COURSE SPECIFICATIONS

Faculty of Pharmacy

Bachelor of Pharmacy

Fourth Year – Second Term

2017-2018

CONTENTS:

COURSE SPECIFICATIONS

Bioassay (2)

Fourth Year- Second Term
2017-2018

Course Specification of Bioassay (2)

University: Zagazig Faculty: Pharmacy

A- Course specifications:

Program(s) on which the course is given: Bachelor of Pharmacy

Major or Minor element of program: Major

Department offering the program: -------

Department offering the course: Pharmacology & Toxicology department

Academic year/Level: Fourth year /Second term

Date of specification approval: January 2018

B- Basic information:

Title: Bioassay (2) Code: 842

Credit Hours: ---

Lectures : 2 hrs/week

Practical: 2 hrs/week

Tutorials: ---

Total: 3 hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to summarize methods of biological assay and standardization of pharmaceutical compounds.

2-Intended Learning Outcomes of Bioassay (2) (lLOs):

A- Knowledge and Understanding	
a1	Illustrate basic principles for biological assay and screening of pharmacological activity of pharmaceutical compounds.
a2	Describe methods of biological screening of pharmaceutical compounds
a3	Demonstrate methods of biological standardization drugs.
B- Professional and Practical skills	
b1	Handle chemicals used in biological assay in a safe way
b2	Use basic laboratory equipment in biological assay of pharmaceutical compounds and screening of pharmacological activity
C- Intellectual skills	
c1	Select the appropriate methods used for biological assay of pharmaceutical compounds.
c2	Retrieve information from different sources in biological assay and standardization of drugs.
D- General and Transferable skills	
d1	Work effectively as a member of a team.

D- Contents:

Week No.	Lecture (2hrs/week)	Practical session (2hrs/week)
1	- distribution of total body fluid - IV fluids	- Laboratory safety measures (1)
2	- Osmolality and osmolarity - Hypertonic saline	- Laboratory safety measures (2)
3	- Hyponateremia and hypo-osmolar states	- Enzyme linked immunosorbent assay technique
4	Hypernateremia and hyper-osmolar states	- Polymerase chain reaction technique
5	Potassium disorders	- Radioimmuno-assay technique
6	- Disorders of Mg++ - Disorders of Ca++ - Disorders of phosphorus	- Western blot technique
7	- Thyroid disorders	- Biological Assay of thyroid hormones
8	- Pituitary gland disorders	- Biological Assay of growth hormone and prolactin
9	- Adrenal gland disorders	- Biological Assay of adrenal gland hormones
10	- Estrogens and androgens	- Biological Assay of sex hormones
11	- Obesity	- Biological Assay of insulin. **-Activity**
12	- Polycystic ovary syndrome	**- Practical exam**
13	- Diabetes mellitus	
14	- Revision	
15	- Open discussion	

E- Teaching and Learning Methods:

- Lectures
- Practical sessions
- Open discussion, activity

F- Student Assessment Methods:

1- Written exam to assess a1, a2, a3, c1

2- Activity to assess c2, d1

3- Practical exam to assess b1, b2

4- Oral exam to assess a1, a2, a3, c1

Assessment schedule:

Assessment (1): Written exams	Week 16
Assessment (2): Activity	Week 11
Assessment (3): Practical exams	Week 12
Assessment (4): Oral exams	Week 16

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exam	60	60%
Practical exam and activities	25	25%
Oral exam	15	15%
TOTAL	100	100%

G- Facilities Required for Teaching and Learning:

- Black (white) board, overhead projectors, Data show, Laboratory equipment (kymograph, organ bath, water bath, thermometer) and Chemicals.

H- List of References:

1- Course Notes: Student book of bioassay 2 approved by the Pharmacology& Toxicology department (2017)

- Practical notes of bioassay 2 approved by the Pharmacology&Toxicology department (2017)

2- Essential Books (Text Books)

i- Bioassay Techniques for Drug Development; Atta-ur-Raham, Iqbal Choudhary M. and Thomson W.J.; Hardwood academic (2001).

ii- Essential Medical Statistics (second edition); Kirkwood B.R., Sterne

J.A.C.; Blackwell Science Inc, Main street, USA (2003).

3- Recommended books:

i- Lippincott illustrated reviews-pharmacology (six edition) (2009).

4- Periodicals and websites:

- Aquilina A. The extemporaneous compounding of paediatric medicines at Mater Dei Hospital. Journal of the Malta College of Pharmacy Practice.Issue 19, 28 – 30, 2013.

http://canadianpharmacistsletter.therapeuticresearch.com/ce/ceCourse.asp...

Course Coordinator: Prof. Dr. Mona Fouad

Head of Department: Prof. Dr. Mohammed Baraka

Date: يناير/2018 م تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ

Matrix I of Bioassay 2 course

Course content		ILOs of Bioassay 2 course							
		Knowledge and understanding			Professional and practical skills		Intellectual skills		General and transferable skills
		a1	a2	a3	b1	b2	c1	c2	d1
Lectures									
1	- distribution of total body fluid - IV fluids	x							
2	- Osmolality and osmolarity - Hypertonic saline	x							
3	- Hyponateremia and hypo-osmolar states	x							
4	- Hypernateremia and hyper-osmolar states	x							
5	Potassium disorders		x	x			x		
6	- Disorders of Mg++ - Disorders of Ca++ - Disorders of phosphorus		x	x			x		
7	- Thyroid disorders		x	x			x		
8	Pituitary gland disorders		x	x			x		
9	Adrenal gland disorders		x	x			x		
10	Estrogens and androgens		x	x			x		
11	Obesity		x	x			x		
12	Biological Assay of insulin		x	x			x		
13	Diabetes mellitus		x	x			x		
Practical sessions									
1	Laboratory safety measures				x				x
2	Enzyme linked immunosorbent assay technique				x	x			x
3	Polymerase chain reaction technique				x	x			x

4	Radioimmuno-assay technique				x	x			x
5	- Western blot technique				x	x			x
6	Biological Assay of thyroid hormones				x	x			x
7	Biological Assay of growth hormone and prolactin				x	x			x
8	Biological Assay of adrenal gland hormones				x	x			x
9	Biological Assay of sex hormones				x	x			x
10	Biological Assay of insulin				x	x			x
11	Activity							x	x

Matrix II of Bioassay 2 course

National Academic Reference Standards (NARS)		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods		Method of assessment		
						Lecture	Practical session	Written exam	Practical exam	Oral exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A2	a1	- distribution of total body fluid - IV fluids - Osmolality and osmolarity - Hypertonic saline - Hyponateremia and hypo-osmolar states - Hypernateremia and hyper-osmolar states	Student book Essential books	x		x		x
2.4	Principles of isolation, synthesis, purification, identification, and standardization methods of	A13	a2	Potassium disorders - Disorders of Mg++ - Disorders of Ca++ - Disorders of phosphorus - Thyroid disorders Pituitary gland disorders	Student book Essential books	x		x		x

	pharmaceutical compounds.		a3	Adrenal gland disorders Estrogens and androgens Obesity Biological Assay of insulin Diabetes mellitus						
3.2	Handle and dispose chemicals and pharmaceutical preparations safely.	B2	b1	- Laboratory safety measures	Practical notes		x		x	
3.8	Apply techniques used in operating pharmaceutical equipment and instruments.	B13	b2	Enzyme linked immunosorbent assay technique Polymerase chain reaction technique Radioimmuno-assay technique - Western blot technique Biological Assay of thyroid hormones Biological Assay of growth hormone and prolactin Biological Assay of adrenal gland hormones Biological Assay of sex hormones Biological Assay of insulin	Practical notes		x		x	

4.5	Select the appropriate methods of isolation, synthesis, purification, identification, and standardization of active substances from different origins.	C8	c1	Potassium disorders - Disorders of Mg++ - Disorders of Ca++ - Disorders of phosphorus - Thyroid disorders Pituitary gland disorders Adrenal gland disorders Estrogens and androgens Obesity Biological Assay of insulin Diabetes mellitus	Student book Essential books Recommended books	x		x		x
4.13	Analyze and interpret experimental results as well as published literature	C16	c2	- Activity - Revision - Open discussion	Student book Essential books Recommended books	x		x		x
5.3	Work effectively in a team.	D4	d1	Enzyme linked immunosorbent assay technique Polymerase chain reaction technique Radioimmuno-assay technique - Western blot technique Biological Assay of thyroid hormones Biological Assay of growth hormone and prolactin Biological Assay of adrenal gland hormones Biological Assay of sex hormones Biological Assay of insulin	Practical notes		x		x	

Course Coordinator: Prof. Dr. Mona Fouad

Head of Department: Prof. Dr. Mohammed Baraka

Date: تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ يناير/2018 م

Course Specification

Hospital pharmacy and Clinical pharmacy-2

Fourth Year- Second Term

2017-2018

Course specification of Hospital pharmacy and clinical pharmacy-2

University: Zagazig Faculty: Pharmacy

A- Course specifications:

Program (s) on which the course is given: Bachelor of Pharmacy

Major or Minor element of programs: Major

Department offering the program: -------

Department offering the course: Pharmacy Practice Department

Academic year Level: Fourth year/Second semester

Date of specification approval: January 2018

B- Basic information:

Title: Hospital pharmacy and clinical pharmacy-2 Code: 641

Credit Hours: ---

Lectures: 2 hrs/week

Practical: 2 hrs/week

Tutorials: ---

Total: 3 hrs/week

C- Professional information:

1-Overall aim of the course

On completion of the course, the student will be able to identify good communication strategies between pharmacist and patient and educate different classes of patients. The student will be able to manage common disorders of respiratory, nervous, gastrointestinal and dermatological systems as well.

