COURSE SPECIFICATIONS

Faculty of Pharmacy

First level – Semester 2

Bachelor of Pharmacy

(Clinical Pharmacy)

2019-2020

CONTENTS

COURSE SPECIFICATIONS

Pharmaceutical Organic Chemistry II

First level –Semester 2

2019-2020

Course Specification of Pharmaceutical Organic Chemistry (2)

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

A- Course specifications:

Programme(s) on which the course is given: Bachelor of Pharmacy (Clinical pharmacy)

Major or Minor element of programmes: Major

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

Department offering the course: Pharmaceutical Organic Chemistry

Academic year / Level: first level / Second Semester

Date of specification approval: 8/2019

B- Basic information:

Title: Pharmaceutical Organic Chemistry II Code: PC203

Credit Hours: ---

Lectures : 2 hrs/week

Practicals: 1 hrs/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:

On completion of the course, the student will be able to explain the aromatic, anti- aromatic and not aromatic compounds, chemistry of aromatic compounds as benzene and electrophilic substitution ex. nitration, sulphonation, halogenations & Friedel-Craft alkylation and acylation.Also nomenclature, synthesis and chemical reaction of arenes, sulphonic acid, nitro compounds, phenol, ether, aryl halides, and aromatic amines and

diazonium salts .Identification of aromatic compounds using spectroscopic tools as UV,IR,^{1}HNMR,^{13}CNMR &mass spectrometer

2-Intended Learning Outcomes:

Knowledge and Understanding	
a1	Illustrate the chemical character of aromatic compounds
a2	Explain the mechanism of different chemical reactions.
a3	Define the systematic nomenclature of different aromatic organic compounds
a4	Identify physical and chemical character of different functional groups
a5	Illustrate the principle of spectroscopic techniques in identification /analysis of aromatic compounds
Professional and Practical skills	
b1	Handle basic laboratory equipments and chemicals effectively and safely.
b2	Perform laboratory experiments concerning synthesis and identification of different chemical compounds
b3	Interpret laboratory results effectively
Intellectual skills	
c1	Assess spectroscopic tools for qualitative analysis of pharmaceutical compounds
c2	Select appropriate methods of synthesis and identification of aryl halides, phenols, aromatic aldehydes, ketones, carboxylic acids and pharmaceutically related compounds
General and Transferable skills	
d1	Work effectively as a member of a team
d2	Write and present reports.
d3	Develop critical thinking, and problem-solving skills.

D- Course Content :

Week No.	Lecture contents (2 hrs/lec.)	Practical session (1hrs/lab)
1	Aromaticity & aromatic compounds.	Laboratory safety
2	Benzene & electrophilic substitution	Identification of benzene
3	Electrophilic substitution	Preparation of nitrobenzene
4	Aromatic aliphatic hydrocarbon(arenes) , Aromatic nitro compounds	Preparation of m-nitro benzoic acid Identification of benzoic acid
5	Aryl halides & aromatic nucleophilic substitution	Identification of phenol
6	Aromatic hydroxyl compounds ,alcohols& phenols	Preparation of tribromo phenol
7	Periodical exam	Periodical exam
8	Aromatic sulphonic acid and derivatives	Identification of aniline
9	Aromatic amines & diazonium salts	Preparation of Schiff base
10	Polynuclear aromatic hydrocarbons	Identification of naphthalene
11	U V Spectroscopy	Preparation of nitro naphthalene
12	IR Spectroscopy	Revision
13	Mass spectrometry	Practical exam
14	^{1}HNMR & ^{13}CNMR Spectroscopy	Practical exam
15	Final written exam & oral exam	

E- Teaching and Learning Methods:

- Lectures
- Practical session
- Case study (interpretation of IR, Mass, NMR charts)
- Self learning (group discussion, group assignment)

F- Student Assessment methods:

- Written exams **to assess:** a1, a2, a3, a4, a5, c1, c2, d3
- Practical exams **to assess:** b1, b2, b3, d1, d2
- Oral exam **to assess:** a1, a2, a3, a4, a5, c1, c2, d1, d3
- Activities **to assess:** d1, d2, d3

Assessment schedule

Assessment (1): Written exams	Week 15
Assessment (2): Practical exams	Week 13, 14
Assessment (3): Oral exams	Week 15
Assessment (4): Activity	participation each lab
Assessment (5): Periodical exam	Week 7

Weighting of Assessment

Assessment method	Marks	Percentage
Written exam	50	50%
Practical exam & activity	25	25%
Oral exam	15	15%
Periodical exam	10	10%
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 pharmaceutical organic chemistry approved by pharmaceutical organic chemistry department **2019**.

2- Essential Books: Organic Chemistry; Solomons T.W.G. & Fryhle C.B.; John Wiley and Sons Inc., USA (2010).

3-Organic Chemistry, Second Edition, Bhupinder Mehta and Manju Mehta (2015

Course Coordinator: Prof. dr/ Hanan Abdel-Razik Abdel-Fattah

Head of Department: Prof. dr/ Hanan Abdel-Razik Abdel-Fattah

Date: **تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ 8/2019**

Matrix I of Pharmaceutical Organic Chemistry 2 course

Course Contents		Knowledge and Understanding					Professional and practical skills			Intellectual skills		General and Transferable skills		
Lectures		a1	a2	a3	a4	a5	b1	b2	b3	c1	c2	d1	d2	d3
1	**Aromaticity &aromatic compounds**	x		x			x							
2	**Benzene &Elecrophilic substitution**	x	x	x	x		x							
3	**Electrophilic substitution & Arenes**	x	x	x	x		x	x						
4	**Aryl halide & neucleophilic substitution**	x	x	x	x		x	x						
	Exercises							x	x			x	x	x
5	**Nitro compounds**	x	x	x	x			x						
6	**Sulphonic acids & derivatives**	x	x	x	x			x						
7	**Aromatic hydroxy compounds,alcohols&phenols**	x	x	x	x			x						
8	**Aromatic aldehydes&ketones**	x	x	x	x			x						
	Exersises							x	x			x	x	x
9	**Aromatic carboxylic acids &derivatives**	x	x	x	x					x				

10	**Aromatic amines& diazonium salts**	x	x	x	x		x							
11	**UV Spectroscopy**					x								
12	**IR spectroscopy**					x			x					
13	**Mass Spectroscopy**					x			x					
14	**H^1NMR Spectroscopy**					x			x					
15	**Final written exam**					x			x					
16														
Practical sessions														
1	**Laboratory safety**									x	x			
2	**Identification of benzene**									x	x			
3	**Preparation of nitrobenzene**									x	x			
4	**Identification of benzoic acid**									x	x			
5	**Preparation of m-nitrobenzoic acid.**									x	x			
6	**Identification of phenol**									x	x			
7	**Preparation of tribromophenol.**									x	x			
8	**Preparation of picric acid**									x	x			
9	**Identification of aniline & benzaldehyde.**									x	x			
10	**Preparation of Schiff base .**									x	x			
11	**Identification of acetophenone & preparation**									x	x			

	of acetophenone hydrazone.													
12	**Identification of aniline HCl & urea**									x	x			
13	**Preparation of monophenyl urea.**									x	x			
14	**Final practical examination**									x	x			

Matrix II of Pharmaceutical Organic Chemistry 2 course

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	Periodical exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A1	a1	**Aromaticity &aromatic Laboratory safety compounds**	Student book Essential books	x			x		x
				Benzene &elecrophilic substitution							
				Electrophilic substitution & arenes							
				Aryl halide & neucleophilic substitution							
			a2	**Electrophilic substitution & Arenes**							
				Nitro compounds							
			a3	**Sulphonic acids & derivatives**							
				Aromatic hydroxy compounds,alcohols&phenols							
				Aromatic aldehydes&ketones							
			a5	**UV Spectroscopy**	Student book	x			x		x

				IR Spectroscopy	Essential books						
				Mass Spectroscopy							
				Spectroscopy							
				H^1NMR							
2.4	Principles of isolation, synthesis, purification, identification, and standardization methods of pharmaceutical compounds.	A8	a4	**Electrophilic substitution & Arenes**	Student book Essential books Internet	x		x	x		
				Aryl halide & neucleophilic substitution	Student book Essential books	x			x		
				Nitro compounds	Student book Essential books	x			x		x
				Sulphonic acids & derivatives	Student book Essential books	x			x		x
				Aromatic hydroxy compounds,alcohols&phenols	Student book Essential books	x			x		x
				Aromatic aldehydes&ketones							
				Aromatic carboxylic acids &derivatives							

				Aromatic amines& diazonium salts							
3.2	Handel and dispose chemicals and pharmaceutical preparation safely.	B2	b1	✓ **Electrophilic substitution & Arenes** ✓ **Aryl halide & neucleophilic substitution** ✓ **Nitro compounds** ✓ **Sulphonic acids & derivatives** ✓ **Aromatic hydroxy compounds, alcohols& phenols** **Aromatic aldehydes&ketones** **Aromatic carboxylic acids &derivatives** **Aromatic amines& diazonium salts**	Practical notes		x			x	
3.4	Extract , isolate ,synthesize , purify ,identify ,and /or standardize active substances from different origins.	B6	b2								

4.13	Analyze and interpret experimental results as well as published literature.	C15	b3								
4.5	Select the appropriate methods of isolation ,synthesis .purification ,identification ,and standardization of active substances from different origins.	C6	c1 c2	**Identification of benzene**	Student book , practical book.	x					
				Preparation of nitro benzene.		x			x		
				Identification of benzoic acid.		x			x		
				Preparation of m-nitro benzoic acid.		x			x		
5.3	Work effectively in a team	D4	d1	**Identification of phenol & preparation of 2,4,6-tribromophenol**	Internet Practical& book			x		x	
5.9	Implement writing and presentation skills.	D11	d2	**Preparation of picric acid.**	Internet Practical& book			x		x	
				Identification of aniline & benzaldehyde.							

