# Department of Pathology & Forensic medicine
# Third Year - Human Pathology

**Course No.:** 5010111

**Time Division:** 120hr theoretical, 90hr Practical
**Units:** 11

**Course Name:** Human pathology

**Semester & Year:** First & Second semesters, 2024-2025

**Course Website:** N/A

**Course Description:** Over the course of one year the student is introduced to clinical study of human pathology in its general and systemic aspects.

**Prerequisite:** Histology & Biochemistry

**Course intended Outcomes:**

By the end of the course the student will be able to:

1. understand the preliminary meanings and terminology applied in the pathology correctly.
2. Link between the mechanism for various diseases and the clinical picture for each of them.
3. Have a detailed review of the most important diseases, their causes and development, their local & generalized effects, as well
4. as the most important results and their complications.
5. Be able to know the applications of laboratory tests and their benefits in diagnosis of diseases ( their specificity for each disease)

**Course Outline**

| First Semester | | | |
|---|---|---|---|
| **Week** | **Lecture** | **Lectures Topics** | **Lab. Topics** |
| 1 | Lec.1 | **Cell injury**<br>Introduction to cell injury | Introduction to pathology:<br>-Define pathology<br>-Define pathogenesis<br>-Define common terms in pathology<br>-Microscopic and macroscopic examination |
| | Lec.2 | Cause of cell injury & its types | |
| | Lec.3 | Mechanisms of cell injury | |
| | Lec.4 | Definition, types & pathology of necrosis | |
| 2 | Lec.5 | **Pathology of inflammation**:<br>Pathology and definition of inflammation | Tissue Processing:<br>perform the ordinary staining of tissue biopsy & the student<br>becomes familial with using of light microscope |
| | Lec.6 | Types of inflammation | |
| | Lec.7 | complication for each type of inflammation. | |
| | Lec.8 | Healing and repair | |
| 3 | Lec.9 | **Pathology of hemodynamic disorders**, edema, hyperemia & congestion | Cell injury, adaptation & cell death<br>understand the principles of cell injury, Adaptation & death by demonstration of slides by data show device & light<br>microscope |
| | Lec.10 | Pathology of ischemia & infarction | |
| | Lec.11 | Pathology of hemorrhage, thrombosis & embolism | |
| | Lec.12 | Pathology of Shock | |

| First Semester | | | |
|---|---|---|---|
| **Week** | **Lecture** | **Lectures Topics** | **Lab. Topics** |
| 4 | Lec.13 | **Pathology of infectious disease**: Terms & definitions in pathology of infectious diseases | Inflammation<br>know the classification of inflammation.<br>understand the pathogenesis the mechanisms of each type of inflammation<br>understand the complications of each type of inflammation |
| | Lec.14 | Classification of infectious disease | |
| | Lec.15 | Typhoid fever, leprosy and syphilis | |
| | Lec.16 | Parasitic and fungal infections | |
| 5 | Lec.17 | **Pathology of genetic diseases**: Principles of genetic | Hemodynamic disorders:<br>to understand the practical points regarding pathology of hemodynamic disorders. |
| | Lec.18 | Types of genetic diseases | |
| | Lec.19 | Common examples of genetic diseases | |
| | Lec.20 | Basis of diagnosis of genetic diseases | |
| 6 | Lec.21 | **Pathology of Neoplastic diseases**: Definition & terminology of neoplasia | Review<br>Exam |
| | Lec.22 | Characteristics of benign and malignant tumors | |
| | Lec.23 | Epidemiology of tumors | |
| | Lec.24 | Carcinogenesis | |
| 7 | Lec.25 | Principals of carcinogenesis | Infectious<br>These achieved by using data show & light microscope<br>diseases.<br>to understand the practical points regarding pathology of infections |
| | Lec.26 | Hall mark of cancer and genomic instability | |
| | Lec.27 | Etiology of cancer | |
| | Lec.28 | Tumor immunity | |
| 8 | Lec.29 | **Pathology of immunological diseases**: Principles of immunology | Genetic diseases: to understand the practical points regarding pathology of genetic disease |
| | Lec.30 | Types of immunological diseases | |
| | Lec.31 | Mechanisms of immunological disease | |
| | Lec.32 | Common immunological diseases | |

