# Syllabus: Course Title General Pathology and Code 11150202
# 2025-2026/ First Semester

| COURSE INFORMATION | |
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| **Course Name:** **General pathology**<br>**Semester:** First<br>**Department:** Department of Microbiology , pathology and forensic medicine<br>**Faculty: Faculty of medicine** | **Course Code:** 111501202<br>**Section:** Second year medical students and dentistry college students<br>**Core Curriculum**: 3 Credits (theory ) |
| **Day(s) and Time(s):** Sunday: 9:30-1:30<br>Tuesday :9:30-1:30<br>Thursday : 9:30-1:30<br>**Classroom:** الطب البشري<br>العلوم المسانده | 16 WEEKS/1st. SEMESTER /YEAR<br>Course Coordinator<br>Dr. Ghada Nazar Al-Jussani<br>Assistant professor in Histopathology and Cytopathology.<br>MBCHB., FRCPATH (UK), European board in pathology, Jordanian board in pathology, Iraqi Board in pathology, Fellowship of royal college of pathologist (UK)<br>Subspecialty in breast pathology from KHCC and UK<br>Office location: Office number 3036, Third floor, Department of Basic Medical<br><br>Dr.Ola Abu Al Karsaneh<br>Assistant Professor of Pathology<br>Department of Microbiology, Pathology and Forensic Medicine<br>Office: 1017, 1st floor<br>olaa@staff.Hu.edu.jo<br>Office Hours: Sun 10-12<br>Tus: 10-1 |

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## COURSE DESCRIPTION

Pathology is a branch of Medicine that deals with the scientific study of the causes, pathogenesis (mechanisms), structural & functional changes of human organs and tissues in various diseases. Therefore, it is one of the main foundations of medicine & it serves to bridge basic medical disciplines with clinical sciences.

Pathology as a whole is divided into two parts:

A-General Pathology.

B- Systemic Pathology

General Pathology: is going to be covered in this course. It deals with diseases processes in general & there will be a description of the molecular, ultrastructural, the cellular & the tissue reactions to different injurious agents.

Pathology is the study of the causes and effects of disease or injury. The word *pathology* also refers to the study of disease in general, incorporating a wide range of biology research fields and medical practices so when used in the context of modern medical treatment, the term is often used in a more narrow fashion to refer to processes and tests which fall within the contemporary medical field of "general pathology", an area which includes a number of distinct but inter-related medical specialties that diagnose disease, mostly through analysis of tissue, cell, and body fluid samples.

A pathology may also refer to the predicted or actual progression of particular diseases (as in the statement "the many different forms of cancer have diverse pathologies "in addition to genetic study related to cancer , outcome , survival and prognosis.

As a field, pathology addresses components of disease: cause, mechanisms of development (pathogenesis), structural alterations of cells (morphologic changes), and the consequences of changes (clinical manifestations).

In common medical practice, general pathology is mostly concerned with analyzing known clinical abnormalities that are markers or precursors for both infectious and non-infectious disease, and is conducted by experts in one of two major specialties, anatomical pathology and clinical pathology.

## DELIVERY METHODS

The course will be delivered through a combination of active learning strategies. These will include:

- PowerPoint lectures and active classroom based discussion
- Collaborative learning through small groups acting in an interdisciplinary context.
- Relevant films and documentaries
- Video lectures
- E-learning resources: e-reading assignments and practice quizzes through Model and Microsoft Team
- Live session is frequently done to discuss clinical cases with the students , encouraging them to analyze the cases , interact with the tutor and try to solve clinical problems, it is a way to trigger and stimulate their critical thinking

## FACULTY INFORMATION

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| **Name** | |
| **Academic Title:** | **Assistant professor** |
| **Office Location:** | **Second floor ,3036** |
| **Telephone Number:** | **0799443711** |
| **Email Address:** | **ghadah@hu.edu.jo.**<br>**ghadahmed2000@gmail.com.** |
| **Office Hours:** | **Sunday** variable (9:30-1:30)<br>**Tuesday variable** (9:30-1:30)<br>*Please send an e-mail (ghadah@hu.edu.jo) to meet at any other time.* |

## REFERENCES AND LEARNING RESOURCES

**Required Textbook**

Text books and material: Robbins Basic Pathology, 11th. Edition 2017. By Kumar, et al. Saunders.

