Pathology; Code: MD 304C

A- Basic Information

Programme(s) on which the course is given:	Bachelor of Pharmacy (Pharm D clinical)
Department responsible for offering the course:	Microbiology and Immunology
Department responsible for teaching the course:	Microbiology and Immunology
Academic year:	Level two – spring semester (2023/2024)
Course title and code:	Pathology, MD 304C
Prerequisite	Registration
Contact hours (Credit hours):	Lectures: 1 (1), Practical: 0 (0), Total: 1(1+0)
Course Coordinator:	Dr. Yomna Nagy

B- Professional Information

1 - Overall Aim of the Course

The aim of pathology course is to provide students with information and practical work to get knowledge and skills about physical changes affecting body organs and system due to disease. It helps the student to understand the causes (etiology) of disease, the mechanisms of its development (pathogenesis) and the associated alterations of structure (morphologic changes) and clinical manifestations and complications to be able to determine the most likely diagnosis of the disease. The main themes of this course will include cell Injury, and cellular adaptations (etiology, factors affecting the outcome of cell injury, pathogenesis of cell injury, reversible cell injury, irreversible cell injury, morphology of reversible cell injury, irreversible cell injury (cell death), changes after cell death, adaptive disorders); amyloidosis and pathology of infectious diseases; inflammation and healing; circulatory disturbances (hyperaemia, congestion, haemorrhage, shock, thrombosis, embolism, ischaemia, infarction); neoplasia; haematopoietic system and bone marrow disorders.

2 -Course learning outcomes

Domain 1: Fundamental knowledge

The student should be able to:

Program key elements	Course learning outcomes
1.1.1.1 Explain the basic knowledge of micro-organisms, infectious/non-infectious diseases, bioinformatics, biotechnology, and epigenetics.	1.1.1.1 Demonstrate the knowledge of physical changes affecting body organs and systems due to diseases.
1.1.2.1. Utilize genetic, microbial, and epidemiological terms in pharmacy practice.	1.1.2.1 Utilize the proper pharmaceutical and medical terms and abbreviations in pathology
1.1.6.1 Make use of scientific literature to enhance professional decision in production of high-quality medicine	1.1.6.1 Utilize scientific literature and interpret information to a. understand the etiology of the disease. b. be able to determine the most likely diagnosis of the disease

Domain 2: Professional and ethical practice
The student will be able to

Program key elements	Course learning outcomes
2.5.2 Restore, clarify & critically assess pharmaceutical information needed in pharmacy profession.	2.5.2 Retrieve, interpret, and critically evaluate evidence-based information to understand A. the causes of disease B. the mechanisms of its development and the associated alterations of structure

Domain 3: Pharmaceutical care
The students should be able to

Program Key elements	Course learning outcomes
3.1.4.2 Link the cause, pathological data, diagnosis and clinical presentation of diseases to their pharmacotherapeutic approaches	3.1.4.2 Understand the etiology, epidemiology, pathophysiology and clinical manifestations and complications to be able to determine the most likely diagnosis of the disease and their pharmacotherapeutic approaches.

3- Course Contents

Week	Lectures	
	Topic	**Credit hrs. (1)**
1	Introduction to pathology, cellular injury and cellular adaptations	1
2	Cellular aging	1
3	Haematopoietic system and disorders of erythroid series	1
4	Haematopoietic system and disorders of erythroid series	1
5	Basic transfusion medicine and disorders of leucocytes	1
6	**Midterm**	
7	Inflammation I	1
8	Inflammation II	1
9	Healing	1
10	Circulatory disturbances	1
11	Neoplasia	1
	Formative Assessment	
12		
13		
14	**Total credit**	**10**
15	**Written exam**	

4- Teaching and Learning Methods:

. 4.1- Lectures (tools: board, data show, LMS system-MOODLE).
4.2- Written essays (library, internet, online classrooms).

4.3- Team working

5- Student Assessment Methods:

Written Midterm exam	To assess	The ability of students to follow-up the course subjects.
Written final exam	To assess	The overall outcomes.