				Preparation of Schiff base.							
5.10	Demonstrate critical thinking, problem solving, and decision making abilities	D12	d3	**Exersises**	Practical notes	x				x	
				Identification of acetophenone.			x			x	
				Preparation of acetophenone hydrazone.							
				Identification of aniline HCl & urea.							
				Preparation of monophenyl urea.							
				Exesises							
				Final Practical Exam							

تم مناقشة و إعتماد توصيف المقرر من مجلس القسم 2019/8

COURSE SPECIFICATIONS

Pharmaceutical Analytical Chemistry I

First level –Semester 2

2019-2020

Course Specification of Pharmaceutical Analytical Chemistry-1

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

A- Course specifications:

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

Major or Minor element of programs: Major

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

Department offering the course: Pharmaceutical Analytical Chemistry

Academic year / Level: First level / Semester 2

Date of specification approval: September 2019

B- Basic information:

Title: Pharmaceutical Analytical Chemistry-I Code: PC 205

Credit hours:

Lectures: 2 hrs/week

Practical: 1hrs/week

Tutorials: ---

Total: 3 hrs/week

C- Professional information:

1-Overal1 Aims of the Course

On completion of the course, students will be able to

- Illustrate fundamentals and mechanisms of neutralization, preciptimetric,gravimetric and complexometric reactions.
- Describe the major procedures for running a reaction and the ideal conditions for each one.

- Apply studied quantitative methods for determination of different pharmaceutical compounds
- Ensure that the student has the skills to select the suitable method of analysis for analyte substances in pure form or in mixtures using the studied reactions and interpret the results.

2-Intended Learning Outcomes of Pharmaceutical Analytical Chemistry-1 (lLOs):

A- Knowledge and Understanding	
a1	Outline principles of neutralization, preciptimetric, gravimetric and complexometric reactions.
a2	Illustrate the use of the studied reactions in the pharmaceutical assay.
B- Professional and Practical skills	
b1	Handle and dispose chemicals safely.
b2	Perform neutralization, preciptimetric, gravimetric and complexometric titration assay for determination of some compounds.
C- Intellectual skills	
c1	Interpret results obtained from different methods applied for determination of different pharmaceutical compounds
c2	Select the most appropriate standardization method for different compounds.
D- General and Transferable skills	
d1	Work as member of team.
d2	Develop problem solving skills.

D- Contents:

Week	Lecture (2 hrs/week)	Practical Session (1 hr/week)
1	Theoretical bases of acid base reactions and pH calculations	- Safety guidelines - Introduction to how to use the tools of analytical work - Preparation and standardization of different acids and bases
2	Acid base equilibrium and pH calculations	- Determination of NaOH and Na_2CO_3 - Determination of hydrochloric and acetic acid mixture
3	Buffer solutions and neutralization indicators	- Determination of boric acid, borax and their mixture
4	Color determination of pH and neutralization titration curves	- Determination of sodium carbonate and sodium bicarbonate
5	Application of neutralization reactions and non aqueous titrations	- Determination of Nickel
6	Theoretical bases of gravimetric analysis	- Determination of Calcium
7	Contamination of gravimetric precipitates and its reduction	- Periodical exam (no labs)
8	Application of gravimetric analysis	- Determination of Zinc
9	Theoretical bases of preciptimetric reactions	- Determination of chloride
10	Detection of end points in argentometric titrations Application of preciptimetric reactions	- Determination of calcium and magnesium in samples.
11	Theoretical bases of complex formation	- Determination of copper metal in

	titration, types of ligand ,chelation and factors affecting on the stability of complex	samples
12	Titration with aminopolycarboxylic acid, stability constant of EDTA complex	- Determination of zinc metal in samples. - Determination of manganese metal in samples
13	Titration of metal ion with ligands, Metal indicators	- Revision
14	Application of complexometric titration, cyanometric titration and mercuremetric titration	**Practical exam**
15	Final Exam	

E- Teaching and Learning Methods:

- Lectures (data show, board)
- Practical sessions
- Problem solving

F- Student Assessment Methods:

1- Written exam to assess : a1,a2, c1,c2,d2
2- Practical exam to assess : b1, b2, c1,c2, d1,d2
3- Oral exam to assess : a1,a2, c1,c2
4- Periodical exam to assess : a1,a2,c2,d2

Assessment schedule:

Assessment (1): Final written exam	Week 15
Assessment (2): Practical exam	Week 14
Assessment (3): Oral exam	Week 15
Assessment (4): Periodical exam	Week 7

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exam	50	50%
Practical exam	25	25%
Oral exam	15	15%
Periodical exam	10	10%
TOTAL	100	100%

G- Facilities Required for Teaching and Learning:

- Lectures (Computer, board)
- Practical sessions (Chemicals and Glassware)
- Open discussion

H- List of References:

1- Course Notes

Lecture notes and department notes

2- Essential Books (Text Books)

1. J. Mendham, et al., Vogel's Textbook of Quantitative Chemical Analysis (6th edition);, Addison Wesley Publishing Co., 2000

2. Daniel C. Harris, Quantitative Chemical Analysis (6thEdition);. (2002).

3- Recommended Books

1. F D. C. Harris, Quantitative Analytical Chemistry (9th edition), W. H. Freeman and Co. (2015)

2. D. Chowrasia, N. Sharma, Analytical Chemistry. A Qualitative & Quantitative Approach (General Techniques) Knoc education (2015).

4- Periodicals, Web Sites, etc

https://www.ekb.eg/

http://chemwiki.ucdavis.edu/

http://en.wikipedia.org/

www.Pubmed.Com and

www.sciencedirect.com

Course Coordinators: **Prof. Dr. Magda El Henawee**

Head of department: **Prof. Dr. Hisham Ezzat**

Date: **تم مناقشة و إعتماد توصيف المقرر من مجلس القسم بتاريخ سبتمبر 2019**

Matrix I of Pharmaceutical Analytical Chemistry-1 (PC 205)

Course Contents / Lectures		ILOs of the course							
		knowledge and understanding		practical skills		intellectual skills		Transferable and general skills	
		a1	a2	b1	b2	c1	c2	d1	d2
1	Theoretical bases of acid base reactions and pH calculations	x							x
2	Acid base equilibrium and pH calculations	x							x
3	Buffer solutions and neutralization indicators	x							
4	Color determination of pH and neutralization titration curves	x							x
5	Application of neutralization reactions and non aqueous titrations	x	x			x	x		x
6	Theoretical bases of gravimetric analysis	x							
7	Contamination of gravimetric precipitates and its reduction	x							
8	Application of gravimetric analysis		x			x	x		x
9	Theoretical bases of preciptimetric reactions	x							
10	Detection of end points in argentometric titrations Application of preciptimetric reactions	x	x			x	x		x
11	Theoretical bases of complex formation titration, types of ligand	x							

	,chelation and factors affecting on the stability of complex								
12	Titration with aminopolycarboxylic acid, stability constant of EDTA complex	X							X
13	Titration of metal ion with ligands, Metal indicators	X							
14	Application of complexometric titration, cyanometric titration and mercuremetric titration		X			X	X		X
Practical Sessions									
1	- Safety guidelines - Introduction to how to use the tools of analytical work - Preparation and standardization of different acids and bases			X	X			X	X
2	- Determination of NaOH and Na_2CO_3 - Determination of hydrochloric and acetic acid mixture				X	X	X	X	X
3	- Determination of boric acid, borax and their mixture				X	X	X	X	X
4	- Determination of sodium carbonate and sodium bicarbonate				X	X	X	X	X
5	- Determination of Nickel				X	X	X	X	X
6	- Determination of Calcium				X	X	X	X	X

7	- Periodical exam (no labs).								
8	- Determination of Zinc				X	X	X	X	X
9	- Determination of chloride				X	X	X	X	X
10	- Determination of calcium and magnesium in samples.				X	X	X	X	X
11	- Determination of copper metal in samples				X	X	X	X	X
12	- Determination of zinc metal in samples. - Determination of manganese metal in samples				X	X	X	X	X
13	- Revision			X	X	X	X	X	X

Matrix II of Pharmaceutical Analytical Chemistry-1 (PC 205)