- Supplementary. Departmental Handouts.
- Rosai & Ackerman's Surgical Pathology .11th edition.
- R.C. Curran, color atlas of Histopathology. Oxford University.
- Color Atlas of Gross Pathology. Oxford.

## STUDENT LEARNING OUTCOMES MATRIX*

| Core Curriculum Learning Outcomes | Program Learning Outcomes | Course Objectives | Course Student Learning Outcomes |
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| Development of ILOs is promoted through the following teaching and learning methods:<br>1. The student should be familiar with the terms used in the study of Pathology.<br>2. The student should be familiar with basic knowledge concerning | **Intended Learning Outcomes (ILOs): Upon successful completion of this course students will be able to**:<br>1- Define Pathology<br>2- To understand basic tissue reactions to different types of injuries. | **Cell Injury,**<br>9 lectures<br>lectures<br>3 lecture per week<br><br>3 lectures<br>adaptation , causes of cell injury , types | Cell injury, cell death & adaptations: (In chapter 1), including introduction to pathology, cellular responses to stress & noxious stimuli; cellular adaptation to stress, causes, morphology, mechanisms and examples of cell injury and necrosis; apoptosis, intracellular accumulations, |

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| the main structures, tissues and organs.<br>3. The student should be oriented with the body tissue, organs and basic pathology and diseases.<br>4. The student should be familiar with basic knowledge of general pathology<br>Including cell structure, pathological terms, necrosis, apoptosis, cell injury, intracellular accumulation, types of necrosis, inflammation, tissue healing and repair, hemodynamic, oedema, congestion, thrombosis, embolism, shock. Neoplasia, malignant and benign tumours, different in between both types, route of spread of malignant tumours, way of investigations, immunohistochemistry.<br><br>To achieve the above goals, the following will be used: | 3- To know the etiology i.e. causes of major diseases.<br>4- To understand why the diseases happen?<br>5- To know the pathogenesis (mechanism) of disease process.<br>6- To understand how the diseases happen?<br>7- To describe the morphological features (the gross & microscopic & ultrastructural changes) produced by the disease.<br>8- To describe the effects of the disease on the functions of organs.<br>9- To know the outcome & the possible complications of the disease.<br>10- Discussing the clinical aspect of each disease or pathological | | pathological calcification and cellular aging |
| | | Reversible<br>Irreversible injury<br>Types of necrosis<br>Apoptosis<br><br>(3 lectures) | Discuss & enumerate cellular adaptations and describe each type, hypertrophy, hyperplasia, atrophy, and metaplasia and mention their clinical significance.<br>Enumerate the types of injurious agents that cause cell injury. and mention their exact role in cell injury<br>Define reversible & irreversible cell injury, mention their gross, microscopical and ultrastructural features with clinical significance.<br><br>Define hydropic degeneration & Fatty changes, and describe their gross & microscopic features<br><br>Necrosis and apoptosis, differentiate between both and describe nuclear changes in necrosis, types of necrosis, clinical correlation and significance<br><br>Apoptosis, nuclear changes, physiological and pathological causes of it<br>Discuss the subcellular injury of mitochondria, cytoplasmic organelles, cell membrane and DNA |