2- Intended Learning Outcomes of Hospital pharmacy and clinical pharmacy-2 (ILOs)

A- Knowledge and Understanding	
a1	Describe appropriate keys for good communication
a2	Enumerate different steps of counselling and problem solving processes
a3	Outline different methods used for management of conflict and violence
a4	Illustrate the etiology, epidemiology of different diseases related to respiratory, nervous, gastrointestinal and dermatological systems
a5	State drugs which can treat the aforementioned diseases, adverse reactions, contraindications and drug-drug interactions
B- Professional and Practical skills	
b1	Evaluate the pharmacist behavior in different communication scenarios
b2	Select proper medicines according to the disease and the patient state
C- Intellectual skills	
c1	Identify different barriers that hinder effective patient – pharmacist communication
c2	Solve different cases related to OTC drugs used for treatment of respiratory, nervous, gastrointestinal and dermatological disorders
D- General and Transferable skills	
d1	Interact effectively with patients, the public and health care professional orally and written
d2	Work effectively as a member of a team
d3	Use information technology to collect and present data

D- Contents:

Week No.	Lecture contents (2 hrs/week)	Practical session (2hrs/week)
1	Strategies for Communicating Effectively with Patients	Ethical Behavior when Communicating with Patients
2	Managing Conflict and Preventing Violence in the Pharmacy	Case study
3	- Patient Counselling - Problem Solving and Analytical Skills	Patient Counselling (Case study)
4	Respiratory system disorders	Identification of Communication Barriers within Different Community Pharmacies
5	Respiratory system disorders	Respiratory system disorders (Case study)
6	Central nervous system disorders	Central nervous system disorders (Case study)
7	Central nervous system disorders	
8	Gastroenterology	GIT disorders (Case study)
9	Gastroenterology	
10	Common Dermatologic Diseases and Conditions	Dermatological disorders (case study)
11	Ear conditions	Ear disorders (case study)
12	Eye conditions	Eye disorders (case study)
13	Role play/presentation	
14	- Revision	**Practical exam**
15	- Open Discussion	

E- Teaching and Learning Methods:

- Lectures
- Practical session (case study, role play)
- Field visit (survey pharmacists in community pharmacies about challenges they faced that hinder good communication)

F- Student Assessment methods:

1-Written exams to assess: a1, a2, a3, a4, a5, c1, c2

2- Activity to assess: d1, d2, d3

3-Practical exams to assess: b2, c2

4-Oral exam to assess: a1, a2, a3, a4, a5, b1, c1

Assessment schedule

Assessment (1): Written exams	Week 16
Assessment (2): Activity	Week 13
Assessment (3): Practical exams	Week 14
Assessment (4): Oral exams	Week 16

Weighting of Assessment

Assessment method	Marks	Percentage
Written exam	60	60%
Practical exam and activities	25	25%
Oral exam	15	15%
TOTAL	100	100%

G- Facilities required for teaching and learning:

- For lectures : Black (white) boards, data show, air conditioned classroom
- For practical: labratories
- Community pharmacy

H- List of References:

1- Course Notes: Student book of Hospital pharmacy and clinical pharmacy -2 approved by pharmacy practice department (2017)

2- Essential Books:

1. Harvey M. Rappaport et al. The Guidebook for Patient Counselling. Lancaster, Pennsylvania: Technomic Publishing Company, 1994.

2. Tindall, William N, Robert S. Beardsley, Carole L. Kimberlin.

Communication Skills in Pharmacy Practice (fourth edition). Baltimore, Maryland and Philadelphia, Pennsylvania : Lippincott Williams & Wilkins, 2003.

3. Managing Conflict and Preventing Violence in the Pharmacy. Canadian Pharmacist Letter. Volume 2014, Course No.

4. ASHP Guidelines on Pharmacist-Conducted Patient Education and Counseling. Medication Therapy and Patient Care: Organization and Delivery of Services–Guidelines, 310 – 312 (2011).

3- Recommended Books

i- Paul Rutter. Community pharmacy: Symptoms, diagnosis and treatment. 3rd edition, Churchill Livingstone, Elsevier, 2013

ii- Non-prescription drugs, Li Wan, P., 2nd ed., Oxford Blackwell Scientific publications (1990).

iii- Pharmacy practice and law 5/ed. Richard R. Abood, David B,Brushwood, (2010).

Course Coordinator: Dr. Gehan Fathy Attia

Head of Department: Dr. Gehan Fathy Attia

Date: م / 2018 يناير تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ

Matrix I of Hospital pharmacy and clinical pharmacy -2 course

Course Contents		ILOs of Hospital pharmacy and clinical pharmacy -2											
		Knowledge and understanding					Professional and practical skills		Intellectual skills		Transferable and general skills		
Lectures		**a1**	**a2**	**a3**	**a4**	**a5**	**b1**	**b2**	**c1**	**c2**	**d1**	**d2**	**d3**
1	Strategies for Communicating Effectively with Patients	x							x				
2	Managing Conflict and Preventing Violence in the Pharmacy			x									
3	- Patient Counselling - Problem Solving and Analytical Skills		x						x				
5	Respiratory system disorders				x	x				x			
6	Central nervous system disorders				x	x				x			
7	Gastroenterology				x	x				x			
8	Common Dermatologic Diseases and Conditions				x	x				x			
9	Ear conditions				x	x				x			
10	Eye conditions				x	x				x			
Practical sessions													
1	Ethical Behavior when Communicating with Patients case study						x				x	x	x
2	Patient Counselling (Case study)						x				x	x	x
3	Identification of Communication Barriers within Different Community Pharmacies						x				x	x	x

4	Respiratory disorders (case study)							x			x	x	x
5	CNS disorders (case study)							x			x	x	x
6	GIT disorders (Case study)							x			x	x	x
7	Dermatological disorders (case study)							x			x	x	x
8	Ear disorders (case study)							x			x	x	x
9	Eye disorders (case study)							x			x	x	x
10	Activity								x		x	x	x

Matrix II of Hospital pharmacy and clinical pharmacy-2 course

National Academic Reference Standards (NARS)		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods			Method of assessment		
						Lecture	Practical session	Field visit	Written exam	Practical exam & activity	Oral exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A2	a1	Strategies for Communicating Effectively with Patients	Student book Essential books	x			x		x
		A8	a2	Patient Counselling Problem Solving and Analytical Skills	Student book Essential books	x			x		x
			a3	Managing Conflict and Preventing Violence in the Pharmacy	Student book Essential books	x			x		x
2.12	Etiology, epidemiology, laboratory diagnosis and clinical features of different diseases and their pharmacotherapeutic approches	A27	a4	Respiratory system disorders Central nervous system disorders Gastroenterology Common Dermatologic Diseases and Conditions Ear conditions Eye conditions	Student book Essential books	x			x		x
			a5		Student	x			x		x

					book Essential books						
3.5	Select medicines based on understanding of etiology and pathophysiology of diseases	B7	b2	Respiratory disorders (case study) CNS disorders (case study) GIT disorders (Case study) Dermatological disorders (case study) Ear disorders (case study) Eye disorders (case study)	Practical notes		x			x	
3.9	Maintain public awareness on rational use of drugs and social health hazards of drug abuse and misuse	B14	b1	Ethical Behavior when Communicating with Patients case study Patient Counselling (Case study) Identification of Communication Barriers within Different Community Pharmacies	Practical notes		x			x	
3.10	Advise patients and other health care professionals about safe and proper use of medicines	B15	c1	Strategies for Communicating Effectively with Patients -Patient Counselling -Problem Solving and Analytical Skills	Practical notes and student books	x	x			x	
4.14	Analyze and evaluate evidence-based information needed in pharmacy practice.	C17	c2	Respiratory system disorders Central nervous system disorders Gastroenterology Common Dermatologic Diseases and Conditions Ear conditions Eye conditions	Practical notes and student books		x			x	

5.1	Communicate clearly by verbal and written means	D1	d1	Ethical Behavior when Communicating with Patients case study Patient Counselling (Case study) Identification of Communication Barriers within Different Community Pharmacies Respiratory disorders (case study) CNS disorders (case study) GIT disorders (Case study) Dermatological disorders (case study) Ear disorders (case study) Eye disorders (case study)	Practical notes and internet			x		x	
5.3	Work effectively in a team.	D4	d2		Practical notes and internet			x		x	
5.4	Use numeracy, calculation and statistical methods as well as information technology tools.	D6	d3		activity			x		x	

Course Coordinator: Dr. Gehan Fathy Attia

Head of Department: Dr. Gehan Fathy Attia

Date: / 2018 يناير تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ

COURSE SPECIFICATIONS

Medicinal Chemistry (2)

Fourth Year- Second Term

2017-2018

Course Specification of Medicinal Chemistry (2)

University: Zagazig Faculty: Pharmacy

A- Course specifications:

Program(s) on which the course is given: Bachelor of Pharmacy

Major or Minor element of program: Major

Department offering the program: -------

Department offering the course: Medicinal chemistry Department

Academic year/ Level: Fourth year /Second term

Date of specification approval: 27/11/2017

B- Basic information:

Title: Medicinal Chemistry (2) Code: 341

Credit Hours: ---

Lectures : 2 hrs/week

Practical: 2 hrs/week

Tutorials: ---

Total: 3 hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to enumerate the therapeutic drugs of different uses with their mode of action and synthetic pathways (antimycobacterium, antineoplastic, antiviral, oral hypoglycemic, diagnostic agents, cardiovascular acting drugs and diuretics).

2-Intended Learning Outcomes of Medicinal Chemistry (2) (lLOs):

A- Knowledge and Understanding	
a1	Describe basics of chemistry of different drug classes (antimycobacterium, antineoplastic, antiviral, oral hypoglycemic, diagnostic agents, cardiovascular acting drugs and diuretics).
a2	Outline synthetic pathways of the aforementioned drugs.
a3	Recognize mode of action & SAR of the aforementioned drugs**.**
B- Professional and Practical skills	
b1	Handle basic laboratory equipments and chemicals effectively and safely.
b2	Identify the active substances (sulfa drugs, aliphatic & aromatic acids & sodium salts).
b3	Establish a research study for assay and analysis of commercial drugs (boric acid and compare results with the pharmacopeia)**.**
C- Intellectual skills	
c1	Apply GLP guide lines in pharmacy practice through learning different analytical techniques
c2	Evaluate quantitative and qualitative methodology of raw materials (boric acid, hexamine, hydrogen peroxide) and pharmaceutical preparations
D- General and Transferable skills	
d1	Work effectively as a member of a team with students.
d2	Write reports and present it.