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	Periodical exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A1	a1	• Theoretical bases of acid base reactions and pH calculations • Acid base equilibrium and pH calculations • Buffer solutions • Neutralization indicators • Color determination of pH and neutralization titration curves	Student book Essential books Recommended books	X			X		X	X

				• Non aqueous titrations • Theoretical bases of gravimetric analysis • Contamination of gravimetric precipitates and its reduction • Theoretical bases of preciptimetric reactions • Detection of end points in argentometric titrations • Theoretical bases of complex formation titration, types of ligand ,chelation and factors affecting on the stability of complex • Titration with								

				aminopolycarboxylic acid, stability constant of EDTA complex • Titration of metal ion with ligands, metal indicators								
2.17	Methods of biostatistical analysis and pharmaceutical calculations	A27	a2	• Application of neutralization reactions and non aqueous titrations • Application of gravimetric analysis • Application of preciptimetric reactions • Application of complexometric titration, cyanometric titration and mercuremetric titration	Student book Essential books Recommended books Internet	**X**			**X**		**X**	**X**

3.2	Handle and dispose chemicals and pharmaceutical preparations safely	B2	b1	• Safety guidelines • Introduction to how to use the tools of analytical work	Practical notes		**X**			**X**		
3.4	Extract, isolate, synthesize, purify, identify, and/or standardize active substances from different origins.	B5	b2	• Preparation and standardization of different acids and bases • Determination of NaOH and Na_2CO_3 • Determination Of hydrochloric and acetic acid mixture • Det. Of boric acid, borax and their mixture • Determination Of sodium carbonate and sodium bicarbonate • Determination of nickel • Determination of calcium • Determination of	Practical notes		**X**			**X**		

				Zinc • Determination of chloride • Determination of calcium and magnesium in samples • Determination of copper metal in samples • Determination of zinc metal in samples. • Determination of manganese metal in samples								
4.3 4.13	Apply qualitative and quantitative analytical and biological methods for QC and assay of raw materials as well as pharmaceutical preparations	C3 C15	• c1 • c2	• Application of neutralization reactions • Application of gravimetric analysis • Application of preciptimetric reactions • Application of complexometric	Student book Practical notebook	X	X		X	X	X	

	Analyze and interpret experimental results as well as published literature			titration, cyanometric titration and mercuremetric titration • Practical sessions in weeks (2-6, 8-14)								
4.5	Select the appropriate methods of isolation, synthesis, purification, identification, and standardization of active substances from different origins.	C6	c2	• Application of neutralization reactions • Application of gravimetric analysis • Application of preciptimetric reactions • Metal indicators, application of complexometric titration, cyanometric titration and mercuremetric titration • Practical sessions in weeks (2-6, 8-14)	Student book Practical notebook	X	X		X	X	X	X

5.3	Work effectively in a team	D4	d1	• All practical sessions	Practical notebook		**X**			**X**		
5.10	Develop critical thinking, problem solving and decision making skills. .	D12	d2	• pH calculations • Acid base equilibrium and pH calculations • Color determination of pH and neutralization titration curves • Application of neutralization reactions and non aqueous titrations • Application of gravimetric analysis	Student book Practical notebook	**X**	**X**		**X**	**X**		**X**

				• Application of preciptimetric reactions • Stability constant of EDTA complex • Application of complexometric titration, cyanometric titration and mercuremetric titration • All practical sessions								

Course Coordinator: **Prof. Dr. Magda El Henawee**

Head of Department: **Prof. Dr. Hisham Ezzat**

Date: **2019 سبتمبر** **تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ**

COURSE SPECIFICATIONS

Pharmacognosy I

First level –Semester 2

2019-2020

Course Specification of Pharmacognosy1

University: Zagazig Faculty: Pharmacy

A- Course specifications:

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

Major or Minor element of programs: Major

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

Department offering the course: Pharmacognosy

Academic year Level: First level /second term

Date of specification approval: 9/ 2019

B- Basic information:

Title: Pharmacognosy I code: PG.202

Credit hours:

Lectures: 2 hrs/ week

Practical: 1 hrs/ 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:

- Describe morphological, histological characters and uses of medicinal flowers, barks, wood and herbs as well as identification of different active constituents and adulteration.
- Examine and determine the active constituents of the studied drugs

2-Intended Learning Outcomes (ILOs):

A- Knowledge and Understanding	
a1	Illustrate morphological , Histological characters and uses of medicinal flowers, barks, wood and herbs
a2	Identify adulteration of different medicinal flowers, barks, wood and herbs.
a3	Identify different active constituents of medicinal flowers, barks, wood and herbs.
B- Professional and Practical skills	
b1	Handel and dispose chemicals in a safe way
b2	Handle lab microscopes effectively
b3	Examine drugs of plant origin in entire and powdered form.
C- Intellectual skills	
c1	Adapt GLP and safety guidelines in the lab.
c2	Differentiate between drugs in entire and powdered form
c3	Differentiate the active constituents of different drugs.
D- General and Transferable skills	
d1	Work as a member of a team
d2	Implement writing and presentation skills
d3	Develop critical thinking, decision making and time management skills

D- Contents:

Week No.	Lecture contents (2hrs/lecture)	Practical session (1hrs/lab)
1	• General introduction for what will be taught all over the term • Introduction for the flowers and giving the students the possible references, web sites, text books.	• Laboratory safety measures • Dealing with microscope.
2	• Rest of introduction of flower. • Description of clove flower Including macro- and micro-morphological study for entire drug and for powdered clove.	• Description of clove flower Including macro- and micro-morphological study for entire drug. • Histology of powdered clove.
3	• Chamomile (German and Roman) and calendula flowers macro-and, micro-morphology of the entire and powdered drugs, chemical identification.	• German chamomile flower macro-, and micro-morphology, powders and chemical identification.
4	• Rest of flower drugs, uses, active constituents, pharmaceutical preparations.	• Santonica flowers macro- and, micro-morphology, powder and chemical identification. • **Activity** (Net research on the pharmaceutical products derived from the flowers).
5	• General introduction of bark	• Cinnamon bark macro-and micro-morphology, powder and chemical identification.
6	• Rest of the introduction and cinnamon bark: macro-and; micro-morphology-, powder and chemical identification.	• Cassia barks (Morphology, histology, powder and chemical test, when it is possible.
7	• Cinchona in details: macro-and; micro-morphology, powder and chemical identification. • **Periodic exam.**	• Cinchona barks (Morphology, histology for entire drug powder and chemical test when it is possible. • Morphological demonstration for all barks.
8	• Cascarilla, quillaia, and canella bark (Morphology, histology, powder and chemical test when it is possible.	• Revision for powdered barks (Cinnamon, Cassia and cinchona).
9	• Cascara and frangula in details: macro-morphology; micro-morphology powder and chemical identification.	• Quassia wood: Macro- and micro-morphology of entire wood. • Galls: Macro-morphology and

		micro-morphology of entire drug.
10	• Rest of the taught barks.	• Hyoscymus muticus herb: Macro- and micro-morphology of entire drug
11	• Introduction to wood • Galls: Macro-morphology of entire wood; micro-morphology-, Powder; chemical identification.	• Mentha: Macro- and micro-morphology of Powder and chemical identification
12	• Herbs introduction	• **Practical exam 1**
13	• Official and nonofficial herbs	• **Practical exam 2**
14	• Revision.	----------
15	• **Final written exam.**	----------

E- Teaching and Learning Methods:

- Lectures and interactive lectures.
- Practical sessions
- Self learning (group discussion, group assignment)

F- Student Assessment methods:

- Periodic exam to assess: a1, a2, a3, c1,c2 and c3
- Written exams to assess: a1, a2, a3, c1, c2 and c3
- Practical exams to assess: b1, b2, b3 and d1
- Oral exam to assess: a1, a2, a3, c1, c2 and c3
- Activities (group discussion, group assignment, case study) to assess: d1, d2, d3

Assessment schedule

Assessment (1): activity	Week 4
Assessment (2): Periodic exam	Week 7
Assessment (3): Practical exam	Week 12, 13
Assessment (4): Final written exam	Week 15
Assessment (5): Oral exams	Week 15

Weighting of Assessment

Assessment method	Marks	Percentage
Periodic exam	10	10%
Practical exam	25	25%
Final written exam	50	50%
Oral exam	15	15%
TOTAL	100	100%

G- Facilities required for teaching and learning:

- **For lectures:** Black (white) boards and data show.
- **For Labs:** Chemicals, glassware and microscopes.

H- List of References:

1- Course Notes: Student book of Pharmacognosy I approved by Pharmacognosy Department (2019).

2- Essential Books:

- Wallis, T. (1967). "Text Book of Pharmacognosy 5th Edition, London." J and A. Churchhill Ltd: 81-82.
- De Smet, P. A., K. Keller, R. Hänsel and R. F. Chandler (1992). Adverse effects of herbal drugs, Springer.
- Betty, P. and W. Derek (2000). "Atlas of microscopy of medicinal plants, culinary Herbs and species." CBS publisher New Delhi: 17-42.

- Evans, W. (2005). Trease and Evans Pharmacognosy, ed: 15th, Elsevier, a reed Elsevier India pvt ltd.

