وزارة التعليم العالي والبحث العلمي

جامعة البصرة

كلية الطب

فرع الأمراض والطب العدلي

Ministry of Higher Education & Scientific Research

University of Basrah

College of Medicine

Department of pathology & forensic medicine

Third year Syllabus

Department of Pathology

Revised and updated by the scientific committee in the department of pathology and forensic medicine

List of contributors:

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Department of Pathology

جامعة البصرة كلية الطب وحدة التسجيل

University of Basrah

College of Medicine

Subject: pathology

Objective:

1- Understand and apply general facts in the field of pathology for third year medical students and forensic medicine for fourth year medical students.
2- Observe and analyze pathological variables.
3- Link between the pathological changes and manifestations of the disease.
4- Acquire the ability to identify and find appropriate solutions to medical problems.
5- Understand the role of the pathologists as a member of an integrated medical team responsible for the diagnosis of the medical case, and the identification of the appropriate treatment.
6- Learn how to care and preserve tissues taken from patients till delivered to the laboratory in good condition for diagnosis.
7- To provide basic background of different medicolegal aspects of living and dead individuals including body remains, and the ability to write medicolegal reports and death certificate.
8-To provide basic knowledge of medical ethics and malpractice
9-To provide ability to diagnose and manage intoxicated patients

Platform for practical training:

(8 hours per week) the main groups are classified into small groups, the main objectives of practical classes is to support the theory and to help the student to comprehend the basic principles in histopathology in form of:

1. Power points projections showing macroscopical (gross) and microscopical slides of some diseases of the theoretical lectures.
2. Examination of available of pathological specimen.
3. Examination of standard slides to demonstrate the microscopic changes in the diseased tissue or organ.

Department of Pathology

جامعة البصرة كلية الطب وحدة التسجيل

4. Tutorials to give the student the opportunity for further information and to give the opportunity to the teachers to assess the standard of their methods of teaching.

Exam mode and Calendar:

Annual assessment:

The examinations are held as followings:

*First Semester 100%

- Mid Semester Exam.... 30% A- Theory 20% B- Practical 10%
- Final Exam..... 70% A- Theory 50 % B- Practical 20%

* Second Semester 100%

- Mid Semester Exam..... 30% A-Theory 20 % B- Practical 10%
- Final Exam....70% A- Theory 50 % B- Practical 20%

Formative examination: (twice per month) (date update accordingly)

Formative exams schedule

Subject
Cell injury **Acute inflammation**
Chronic inflammation & tissue repair
Genetics
Amyloid **Circulatory system**
Neoplasia
Hematology-RBC disorders **Hematology-WBC disorders**
Liver, biliary tract & pancreas
Gastro intestinal tract
Lymphoreticular system
Cardiovascular system
Female genital system **Breast**
Kidney & urinary tract system **Male genital system**
Endocrine system **Bone, joints & skeletal muscles** **Central and peripheral nervous system**

Department of Pathology

Syllabus:

First Semester : General Pathology			
Subject	Learning Objective	Lecturer	Hours
Cell and tissue injury	**To know**: type, causes & mechanisms of cell injury **To define**: the adaptation **To know**: type, causes, mechanisms & morphology of adaptation **To know:** definition, morphology& type of necrosis **To know**: definition, morphology &mechanisms of apoptosis **To compare** between necrosis & apoptosis **To know:** definition, causes, & morphology of fatty changes **To know:** definition, & types of pathological calcification **To compare** between types of calcification **To recognize** different types of pigmentations	**Dr. Abeer Ali**	5
Amyloidosis	**To know:** definition, types & morphology of amyloidosis	**Dr. Aseel Hamid**	1
Acute & chronic Inflammation **Tissue healing &** **repairs**	**To define:** inflammation & each type of it **To know:** types, causes, classical signs, morphology & outcomes of acute inflammation **To understand:** the pathogenesis of inflammatory process **To know & recognize:** types , causes & morphology of Chronic Inflammation **To define:** repair	**Dr. Swasan salih Alharoon**	10