D- Contents:

Week No.	Lecture (2hrs/week)	Practical session (2hrs/week)
1	-Antimycobacterium agents	-Laboratory safety measures
2	Oral hypoglycemic drugs.	-Quantitative estimation of boric acid
3	Diuretics	-Quantitative estimation of hexamine
4	-Antineoplastic agents (Alkylating agents, antimetabolites)	Quantitative estimation of tolbutamide
5	-Antineoplastic agents (antimetabolites, hormones)	- Identification of boric acid , borax, urea and hexamine **Activity 1 (case study).**
6	-Antiviral agents (host cell penetration inhibitors and nucleic acid inhibitors)	- Identification of sulpha drugs
7	-Antiviral agents (protein inhibitors)	-Identification of organic acids and its salts of pharmaceutical use
8	-Antianginal agents	-Identification of iron , zinc and magnesium salts of pharmaceutical use -Activity 2 (case study)
9	-Antiarryhthmic drugs	**Revision scheme 1**
10	-Antihypertensive agents	Revision scheme 1
11	-Anticoagulants	**-Practical exam**
12	-Antihyperlipidemic agents	
13	Diagnostic agents	----------
14	Revision	----------
15	Open discussion	

E- Teaching and Learning Methods:

- Lectures (overhead projector, data show, board)
- Practical sessions
- Self learning (activity, case report)

F- Student Assessment Methods:

1- Written exam to assess a1, a2, a3, c2

2- Activity to assess d2

3- Practical exam to assess b1, b2, b3, c1, d1, d2

4- Oral exam to assess a1, a2, a3, c2

Assessment schedule:

Assessment (1): Written exams	Week 16
Assessment (2): Activity	Week 5,8
Assessment (3): Practical exams	Week 11
Assessment (4): Oral exams	Week 16

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exam	60	60%
Practical exam and activities	25	25%
Oral exam	15	15%
TOTAL	100	100%

G- Facilities Required for Teaching and Learning:

1. Black (white) board.
2. Data show
3. Explanatory videos.
4. Laboratory equipment (test tubes, piurettes and conical flasks).
5. Chemicals.

H- List of References:

1- Course Notes: Student book of Medicinal chemistry (2) approved by medicinal chemistry department 2017

- Practical notes of Medicinal chemistry (2) approved by medicinal chemistry department 2017

2- Essential Books:

i- Wilson & Griswold's Textbook of Organic: Medicinal and Pharmaceutical Chemistry; Wilson, Charles Owens; Beale, John Marlowe; Block, John H.; Block, John H.; Griswold, Ole; Wiley-Interscience (2009).

ii- Foye's Principles of Medicinal Chemistry; Williams, David A., William O. Foye, and Thomas L. Lemke; Lippincott Williams and Wilkins (2009).

iii- B.p. &U.S Pharmacopia (1988-2007)

3- Recommended books

i- An Introduction to Medicinal Chemistry; Patrick, Graham L, Oxford (2009)

4- Periodicals, Web Sites, etc

http://www.ncbi.nlm.nih.gov/sites/entrez

http://journals.tubitak.gov.tr/chem/index.php

http://www.pharmacopoeia.co.uk/

www.Pubmed.Com

www.sciencedirect.com

Course Coordinator: Prof. Dr./ Lobna Abdelaziz.

Head of Department: Prof. Dr./ Mohammed Baraka.

Date: 27/11/2017 **تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ**

Matrix I of Medicinal chemistry 2 course

Course Contents		ILOs of Medicinal chemistry 2 course									
		Knowledge and understanding			Professional and practical skills			Intellectual skills		General and transferable skills	
Lectures		a1	a2	a3	b1	b2	b3	c1	c2	d1	d2
1	Antimycobacterium agents	x	x	x							
2	Antineoplastic agents(Alkylating agents)	x	x	x							
3	Antineoplastic agents(Alkylating agents, antimetabolites)	x	x	x							
4	Antineoplastic agents(antimetabolites, hormones)	x	x	x							
5	Antiviral agents (host cell penetration inhibitors and nucleic acid inhibitors) (host cell penetration inhibitors and nucleic acid inhibitors)	x	x	x							
6	Antiviral agents(protein inhibitors)	x	x	x							
7	Oral hypoglycemic (sulfonylurea derivatives)	x	x	x					x		
8	Oral hypoglycemic (biguanide derivatives) & diagnostic agents	x	x	x							
9	Antianginal agents & antiarryhthmic drugs	x	x	x							
10	Antihypertensive agents	x	x	x							
11	Anticoagulants & antihyperlipidemic agents	x	x	x							
12	Diuretics (water and osmotic agents, acidifying salts, mercurials , α,β unsaturated ketones, purines , pyrimidines)	x	x	x							

13	Diuretics (sulfonamide derivatives and endocrine antagonists)	x	x	x							
Practical sessions											
1	Laboratory safety measures				x						
2	Quantitative estimation of boric acid, hexamine, hydrogen peroxide & tolbutamide				x		x	x	x	x	x
3	Identification of organic acids / salts,iron , zinc and magnesium salts, sulpha, boric acid, urea and hexamine of pharmaceutical use				x	x		x	x	x	
4	Activity (case study)										x

Matrix II of Medicinal Chemistry 2 course

National Academic Reference Standards (NARS)		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods			Methods of assessment		
						lecture	practical session	self learning	written exam	practical exam	oral exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A2	a1	Antimycobacterium agents	Student book	x			x		x
				Antineoplastic agents(Alkylating agents)	Student book	x			x		x
				Antineoplastic agents(Alkylating agents, antimetabolites)	Student book	x			x		x
				Antineoplastic agents(antimetabolites, hormones)	Student book Essential books	x		x	x		x
				Antiviral agents (host cell penetration inhibitors and nucleic acid inhibitors)	Student book	x			x		x
				Antiviral agents(protein inhibitors)	Student book	x			x		x
				Oral hypoglycemic (sulfonylurea derivatives) (sulfonylurea derivatives) (sulfonylurea derivatives)	Student book	x			x		x

				Oral hypoglycemic (biguanide derivatives) & diagnostic agents	Student book Essential books	x			x		x
				Antianginal agents & antiarryhthmic drugs	Student book	x			x		x
				Antihypertensive agents	Student book	x			x		x
				Anticoagulants & antihyperlipidemic agents	Student book Internet Recommended books	x		x	x		x
				Diuretics (water and osmotic agents, acidifying salts, mercurials , α,β unsaturated ketones, purines , pyrimidines)	Student book Essential books	x			x		x
				Diuretics (sulfonamide derivatives and endocrine antagonists)	Student book	x			x		x
2.5	Principles of drug design, development and synthesis.	A15	a2	Antimycobacterium agents	Student book	x			x		x
				Antineoplastic agents(Alkylating agents)	Student book	x			x		x
				Antineoplastic agents(Alkylating agents, antimetabolites)	Student book Internet Recommended books	x		x	x		x
				Antineoplastic agents(antimetabolites, hormones)	Student book	x			x		x

				Antiviral agents (host cell penetration inhibitors and nucleic acid inhibitors)	Student book	x			x		x
				Antiviral agents(protein inhibitors)	Student book	x			x		x
				Oral hypoglycemic (sulfonylurea derivatives)	Student book	x			x		x
				Oral hypoglycemic (biguanide derivatives) & diagnostic agents	Student book	x			x		x
				Antianginal agents & antiarryhthmic drugs	Student book	x			x		x
				Antihypertensive agents	Student book Internet Recommended books	x		x	x		x
				Anticoagulants & antihyperlipidemic agents	Student book	x			x		x
				Diuretics (water and osmotic agents, acidifying salts, mercurials , α,β unsaturated ketones, purines , pyrimidines)	Student book	x			x		x
				Diuretics (sulfonamide derivatives and endocrine antagonists)	Student book	x			x		x
2.13	Pharmacological properties of drugs including mechanisms of	A30	a3	Antimycobacterium agents	Student book	x			x		x
				Antineoplastic agents(Alkylating agents)	Student book	x			x		x

	action, therapeutic uses, dosage, contra-indications, ADRs and drug interactions.			Antineoplastic agents(Alkylating agents, antimetabolites)	Student book	x			x		x
				Antineoplastic agents(antimetabolites, hormones)	Student book Internet Recommended books	x		x	x		x
				Antiviral agents (host cell penetration inhibitors and nucleic acid inhibitors)	Student book	x			x		x
				Antiviral agents(protein inhibitors)	Student book	x			x		x
				Oral hypoglycemic (sulfonylurea derivatives)	Student book	x			x		x
				Oral hypoglycemic (biguanide derivatives) & diagnostic agents	Student book	x			x		x
				Antianginal agents & antiarryhthmic drugs	Student book	x			x		x
				Antihypertensive agents	Student book	x			x		x
				Anticoagulants & antihyperlipidemic agents	Student book Internet Recommended books	x		x	x		x
				Diuretics (water and osmotic agents, acidifying salts, mercurials , α,β unsaturated ketones, purines , pyrimidines)	Student book	x			x		x

				Diuretics (sulfonamide derivatives and endocrine antagonists)	Student book	x			x		x
3.2	Handle and dispose chemicals and pharmaceutical preparations safely	B2	b1	Laboratory safety measures	Practical notes		x			x	
3.4	Extract, isolate, synthesize, purify, identify, and/or standardize active substances from different origins.	B6	b2	Identification of organic acids / salts,iron , zinc and magnesium salts, sulpha, boric acid, urea and hexamine of pharmaceutical use	Practical notes		x			x	
3.11	Conduct research studies and analyze the results	B17	b3	Quantitative estimation of boric acid, hexamine, hydrogen peroxide & tolbutamide	Practical notes		x			x	
4.1	Apply pharmaceutical knowledge in the formulation	C1	c1	Quantitative estimation of boric acid, hexamine, hydrogen peroxide & tolbutamide	Practical notes		x			x	

	of safe and effective medicines as well as in dealing with new drug delivery systems.			Identification of organic acids / salts,iron , zinc and magnesium salts, sulpha, boric acid, urea and hexamine of pharmaceutical use	practical notebook		x			x	
4.3	Apply qualitative and quantitative analytical and biological methods for QC and assay of raw materials as well as pharmaceutical preparations	C4	c2	Oral hypoglycemic (sulfonylurea derivatives)	Student book Internet Recommended books	x		x	x		X
				Quantitative estimation of boric acid, hexamine, hydrogen peroxide & tolbutamide	Practical notes		x			x	
				Identification of organic acids / salts,iron , zinc and magnesium salts, sulpha, boric acid, urea and hexamine of pharmaceutical use	Practical notes		x			x	

5.3	Work effectively in a team	D4	d1	Quantitative estimation of boric acid, hexamine, hydrogen peroxide & tolbutamide	Practical notes		x			x	
5.9	Implement writing and presentation skills	D11	d2	Activity	Internet Recommended books		x	x		x	
				Quantitative estimation of boric acid, hexamine, hydrogen peroxide & tolbutamide, Activity	Practical notes		x			x	

Course Coordinator: Prof. Dr./ Lobna Abdelaziz.