- Jackson, M. and A. Lowey (2010). Handbook of extemporaneous preparation: a guide to pharmaceutical compounding, Pharmaceutical Press London, UK.

- Upton, R., A. Graff, G. Jolliffe, R. Länger and E. Williamson (2016). American herbal pharmacopoeia: botanical pharmacognosy-microscopic characterization of botanical medicines, CRC Press.

- McCreath, S. B. and R. Delgoda (2017). Pharmacognosy: Fundamentals, applications and strategies, Academic Press.

3- Recommended Books

- Martindale (2007), "The extra pharmacopeia". 31st edn., by James, E.F Reynolds. And Kathleen Parfitt, Royal Pharmaceutical Society, London.

4- Periodicals and websites:

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

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

- https://www.google.com/search?safe=active&sxsrf=ACYBGNT1wfCQl6DGxZ5ouZYl1QZZfJSrYg:1568843605556&q=Pharmacognosy4all&tbm=isch&source=univ&sa=X&ved=2ahUKEwiel8TurdvkAhVIrxoKHcTHDMAQ7Al6BAgBECQ&biw=1008&bih=584#imgrc=7NmuWomEPl70WM:

Course Coordinators: Prof. Dr. Fawkeya Abbas

Head of Department:

Date: 9/2019

Matrix 1 of Pharmacognosy I													
Course Contents		ILOs of Pharmacognosy I											
		knowledge and understanding			professional and practical skills			intellectual skills			Transferable and general skills		
		a1	a2	a3	b1	b2	b3	c1	c2	c3	d1	d2	d3
Lectures													
1	• General introduction for what will be taught all over the term • Introduction for the flowers and giving the students the possible references, web sites, text books.	x	x	X				x	x	X			
2	• Rest of introduction of flower. • Description of clove flower Including Macro- and micro-morphological study for entire drug and for powdered clove.	x	x	X				x	x	X			
3	• Chamomile (German and Roman) and calendula flowers macro-and, Micro-morphology of the entire and powdered drugs, chemical identification.	x	x	X				x	x	X			
4	• Rest of flower drugs-, uses-, active constituents, pharmaceutical preparations.	x	x	X				x	x	X			
5	• General introduction of bark.	x	x	X				x	x	X			

6	• Rest of the introduction and cinnamon bark: macro-and; micro morphology -, powder and chemical identification.	x	x	X				x	x	X			
7	• Cinchona in details: macro-and; micro-morphology - powder and chemical identification.	x	x	X				x	x	X			
8	• Cascarilla, quillaia, and canella bark (Morphology, histology, powder and chemical test when it is possible.	x	x	X				x	x	X			
9	• Cascara and frangula in details: macro-morphology; micro-morphology powder and chemical identification.	x	x	X				x	x	X			
10	• Rest of the taught barks.	x	x	X				x	x	X			
11	• Introduction to wood • Galls: Macro-morphology of entire wood; micro-morphology-, Powder; chemical identification.	x	x	X				x	x	X			
12	• Herbs introduction • Official and nonofficial herbs	x	x	X				x	x	X			
Practical sessions													
13	• Laboratory safety measures • Dealing with microscope.				X	X							
14	• Description of clove flower Including Macro- and micro-morphological study for entire				X	X	x				x		

	drug. • Histology of powdered clove												
15	• German chamomile flower macro-, and Micro-morphology, powders and chemical identification.				**X**	**X**	**X**				**x**		
16	• Santonica flowers macro- and, micro-morphology, powder and chemical identification.				**X**	**X**	**X**				**x**		
17	• Cinnamon bark macro- and Micro-morphology, powder and chemical identification.				**X**	**X**	**X**				**x**		
18	• Cassia barks (Morphology, histology, powder and chemical test, when it is possible.				**X**	**X**	**X**				**x**		
19	• Cinchona barks (Morphology, histology for entire drug powder and chemical test when it is possible. • Morphological demonstration for all barks.				**X**	**X**	**X**				**x**		
20	• Revision for powdered barks (Cinnamon, Cassia and cinchona).				**X**	**X**	**X**				**x**		
21	• Quassia wood: Macro- and micro-morphology of entire wood. • Galls: Macro-morphology and micro-morphology of entire				**X**	**X**	**x**				**x**		

	drug.												
22	• Hyoscymus muticus herb: Macro- and micro-morphology of entire drug				X	X	X				x		
23	• Mentha: Macro- and micro-morphology of Powder and chemical identification				X	X	X				x		
24	• **Activity** (Net research on the pharmaceutical products derived from the flowers).										x	x	x

Matrix II of Pharmacognosy I

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	Period-ical exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A2	- a1 - a2 - a3	General introduction for what will be taught all over the term. Introduction for the flowers and giving the students the possible references, web sites, text books. Rest of introduction of flower. Description of clove flower Including Macro- and micro-morphological study for entire drug and for powdered clove. Chamomile (German and Roman) and calendula flowers macro-and, Micro-morphology of the entire and powdered	Book note	x			x		x	X

			drugs, chemical identification.									
			Rest of flower drugs, uses, active constituents, pharmaceutical preparations									
			General introduction of bark	Book note								
			Rest of the introduction and cinnamon bark: macro-and; micro morphology -, powder and chemical identification.									
			Cinchona in details: macro-and; micro-morphology - powder and chemical identification. Cascarilla, quillaia, and canella bark (Morphology, histology, powder and chemical test when it is possible.		x			x		x	X	

				Cascara and frangula in details: macro-morphology; micro-morphology powder and chemical identification.								
				Rest of the taught barks.								
			- a1 - a2	Introduction of wood Galls: Macro-morphology of entire wood; micro-morphology-, Powder; chemical identification	Book note	x			x		x	
			- a3	Herbs introduction Official and nonofficial herbs	Book note	x			x		x	
				Identify adulteration of different plant organs using microscope and chemical tests.	Book note	x			x		x	

2.4	Principles of isolation, synthesis, purification, identification, and standardization methods of pharmaceutical compounds.	A8		Study the active constituents of medicinal flowers, barks, woods and herbs.	Book note	x			x		x	X
3.2	Handle and dispose chemicals and pharmaceutical preparations safely	B2	b1	Safety measures lab	Practical note					x		
			b2	Dealing with microscope	Practical note					x		
3.4	Extract, isolate, synthesize, purify, identify, and/or standardize active substances from different origins.	B4	b3	Examine the entire and powdered forms of different medicinal flowers, barks, wood and herbs.	Practical note					x		
				identification of different secondary metabolites using chemical tests	Practical note					x		
4.2	Comprehend and apply GLP,GPMP, GSP and GCP guidelines in pharmacy practice	C2	c1	Safety measures lab.	Practical note					x		
4.5	Select the appropriate methods of isolation,	C6	c2	Differentiate between drugs obtained from	book note	x			x		x	x

	synthesis, purification, identification, and standardization of active substances from different origins.			different medicinal flowers, barks, wood and herbs in entire and powdered form.								
			c3	Study the active constituents of medicinal flowers, barks, wood and herbs.	book note	x			x		x	x
5.3	Work effectively in a team	D4	d1	Activity	Internet research			x				
5.8	Demonstrate creativity and time management abilities	D10	d3	Activity	Internet research			x				
5.9	Implement writing and presentation skills	D11	d2	activity	Internet research			x				

COURSE SPECIFICATIONS

Histology

First level –Semester 2

2019-2020

Course Specification of Histology

University: Zagazig Faculty: Pharmacy

A- Course specifications:

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

Major or Minor element of programs: Major

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

Department offering the course: Histology Department/ Faculty of Medicine

Academic year/ Level: first level /Semester 2

Date of specification approval: September 2019

B- Basic information:

Title: Histology Code: **MD203**

Credit Hours: ---

Lectures : 1 hr/week

Practical: 1 hr/week

Tutorials: ---

Total: 2 hrs/week

C- Professional information:

1-Overall Aims of the Course:

On completion of the course, students will be able to describe cellular components, tissues, organs structure and staining techniques and DNA structure.

2-Intended Learning Outcomes of Histology (lLOs):

A- Knowledge and Understanding	
a1	Outline cellular components structure and functions.
a2	Illustrate principles of histological staining techniques.
a3	Demonstrate different types of microscopes and their functions.
a4	Underline DNA and chromosome structure.
a5	Describe histological features of different tissues in normal and pathological conditions as well.
B- Professional and Practical skills	
b1	Use proper medical terms, abbreviation and symbols of histology.
b2	Construct a research study and analyze the results.
C- Intellectual skills	
c1	Evaluate both scientific and library based information.
D- General and Transferable skills	
d1	Write and present reports.
d2	Develop critical thinking, decision-making and problem-solving skills.