Department of Pathology

	To compare between regeneration & fibrosis **To know and compare:** between healing by first intention & secondary intention **To recognize:** factors affect wound healing		
Disturbances of blood &flow **body fluid**	**To define:** edema **To understand:** the pathophysiology & morphology of edema **To define & compare between:** congestion &hyperemia **To define:** hemorrhage **To know:** types of hemorrhage **To recognize:** the effects of hemorrhage **To define:** Thrombosis **To know:** causes, pathogenesis, morphology & fate of thrombosis **To define:** Embolism **To know:** types & effects of embolism **To know:** causes , effects & pathogenesis of pulmonary embolism **To define:** infarction **To recognize:** causes, types & morphology of infarction **To define:** shock **To know:** types of shock **To understand:** pathogenesis & stages of shock	**Dr. Aseel Hamid**	6
Neoplasia	**To define:** tumor, tumor like lesions **To understand:** the nomenclature **To know:** Characteristics of benign & malignant neoplasms **To define & to know:** Characteristics of atypia & dysplasia **To know:** tumor grade and stage **To understand:** Invasion & metastasis **To know:** incidence & etiology of cancer **To understand:** carcinogenesis	**Dr. Jasim Al-Diab**	10

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	To know: the commonest chemicals, viral carcinogens & their pathogenesis **To define:** tumor antigens **To know:** type of tumor antigens **To know:** the Effects of Tumor on the Host.		
Medical Genetics	**To define:** genetic term **To define:** Mosaicism **To define:** Chimera **To know:** type & causes of genetic diseases **To know**: Down syndrome, Edward syndrome, Turner syndrome & Klinefilter syndrome **To define:** Structural abnormalities **To understand:** single-gene disorders with non classic inheritance **To Define:** fragile x-syndrome **To understand:** Disorders with multifactorial inheritance **To know:** Diseases caused by mutation of mitochondrial genes **To define:** karyotype **To know:** steps of karyotype **To understand:** genetic counseling (type & indication)	**Dr. Saad Abdulbaqi**	8
Hematopoietic system	**To know:** Red cell Disorders **To define:** anemia **To know:** classification of each anemia **To define**: Anemia of blood loss--Hemorrhage **To define:** Hemolytic Anemia **To understand:** the pathogenesis of each type of hemolytic anemia -Hereditary spherocytosis -Sickle cell anemia - Thalassemia -G6PD deficiency -Immunohemolytic anemia	**Dr. Alaa Abdulrazzaq** **Dr.Sara Anmar Abd-Almuhsin**	10

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	To recognize: types, morphology & causes of bleeding disorders • Idiopathic thrombocytopenic purpura • Hemophilia • Von-Willebrand disease **To know:** WBC disorders **To remember:** WBC production **To define:** Neutrophils count disorders **To define**: Lymphocytosis **To know:** Leukemia & define each type **To define:** Myeloproliferative neoplasms **To know:** Chronic myeloid leukemia **To define**: Polycythemia vera, Essential thrombocytosis & Primary myelofibrosis **To know:** Myelodysplastic syndrome **To understand:** Plasma cell dyscrasia **To define:** Chronic lymphoproliferative disoreders **To understand:** Blood transfusion **To know:** Red blood cell antigens and blood group antibodies **To know:** ABO system **To define**: Rh system **To know:** Cross match & pre transfusion testing		
Scond Semester:	**Systemic pathology**		
Cardiovascular system	**The Blood Vessels** **To define & understand:** Atherosclerosis **To know:** risk factors, pathogenesis, morphology & complications of atherosclerosis **To define & understand:** Aneurysms (definition, type, complication) **To define**: hypertension	**Dr. Saad Abdulbaqi**	10

Department of Pathology

	To detrermine: types & causes of hypertension **To know:** types, causes & morphology of vascular tumors ➢ Benign tumors - Hemangioma (types) - Lymphangioma (types) ➢ Intermediate (Borderline) tumors -Kaposi sarcoma ➢ Malignant tumors -Angiosarcoma -lymphangiosarcoma **The Heart** **To define**: Ischemic heart diseases **To define**: Myocardial infarction(MI) **To know:** pathogenesis, events, sequences,& complications of MI **To define**: Valvular heart diseases **To define & understand**: Rheumatic fever, pathogenesis & morphology **To recognize:** valvular complications of chronic rheumatic diseases **To define**: Infective Endocarditis **To know:** Congenital heart disease ➢ Left-to-right shunts - Atrial septal defects - Ventricular septal defects - Patent ductus arteriosus ➢ Right-to-left shunts -Tetralogy of Fallot -Transposition of great arteries		
Lymphoreticular system	**To define & classify:** Reactive lymphadenopathy • Chronic non-specific lymphadenitis (follicular and sinus hyperplasia) • Granulomatous lymphadenitis **To know:** Neoplastic lymphadenopathy	**Dr.Swasan salih Alharoon**	5