Head of Department: Prof. Dr./ Mohammed Baraka.

Date: 27/11/2017 تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ

Course Specification

Natural products 2

Fourth Year- Second Term

2017-2018

Course Specification of Natural products 2

University: **Zagazig** **Faculty:** **Pharmacy**

A- Course specifications:

Program (s) on which the course is given: B. Pharm. Sci.

Major or Minor element of programs: Major

Department offering the program: ----------

Department offering the course: Pharmacognosy

Academic year Level: Fourth year /Second term

Date of specification approval: October 29, 2017

B- Basic information:

Title: Natural products II code: 741

Credit Hours: ---------

Lectures: 2 hrs/week

Practical: 3.5 hrs/week

Tutorials: ----------

Total: 5.5 hrs/week

C- Professional information:

1-Overall aim of the course:

By the end of the course, the student will be able to illustrate the fundamental knowledge about plant tissue culture, biotransformation and genetic engineering

2-Intended learning outcomes (ILOs):

A- Knowledge and Understanding	
a1	Define plant tissue culture
a2	Describe laboratory organization
a3	Identify techniques of micropropagation, media and their preparation, culture initiation and plant regeneration
a4	Summarize biotransformation principles and approaches based on pathway of secondary metabolites and by using cell culture and plant enzymes
a5	Demonstrate plant genetics principles based on DNA technology including plant genes and enzymes coding
a6	Describe applications of the previously mentioned technology in pharmaceuticals and related fields
a7	Describe physical and chemical properties of radio labeled materials and their applications in tissue culture and plant genetics using genetic makers
a8	Explain plant biotechnology and genetic engineering used for production of biosynthetic enzymes for natural products.
B- Professional and Practical skills	
b1	Use different abbreviations and medical terms belonging to tissue culture, biotransformation and plant genetics
b2	Deal with different chemicals in a right and safe way.
b3	Monitor and control growth in a callus
C- Intellectual skills	
c1	Recall and sleet the appropriate biochemical information for production of active principles in an efficient way
c2	Integrate plant cell biology and genetic information to estimate the pharmaceutically active compounds qualitatively
D- General and Transferable skills	
d1	Work effectively in a team
d2	Acquire computer skills through the use of database, internet and word processing
d3	Demonstrate critical thinking, decision making and problem solving in tissue culture, biotransformation and plant genetics

D-Course Content:

Week No.	Lecture contents (2hrs/lec)	Practical (3½ hrs/lab)
1	- Introduction to plant tissue culture - Plasticity and totipotency - The culture enlivenment - Plant cell culture media	-Introduction to tissue culture techniques
2	- Plant growth regulators	-Production of callus from Root (carrot)
3	- Culture types - Plant regeneration	-Production of callus from seeds (fenugreek)
4	- Micropropagation	-Production of callus from leaves (Hyosyamus)
5	- Introduction to plant biotransformation - Biotransformation using plant cells and organ culture	-Demonstration of different equipments used in plant tissue culture lab
6	- Pathway transformation - Biotransformation using immobilized cell culture. - Genetic engineering approach towards transformation.	**-Activity:** Study of different metabolic pathways that could be used in biotransformation
7	- Biotransformation using plant enzymes. - Biotransformation of selected secondary metabolites.	**-Practical exam 1**
8	- Introduction of plant genetics - A natural vehicle for introducing new gene into plant.	-Introduction of plant molecular biology and biotechnology
9	- Horizontal gene transformation - The Ti plasmid and plant genetic engineering	-DNA isolation from fruits (straw berry) using the isopropanol method
10	- The role of organisms in genetic engineering. - Application and purpose of plant genetic engineering	-DNA isolation from leaves (Hyosyamus) using CTAB method
11	- Genetic engineering of biosynthetic enzymes for natural products - Genetically engineered plant fats	**- Group discussion (activity):** using genbank to source and identify different genes.
12	- Production of candidate vaccines in plant tissue. - Genetic markers for plant breeding (DNA	**-Practical exam 2**

	polymorphism)	
13	-Authentication of components from a mixture of herbal materials - other purposes of genetic engineering	
14	-Revision	
15	-Open discussion	

E-Teaching and learning methods:

- Lectures
- Practical sessions
- Self learning (activity)

F-Student assessment:

1-Written exam to assess: a1, a2, a3, a4, a5, a6, a7, a8, b1, c1

2- Activity to assess: c2, d1, d2. d3

3-Practical exam to assess: b1, b2, b3, c1, c2, d1, d2, d3

4-Oral exam to assess: a1, a2, a3, a4, a5, a6, a7, a8, b1, c1

Assessment schedule:

Assessment (1): Written exam	Week 16
Assessment (2): Activity	Week 6 and 11
Assessment (3): Practical exam	Week 7 and 12
Assessment (4): Oral exam	Week 16

Weighting of assessment:

Assessment method	Marks	Percentage
Written exam	60	60 %
Practical exam and activities	25	25 %
Oral exam	15	15 %
Total	100	100 %

G-Facilities required for teaching and learning:

- **For lectures:** Black (white) boards, data show.
- **For Labs:** Chemicals, glassware, instruments, Digital balances, water bathes.

H-List of References

1- Course Notes:

Student book of natural product II approved by Pharmacognosy department (2017).

2- Essential Books (Text Books):

i. Methods in Plant Molecular Biology ,Schuler, M.A and Zialinski, R.EAcademic Press. Inc. (1989)

ii. Basic Cell Culture; Davis, J. M ;IRL Press(1994)

iii. Plant Biotechnology ;Hammond ,J , McGarvey ,P and Yusibov Eds. Springer (2000).

iv. Pharmaceutical Biotechnology ; Crommmlin ,J.A. and Sindelar ,R.D.Taylor and Francis ,(2002).

3 -Recommended books:

i- Plant Gene Isolation; Foster, G. D. Twell, D ; John Wiley& Sons (1996)

ii- Plant Cell and Tissue Culture ;Reinert ,J and Yeoman, M. M; Springer-Verlag (1982)

iii- Genetics; Weaver, F. R and Hedrick, P. W. 3rd Ed.WCB (1996).

iv- Biotechnology ; Smith, J. E. 3rd ,Cambridge University Press (1996)

v- Genetics; P.K. Gupta 3rd.Ed Rakish Kumar (2004) .

4- Periodicals and Websites:

Periodicals :Plant Biotechnology , J. Molecular Biology, Plant Molecular Biology , Plant Cell Physiology , Die Pharmazie ; Planta medica , Phytochemistry, J. of Natural Products and Fitoterapia .

http:// www.elsevier.com/phytochem

http:// www.elsevier.com/phytomed

http:// www.wiley.co.uk.

http:// bioweb@cellbiol.com

Course Coordinator: Prof. Dr. Sameih EL Dahmy

Head of Department: Prof. Dr. Azza Mohommed E-Shafaie

Date: 2017/ 10 / 29 م تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ

Matrix I of Natural Products-2 Course

Course Contents		ILOs of Natural Products-2 Course															
		Knowledge and understanding								Professional and practical skills			Intellectual skills		Transferable and general skills		
		a1	a2	a3	a4	a5	a6	a7	a8	b1	b2	b3	c1	c2	d1	d2	d3
Lectures																	
1	- Introduction to plant tissue culture	x															
2	- Plasticity and totipotency	x															
3	- The culture enlivenment	x	x	x													
4	- Plant cell culture media	x		x													
5	- Plant growth regulators	x		x						x							
6	- Culture types	x		x													
7	- Plant regeneration	x		x													
8	- Micropropagation			x													
9	- Introduction to plant biotransformation				x												
10	- Biotransformation using plant cells and organ culture				x												
11	- Pathway transformation				x												
12	- Biotransformation using immobilized cell culture.				x												

13	- Genetic engineering approach towards transformation.				x				x								
14	- Biotransformation using plant enzymes.				x				x								
15	- Biotransformation of selected secondary metabolites					x			x								
16	- Introduction of plant genetics					x			x								
17	- A natural vehicle for introducing new gene into plant.					x			x								
Course Contents		**ILOs of Natural Products-2 Course**															
		Knowledge and understanding								**Professional and practical skills**			**Intellectual skills**		**Transferable and general skills**		
		a1	**a2**	**a3**	**a4**	**a5**	**a6**	**a7**	**a8**	**b1**	**b2**	**b3**	**c1**	**c2**	**d1**	**d2**	**d3**
18	- Horizontal gene transformation					x			x								
19	- The Ti plasmid and plant genetic engineering					x			x								
20	- The role of organisms in genetic engineering.					x			x								
21	- Application and purpose of plant genetic engineering						x		x								
22	- Genetic engineering of biosynthetic enzymes for natural products						x		x				x				
23	- Genetically engineered plant fats						x		x				x				
24	- Production of candidate vaccines in plant tissue.						x		x				x				
25	- Genetic markers for plant breeding (DNA polymorphism)							x	x	x							

26	- Authentication of components from a mixture of herbal materials						x										
27	- Other purposes of genetic engineering						x		x								
Practical																	
28	- Introduction to tissue culture techniques									x				x		x	
29	- Production of callus from Root (carrot)									x	x			x		x	
30	- Production of callus from seeds (fenugreek)									x	x			x		x	
31	- Production of callus from leaves (Hyosyamus)									x	x			x		x	
32	- Demonstration of different equipments used in plant tissue culture lab									x				x		x	
Course Contents		**ILOs of Natural Products-2 Course**															
		Knowledge and understanding								**Professional and practical skills**			**Intellectual skills**		**Transferable and general skills**		
		a1	**a2**	**a3**	**a4**	**a5**	**a6**	**a 7**	**a 8**	**b1**	**b2**	**b3**	**c1**	**c2**	**d1**	**d2**	**d3**
33	- Activity: Study of different metabolic pathways that could be used in biotransformation														x		x
34	- Introduction of plant molecular biology and biotechnology										x				x		x
35	- DNA isolation from fruits (straw berry) using the isopropanol method										x				x		x