D- Contents:

Week No.	Lecture (1hrs/week)	Practical session (1hrs/week)
1	- Types of microscopes (LM&EM) Types of stains Membranous organoids (cell membrane, mitochondria, Golgi bodies, rough& smooth endoplasmic reticulum and lysosomes).	Projector slides for: 1- types of microscopes 2- cell membrane 3- mitochondria 4- Golgi bodies 5- rough& smooth endoplasmic reticulum 6- lysosomes
2	- Non-membranous organoids Structure of the nucleus	Projector slides for: 1- ribosomes 2- centriolesc 3- cilia and falgella 4- nucleus 5- fat and liver glycogen
3	- DNA structure Chromosomes structure Cell cycle	Projector slides for: 1-Chromosomes (krayotyping)
4	- Epithelial tissues (structure, types, sites)	Projector slides for: 1-Simple epithelium 2-Stratified epithelium
5	- Connective tissues and fibers (structure, types). - Connective tissues proper (structure, types).	Projector slides for: 1-fat cells 2- mast cells 3- adipose c.t. 4- areolar c.t. 5- yellow elastic c.t 6- tendon

6	Periodical exam	
7	- Histological structure of bone and cartilage.	Projector slides for: 1-hyaline and elastic cartilage 2- compact decalcified,ground and spongy bones **Practical exam (1)**
8	- RBCs and WBCs (histological structure, function)	Projector slides for: blood film showing RBCs and leucocytes
9	- Histological structure of skeletal, smooth and cardiac muscles	Projector slides for: skeletal, smooth and cardiac muscles **Activity**
10	- Histological structure of neurons, synapse, neurological cells and nerve endings	Projector slides for: nerve trunk (H&E and osmic acid) Projector slides for: 1- aorta 2- medium sized artery and vein 3- basilar artery
11	- Histological structure of arteries and veins	Projector slides for: 1- thymus 2- tonsils 3- spleen 4- lymph node Projector slides for: 1- fundus and pylorus 2- small intestine 3- large intestine
12	- Histological structure of thymus, tonsils, spleen and lymph node	Projector slides for: 1- liver

		2- pancreas 3- salivary glands Projector slides for: 1- kidney 2- trachea 3- lung
13	- Histological structure of tongue, oesophagus, stomach, small and large intestine	Projector slides for: 1- pituitary gland 2- supra-renal gland 3- thyroid and paparathyroid glands **Practical exam (2)**
14	- Histological structure of liver, pancreas and salivary glands - Histological structure of trachea, lung and kidney - Histological structure of pituitary, supra-renal, thyroid and parathyroid glands	
15	Final written exam	

E- Teaching and Learning Methods:

- Lectures
- Practical sessions
- Self learning (Activities)

F- Student Assessment Methods

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

2- Practical exam to assess b1,b2,c1,d1,d2

3- Activity to assess c1,d1,d2

Assessment schedule:

Assessment (1): Written exam	Week 15
Assessment (2): Periodical exam	Week 6
Assessment (3): Activity	Week 9
Assessment (4): Practical exam	Week 7,13

Weighting of Assessment:

Assessment method	Marks	Percentage
Written exam	65	65%
Practical exam and activities	25	25%
Periodical exam	10	10%
TOTAL	100	100%

G- Facilities Required for Teaching and Learning:

- Black (white) board, Data show.

H- List of References:

1- Course Notes: Student book of Histology approved by Histology Department (2018)

2- Essential Books (text books)

Ross M.H.& Pawlina W.: Histology: A Text and Atlas (Histology (Ross)) (2010).

Course Coordinators: Prof. Azza Saeid Ahmad

Date: /9/2019

Matrix I of Histology course

Course Contents		ILOs of Histology course									
		Knowledge and understanding					Professional and practical skills		Intellectual skills	General and transferable skills	
Lectures		a1	a2	a3	a4	a5	b1	b2	c1	d1	d2
1	Types of microscopes (LM&EM), types of stains, membranous organoids (cell membrane, mitochondria, Golgi bodies, rough& smooth endoplasmic reticulum and lysosomes).	x	x	x							
2	Non-membranous organoids, structure of the nucleus	x									
3	DNA structure, chromosomes structure, cell cycle				X				x		
4	Epithelial tissues (structure, types, sites)					x					
5	Connective tissues and fibers (structure, types), connective tissues proper (structure, types)					x					
6	Histological structure of bone and cartilage					x					
7	RBCs and WBCs (histological structure, function)					x					
8	Histological structure of skeletal, smooth and cardiac muscles					x					
9	Histological structure of neurons, synapse, neurological cells and nerve endings					x			x		
10	Histological structure of arteries and veins					x					
11	Histological structure of thymus, tonsils, spleen and lymph node					x					
12	Histological structure of tongue, oesophagus, stomach, small and large intestine					x					
13	Histological structure of liver, pancreas and salivary glands					x					
14	Histological structure of trachea, lung and kidney Histological structure of pituitary, supra-renal, thyroid and parathyroid glands					x					

Practical sessions											
1	Projector slides for:types of microscopes, cell membrane, mitochondria, Golgi bodies, rough& smooth endoplasmic reticulum and lysosomes						x				
2	Projector slides for: ribosomes, centriolesc,cilia and falgella, nucleus, fat and liver glycogen						x				
3	Projector slides for: Chromosomes (krayotyping)						x				
4	Projector slides for: Simple epithelium,Stratified epithelium							x			
5	Projector slides for: fat cells, mast cells, adipose c.t., areolar c.t., yellow elastic c.t, tendon							x			
6	Projector slides for: hyaline and elastic cartilage, compact decalcified, ground and spongy bones							x			
7	Projector slides for: blood film showing RBCs and leucocytes							x			
8	Projector slides for: skeletal, smooth and cardiac muscles							x			
9	Projector slides for: nerve trunk (H&E and osmic acid)							x			
10	Projector slides for: aorta, medium sized artery and vein, basilar artery							x			
11	Projector slides for: thymus, tonsils, spleen, lymph node							x			
12	Projector slides for: fundus and pylorus, small intestine, large intestine							x			
13	Projector slides for: liver, pancreas, salivary glands							x			
14	Projector slides for: kidney, trachea, lung							x			

15	Projector slides for: pituitary gland, supra-renal gland, thyroid and paparathyroid glands							x			
16	Activity								x	x	x

Matrix II of Histology

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.	A3	a1	Types of microscopes (LM&EM), types of stains, membranous organoids (cell membrane, mitochondria, Golgi bodies, rough& smooth endoplasmic reticulum and lysosomes). Non-membranous organoids, structure of the nucleus	Student book	x			x	
			a2	Types of microscopes (LM&EM), types of stains, membranous organoids (cell membrane, mitochondria, Golgi bodies, rough& smooth endoplasmic reticulum	Student book	x			x	

				and lysosomes).						
2.7	Principles of various instruments and techniques including sampling, manufacturing, packaging, labeling, storing and distribution processes in pharmaceutical industry	A 11	a3	Types of microscopes (LM&EM), types of stains, membranous organoids (cell membrane, mitochondria, Golgi bodies, rough& smooth endoplasmic reticulum and lysosomes).	Notebook	x			x	
2.11	Principles of body function in health and disease states as well as basis of genomic and	A 16	a4	DNA structure, chromosomes structure, cell cycle	Notebook	x			x	

	different biochemical pathways regarding their correlation with different diseases.									
2.12	Etiology, epidemiology, laboratory diagnosis and clinical features of different diseases and their pharmaco-therapeutic approaches	A19	a5	Epithelial tissues (structure, types, sites) connective tissues and fibers (structure, types), connective tissues proper (structure, types) Histological structure of bone and cartilage RBCs and WBCs (histological structure, function) Histological structure of skeletal, smooth and cardiac muscles Histological structure of neurons, synapse, neurological cells and nerve endings Histological structure of arteries and veins Histological structure of thymus, tonsils, spleen and lymph node	Student book	x			x	

				Histological structure of tongue, oesophagus, stomach, small and large intestine Histological structure of liver, pancreas and salivary glands Histological structure of trachea, lung and kidney Histological structure of pituitary, supra-renal, thyroid and parathyroid glands						
3.1	Use the proper pharmaceutical and medical terms and abbrevations and symbols in pharmacy practice	B1	b1	Projector slides for:types of microscopes, cell membrane, mitochondria, Golgi bodies, rough& smooth endoplasmic reticulum and lysosomes Projector slides for: ribosomes, centriolesc,cilia and falgella, nucleus, fat and liver glycogen Projector slides for: Chromosomes (krayotyping)	Practical Notes		x			x

3.11	Conduct research studies and analyze the results	B17	b2	Projector slides for: Simple epithelium,Stratified epithelium	Practical Notes		x			x
				Projector slides for: fat cells, mast cells, adipose c.t., areolar c.t., yellow elastic c.t, tendon						
				Projector slides for: hyaline and elastic cartilage, compact decalcified, ground and spongy bones						
				Projector slides for: blood film showing RBCs and leucocytes						
				Projector slides for: skeletal, smooth and cardiac muscles						
				Projector slides for: nerve trunk (H&E and osmic acid)						
				Projector slides for: aorta, medium sized artery and vein, basilar artery						
				Projector slides for: thymus, tonsils, spleen, lymph node						

				Projector slides for: fundus and pylorus, small intestine, large intestine Projector slides for: liver, pancreas, salivary glands Projector slides for: kidney, trachea, lung Projector slides for: pituitary gland, supra-renal gland, thyroid and paparathyroid glands						
4.14	Analyze and evaluate evidence- based information needed in pharmacy practice	C16	c1	Activity DNA structure, chromosomes structure, cell cycle, Histological structure of neurons, synapse, neurological cells and nerve endings	Student book, essential book, internet	x	x	x	x	x
5.9	Implement writing and presentation skills	D11	d1	Activity	Internet		x	x		x
5.10	Implement writing and thinking, problem-solving and decision-	D12	d2	Activity	Internet		x	x		x

	making abilities.									