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| • Teaching movies and CDs and E-format lectures.<br>• Available university services that support achievement in the course:<br>• Laboratories, Microscopes, Data show, power point, Lap tops, Gross specimens | changes that lead to disease by giving students various clinical scenario through clinical cases , and try to motivate the students in the lecture hall and by giving them short quizzes in order to know how to correlate the pathology of disease with clinical practice and how to analyze the clinical data regarding sign and symptoms of the patients with laboratory finding or pathological changes in the tissue to reach the diagnosis by this we could prepare our students for their future clinical practice | Pattern of necrosis<br>Intracellular accumulation and aging<br>3 lectures | Discuss Pattern of necrosis including coagulative, liquefactive, caseating, gangrenous, fibrinoid and fat necrosis and their clinical significance<br><br>Discuss and describe intracellular accumulation<br>Definition of senescent cells and aging |
| | | **Inflammation 9 lectures**<br>Types,Cellular changes<br>Vascular changes<br>3 lectures | Acute and chronic inflammation.<br>Healing & Tissue repair: (In chapters 2 total of 8 Lectures)<br>• Define inflammation, mention the causes, the types acute, chronic & subacute. The cardinal signs & nomenclature<br>• Discuss the vascular & cellular responses in acute inflammation<br>• Discuss the causes of increased vascular permeability<br>• Discuss the mode of leukocytes cell margination, sticking & rolling, immigration, chemotaxis & phagocytosis<br>• Describe the gross & microscopic features of acute inflammation<br>• Mention the role of chemical mediators in inflammation<br>• Enumerate the types of chemical |

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| | | | mediator, their source<br>and mode of action |
| | | Pattern of Inflammation, Outcome of inflammation, Types of cells Granulomatous inflammation<br><br>2 lectures | • Enumerate the patterns of inflammation, & describe each type, mention their gross & microscopic features & clinical significance<br>• Define abscess, ulcer, pus, exudates & transudate<br>• Discuss the outcome of acute inflammation<br>• Enumerate inflammatory cells both in acute & chronic inflammation, describe each cell, & mention their role in<br>• Inflammatory processes<br>• Define chronic inflammation, discuss its forms, pathogenesis & outcome<br><br>• Define granulomatous inflammation Enumerate the causes of granulomatous reactions<br><br>• Describe the microscopic features of granulomas<br>• Discuss the local effects of |

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| | | | inflammation, both beneficial & harmful effects |
| | | Systemic Effect of Inflammation<br>Healing and repair<br>Growth factors<br>Extracellular Matrix<br>Stem<br>2 lectures | • Discuss the systemic effects inflammation & it's pathogenesis.<br>• Define tissue healing & repair<br>• Discuss the types of somatic cells, and stem, cells<br>• Discuss the role of growth factors in healing process.<br>• Discuss the role of extracellular matrix in healing process<br>• Discuss Cell cycles , define stem cell , types of cells (stable , labile , permenant cells )<br>• Types of extracellular matrix<br>• Collagen , elastin, glycoprotein , fibronectin , laminin<br>• Function and sourse of growth factors<br>• Discussion the clinical aspects of inflammation.<br>• Clinical cases with specific scenarios concerning with the topics and subtopics of inflammation , mediators , growth factors , pattern of inflammation , and all others that already given to the students throughout the course. |

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| | | Primary and Secondary Union<br><br>2 lectures | • Describe the primary union & secondary union in healing of skin wounds. Enumerate causes of delay of healing process<br>• Define keloid, proud flesh scar. |
| | | **Hemodynamics 8 lectures**<br><br>Edema, congestion and Hyperemia<br><br>3 lectures | Hemodynamic Disorders: (Chapter 3 / 8 lectures)<br>• Define edema, enumerate the causes, and discuss it's pathophysiology<br>• Describe the morphological features of localized & generalized edema<br>• Hyperemia, discuss it's causes & it's clinical significance<br>• Define congestion, discuss the causes, pathophysiology & it's clinical, gross& Microscopy<br>• Describe liver congestion (nut-eg liver), & pulmonary congestion<br>• Describe hyperemia, Active and Passive<br>• |
| . | | Haemorrhage Embolism and Infarction<br><br>3 lectures | • Hemorrhage, types of hemorrhage, Internal and external types, Define Hematoma, describe gross and microscopical changes<br>• Define embolism<br>• Enumerate it's types: thromboembolism, |