36	- DNA isolation from leaves (Hyosyamus) using CTAB method										x				x		x
37	- Group discussion (activity): using genbank to source and identify different genes.																
38	- Group discussion (activity): Identification of different genes responsible for different pharmaceutically active pathways from genbank													x	x	x	x

Matrix II of Natural Products-2

National Academic Reference Standards NARS		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods			Weighting of assessment		
						Lecture	Practical session	Self learning	Written exam	Practical exam	Oral exam
Lectures											
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A2	a1	- Introduction to plant tissue culture. - Plasticity and totipotency. - The culture enlivenment. - Plant cell culture media. - Plant growth regulators. - - Culture types. - Plant regeneration.	Student book	x			x		x
			a2	- The culture enlivenment.	Student book	x			x		x
			a3	- The culture enlivenment. - Plant cell culture media. - Plant growth regulators. - Culture types. - Plant regeneration. - Micropropagation	Student book	x			x		x

2.2	Physico-chemical properties of various substances used in preparation of medicines including inactive and active ingredients as well as biotechnology and radio-labeled products.	A10	a4	- Introduction to plant biotransformation. - Biotransformation using plant cells and organ culture. - Pathway transformation. - Biotransformation using immobilized cell culture. - Genetic engineering approach towards transformation. - Biotransformation using plant enzymes.	Student book	x			x		x
			a5	- Biotransformation of selected secondary metabolites. - Introduction of plant genetics. - A natural vehicle for introducing new gene into plant. - Horizontal gene transformation. - The Ti plasmid and plant genetic engineering. - The role of organisms in genetic engineering.	Student book	x			x		x
			a6	- Application and purpose of plant genetic engineering. - Genetic engineering of biosynthetic enzymes for natural products. - Production of candidate vaccines in plant tissue. - Authentication of components from a mixture of herbal materials. - Other purposes of genetic engineering.	Student book	x			x		x

		A9	a7	- Genetic markers for plant breeding (DNA polymorphism).	Student book	x			x		x
2.11	Principles of body function in health and disease states as well as basis of genomic and different biochemical pathways regarding their correlation with different diseases.	A26	a4	- Introduction to plant biotransformation. - Biotransformation using plant cells and organ culture. - Pathway transformation. - Biotransformation using immobilized cell culture. - Genetic engineering approach towards transformation. - Biotransformation using plant enzymes.	Student book	x			x		x
			a5	- Biotransformation of selected secondary metabolites. - Introduction of plant genetics. - A natural vehicle for introducing new gene into plant. - Horizontal gene transformation. - The Ti plasmid and plant genetic engineering. - The role of organisms in genetic engineering.		x			x		x

			a6	- Application and purpose of plant genetic engineering. - Genetic engineering of biosynthetic enzymes for natural products. - Production of candidate vaccines in plant tissue. - Authentication of components from a mixture of herbal materials. - Other purposes of genetic engineering.		x			x		x
	Program Ilos Exceeding NARS	A41	a7	- The role of organisms in genetic engineering. - Application and purpose of plant genetic engineering - Genetic engineering of biosynthetic enzymes for natural products - Genetically engineered plant fats		x			x		x
3.1	Use the proper pharmaceutical and medical terms and abbrevations and symbols in pharmacy practice.	B1	b1	- Plant growth regulators. Genetic markers for plant breeding (DNA polymorphism).	Student book	x			x		x
Practical											

3.2	Handle and dispose chemicals and pharmaceutical preparations safely	B2	b2	- Introduction to tissue culture techniques. - Production of callus from Root (carrot). - Production of callus from seeds (fenugreek). - Production of callus from leaves (Hyosyamus). - Demonstration of different equipments used in plant tissue culture lab. - Introduction of plant molecular biology and biotechnology. - DNA isolation from fruits (straw berry) using the isopropanol method. - DNA isolation from leaves (Hyosyamus) using CTAB method.	practical notes		x			x	
3.6	Monitor and control microbial growth and carry out laboratory tests for identification of infectious and non-infectious diseases.	B8	b3	- Production of callus from Root (carrot). - Production of callus from seeds (fenugreek). - Production of callus from leaves (Hyosyamus).	Practical notes		x			x	

4.13	Analyze and interpret experimental results as well as published literature	C16	c1	- Genetic engineering of biosynthetic enzymes for natural products. - Genetically engineered plant fats. - Production of candidate vaccines in plant tissue.	Student book	x			x		x
			c2	- Group discussion (activity): Identification of different genes responsible for different pharmaceutically active pathways from genbank.	Internet, essential and recommended books.			x			
5.3	Work effectively in a team	D4	d1	- Introduction to tissue culture techniques. - Production of callus from Root (carrot). - Production of callus from seeds (fenugreek). - Production of callus from leaves (Hyosyamus). - Demonstration of different equipments used in plant tissue culture lab. - Activity: Study of different metabolic pathways that could be used in biotransformation. - Introduction of plant molecular biology and biotechnology. - DNA isolation from fruits (straw berry) using the isopropanol method.	Student book , practical notes , internet	x	x	x	x	x	x

				- DNA isolation from leaves (Hyosyamus) using CTAB. - Group discussion (activity): Identification of different genes responsible for different pharmaceutically active pathways from gene bank.							
5.4	Use numeracy, calculation and statistical methods as well as information technology tools	D5	d2	- Group discussion (activity): Identification of different genes responsible for different pharmaceutically active pathways from genbank.							
5.1	Demonstrate critical thinking, problem-solving and decision-making abilities	D12	d3	- Introduction to tissue culture techniques. - Production of callus from Root (carrot). - Production of callus from seeds (fenugreek). Production of callus from leaves (Hyosyamus). - Demonstration of different equipments used in plant tissue culture lab. - Activity: Study of different metabolic pathways that could be used in biotransformation. - Introduction of plant molecular biology and biotechnology. - DNA isolation from fruits (straw berry) using the isopropanol method.	Student book , practical notes, internet	x	x	x	x	x	x

				- DNA isolation from leaves (Hyosyamus) using CTAB. - Group discussion (activity): Identification of different genes responsible for different pharmaceutically active pathways from genbank.							

Course Coordinator: Prof. Dr. Sameih EL Dahmy

Head of Department: Prof. Dr. Azza Mohommed E-Shafaie

Date: 29 / 10 /2017 م تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ

COURSE SPECIFICATIONS

Parasitology and Pathology

Fourth Year-Second Term
2017-2018

Course Specification of Parasitology and Pathology

University: **Zagazig** **Faculty:** **Pharmacy**

A- Course specifications:

Program(s) on which the course is given: Bachelor of Pharmacy

Major or Minor element of program: Major

Department offering the program: -------

Department offering the course: Microbiology & Immunology Department

Academic year/level: Fourth year/ Second term

Date of specification approval: 3 September 2017

B- Basic information:

Title: Parasitology and Pathology Code: 440

Credit Hours: ---

Lectures : 2 hrs/week

Practical: 1 hr/week

Tutorials: ---

Total: 3 hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to:

Underline the basic concepts of parasitology, entomology and pathology and specify the appropriate methods for treatment, prevention and control of different diseases caused by parasites and insects

2-Intended Learning Outcomes of Parasitology and Pathology Course (lLOs):

A- Knowledge and Understanding	
a1	Illustrate the basic concepts of parasitology.
a2	Summarize the principles of entomology and diseases caused by insects.
a3	Identify the basic fundamentals of pathology.
a4	Recognize etiology, epidemiology and clinical features of different diseases caused by parasites and insects.
a5	Determine the etiology of disease and response of cells to various injurious agents.
a6	Outline the laboratory diagnosis of diseases caused by different parasites.
B- Professional and Practical skills	
b1	Use the proper terms of parasitology, entomology and pathology.
b2	Select drugs for treatment of different diseases caused by parasites.
b3	Perform microscopical examination of different parasitic stages and insects from different specimens.
b4	Identify pathological slides for different diseases.
C- Intellectual skills	
c1	Suggest the appropriate methods for treatment, prevention and control of different parasites and insects.
c2	Analyze and interpret experimental results for identification of parasites, insects and pathological diseases in suitable form.
D- General and Transferable skills	
d1	Interact effectively with public, patients and other health care professionals.
d2	Acquire computer skills for writing reports and researches.
d3	Write and present reports.
d4	Demonstrate critical thinking, decision-making and problem-solving in dealing with case study.