Course Coordinators: **Prof. Azza Saeid Ahmad**

Date: **/9/2019**

COURSE SPECIFICATIONS

Physical Pharmacy

First level –Semester 2

2019-2020

Course specification of physical pharmacy

University: Zagazig Faculty: Pharmacy

A- Course specifications:

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

Major or Minor element of programs: Major

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

Department offering the course: Pharmaceutics Dept.

Academic year Level: level 1, semester 2

Date of specification approval: 11/2019

B- Basic information:

Title: Physical pharmacy Code: **PT201**

Credit Hours: ---

Lectures: 2 hrs/week

Practical: 1 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 the principal of physical pharmacy of matter such as state of matter , and rheology in pharmacy. Surface tension and adsorption phenomena .

2-Intended Learning Outcomes of Physical pharmacy (ILOs):

A- Knowledge and Understanding	
a1	Enumerate types of (flow, surfactants and adsorption)
a2	Define buffer, isotonicity, kinetic molecular theory, solubility and colligative properties of solution
a3	Outline the state of matter, application of viscosity and surface tension in pharmacy
a4	Outline different pharmaceutical calculations related to buffer , pH and isotonicity of different solutions
B- Professional and Practical Skills	
b_1	Measure the viscosity, surface tension of different solutions and adsorption of active agent on adsorbate
b_2	Determine the solubility of pharmaceutical materials
C- Intellectual Skills	
c1	Distinguish between different classes of surface active agents, different types of flow and adsorption.
c2	Evaluate different state of matter and its colligative properties
D- General and Transferable Skills	
d1	Work effectively in a team
d2	Develop the decision making and problem solving abilities
d3	Communicate effectively both in oral and written manners

D- Contents

Week No.	Lecture contents (2hrs/week)	Practical session (1 hr /week)
1	State of matter and intermolecular forces:	Introduction to Lab safety and equipment
2	Colligative properties of different states , Phase equilibrium and Phase rule	Calculate the colligative properties of solutions
3	Solubility and factors affecting the solubility	Solubility expression and determine of solubility of certain pharmaceutical agent
4	Dissolution phenomena and partition coefficient	Determine of solubility of certain pharmaceutical agent
5	Rheology	Determine of viscosity of certain liquids
6	Rheology	Determine of viscosity of certain liquid
7	Periodical exam	
8	Surface tension and Interfacial phenomenon	Determination of surface tension of liquids
9	Surface tension and Interfacial phenomenon	Determination of surface tension of liquids
10	Adsorption	Determination of percentage of adsorbed substances
11	Isotonicity	Problems on isotonicity
12	Buffer	Problems on Buffer
13	Application of physical pharmacy in pharmaceutical field	Practical Exam
14	Revision	
15	Final exam	

E- Teaching and Learning Methods:

- Lectures
- Practical session

F- Student Assessment methods:

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

2- Practical exams to assess: b1, b2

3- Activity within labs: d1, d2

3- Oral exam to assess: a1, a2, a3, a4, c1, c2, , d3

Assessment schedule

Assessment (1): Periodical exam	Week 7
Assessment (2): Final written exam	Week 15
Assessment (3): Practical exam	Week 13
Assessment (4): Oral exam	Week 15

Weighting of Assessment

Assessment method	Marks	Percentage
Written exam	50	50%
Periodical	10	10%
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, glass ware, digital balance, water bathes, viscometer and stallagmometer

H- List of References:

1- Course Notes: Student book of physical pharmacy approved by pharmaceutics

department 2019

2- Essential Books:

i- ATTWOOD, D. & FLORENCE, A. T. 2012. FAST track Physical Pharmacy, Pharmaceutical Press.

ii- Aulton, Michael E. Pharmaceutics: The Science of Dosage Form Design. 2 nded.Churchill, 2002

3- Recommended Books

i- Applied physical pharmacy, Mansoor M. Amiji, Beverly J. Sandmann, McGraw-Hill,(2003).

Course Coordinator: Hanan Mohamed Elnahas

Head of Department: Nagia Ahmed El-megrab

تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ:**11/2019**

Matrix I of Physical pharmacy course

Course Contents		ILOs of Physical pharmacy course										
		Knowledge and understanding				Professional and practical skills		Intellectual skills		Transferable and general skills		
Lectures		a1	a2	a3	a4	b1	b2	c1	c2	d1	d2	d3
1	State of matter and intermolecular forces: -Types of inter and intra molecular forces		x	x								
2	State of matter: -Gaseous state, Liquid state and solid state		x	x								
3	Phase equilibrium and Phase rule		x	x					x			
4	Rheological flow characteristics of liquids and semi-solids :	x						x	x			
5	The rheology of solid and factors affecting viscosity	x						x	x			
6	Surface and Interfacial phenomenon	x										
7	Surface characteristics and surface active agents	x					x	x				

8	Adsorption	x	x					x			
9	Solubility of solid in liquid	x	x					x			
10	Properties of solutions	x	x					x			
11	Isotonic solutions	x	x		x			x			
12	Buffer solutions	x	x		x			x			
Practical Session											
13	Determination of viscosity of certain liquids				x				x	x	x
14	Determination of surface tension of liquids					x			x	x	x
17	Determination of percentage of adsorbed substances					x		x	x	x	x
18	Determination of solubility of certain substances					x			x	x	x
19	Solve problems of pharmaceutical buffer solutions							x	x	x	x
20	Solve problems of isotonic solutions					x		x	x	x	x

Matrix II of Physical pharmacy course									
NARS	**Program ILOS**	**Course ILOS**	**Course content**	**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	Rheological flow characteristics of liquids and semi-solids	Student book Essential books	x		x		x
			The rheology of pharmaceutical dosage forms						
			Surface and Interfacial phenomenon						
			Surface characteristics and surface active agents						
			Adsorption						
			Solubility of solid in liquid						
			Properties of solutions						
			Buffer solutions						

2.2 Physical-chemical properties of various substances used in preparation of medicines including inactive and active ingredients as well as biotechnology and radio- labeled products.	A5		Isotonic solutions	Student book Essential books	x		x		x
		a_2	Solubility of solid in liquid						
			Properties of solutions						
			Buffer solutions						
			Isotonic solutions						
		a_3	State of matter and intermolecular forces: -Types of inter and intra molecular forces	Student book Essential books	x		x		x
			State of matter: -Gaseous state, Liquid state and solid state						
		a3	Surface and Interfacial phenomenon	Student book Essential	x		x		x

			Adsorption	books					
3.3 Compound, dispense, label, store and distribute medicines effectively and safely.	B3	b_1	Measure the viscosity of solution	Practical notes		x		x	
		b_2	Measure surface tension of liquids	Practical notes		x		x	
			Measure the percentage of adsorbate						
			Determination of solubility of certain substances	Practical notes		x		x	
4.13 Analyze and interpret experimental results as well as published literature.	C15	c_1	Distinguish between Rheological flow characteristics of pharmaceutical dosage forms	Student book Essential books Internet	x		x		x

		c2	Select different Surface characteristics and surface active agents	Practical notes	x	x	x	x		
			Adsorption types							
			Solve problems of pharmaceutical buffer solutions							
			Solve problems of isotonic solutions							

			Colligative properties of different phases						
5.1 Communicate clearly by verbal and means.	D1	d3	Solve problems of viscosity of certain liquids						
5.3 Work effectively in a team.	D4	d1	Problem solve of surface tension calculation						
			Determination of percentage of adsorbed substances	Practical notes		x		x	x
5.10 Implement writing and thinking,			Determination of solubility of certain substances						

problem- solving and decision-making abilities	D12	d2	Solve problems of pharmaceutical buffer solutions						
			Solve problems of isotonic solutions						

Course Coordinator: Hanan Mohamed El nahas

Head of Department: Nagia Ahmed El-megrab

تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ 11/2019

COURSE SPECIFICATIONS

Pharmacy Orientation

First level –Semester 2

2019-2020

Course specification of pharmacy orientation

University: Zagazig **Faculty: Pharmacy**

A- Course specifications:

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

Major or Minor element of programs: Major

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

Department offering the course: Pharmaceutics Department

Academic year Level: First level / semester 2

Date of specification approval: November 2019

B- Basic information:

Title: Pharmacy orientation Code: PT202

Credit Hours: ---

Lectures: 1 hrs/week

Practical: 0

Tutorials: ---

Total: 1 hrs/week

C- Professional information:

1-Overall aim of the course

On completion of the course, the student will be able to recognize the mission of pharmacy, role and the responsibility of pharmacists at various pharmacy sittings, pharmacy careers, educational requirements and ethical framework of pharmacy, drug information sources, national and international pharmaceutical organizations and the principles and steps of pharmaceutical products development process. Illustrate the different dosage forms and their routes of administration as well as pharmacy history.

