

Pathology; Code: MD 404

A- Basic Information

Programme(s) on which the course is given:	Bachelor of Pharmacy (Pharm D)
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 404
Prerequisite	Histology
Contact hours (Credit hours):	Lectures: 1 (1), Practical: 2 (1), Total: 3 (1+1)
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	ze scientific literature and interpret information to and the etiology of the disease.

Make use of scientific literature to enhance professional decision in production of high-quality medicine	B. be able to determine the most likely diagnosis of the disease
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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	Credit hrs. (1)	Practical	Credit hrs. (1)
	Topic		Topic	
1	Introduction to pathology, cellular injury and cellular adaptations	1	Cell injury (Part 1)	1
2	Cellular aging	1	Cell injury (Part 2)	1
3	Haematopoietic system and disorders of erythroid series (Part 1)	1	Hematology (Part 1)	1
4	Haematopoietic system and disorders of erythroid series (Part 2)	1	Hematology (Part 2)	1

5	Basic transfusion medicine and disorders of leucocytes	1	Inflammation(Part 1) s	1
6	Midterm			
7	Inflammation I	1	Inflammation(Part 2)	1
8	Inflammation II	1	Hemodynamic disorder	1
9	Healing	1	Tuesday 9/4/2024 (Eid Al-fitr)	
10	Circulatory disturbances	1	Neoplasia	1
11	Neoplasia	1	Revision	
	Formative Assessment			
12			Practical Exam	1
13				
14	Total Credit	10	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	Midterm exam	Week 6
Assessment 2	Final written exam	Week 15

Weighting of Assessments

Periodic examination	15
Final-written examination	50
Oral Examination	10
Practical Examination	25
<u>Other types of assessment</u>	----
Total	100

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.2019.

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: Assoc. Prof. Dr. Sarra Ibrahim Saleh

Sarra Saleh

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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 P: Cell injury (Part 1)	1.1.1.1 1.1.2.1.	1.1.1.1 1.1.2.1	Lectures Open discussion	Written Practical
Week # 2	Cellular aging P: Cell injury (Part 2)	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 Practical
Week # 3	Haematopoietic system and disorders of erythroid series (Part 1) P:Hematology (Part 1)	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	Written Practical
Week # 4	Haematopoietic system and disorders of erythroid series (Part 2) P:Hematology (Part 2)	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 Practical
Week # 5	Basic transfusion medicine and disorders of leucocytes P: Inflammation (Part 1)	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 2.5.2.A 3.1.4.2	Lectures Open discussion brain storming,	Written Practical
Week # 6	Midterm Exam				
Week # 7	Inflammation I P: Inflammation (Part 2)	1.1.1.1 2.5.2	1.1.1.1 1.1.2.1 1.1.6.1.A 2.5.2.A 3.1.4.2	Lectures Open discussion brain storming	Written Practical
Week # 8	Inflammation II P:Hemodynamics	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 Practical
Week # 9	Healing P:Eid AlFitr	1.1.1.1 1.1.2.1. 1.1.6.1 2.5.2	1.1.1.1 1.1.2.1 1.1.6.1.A 1.1.6.1.B	Lectures Open discussion,	Written

		3.1.4.2	2.5.2.A 2.5.2.B 3.1.4.2		
Week # 10	Circulatory disturbances P: 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 brain storming,	Written Practical
Week # 11	Neoplasia P:Revision	1.1.6.1 2.5.2 3.1.4.2	1.1.6.1.A 1.1.6.1.B 2.5.2.A 2.5.2.B 3.1.4.2	Lectures Formative Assessment	Written Practical
Week # 12	Practical Exam				Practical
Week # 13					
Week # 14	Preparation for the exams				
Week # 15	Final exam				

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

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