D- Contents:

Week No.	Lectures (2 hrs/week)	Practical session (1hr/week)
1	- General Introduction	- General Introduction – General terms of parasitology
2	- Helminthology 2a-Trematodes: - General characters - Fasciola species - Short essay questions	- Parasitological laboratory examination: - Sample collection - Evaluation of different techniques used in the diagnosis of parasitic infections: - Microscopical Serology - Modern molecular techniques (e.g. PCR)
3	- Heterophyes species - Schistosoma species - Case report	- Demonstration of microscopic slides of morphologic stages of: - Fasciola species - Heterophyes species - Schistosoma species - Demonstration of Snails hosts
4	Cestodes: General characters Taenia saginata Taenia solium Cysticercosis Case report	- Demonstration of microscopic slides of morphologic stages of: Taenia saginata Taenia solium
5	- Echinococcus sp. - Hymenolepis sp. - Diphyllobothrium sp. Nematodes:` - General characters - Ascaris lumbricoides - Hook worm sp.	Demonstration of microscopic slides of morphologic stages of : - Echinococcus sp. - Ascaris lumbricoides - Hook worm sp. - **Activity (report)**
6	- Enterobius & Trichuris - Trichinella spiralis - Wuchereria species - Case report	Demonstration of microscopic slides of morphologic stages of: - Enterobius & Trichuris - Trichinella spiralis - Wuchereria species
7	Protozoology	Demonstration of microscopic

	- Amoebae species - Balantidium coli - Giardia lamblia - Trichomonas vaginalis - Case report	slides of morphologic stages of: - Amoebae species - Balantidium coli - Giardia lamblia - Trichomonas vaginalis
8	- Leishmania species - Trypanosoma species. Case report	- Leishmania species - Trypanosoma species.
9	- Plasmodium species - Toxoplasma gondii Case study	- Plasmodium species - Toxoplasma gondii - Lab. Diagnosis of parasitic infections
10	Entomology - General characters - Mosquito species - Lice, Fleas, Bugs - Ticks, Mites & Cyclops Parasitic Infections: Clinical Manifestations, Diagnosis and Treatment	Demonstration of microscopic slides of: - Mosquito species - Lice, Fleas, Bugs - Ticks, Mites & Cyclops
11	General Pathology - Introduction - Inflammation - Healing and regeneration - Repair - Cell injury & cell death - Blood pressure & Diabetes	Demonstration of computer Slide of: some pathological slides Cardinal signs of inflammation Neutrophile margination Dilated congested capillaries. Chronic Non specific inflammation Acute localized suppurative inflammation (acute lung abcess) Acute diffuse suppurative inflammation (Cellulitis) Tuberculous granuloma foreign body giant cell granuloma Serous Inflammation (effusion) Edema Demonstration of computer Slide of: other pathological slides Coagulative necrosis Liquefactive necrosis Granulation tissue Fatty degeneration in liver Apoptosis in liver

		Adenoma liver Meningioma Revision
12	- Thrombosis & Embolism - Ischemia & Infarction - Sclerosis & Heart failure - Blood disorders - Apoptosis - Necrosis	**Practical exam**
13	Growth Disorders Neoplastic and non-neoplastic growth Genetic Disorders: Degenerative Disorders Hepatic & Pulmonary Disorders Diseases of nervous system	
14	Revision	
15	Open Discussion	

E- Teaching and Learning Methods:

- Lectures
- Practical sessions
- Self learning (Activity, Internet search, case report, …..)

F- Student Assessment Methods:

1- Written exam to assess a1, a2, a3, a4, a5, a6, c1, d4

2- Activity to assess d2, d3

3- Practical exam to assess b1, b2, b3, b4, c2, d1,d2,d3

Assessment schedule:

Assessment (1): Written exams	Week 16
Assessment (2): Activity	Week 5
Assessment (3): Practical exams	Week 12

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exam	40	80%
Practical exam and activities	10	20%
TOTAL	50	100%

G- Facilities Required for Teaching and Learning:

1. For lectures: Black (white) boards and data show.

2. For Labs: Chemicals, Autoclaves, Incubators, Ovens, Water bathes, staining dyes, microscopes, refrigerators and microbiological culture media

H- List of References:

A- Parasitology:

1- Student book of Parasitology and pathology-Lecture approved by Microbiology & Immunology department & practical notes by staff of the department 2017.

2- Essential Books:

i- Medical Parasitology (eighth edition); Markell and Voge's, W.B. Saunders Company (1999).

ii- District Laboratory practice in Tropical countries.

iii- MONICA CHEESBROUGH, Printed in Great Britain at University press, Cambridge (1999).

iv- Clinical Parasitology (ninth Edition); Beaver, P.C.; Jung, R.C. and Cupp, E.W. Lea & Febiger; Philadelphia (1984).

3- Recommended Books

Manson's Tropical Diseases (21th edition), Cook GC (ed), London: WB Saunders (2003).

4- Periodicals, Web Sites

http://medicaleducationonline.org/

http://www.parasitesonline.net

http://pathmicro.med.sc.edu/book/parasit-sta.htm

http://www.dpd.cdc.gov/dpdx/HTML/Para_Health.htm

Course Coordinator: Prof. Ghada Hamed Shaker

Head of Department: prof. Nehal Elsayed Youssif

Date: 2017/ 12 / 25 تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ م

Matrix I of Parasitology and pathology course

Course Contents		ILOs of Parasitology and pathology course															
		Knowledge and understanding						Professional and practical skills				Intellectual skills		General and transferable skills			
Lectures		a1	a2	a3	a4	a5	a6	b1	b2	b3	b4	c1	c2	d1	d2	d3	d4
1	General Introduction	x															
2	Helminthology Trematodes: General characters - Fasciola species Short essay questions	x			x		x					x					x
3	Heterophyes species Schistosoma species Case report	x			x		x					x					x
4	Cestodes: General characters - Taenia saginata - Taenia solium - Cysticercosis Case report	x			x		x					x					x
5	Echinococcus sp. - Hymenolepis sp. - Diphyllobothrium sp. Nematodes:`General characters - Ascaris lumbricoides - Hook worm sp.	x			x		x					x					x
6	Enterobius & Trichuris - Trichinella spiralis - Wuchereria species Case report	x			x		x					x					x
7	Protozoology: Amoebae species - Balantidium coli - Giardia lamblia -Trichomonas vaginalis Case report	x			x		x					x					x

8	Leishmania species - Trypanosoma species. Case report	x			x		x					x					x
9	Plasmodium species - Toxoplasma gondii • Case study	x			x		x					x					x
10	Entomology: General characters - Mosquito species - Lice, Fleas, Bugs - Ticks, Mites & Cyclops Parasitic Infections: Clinical Manifestations, Diagnosis and Treatment	x	x		x		x					x					
11	General Pathology: Introduction - Inflammation - Healing and regeneration - Repair - Cell injury & cell death - Blood pressure & Diabetes			x		x											
12	Thrombosis & Embolism - Ischemia & Infarction - Sclerosis & Heart failure – Blood disorders - Apoptosis - Necrosis			x		x											
13	Growth Disorders - Neoplastic and non-neoplastic growth Genetic Disorders: Degenerative Disorders Hepatic & Pulmonary Disorders Diseases of nervous system			x		x											
14	Revision	x	x	x	x	x	x										
15	Open discussion	x	x	x	x	x	x										
Practical sessions																	
16	General Introduction – General terms of parasitology							×									

17	Parasitological laboratory examination: - Sample collection - Evaluation of different techniques used in the diagnosis of parasitic infections: Microscopical - Serology - Modern molecular techniques (e.g. PCR)									×							
18	Demonstration of microscopic slides of morphologic stages of: Fasciola species - Heterophyes species - Schistosoma species Demonstration of Snails hosts							×	×	×			×	×			
19	Demonstration of microscopic slides of morphologic stages of: Taenia saginata - Taenia solium							×	×	×			×	×			
20	Demonstration of microscopic slides of morphologic stages of : Echinococcus sp. - Ascaris lumbricoides - Hook worm sp.							×	×	×			×	×			
21	Demonstration of microscopic slides of morphologic stages of: Enterobius & Trichuris - Trichinella spiralis - Wuchereria species							×	×	×			×	×			
22	Demonstration of microscopic slides of morphologic stages of: Amoebae species - Balantidium coli - Giardia lamblia - Trichomonas vaginalis							×	×	×			×	×			
23	Leishmania species Trypanosoma species.							×	×	×			×	×			
24	Plasmodium species Toxoplasma gondii - Lab. Diagnosis of parasitic infections							×	×	×			×	×			
25	Demonstration of microscopic slides of: Mosquito species - Lice, Fleas, Bugs - Ticks, Mites & Cyclops							×		×			×	×			
26	Demonstration of computer Slides of: some pathological slides							×			×		×	×			

27	Demonstration of computer Slides of: other pathological slides - Revision							×			×		×	×			
28	Activity														×	×	

Matrix II of Parasitology and pathology Course

National Academic Reference Standards (NARS)		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods			Method of assessment	
						Lecture	Practical session	Self learning	Written exam	Practical exam
2.1	Principles of basic, pharmaceutical medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice	A4	a1	General Introduction	Student book Essential books	x			x	
				Helminthology Trematodes: General characters - Fasciola species Short essay questions	Student book Essential books	x			x	
				Heterophyes species Schistosoma species Case report	Internet Recommended books	x		x	x	
				Cestodes: General characters - Taenia saginata - Taenia solium - Cysticercosis Case report	Student book Essential books	x			x	

				Echinococcus sp. - Hymenolepis sp. - Diphyllobothrium sp. Nematodes:`General characters - Ascaris lumbricoides - Hook worm sp.	Student book Essential books	x			x	
				Enterobius & Trichuris - Trichinella spiralis - Wuchereria species Case report	Student book Essential books	x			x	
				Protozoology: Amoebae species - Balantidium coli - Giardia lamblia - Trichomonas vaginalis Case report	Student book Essential books	x			x	
				Leishmania species - Trypanosoma species. Case report	Student book Essential books	x			x	
				Plasmodium species - Toxoplasma gondii Case study	Internet Recommended books	x		x	x	
				Entomology: General characters - Mosquito species - Lice, Fleas, Bugs - Ticks, Mites & Cyclops Parasitic Infections: Clinical Manifestations, Diagnosis and Treatment	Student book and Essential books	x			x	

				Revision	Student book and Essential books	x			x	
				Open discussion	Student book and Essential books	x			x	
			a2	Entomology: General characters - Mosquito species - Lice, Fleas, Bugs - Ticks, Mites & Cyclops Parasitic Infections: Clinical Manifestations, Diagnosis and Treatment	Student book and Essential books	x			x	
				Revision	Student book and Essential books	x			x	
				Open discussion	Student book Essential books	x			x	
			a3	General Pathology: Introduction - Inflammation - Healing and regeneration - Repair - Cell injury & cell death - Blood pressure & Diabetes	Student book Essential books	x			x	
				Thrombosis & Embolism - Ischemia & Infarction - Sclerosis & Heart failure - Blood disorders - Apoptosis - Necrosis	Student book Essential books	x			x	

				Growth Disorders - Neoplastic and non-neoplastic growth Genetic Disorders: Degenerative Disorders Hepatic & Pulmonary Disorders Diseases of nervous system	Student book Essential books	x			x	
				Revision	Student book and Essential books	x			x	
				Open discussion	Student book and Essential books	x			x	
2.11	Principles of body function in health and disease states as well as basis of genomic and different biochemical pathways regarding their correlation with different diseases	A24	a4	Helminthology Trematodes: General characters - Fasciola species Short essay questions	Student book Essential books	x			x	
				Heterophyes species Schistosoma species Case report	Internet Recommended books	x		x	x	
				Cestodes: General characters - Taenia saginata - Taenia solium - Cysticercosis Case report	Student book Essential books	x			x	