Intended Learning Outcomes of Pharmacy Orientation:

A- Knowledge and Understanding	
a1	Define different concepts related to pharmacy profession, duties of pharmacist at various pharmacy sittings, drug information sources and various pharmaceutical and medical terms, as well as drug, medicine and excipients
a2	Identify the pharmacy careers, educational requirements and ethical framework of pharmacy
a3	Describe the principles and steps of new pharmaceutical products development process
a4	Enumerate different types of dosage forms and their routes of administration as well as factors affecting drug dosage
a5	Summarize the history of pharmacy
b- Professional and practical	
b1	Use pharmaceutical terminology effectively
b2	Interpret different medication orders
C- Intellectual skills	
c_1	Solve different problems related to pharmaceutical incompatibilities
D- General and Transferable skills	
d_1	Develop the decision making and problem solving abilities
d2	Communicate effectively in a written and verbal manner

Week No.	Lecture contents (1 hrs/lec.)
1	**Introduction to pharmacy:** -Pharmacy profession, pharmaceutics, pharmacists, pharmacy education, Pharmaceutical organizations
2	- Drug information sources (Pharmacopeias and Formularies)
3	**Pharmacy careers and role of pharmacists** **-Ethics in pharmacy**
4	**Drug and medicine:** Definition of drugs, medicines and excipients, drug characteristics, sources, nomenclatures, Drug classifications and steps of pharmaceutical products development
5	**Medical and pharmaceutical terminology**

Course Content of Pharmacy Orientation:

6	**Routes of drug administration**
7	**Periodical exam**
8	**Introduction to pharmaceutical dosage forms**
9	**Introduction to pharmaceutical dosage forms**
10	**Drug Dosage,** Factors affecting dose
11	**Systems of weight and measures**
12	**Medical Prescription and medication order and their interpretation**
13	**Incompatibility in prescription**
14	**History of pharmacy -** - نبذة عن تاريخ الصيدلة و الدواء فضل العرب والمسلمين على الدواء والمداواة -الدواء وبلاد ما بين النهرين- المصريين القدماء
15	**--- Final written exam**

Teaching and Learning Methods:

- Lectures
- Interactive discussion (circulating questions)

Student Assessment methods:

- Periodical & final written exam to assess: a1,a2,a3,a4,a5,b1, b2, c1, d1,d2

Assessment schedule:

Assessment (1): Periodical exam	Week 7
Assessment (2): Written exams	Week 15

Weighting of Assessment:

Assessment method	Marks	Percentage

• Written exam	75	75%
• Periodical exam	25	25%
TOTAL	**100**	**100%**

Facilities required for teaching and learning:

- For lectures : Black (white) boards, data show

List of References:

1. Course Notes: Student book of pharmacy orientation approved by pharmaceutics department (2019).

2- Essential Books (Textbooks):

- ✓ **Pharmaceutical dosage forms and drug delivery systems (1995), Ansel, H. c., Popovich, N. G., Allen, L. V. 6th edition , Williams and Wilkins.**
- ✓ Pharmaceutical calculations, Stoklosa, M and Ansel, H., Philadelphia, London. (1997).
- ✓ **Remington: the Science and Practice of Pharmacy" Genars, Alfonso R edition, 2000.**

Course Coordinator: Nagia Ahmed El-megrab
Head of Department: Nagia Ahmed El-megrab

تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ 11 / 2019 م

Matrix I of pharmacy orientation course

	Course contents	Knowledge and understanding					Professional and practical		Intellectual skills	General and transferable skills	
		a1	a2	a3	a4	a5	b1	b2	c1	d1	d2
1	**Introduction to pharmacy:** Pharmacy profession, pharmaceutics, pharmacists, pharmacy education, Pharmaceutical organizations Drug information sources (Pharmacopeias and Formularies)	x									
2	**Pharmacy careers and role of pharmacists Ethics in pharmacy**		**x**								**x**
3	**Drug and medicine:** Definition of drugs, medicines and excipients, drug characteristics, sources, nomenclatures, classifications and steps of pharmaceutical products development	x		**x**							
4	**Medical and pharmaceutical terminology**	x					**x**				
5	**Routes of drug administration**	x			**x**					x	x
6	**Introduction to pharmaceutical dosage forms**	**x**			**x**						
7	**Drug Dosage,** Factors affecting dose **Systems of weight and measures**	x								**x**	**x**

8	**Medical Prescription and medication order and their interpretation** **Medical and pharmaceutical terminology**	x						x			**x**
9	**Incompatibility in prescription**								**x**	**x**	**x**
11	نبذة عن تاريخ الصيدلة					**x**					
12	فضل العرب والمسلمين على الدواء والمداواة					**x**					
13	الدواء وبلاد ما بين النهرين- المصريين القدماء					**x**					

Matrix II of pharmacy orientation 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	Oral exam
2.1	Principles of basic, pharmaceutical, medical, social, behavioral, management, health and environmental sciences as well as pharmacy practice.	A2	a1	Introduction to pharmacy: Pharmacy profession, pharmaceutics, pharmacists, pharmacy education, Pharmaceutical organizations Drug information sources (Pharmacopeias and Formularies)	Student book	x			x		
				Introduction to pharmacy: Pharmacy profession,	Student book	x			x		

				pharmaceutics, pharmacists, pharmacy education, Pharmaceutical organizations Drug information sources (Pharmacopeias and Formularies)							
				Medical and pharmaceutical terminology	Student book Essential books	x			x		
				Routes of drug administration	Student book Essential books	x			x		
				Introduction to pharmaceutical dosage forms	Student book	x			x		
			a1	Drug Dosage, Factors affecting dose, system weight and measures	Student book	x			x		

				Medical Prescription and medication order and their interpretation Medical and pharmaceutical terminology	Student book	x			x		
			a2	Pharmacy careers and role of pharmacists Ethics in pharmacy	Student book	x			x		
			a3	Drug and medicine: Definition of drugs, medicines and excipients, drug characteristics, sources, nomenclatures, classifications and steps of pharmaceutical products development	Student book	x			x		
			a5	نبذة عن تاريخ الصيدلة	Student book	x			x		

				فضل العرب والمسلمين على الدواء والمداواة الدواء وبلاد ما بين النهرين- المصريين القدماء							
2.6	Properties of different pharmaceutical dosage forms including novel drug delivery systems..	A10	a4	Routes of drug administration	Student book	x			x		
				Introduction to pharmaceutical dosage forms	Student book	x			x		

2.21	Regulatory affairs, pharmacy laws and ethics of health care and pharmacy profession.	A31	a2	Identify the pharmacy careers, educational requirements and ethical framework of pharmacy	Student book	x			x		
3.1	Use the proper pharmaceutical and medical terms and abbrevations and symbols in pharmacy practice.	B1	b1 b2	Medical Prescription and medication order and their interpretation Medical and pharmaceutical terminology	Student book Essential books Internet	x			x		
4.4	Recognize and control possible physical and/or chemical incompatibilities that may occur during drug dispensing.	C4	c1	Incompatibility in prescription	Student book	x			x		
5.1	Communicate clearly by verbal and writing means.	D1	d2	-Medical and pharmaceutical terminology Prescription and medication order and their interpretation	Student book	x			x		

5.10	Implement writing and thinking, problem- solving and decision-making abilities.	D12	d1	Incompatibility in prescription Drug Dosage, Factors affecting dose,	Student book	x			x		

Course Coordinator: Nagia Ahmed El-megrab
Head of Department: Nagia Ahmed El-megrab

تم مناقشة و اعتماد توصيف المقرر من مجلس القسم بتاريخ 11 / 2019م

COURSE SPECIFICATIONS

Human rights

First level –Semester 2

2019-2020

توصيف مقرر حقوق الإنسان و أخلاقيات المهنة

أ- مواصفات المقرر:

البرنامج أو البرامج التى يقدم من خلالها المقرر: بكالوريوس الصيدلة (برنامج الصيدلة الاكلينيكية)

المقرر يمثل عنصرا رئيسيا أو ثانويا بالنسبة للبرامج: ثانوياً

القسم العلمي المسئول عن البرنامج: ----------

المسئول عن تدريس المقرر: د.مي احمد محمد د. ياسمين أحمد شرف

السنة الدراسية: المستوى الأول – التيرم الثاني.