Assessment Schedule

Assessment 1	Periodic exams	Week 6
Assessment 2	Final written exam	Week 15

Weighting of Assessments

Periodical examination	10
Final-term Examination	40
Oral Examination	----
Practical Examination	----
Other types of assessment	----
Total	**50**

6- List of References

Course notes

- General Pathology Notes written by staff members of Microbiology and Immunology Department Faculty of Pharmacy Ain Shams University
- Practical Pathology Notes written by staff members of Microbiology and Immunology Department Faculty of Pharmacy Ain Shams University

Essential books (textbooks):

- Kumar, V. (Ed.), Cotran, R. S., Robbins, S. L. (2017) Basic Pathology 10th edition Philadelphia, PA: W.B. Saunders.
- Harsh Mohan Textbook of Pathology, 8th Edition.

Recommended books

- Histopathology Atlas

Web sites

- http://www.webpath
- http://www.pathguy
- http://www.pathmax

7- Facilities Required for Teaching and Learning

- Modern libraries, audiovisual tools, lecture halls, data show, LMS system (moodle), internet.

Course members:

Prof. Dr. Khaled Anwar Aboshanab
Dr.Yomna Nagy
Dr. Amr Shaker
Dr.Ann Elshamy

Course Coordinator: Dr. Yomna Nagy *Yomna Nagy*

Head of Department: Prof. Dr. Sarra Ebrahim Saleh *Sarra Saleh*

Course name	Pathology
Code	MD 304C

Course Contents		Program Key Elements	Course learning outcomes	Teaching and Learning Methods	Student Assessment Methods
Week # 1	Introduction to pathology, cellular injury and cellular adaptations	1.1.1.1 1.1.2.1.	1.1.1.1 1.1.2.1	Lectures Open discussion	Written
Week # 2	Cellular aging	1.1.1.1 1.1.2.1. 2.5.2	1.1.1.1 1.1.2.1 2.5.2.A 2.5.2.B	Lectures, Self-learning	Written
Week # 3	Haematopoietic system and disorders of erythroid series	1.1.1.1 1.1.2.1. 2.5.2	1.1.1.1 1.1.2.1 2.5.2.A 2.5.2.B	Lectures Open discussion brain storming, Videos	Written
Week # 4	Haematopoietic system and disorders of erythroid series	1.1.1.1 1.1.2.1. 2.5.2	1.1.1.1 1.1.2.1 2.5.2.A 2.5.2.B	Lectures, Videos	Written
Week # 5	Basic transfusion medicine and disorders of leucocytes	1.1.1.1 1.1.2.1. 1.1.6.1 3.1.4.2	1.1.1.1 1.1.2.1 1.1.6.1.a 1.1.6.1.b 3.1.4.2	Lectures Open discussion brain storming,	Written
Week # 6	**Midterm**				
Week # 7	Inflammation I	1.1.1.1 1.1.2.1. 1.1.6.1 3.1.4.2	1.1.1.1 1.1.2.1 1.1.6.1.a 1.1.6.1.b 3.1.4.2	Lectures Open discussion brain storming,	Written
Week # 8	Inflammation II Neoplasia	1.1.1.1 1.1.2.1. 1.1.6.1 2.5.2 3.1.4.2	1.1.1.1 1.1.2.1 1.1.6.1.a 1.1.6.1.b 2.5.2.A 2.5.2.B 3.1.4.2	Lectures Open discussion, Formative Assessment	Written
Week # 9	Healing	1.1.1.1 1.1.6.1 2.5.2 3.1.4.2	1.1.1.1 1.1.6.1.a 1.1.6.1.b 2.5.2.A 2.5.2.B 3.1.4.2	Lectures Assignments,	Written
Week # 10	Circulatory disturbances	1.1.6.1 2.5.2	1.1.6.1.a 1.1.6.1.b	Lectures	Written

		3.1.4.2	2.5.2.A 2.5.2.B 3.1.4.2		
Week # 11	Neoplasia	1.1.2.1. 1.1.6.1 2.5.2	1.1.2.1 1.1.6.1.a 1.1.6.1.b 2.5.2.A 2.5.2.B	Lectures Formative assessment	Written
Week # 12					
Week # 13					
Week # 14					
Week # 15	**Written Exam**				

In case of emergency or necessity, the study will be converted into recorded and interactive lectures.

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