				Echinococcus sp. - Hymenolepis sp. - Diphyllobothrium sp. Nematodes:`General characters - Ascaris lumbricoides - Hook worm sp.	Student book Essential books	x			x	
				Enterobius & Trichuris - Trichinella spiralis - Wuchereria species Case report	Student book Essential books	x			x	
				Protozoology: Amoebae species - Balantidium coli - Giardia lamblia - Trichomonas vaginalis Case report	Student book Essential books	x			x	
				Leishmania species - Trypanosoma species. •Case report	Student book Essential books	x			x	
				Plasmodium species - Toxoplasma gondii Case study	Internet Recommended books	x		x	x	
				Entomology: General characters - Mosquito species - Lice, Fleas, Bugs - Ticks, Mites & Cyclops Parasitic Infections: Clinical Manifestations, Diagnosis and Treatment	Student book Essential books	x			x	
				Revision	Student book Essential books	x			x	

				Open discussion	Student book and Essential books	x			x	
2.12	Etiology, epidemiology, laboratory diagnosis and clinical features of different diseases and their pharmacotherapeutic approaches	A27	a5	General Pathology: Introduction - Inflammation - Healing and regeneration - Repair - Cell injury & cell death - Blood pressure & Diabetes	Student book and Essential books	x			x	
				Thrombosis & Embolism - Ischemia & Infarction - Sclerosis & Heart failure - Blood disorders - Apoptosis - Necrosis	Student book and Essential books	x			x	
				Growth Disorders - Neoplastic and non-neoplastic growth Genetic Disorders: Degenerative Disorders Hepatic & Pulmonary Disorders Diseases of nervous system	Student book Essential books	x			x	
				Revision	Student book Essential books	x			x	
				Open discussion	Student book Essential books	x			x	

		A28	a6	Helminthology2a-Trematodes: General characters - Fasciola species • Short essay questions	Student book Essential books	x			x	
				• Heterophyes species • Schistosoma species • Case report	Internet Recommended books	x		x	x	
				Cestodes: General characters - Taenia saginata - Taenia solium - Cysticercosis • Case report	Student book Essential books	x			x	
				Echinococcus sp. - Hymenolepis sp. - Diphyllobothrium sp. Nematodes:`General characters - Ascaris lumbricoides - Hook worm sp.	Student book Essential books	x			x	
				Enterobius & Trichuris - Trichinella spiralis - Wuchereria species Case report	Student book Essential books	x			x	
				Protozoology: Amoebae species - Balantidium coli - Giardia lamblia - Trichomonas vaginalis Case report	Student book Essential books	x			x	
				Leishmania species - Trypanosoma species. Case report	Student book Essential books	x			x	

				Plasmodium species - Toxoplasma gondii Case study	Internet Recommended books	x		x	x	
				Entomology: General characters - Mosquito species - Lice, Fleas, Bugs - Ticks, Mites & Cyclops Parasitic Infections: Clinical Manifestations, Diagnosis and Treatment	Student book Essential books	x			x	
				Revision	Student book Essential books	x			x	
				Open discussion	Student book Essential books	x			x	
3.1	Use the proper pharmaceutical and medical terms, abbreviations and symbols in pharmacy practice	B1	b1	General Introduction – General terms of parasitology	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of: Fasciola species - Heterophyes species - Schistosoma species Demonstration of Snails hosts	Practical notes		x			X

				Demonstration of microscopic slides of morphologic stages of: Taenia saginata - Taenia solium	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of : Echinococcus sp. - Ascaris lumbricoides - Hook worm sp.	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of: Enterobius & Trichuris - Trichinella spiralis - Wuchereria species	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of: Amoebae species - Balantidium coli - Giardia lamblia - Trichomonas vaginalis	Practical notes		x			X
				Leishmania species Trypanosoma species.	Practical notes		x			X
				Plasmodium species Toxoplasma gondii Lab. Diagnosis of parasitic infections	Practical notes		x			X
				Demonstration of microscopic slides of: Mosquito species - Lice, Fleas, Bugs - Ticks, Mites & Cyclops	Practical notes		x			X

				Demonstration of computer Slides of: some pathological slides	Practical notes		x			X
				Demonstration of computer Slides of: other pathological slides - Revision	Practical notes		x			X
3.5	Select medicines based on understanding etiology and path physiology of diseases	B7	b2	Demonstration of microscopic slides of morphologic stages of: Fasciola species - Heterophyes species - Schistosoma species Demonstration of Snails hosts	Practical notes		x			×
				Demonstration of microscopic slides of morphologic stages of: Taenia saginata - Taenia solium	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of : Echinococcus sp. - Ascaris lumbricoides - Hook worm sp.	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of: Enterobius & Trichuris - Trichinella spiralis - Wuchereria species	Practical notes		x			X

				Demonstration of microscopic slides of morphologic stages of: Amoebae species - Balantidium coli - Giardia lamblia - Trichomonas vaginalis	Practical notes		x			X
				Leishmania species Trypanosoma species.	Practical notes		x			X
				Plasmodium species Toxoplasma gondii Lab. Diagnosis of parasitic infections	Practical notes		x			X
3.6	Monitor and control microbial growth and carry out laboratory tests for identification of infectious and non-infections in biological specimens	B9	b3	Parasitological laboratory examination: - Sample collection - Evaluation of different techniques used in the diagnosis of parasitic infections: Microscopical - Serology - Modern molecular techniques (e.g. PCR)	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of: Fasciola species - Heterophyes species - Schistosoma species Demonstration of Snails hosts	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of: Taenia saginata - Taenia solium	Practical notes		x			X

				Demonstration of microscopic slides of morphologic stages of : Echinococcus sp. - Ascaris lumbricoides - Hook worm sp.	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of: Enterobius & Trichuris - Trichinella spiralis - Wuchereria species	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of: Amoebae species - Balantidium coli - Giardia lamblia - Trichomonas vaginalis	Practical notes		x			X
				• Leishmania species • Trypanosoma species.	Practical notes		x			X
				• Plasmodium species • Toxoplasma gondii - Lab. Diagnosis of parasitic infections	Practical notes		x			X
				Demonstration of microscopic slides of: Mosquito species - Lice, Fleas, Bugs - Ticks, Mites & Cyclops	Practical notes		x			X
			b4	Demonstration of computer Slides of: some pathological slides	Practical notes		x			X
				Demonstration of computer Slides of: other pathological slides - Revision	Practical notes		x			X

4.8	Select and assess appropriate methods of infection control to prevent infections and promote public health	C11	c1	HelminthologyTrematodes: General characters - Fasciola species Short essay questions	Student book and Essential books	x			x	
				Heterophyes species Schistosoma species Case report	Student book and Essential books	x			x	
				Cestodes: General characters - Taenia saginata - Taenia solium - Cysticercosis Case report	Student book Essential books	x			x	
				Echinococcus sp. - Hymenolepis sp. - Diphyllobothrium sp. Nematodes:`General characters - Ascaris lumbricoides - Hook worm sp.	Student book Essential books	x			x	
				Enterobius & Trichuris - Trichinella spiralis - Wuchereria species Case report	Student book Essential books	x			x	
				Protozoology: Amoebae species - Balantidium coli - Giardia lamblia - Trichomonas vaginalis Case report	Student book Essential books	x			x	
				Leishmania species - Trypanosoma species. Case report	Student book Essential books	x			x	

				Plasmodium species - Toxoplasma gondii Case study	Student book Essential books	x			x	
				Entomology: General characters - Mosquito species - Lice, Fleas, Bugs - Ticks, Mites & Cyclops Parasitic Infections: Clinical Manifestations, Diagnosis and Treatment	Student book Essential books	x			x	
4.13	Analyze and interpret experimental results as well as published literature	C16	c2	Demonstration of microscopic slides of morphologic stages of: Fasciola species - Heterophyes species - Schistosoma species Demonstration of Snails hosts	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of: Taenia saginata - Taenia solium	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of : Echinococcus sp. - Ascaris lumbricoides - Hook worm sp.	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of: Enterobius & Trichuris - Trichinella spiralis - Wuchereria species	Practical notes		x			X

				Demonstration of microscopic slides of morphologic stages of: Amoebae species - Balantidium coli - Giardia lamblia - Trichomonas vaginalis	Practical notes		x			X
				Leishmania species Trypanosoma species.	Practical notes		x			X
				Plasmodium species Toxoplasma gondii Lab. Diagnosis of parasitic infections	Practical notes		x			X
				Demonstration of microscopic slides of: Mosquito species - Lice, Fleas, Bugs - Ticks, Mites & Cyclops	Practical notes		x			X
				Demonstration of computer Slides of: some pathological slides	Practical notes		x			X
				Demonstration of computer Slides of: other pathological slides - Revision	Practical notes		x			X
5.1	Communicate clearly by verbal and written means	D1	d1	Demonstration of microscopic slides of morphologic stages of: Fasciola species - Heterophyes species - Schistosoma species Demonstration of Snails hosts	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of: Taenia saginata - Taenia solium	Practical notes		x			X

				Demonstration of microscopic slides of morphologic stages of : Echinococcus sp. - Ascaris lumbricoides - Hook worm sp.	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of: Enterobius & Trichuris - Trichinella spiralis - Wuchereria species	Practical notes		x			X
				Demonstration of microscopic slides of morphologic stages of: Amoebae species - Balantidium coli - Giardia lamblia - Trichomonas vaginalis	Practical notes		x			X
				Leishmania species Trypanosoma species.	Practical notes		x			X
				Plasmodium species Toxoplasma gondii Lab. Diagnosis of parasitic infections	Practical notes		x			X
				Demonstration of microscopic slides of: Mosquito species - Lice, Fleas, Bugs - Ticks, Mites & Cyclops	Practical notes		x			X
				Demonstration of computer Slides of: some pathological slides	Practical notes		x			X