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| | | | fat, air amniotic fluid, bone marrow and air embolism. Discuss the pathogenesis, it's gross, microscopic & clinical features<br>• Define infarction<br>• Describe the gross & histological features<br>• Causes of white & red infarctions. Discuss the factors that influence the formation of an infarct |
| | | **Thrombosis and Shock**<br>**2 lectures**<br><br>**Clinical aspects and scenario of clinical cases** | • Define thrombosis. Enumerate it's causes. What is Virchow's triad?<br>• Describe endocardial, arterial, venous & postmortem thrombi, discuss their causes, gross & microscopic features Discuss the fate of thrombus<br>• Discuss causes, pathophysiology, gross & microscopic features & the clinical significance of DIC<br>• Giving to the students various types and examples of clinical<br>• Cases that correlated with |

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| | | | each pathological changes described above<br>• Describe and define Shock, discuss the pathophysiology of shock<br>• types of shock<br>• Cardiogenic, Hypovolemic, Anaphylactic, septic shock<br>• Difference in between above types<br>• Define Septic shock, pathological changes, Gross and microscopical changes<br>• Stages of shock<br>• Discussion the clinical aspects of hemodynamic derangements and disorders as thrombosis, infarction , bleeding and shock by giving different cases with diversities of clinical scenarios. Discuss theses cases with students and guide them to reach definite diagnosis focusing on keyword in every clinical cse assisting them to find clue to reach diagnosis. |
| | | **Neoplasia( 8 lectures)**<br><br>**1-2 lectures: Introduction to neoplasms (benign and** | - Define neoplasms and understand the nomenclature of benign |

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| | | **malignant tumors)** | and malignant epithelial and connective tissue neoplasms.<br>-Discuss briefly mixed tumors, hamartoma, blastoma, and Choristoma.<br>-Discuss the characteristics and differentiating features of benign and malignant tumors in detail.<br>- Discuss tumor differentiation, dysplastic features, and different grades of dysplasia.<br>- Discuss the growth rate of different tumors, the ability to invade locally, and encapsulation.<br>- Discuss the different routes of tumor metastasis. |
| | | **3-Epidemiology of cancer and carcinogenic agents** | - Discuss the epidemiology of cancer and the factors that influence its incidence, including geographic, hereditary, and acquired factors.<br><br>-Discuss in detail the chemical carcinogens, including direct and indirect-acting ones, and give examples of each. |

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| | | **4-Radiation and Microbial carcinogens and genetic lesions in tumors** | - Discuss the different types of radiation carcinogens and the cancers they increase the risk for.<br><br>- Discuss the microbial carcinogens, including different oncogenic DNA and RNA viruses, and their mode of action in different cancers.<br><br>- Discuss H.pylori as a microbial carcinogen.<br><br>- Discuss the different types of genetic lesions seen in tumors. |
| | | **5-6: Carcinogenesis and hallmarks of cancer**<br><br>**7-Clinical aspects of neoplasia** | -Discuss the multistep process of carcinogenesis.<br>-Talk in detail about the eight hallmarks of cancer.<br>-Discuss the mode of action of different oncogenes and tumor suppressor genes involved in the process of cancer development.<br><br>-Discuss the effect of cancer on the host and talk in detail about cancer cachexia and paraneoplastic syndromes.<br><br>-Discuss grading and staging of tumors. |

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| | | **8-Practical and pathologic features of neoplasms** | - Talk in detail about the methods used in the diagnosis of tumors, including the different morphological methods, tumor markers, and molecular techniques<br><br>-Be familiar with the morphologic features of some benign and malignant epithelial and connective tissue tumors.<br>- Describe the components of some mixed tumors.<br>- Discuss the morphologic features of different grades of dysplasia.<br>- Be familiar with the morphologic features of the metastatic routes of malignant tumors.<br>- Discuss the morphologic features of some preneoplastic disorders. |
| | The objectives of, practical and theoretical revision sessions is<br>1-to be familiar with morphological patterns of diseases through looking at slides & photographs of ultra structural, histopathological sections & gross specimens | **Revision sessions in all General pathology material including clinical scenarios , case study and demonstrating pathology gross** | **Cell Injury**<br>1-The students are informed about tissue processing & a visit to the pathology lab<br>2-To have an idea about used instruments & be informed about how |