| First Semester | | | |
|---|---|---|---|
| **Week** | **Lecture** | **Lectures Topics** | **Lab. Topics** |
| 9 | Lec.33 | Cytopathology:<br>Principles in Cytopathology | Neoplasia.<br>understand the practical points regarding pathology of neoplasia |
| | Lec.34 | Types of Cytopathology | |
| | Lec.35 | Common examples on each type. | |
| | Lec.36 | Common examples on each type. | |
| 10 | Lec.37 | Advances in pathology<br>Principles of Immunohistochemistry | Review :<br>Exam |
| | Lec.38 | Principals of light microscopy | |
| | Lec.39 | Principles of fluorescent microscope | |
| | Lec.40 | Principles of electron microscope | |
| 11 | Lec.41 | Red Blood Cell diseases:<br>Basis of hemopoiesis | Review |
| | Lec.42 | Terminology of Anemia ,<br>Classification of anemia | |
| | Lec.43 | Mechanism, etiology, pathological changes,<br>clinical features & lab. Diagnosis for each type of<br>anemia | |
| | Lec.44 | Hemoglobinopathies | |
| 12 | Lec.45 | Diseases of White Blood Cells:<br>Basis of myelopoiesis & lymphpoiesis | Red Blood Cells diseases:<br>understand the practical points regarding red blood cells pathology |
| | Lec.46 | Terminology of WBC diseases<br>Types of leukemia | |
| | Lec.47 | Mechanism, etiology, pathological changes,<br>clinical features & diagnosis of leukemia | |
| | Lec.48 | Diseases of bone marrow | |
| 13 | Lec.49 | Diseases of platelets & blood transfusion:<br>Basic of hemostssis<br>Blood grouping | White Blood Cells diseases:<br>understand the practical points regarding white blood cells diseases |
| | Lec.50 | Diagnosis of platelets diseases | |
| | Lec.51 | Basic of platelets synthesis<br>Common platelets diseases | |
| | Lec.52 | Diseases of clotting factors deficiency | |

| First Semester | | | |
|---|---|---|---|
| **Week** | **Lecture** | **Lectures Topics** | **Lab. Topics** |
| 14 | Lec.53 | Pathology of lymph nodes diseases:<br>Normal histology of lymph nodes<br>Non neoplastic disorders of lymph nodes | Platelets diseases & blood transfusion: understand the practical points regarding platelets diseases & blood transfusion. |
| | Lec.54 | Neoplastic disorders of lymph nodes | |
| | Lec.55 | Classification of lymphoma | |
| | Lec.56 | Pathological changes, Pathogenesis, etiology &<br>lab. Diagnosis for each type of lymphoma | |
| 15 | Lec.57 | Pathology of vascular diseases:<br>Pathological aspect of atherosclerosis | Diseases of lymph nodes: understand the practical points regarding lymph nodes diseases |
| | Lec.58 | Vascular aneurysm (types, etiology, pathology of<br>type) | |
| | Lec.59 | Pathology of aortic dissection<br>Pathology of Hypertension | |
| | Lec.60 | Pathology of vasculitis<br>Tumors of vascular system | |