				Demonstration of computer Slides of: other pathological slides - Revision	Practical notes		x			x
5.4	Use numeracy, calculation and statistical methods as well as information technology tools	D6	d2	Activity	Internet Recommended books		x	x		X
5.9	Implement writing and presentation skills	D11	d3	Activity	Internet Recommended books		x	x		X
5.1O	Implement writing and thinking, problem- solving and decision- making abilities	D12	d4	Helminthology 2a-Trematodes: General characters - Fasciola species Short essay questions	Student book Essential books	x			x	
				Heterophyes species Schistosoma species Case report	Student book Essential books	x			x	
				Cestodes: General characters - Taenia saginata - Taenia solium - Cysticercosis Case report	Student book Essential books	x			x	
				Enterobius & Trichuris - Trichinella spiralis - Wuchereria species Case report	Student book Essential books	x			x	

				Protozoology: Amoebae species - Balantidium coli - Giardia lamblia - Trichomonas vaginalis Case report	Student book Essential books	x			x	
				Leishmania species - Trypanosoma species. Case report	Student book Essential books	x			x	
				Plasmodium species - Toxoplasma gondii Case study	Student book Essential books	x			x	

Course Coordinator: Prof. Ghada Hamed Shaker

Head of Department: prof. Nehal elsayed Youssif

Date: م 2017/ 12 / 25 تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ

COURSE SPECIFICATIONS

Toxicology (2)

Fourth year –Second Term

2017-2018

Course Specification of Toxicology (2)

University: Zagazig Faculty: Pharmacy

A- Course specifications:

Program(s) on which the course is given: Bachelor of Pharmacy

Major or Minor element of program: Major

Department offering the program: -------

Department offering the course: Pharmacology & Toxicology department

Academic year/Level: Fourth year /Second term

Date of specification approval: September 2017

B- Basic information:

Title: Toxicology (2) Code: 843

Credit Hours: ---

Lectures : 2 hrs/week

Practical: 1 hr/week

Tutorials: ---

Total: 3 hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, the student will be able to define teratogenicity and possible drug-drug interactions as well as first aid measures.

2-Intended Learning Outcomes of Toxicology (2) (lLOs):

A- Knowledge and Understanding	
a1	Describe common teratogenic states and the risk of drug use during pregnancy and breast feeding
a2	Mention the clinical features and management of abuse of some drugs
a3	Discuss the mechanism of action and side effects of several drug groups
a4	Describe the mechanism and types of drug-drug interactions
a5	Explain drug induced disease and how to avoid it
a6	Define toxic profile of drugs and other xenobiotics
a7	Illustrate first aid measures regarding drug toxicity and emergency conditions.
B- Professional and Practical skills	
b1	Handle and dispose chemicals safely
b2	Assess toxicity profiles of some xenobiotics
b3	Underpin first aid measures in laboratory settings.
C- Intellectual skills	
c1	Suggest proper drug during pregnancy based on knowledge of drug toxic profile.
c2	Evaluate prescribed drugs for drug-drug interactions or drug-induced disease
D- General and Transferable skills	
d1	Solve some clinical cases by determination the cause and suitable therapy.

D- Contents:

Week No.	Lecture (2 hrs/week)	Practical session (1hr/week)
1	- Drug-induced diseases (1)	- Laboratory safety measures
2	- Drug-induced diseases (2)	- First aid measures 1
3	- Drug-drug interaction (1)	- First aid measures 2
4	- Drug-drug interaction (2)	- Toxic effects of CNS stimulants
5	- Teratogenicity & drugs during pregnancy/breast feeding (1)	- Toxic effects of CNS depressants
6	- Teratogenicity & drugs during pregnancy/breast feeding (2)	- Toxic effects of corrosives
7	- Teratogenicity & drugs during pregnancy/breast feeding (3)	- Toxic effects of irritants
8	- Drug dependence and drug abuse	- Case reports (1)
9	- Toxicology of antibiotics	- Case reports (2)
10	- Toxicology of antiviral & Antifungal	- Case reports (3)
11	- Toxicology of antiprotozoal & antihelmenthic	- Revision **- Activity**
12	- Cancer chemotherapy	**- Practical exam**
13	- First aid basics	
14	- Revision	
15	- Open discussion	

E- Teaching and Learning Methods:

- Lectures
- Practical sessions
- Group discussion, activity

F-Student Assessment Methods:

1- Written exam	to assess	a1, a2, a3, a4, a5, a6, a7, c1, c2
2- Activity	to assess	d1
3- Practical exam	to assess	b1, b2, b3, d1
4- Oral exam	to assess	a1, a2, a3, a4, a5, a6, a7, c1, c2

Assessment schedule

Assessment (1): Written exams	Week 16
Assessment (2): Activity	Week 11
Assessment (3): Practical exams	Week 12
Assessment (4): Oral exams	Week 16

Weighting of Assessment

Assessment method	Marks	Percentage
Written exam	60	60%
Practical exam and activities	25	25%
Oral exam	15	15%
TOTAL	100	100%

G- Facilities Required for Teaching and Learning:

- Black (white) board, Data show, laboratory equipments (digital balance), animals and chemicals.

H- List of References:

1- Course Notes: Student book of Toxicology (2) approved by Pharmacology & Toxicology department (2017)

- Practical notes of Toxicology (2) approved by Pharmacology & Toxicology department (2017)

2- Essential Books

i- Goodman & Gilman's: The pharmacological basis of therapeutics (tenth edition); Hardman, Limbird, Gillman; McGraw-Hill Companies USA

(2001).

ii- The Basic Science of Poison (fifth edition); Klassen C.; McGraw-Hill Companies USA (1996).

3- Recommended Books

i- Integrated Pharmacology; Curtis, Suiter, Walker, Hottman; Mosby, London, UK (1997).

Course Coordinators: Ass. Prof. Dr. Shimaa El-shazly

Head of Department: Prof. Mohamed Baraka

Date: تم مناقشة و إعتماد توصيف المقرر من مجلس القسم بتاريخ 3 /9/2017م

Matrix I of Toxicology 2 course

Course contents		ILOs for Toxicology 2 course												
		Knowledge and understanding							Professional and practical skills			Intellectual skills		General and transferable skills
		a1	a2	a3	a4	a5	a6	a7	b1	b2	b3	c1	c2	d1
Lectures														
1	Drug-induced diseases (1)					x							x	
2	Drug-induced diseases (2)					x							x	
3	Drug-drug interaction (1)				x								x	
4	Drug-drug interaction (2)				x								x	
5	Teratogenicity & drugs during pregnancy/breast feeding (1)	x										x		
6	Teratogenicity & drugs during pregnancy/breast feeding (2)	x										x		
7	Teratogenicity & drugs during pregnancy/breast feeding (3)	x										x		
8	Drug dependence and drug abuse		x											
9	Toxicology of Antibiotics			x			x							
10	Toxicology of Antiviral & Antifungal			x			x							
11	Toxicology of Antiprotozoal & Antihelmenthic			x			x							
12	Cancer chemotherapy			x			x							
13	First aid basics							x						
Practical session														
14	Laboratory safety measures								x					
15	First aid measures										x			
17	Toxic effects of CNS stimulants									x				
18	Toxic effects of CNS depressants									x				
19	Toxic effects of corrosives									x				
20	Toxic effects of irritants									x				
21	Case reports (1)									x				x

22	Case reports (2)									x				x
23	Case reports (3)									x				x
24	Revision													
25	Activity													x

Matrix II of Toxicology 2 course										
National Academic Reference Standards (NARS)		Program ILOs	Course ILOs	Course contents	Sources	Teaching and learning methods		Method of assessment		
						Lecture	Practical session	Written exam	Practical exam	Oral exam
2.11	Principles of body function in health and disease states as well as basis of genomic and different biochemical pathways regarding their correlation with different diseases.	A24	a1	- Teratogenicity & drugs during pregnancy/breast feeding	Student book Essential books Recommended books	x		x		x
2.12	Etiology, epidemiology, laboratory diagnosis and clinical features of different diseases and their pharmacotherapeutic approaches.	A27	a2	- Drug dependence and drug abuse	Student book Essential books	x		x		x

2.13	Pharmacological properties of drugs including mechanisms of action, therapeutic uses, dosage, contra-indications, ADRs and drug interactions.	A30	a3	- Toxicology of Antibiotics - Toxicology of Antiviral & Antifungal - Toxicology of Antiprotozoal & Antihelmenthic - Cancer chemotherapy	Student book Essential books	x		x		x

2.14	Principles of clinical pharmacology, pharmacovigilance and the rational use of drugs.	A31	a4	- Drug interaction	Student book Essential books Recommended books	x		x		x
			a5	- Drug induced disease	Student book Essential books	x		x		x
2.16	2.16 Toxic profile of drugs and other xenobiotics including sources, identification, symptoms, management control and first aid measures.	A33	a6	- Toxicology of Antibiotics - Toxicology of Antiviral & Antifungal - Toxicology of Antiprotozoal & Antihelmenthic	Student book Essential books	x		x		x

				- Cancer chemotherapy						
		A34	a7	- First aid basics	Student book	x	x	x	x	x
3.2	Handle and dispose chemicals and pharmaceutical preparations safely.	B2	b1	- Laboratory safety measures	Practical Notes		x		x	
3.7	Assess toxicity profiles of different xenobiotics and detect poisons in biological specimens	B11	b2	- Toxic effects of CNS stimulants - Toxic effects of CNS depressants - Toxic effects of corrosives - Toxic effects of irritants	Practical notes		x		x	

				- Case reports (1, 2, 3)						
	Program ILOS exceeding NARS	B16	b3	- First aid measures 1,2	Practical notes		x		x	
4.9	Utilize pharmacological basis of therapeutics in the proper selection and use of various drugs in various disease conditions.	C12	c1	- Teratogenicity & drugs during pregnancy/breast feeding	Student book Essential books Recommended books	x		x		x
4.11	Assess drug interactions, ADRs and pharmacovigilance.	C14	c2	- Drug-induced diseases - Drug interaction	Student book Essential books	x		x		x

5.10	Implement writing and thinking, problem- solving and decision- making abilities.	D12	d1	Activity	Recommended books		x		x	

Course Coordinators: **Ass. Prof. Dr. Shimaa El-shazly**

Head of Department: **Prof. Mohamed Baraka**

Date: **تم مناقشة و إعتماد توصيف المقرر من مجلس القسم بتاريخ 3 /9/2017م**