estimate self-patient monitoring criteria to ensure achievement of the desired therapeutic outcomes

c-4: Practice clear, accurate and confident communication with patients and health care professionals to establish team working.

d-General Skills:

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

d1-Have the power to Communicate with patients, caregivers, other health care professionals, and the public using appropriate listening, verbal, nonverbal, and written communication skills

d2- Show empathy while establishing rapport and communicating with the patient and/or caregiver.

d3- Apply gained information about ethics to exhibit a caring and respectful attitude.

Topic	No. of hours		
	Lecture	Practical	Total
Role of Pharmacist in Management of Minor Illness.	2	0	2
Common cold & Cough.	2	1	3
Sore Throat.	2	1	3
Primary headaches	2	2	4
Indigestion & Heart Burn	2	1	3
Constipation	2	1	3
Diarrhea.	2	1	3
Nausea & Vomiting	2	1	3
Minor eye disorders	2	1	3
Hemorrhoids	2	1	3
Musculoskeletal disorders	2	1	3
Vaginal thrush	2	1	3
Total	**24**	**12**	**36**

4-Teaching and Learning Methods (lectures, open discussion, role plays, ..etc):
1. Self-Learning assignments **2.** Interactive lectures & open discussions ((Tools; board, data show) **3.** practical tutorials (tools; case studies, Group-based research project for patient counseling) **4.** Office hours for Probation Students

5- Student Assessment:	
a-Assessment Methods and Weighing:	
- Class participation (two quizzes, assignments/ presentations): 15 % - Practical exam: 20 % - 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	Lectures and practical notes prepared by instructors
Required Books	N/A
Recommended Books	1. Symptoms in the pharmacy a Guide to the management of common illnesses", Alison Blenkinsopp, 7th edition, 2014. 2. "The common symptom guide", John Wasson, McGraw Hill Professional, 2009.
Periodicals	Journal of pharmacy practice and community medicine
Web Sites	i. www.drugs.com ii. www.pubmed.com

Course Coordinator: Dr. Azza Mancy

Head of Department: Prof. Dr. Mona Hetta

Date: 17-01-2017