| Second Semester | | | |
|---|---|---|---|
| **Week** | **Lecture** | **Lecture Topics** | **Lab. Topics** |
| 16 | Lec.1 | Pathology of heart diseases:<br>Notes on normal anatomy & histology of heart. Coronary heart disease | Diseases of vascular system: to understand the practical points regarding diseases of vascular system |
| | Lec.2 | Pathology of coronary heart diseases | |
| | Lec.3 | Pathology of congenital heart diseases | |
| | Lec.4 | Pathology of heart failure, rheumatic fever & infective endocarditis. | |
| 17 | Lec.5 | Notes on normal anatomy & histology of respiratory system<br>Pathology of upper respiratory tract | Diseases of heart: understand the practical points regarding diseases of heart |
| | Lec.6 | Congenital diseases of lungs<br>Pathology of pneumonia | |
| | Lec.7 | Pathology of chronic obstructive and restrictive lung diseases. | |
| | Lec.8 | Pathology of Pneumoconiosis and tumors | |

| Second Semester | | | |
|---|---|---|---|
| **Week** | **Lecture** | **Lecture Topics** | **Lab. Topics** |
| | | | |
| 18 | Lec.9 | Diseases of gastrointestinal tract:<br>Pathology of oral cavity diseases (congenital, inflammatory & neoplastic diseases | Tumors of respiratory tract<br>Diseases of heart:<br>understand the practical points regarding diseases of heart. |
| | Lec.10 | Pathology of esophageal diseases (congenital,<br>inflammatory & neoplastic diseases) | |
| | Lec.11 | Pathology of stomach (congenital, inflammatory,<br>Mechanical & neoplastic diseases | |
| | Lec.12 | Pathology of intestine (congenital, inflammatory,<br>mechanical & neoplastic diseases) | |
| 19 | Lec.13 | Pathology of liver, pancreas & gallbladder diseases:<br>Congenital disorders.<br>Inflammatory diseases | Diseases of gastrointestinal tract:<br>understand the practical points regarding diseases of gastrointestinal system |
| | Lec.14 | Traumatic diseases | |
| | Lec.15 | Metabolic diseases | |
| | Lec.16 | Neoplastic diseases | |
| 20 | Lec.17 | Pathology of renal diseases:<br>Congenital diseases of kidneys<br>Inflammatory diseases & immunological diseases of glomeruli | Pathology of liver, pancreas & gallbladder diseases:<br>understand the practical points regarding pathology of<br>liver, gallbladder & pancreas. |
| | Lec.18 | Diseases of tubulointerstitial system of kidneys<br>Cystic diseases of kidneys | |
| | Lec.19 | urinary tract infection<br>Urinary tract stones<br>Tumors of kidneys | |
| | Lec.20 | urinary bladder<br>Inflammatory diseases, neoplastic disease | |
| 21 | Lec.21 | Pathology of male genital system:<br>Pathology of prostate (infections, benign prostatic hyperplasia, | Pathology of renal diseases:<br>understand the practical points regarding pathology of<br>renal system. |
| | Lec.22 | tumors of prostate | |
| | Lec.23 | Pathology of testes (congenital, infections, | |
| | Lec.24 | tumors of testes | |
| 22 | Lec.25 | Pathology of female genital system:<br>Pathology of vagina, cervix | Pathology of male genital system:<br>understand the practical points regarding pathology of male genital system |
| | Lec.26 | Pathology of uterine body (hormonal, infections<br>& neoplastic disorders) | |
| | Lec.27 | Pathology of ovaries | |
| | Lec.28 | tumor of ovaries | |