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| | those with various diseases.<br>2-Four practical sessions were held in this module include power point slides of large number of pathological conditions and disease concerning with four main chapter that is given through the module in addition to various topics and subtopics that included in each chapter<br>3-teaching the students how to interpret routine slides by using routine stains as Heatmatoxylin and eosin in addition to ancillary or additional stains that help us to identify specific substances or structures in order to reach definite diagnosis or confirm or provisional diagnosis moreover using electron microscope ready pictures to be discussed and taught to the students in specific subtopics | **and microscopical images** | histological sections & cytology specimens were prepared<br>3-A review of gross morphology, & histological sections of reversible and irreversible cell injuries were done including hydropic degeneration of necrosis & intracellular accumulaThe students were informed to identify the gross & Lab<br><br>**INFLAMMATION &HEALING AND TISSUE REPAIR**<br>1-Inflammation microscopic features of acute & chronic inflammation,<br>2-to identify the types of inflammatory cells and the patterns of inflammation<br>3-To identify abscess, ulcer & granulomas<br><br>4-The gross & microscopic features of healing & repair are reviewed, including granulation tissue, fibrous tissue and keloid<br><br>**HEMODYNAMICS**<br>1-The students are informed to identify the gross & microscopic appearances of edema, congestion, hemorrhages, hematomas, thrombosis, embolism & infarction |

## CADEMIC SUPPORT

It is The Hashemite University policy to provide educational opportunities that ensure fair, appropriate and reasonable accommodation to students who have disabilities that may affect their ability to participate in course activities or meet course requirements. Students with disabilities are encouraged to contact their Instructor to ensure that their individual needs are met. The University through its Special Need section will exert all efforts to accommodate for individual's needs.

**Special Needs Section:**
**Tel:**
**Location:**
**Email**:

## COURSE REGULATIONS

If a student is absent for a teaching session then they must discuss this with the course instructor. If a student is absent for more than 25% of the course then he may be liable to fail the course

:B- Absences from exams and handing in assignments on time

If a student misses an examination then they will have the opportunity for a make-up .examination, according to the university regulations

C- Health and safety procedures: College Members and students must at all times, conform to .Health and Safety rules and procedures

:D- Honesty policy regarding cheating, plagiarism, misbehavior

As a student in this course (and at this university) you are expected to maintain high degrees of professionalism, commitment to active learning and participation in this class and also integrity in your behavior in and out of the classroom. Students violate this policy would be subjected to disciplinary action according to the Hashemite University disciplinary policies

## COURSE ASSESSMENT

***Course Calendar and Assessment***

Students will be graded through the following means of assessment and their final grade will be calculated from the forms of assessment as listed below with their grade weighting taken into account. The criteria for grading are listed at the end of the syllabus

| Assessment | Grade Weighting | Deadline Assessment |
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| e.g. Exam 1 | 50% | Add date/time |
| | | |

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| e.g. Quizzes | ungraded | |
| Homework assignment | ungraded | |
| e.g. Final Exam (3) | 50% | Add date/time |

**Description of Exams**
Test questions will predominately come from material presented in the lectures. Semester exams will be conducted during the regularly scheduled lecture period. Exam will consist of multiple choice questions.
All the best is done to include and cover ALL the material given in syllabus by examination all throughout the semester.

**Homework and assignment:** Will be given for each chapter, while the chapter in progress you are supposed to work on them continuously and submit in next lecture when I finish the chapter. You are also expected to work on in-chapter examples, self-tests and representative number of end of chapter problems.

**Quizzes:** Unannounced quizzes will be given during or/and at the end of each chapter based upon the previous lectures. It will enforce that you come prepared to the class.
**Weekly quizzes is given to the students to practice their knowledge and new learnt concepts by giving those questions in Team and educational channel in Instagram**

On live session is given to the student by appointing fixed date and time to discuss clinical cases which is correlate with the pathological concepts that we discussing in each chapter, to motivate the medical students to think critical and trigger their ability to analyses the clinical problems according to the scenario given in each case( provoke their critical , abstract and analyzed thinking )