تاريخ اعتماد التوصيف:

(ب) البيانات الأساسية:

العنوان : حقوق الإنسان و أخلاقيات المهنة الكود : **HR 201**

الساعات المعتمدة : ---

المحاضرات : ساعتان أسبوعيا

العملي: ---

الدروس العملية : ---

المجموع : 2 ساعة في الأسبوع

(ج) البيانات المهنية:

1) الأهداف العامة للمقرر:

عند إتمام المقرر سوف يكون الطلاب قادرين على

- معرفة أهمية حقوق الإنسان وواجباته نحو المجتمع وكيفية حماية تلك الحقوق.
- معرفة الفساد وانواعه واسبابه واثاره وكيفية مجابهة الفساد

2) النتائج التعليمية المستهدفة لمقرر حقوق الإنسان:

أ – المعرفة والفهم	
أ1	يعرف المقصود بحقوق الإنسان ومصدرها وأنواع حقوق الإنسان الفردية والجماعية وكيفية حمايتها
أ2	يفهم الفساد وانواعه واسبابه واثاره
أ3	يعرف كيفية مجابهة الفساد ودور الاجهزة الرقابية في مجابهة الفساد داخل الدولة
د- المهارات العامة والمنقولة	
د1	يعمل بكفاءة كأحد أفراد الفريق.

د2	ينمي شخصية الفرد من خلال معرفة الحقوق الفردية و الجماعية للإنسان.
د3	ينمي مهارات التفكير النقدي و اتخاذ القرارات و حل المشكلات.

د- المحتويات:

الأسبوع	المحاضرة (2ساعة/ الأسبوع)
1	- مقدمة -التطور التاريخي لفكرة حقوق الإنسان
2	- التعريف بحقوق الإنسان - خصائص و مبادئ حقوق الإنسان
3	مصادر حقوق الإنسان
4	أنواع حقوق الإنسان الفردية والجماعية
5	- مكافحة الفساد -مفهوم الفساد -أنواع وصور الفساد
6	- أسباب الفساد امتحان نصف الفصل
7	- آثار الفساد
8	- وسائل مجابهة الفساد الإطار التشريعي لمكافحة الفساد
9	- دور الأجهزة الرقابية الوطنية في مكافحة الفساد الإداري -هيئة الرقابة الإدارية ودورها في مكافحة الفساد الإداري.
10	- الجهاز المركزي للمحاسبات ودوره في مكافحة الفساد الإداري
11	- الجهاز المركزي للتنظيم والإدارة ودوره في مكافحة الفساد الإداري
12	- هيئة النيابة الإدارية ودورها في مكافحة الفساد الإداري
13	- اللجان الأخرى المعنية بمكافحة للفساد فجمهورية مصر العربية:
14	- مراجعة عامة و مناقشة حره
15	- الامتحان النهائي

هـ- أساليب التعليم و التعلم:

- المحاضرة

- المناقشة
- **المقرر الكتروني Internet**

و-أساليب تقييم الطلبة:

1- **الامتحان التحريري يقيم: أ1و أ2و أ3و د1و د2 و د3**
2- **الامتحان نصف الفصل يقيم: أ1و أ2و أ3و د1و د2 و د3**

الجدول الزمني التقييم:

تقييم (1): امتحان نصف الفصل	**الأسبوع السادس**
تقييم (2): الامتحان التحريري	**الأسبوع الخامس عشر**

ترجيح التقييم:

طريقة التقييم	الدرجات	النسب المئوية
الامتحان التحريري	90	%90
امتحان نصف الفصل	10	%10
الإجمالي	100	%100

ز- التسهيلات اللازمة للتعليم و التعلم:

1- للمحاضرات: اللوحات (البيضاء) و السوداء و جهاز العرض المرئي (داتا شو) والانترنت.

ي- قائمة المراجع:

1-الانترنت : المقرر الالكتروني

2- كتب مقترحة

القانون الدولي الإنساني

4- مجلات دورية، مواقع انترنت، الخ

مجلات حقوق الإنسان

منسق المقرر: د. ياسمين أحمد شرف
التاريخ:

مصفوفة 1 مقرر حقوق الإنسان و أخلاقيات المهنة

	محتويات المقرر	نتائج التعلم المنشودة لمادة حقوق الإنسان					
		المعرفة و الفهم			مهارات عامة و تواصلية		
		أ1	أ2	أ3	د1	د2	د3
1	- مقدمة -التطور التاريخي لفكرة حقوق الإنسان	x					
2	- التعريف بحقوق الإنسان - خصائص و مبادئ حقوق الإنسان	x					
3	مصادر حقوق الإنسان	x					
4	أنواع حقوق الإنسان الفردية والجماعية	x			x	x	x
5	- مكافحة الفساد(مفهوم الفساد-أنواع وصور الفساد)		x				
6	- أسباب الفساد		x				
7	- آثار الفساد		x				
8	- وسائل مجابهة الفساد(الإطار التشريعي لمكافحة الفساد)			x	x	x	x
9	- دور الأجهزة الرقابية الوطنية في مكافحة الفساد الإداري -هيئة الرقابة الإدارية ودورها في مكافحة الفساد الإداري.			x			
10	- الجهاز المركزي للمحاسبات ودوره في مكافحة الفساد الإداري			x			
11	- الجهاز المركزي للتنظيم والإدارة ودوره في مكافحة الفساد الإداري			x			
12	- هيئة النيابة الإدارية ودورها في مكافحة الفساد الإداري			x			
13	- اللجان الأخرى المعنية بمكافحة للفساد فجمهورية مصر العربية:			x			
14	مراجعة عامة و مناقشة حره	x	x	x	x	x	x

مصفوفة 2 مقرر حقوق الإنسان و أخلاقيات المهنة

المعايير الأكاديمية المرجعية القومية (NARS)		نتائج التعلم المنشودة للبرنامج	نتائج التعلم المنشودة للمقرر	محتويات المقرر	المصدر	أساليب التعليم و التعلم			أسلوب التقييم
						المحاضرة	الدروس العملية	التعلم الذاتي	الامتحان التحريري
2.1	مباديء العلوم الأساسية و الصيدلانية و الطبية و الاجتماعية و السلوكية و الإدارة و الصحة و العلوم البيئية فضلا عن ممارسة الصيدلة	4أ	1أ	- مقدمة -التطور التاريخي لفكرة حقوق الإنسان	المقرر الالكتروني	x			x
				- التعريف بحقوق الإنسان - خصائص و مبادئ حقوق الإنسان	المقرر الالكتروني	x			x
				مصادر حقوق الإنسان	المقرر الالكتروني	x			x
				أنواع حقوق الإنسان الفردية والجماعية	المقرر الالكتروني	x			x
			2أ	- مكافحة الفساد(مفهوم الفساد-أنواع وصور الفساد)	المقرر الالكتروني	x			x
				- أسباب الفساد	المقرر الالكتروني	x			x
				- آثار الفساد	المقرر الالكتروني	x			x
			3أ	- وسائل مجابهة الفساد(الإطار التشريعي لمكافحة الفساد)	المقرر الالكتروني	x			x
				- دور الأجهزة الرقابية الوطنية في مكافحة الفساد الإداري -هيئة الرقابة الإدارية ودورها في مكافحة	المقرر الالكتروني	x			x

									الفساد الإداري.	
								المقرر الالكتروني	- الجهاز المركزي للمحاسبات ودوره في مكافحة الفساد الإداري	x
								المقرر الالكتروني	- الجهاز المركزي للتنظيم والإدارة ودوره في مكافحة الفساد الإداري	x
								المقرر الالكتروني	- هيئة النيابة الإدارية ودورها في مكافحة الفساد الإداري	x
								المقرر الالكتروني	- اللجان الأخرى المعنية بمكافحة للفساد فجمهورية مصر العربية:	x
								المقرر الالكتروني	أنواع حقوق الإنسان الفردية والجماعية	x
								المقرر الالكتروني	- مكافحة الفساد(مفهوم الفساد-أنواع وصور الفساد)	x
								المقرر الالكتروني	- أسباب الفساد	x
								المقرر الالكتروني	- اللجان الأخرى المعنية بمكافحة للفساد فجمهورية مصر العربية:	x
								المقرر الالكتروني	أنواع حقوق الإنسان الفردية والجماعية	x
								المقرر الالكتروني	- مكافحة الفساد(مفهوم الفساد-أنواع وصور الفساد)	x
								المقرر الالكتروني	- أسباب الفساد	x

5.7	ينمي المهارات الإدارية و التي تشمل التمويل و التسويق و المبيعات	9د	2د	- مقدمة -التطور التاريخي لفكرة حقوق الإنسان	المقرر الالكتروني	x			x
				- التعريف بحقوق الإنسان - خصائص و مبادئ حقوق الإنسان	المقرر الالكتروني	x			x
				مصادر حقوق الإنسان	المقرر الالكتروني	x			x
				أنواع حقوق الإنسان الفردية والجماعية	المقرر الالكتروني	x			x
5.10	ينمي مهارات التفكير النقدي و حل المشكلات و اتخاذ القرارات	12د	3د	- مكافحة الفساد(مفهوم الفساد-أنواع وصور الفساد)	المقرر الالكتروني	x			x
				- أسباب الفساد	المقرر الالكتروني	x			x
				- آثار الفساد	المقرر الالكتروني	x			x
				- وسائل مجابهة الفساد(الإطار التشريعي لمكافحة الفساد)	المقرر الالكتروني	x			x

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منسق المقرر: د. ياسمين أحمد شرف

رئيس القسم:

التاريخ: 2019/9/