| Second Semester | | | |
|---|---|---|---|
| **Week** | **Lecture** | **Lecture Topics** | **Lab. Topics** |
| 23 | Lec.29 | Diseases of breast (congenital, hormonal diseases) | Pathology of female genital system: understand the practical points regarding pathology of male genital system. |
| | Lec.30 | benign breast disease | |
| | Lec.31 | Ductal breast disease | |
| | Lec.32 | Lobular breast disease | |
| 24 | Lec.33 | Pathology of endocrine system: Pathology of pituitary & hypothalamus | Pathology of female genital system: understand the practical points regarding pathology of male genital system. |
| | Lec.34 | Pathology of thyroid & para thyroid glands | |
| | Lec.35 | Pathology of adrenal glands | |
| | Lec.36 | Pathology of diabetes mellitus & pancreas | |
| 25 | Lec.37 | Pathology of Central nervous system: Congenital diseases, Infection of meninges | Pathology of endocrine system: understand the practical points regarding pathology of endocrine system. |
| | Lec.38 | Pathology of cerebrovascular accidents | |
| | Lec.39 | Pathology of cranial hemorrhage | |
| | Lec.40 | Tumors of central nervous system | |
| 26 | Lec.41 | Pathology of skin diseases: Terminology of skin pathology | Pathology of Central nervous system: understand the practical points regarding pathology of central nervous system. |
| | Lec.42 | Inflammatory diseases of skin | |
| | Lec.43 | Bullous diseases of skin | |
| | Lec.44 | Tumors of skin | |
| 27 | Lec.45 | Introduction to Pathology of bone, joint & soft tissue: | Pathology of skin diseases: understand the practical points regarding pathology of skin. |
| | Lec.46 | Congenital diseases | |
| | Lec.47 | Infections of locomotor system | |
| | Lec.48 | Metabolic diseases of bone | |
| 28 | Lec.49 | Tumors of bone | Pathology of bone, joint: understand the practical points regarding pathology of bone, joint. |
| | Lec.50 | Soft tissue benign conditions | |
| | Lec.51 | Soft tissue malignant tumors | |
| | Lec.52 | Joint disease related to aging | |
| 29 | Lec.53 | Introduction to molecular pathology | Pathology of soft tissue: understand the practical point regarding soft tissue |
| | Lec.54 | Basic principles in molecular pathology | |
| | Lec.55 | Molecular pathology technique | |
| | Lec.56 | Molecular pathology procedures | |
| 30 | | Exam Preparation | Final Spot Exam |

**Textbooks:**

1. Robbins & Kumar Basic Pathology (Robbins Pathology). Vinay Kumar, Abul K. Abbas, Jon C. Aster, & Andrea T Deyrup. Elsevier; 11th edition (2022).
2. Hoffbrand's Essential Haematology (Essentials). A. Victor Hoffbrand, Pratima Chowdary, Graham P. Collins, & Justin Loke. Wiley-Blackwell; 9th edition (2024).
3. Rosai and Ackerman's Surgical Pathology. Juan Rosai. Mosby; 10th edition (2011).

**Suggested references:**

1. Mills and Sternberg's Diagnostic Surgical Pathology. Teri A. Longacre. LWW; 7th edition (2022).
2. Rodak's Hematology: Clinical Principles and Applications. Elaine M. Keohane, Michelle Montgomery Preston, Kamran M. Mirza, & Jeanine M. Walenga. Elsevier; 7th edition (2024).

**Marking:**

| | |
|---|---|
| First Semester | 10 marks |
| Mid-Year Theoretical Exam | 20 marks |
| Second Semester | 10 marks |
| Final Practical Exam | 20 marks |
| Final Theoretical Exam | 40 marks |

**Regulations:**

1. Attendance is mandatory and University regulations will be enforced
2. There will be a number of theoretical quizzes each semester followed by a practical exam.
3. No cell phones are allowed during lectures, labs and exams.
4. All Cheating incidences will be reported to the chair and proper punishment applied.
5. See student handbook for other regulations.

**Instructor(s) information:**

**Section:** N/A **Lecture Hall:** 5 & 6 **Time:** according to timetable

| Instructor's Name: | E-mail: | Office hours: |
|---|---|---|
| Assistant Professor Dr. Maysem Mouayad Alwash | maysemalwash@uomustansiriyah.edu.iq | 10:00 am- 4:00 pm Sun-Thu |
| Lecturer Dr. Mais Ibrahim ALsikafi | mais.ibrahim.hadi@uomustansiriyah.edu.iq | 10:00 am- 4:00 pm Sun-Thu |