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	To classify: lymphoma • Hodgkin lymphoma • Non-Hodgkin lymphoma - Low-grade B-cell lymphoma - Low-grade T- cell lymphoma - High- grade B- cell lymphoma - High – grade T- cell lymphoma **To know:** morphology of each type **To know:** Metastatic lymphadenopathy		
Respiratory system	**To know:** commonest pathological lesions of Upper respiratory tract **To define** : Atelectasis (collapse) **To recognize**: the types of atelectasis **To understand & classify:** Obstructive Pulmonary Disease • Bronchial asthma. • Chronic bronchitis. • Bronchiectasis • Emphysema - Centrilobular emphysema - Panacinar emphysema **To know & classify:** Restrictive lung defect • Interstitial lung diseases • Acute respiratory distress syndrome • Chronic restrictive lung diseases • Pneumoconiosis • Interstitial fibrosis of unknown etiology • Infiltrative lesions **To define**: Pneumonia **To classify:** Pneumonia -Bronchopneumonia -Lobar pneumonia **To understand**: etiology, pathogenesis, & morphology of pneumonia **To define & classify:** Pneumoconiosis.	**Dr. Jasim Al-Diab**	10

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	To know: Pathological changes & complications of Pneumoconiosis **To recognize:** types of lung Tumors • Bronchial carcinoid -Typical -Atypical • Bronchial carcinoma. -Squamous cell carcinoma -Adenocarcinoma -Small cell carcinoma -Large cell carcinoma **To know:** etiology, morphology & complication of bronchogenic carcinoma **To know:** commonest tumors of Pleura.		
Gastro-intestinal tract	**Esophagus** **To remember:** histology of esophagus **To define:** Functional esophageal obstruction- - achalasia **To know**: Mechanical esophageal obstruction- - esophageal atresia **To understand**: Esophageal varices **To know**: definition, types, causes & complication of Esophagitis : ▪ Infectious ▪ Chemical **To understand**: definition, pathogenesis & complication of Barrett esophagus **To know**: types, etiology & morphology of Esophageal carcinoma. **Stomach** **To remember:** histology of stomach **To know**: type of Gastritis • Acute gastritis • Chronic gastritis **To know**: definition, etiology, pathogenesis & morphology of acute & chronic gastritis **To understand**: Gastric ulceration	**Dr. Hind Alaa**	8

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	To define: chronic peptic ulcers **To know**: etiology, pathogenesis & morphology of chronic gastric ulcer **To know**: morphology & complications of chronic peptic ulcer **To classify:** tumors of stomach **To define & know:** Gastric polyps & it's type **To know**: type, etiology, pathogenesis & morphology of Gastric Carcinoma **Small and large intestine** **To remember:** histology of the intestine **To define:** Malabsorption syndrome **To know**: Inflammatory bowel disease **To define:** Crohn disease **To know**: etiology, pathogenesis , morphology & complication of crohn disease **To define:** Ulcerative colitis **To know**: etiology, pathogenesis , morphology & complication of Ulcerative colitis **To classify:** Tumors of small and large intestines • Non- neoplastic polyps • Adenomas • Familial polyposis syndromes • Colorectal carcinoma • Neoplasms of small intestine • Other tumors of gastro-intestinal tract , Gastro-intestinal lymphoma and Carcinoid **To know**: etiology, pathogenesis & morphology of colonic cancer **Appendix** **To know**: acute appendicitis		

Department of Pathology

جامعة البصرة كلية الطب وحدة التعليم

Liver, biliary tract & pancreas	**Liver** **To remember**: anatomy, histology and physiology of liver **To define & classify**: Hepatitis 1.According to the onset: acute and chronic hepatitis **To know**: definition, causes& pathological features of acute & chronic hepatitis 2. According to the etiology: e.g. viral hepatitis, autoimmune hepatitis **To know**: etiology, pathology, outcome & complications of viral hepatitis. **To understand**: definition & characteristic features of autoimmune hepatitis. **To define & know**: pathogenesis & morphology of Alcoholic & nonalcoholic fatty liver disease **To know**: definition, etiology, pathogenesis, morphology & complications of liver cirrhosis **To define:** Portal hypertension **To know:** causes & pathogenesis of liver cirrhosis **To identify:** Cholestatic liver diseases (definition & pathogenesis,e.g. autoimmune Cholangiopathies (primary biliary cholangitis and primary sclerosing cholangitis) and bile duct obstruction). **To classify:** Tumors of the liver 1. Benign tumors: e.g. Hemangioma (morphology) and hepatocellular adenoma (risk factors and morphology)	**Dr.Abeer Ali Hussien**	8

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	2. Malignant tumors: primary and secondary **To know**: the commonest site of origin and gross appearance of secondary liver tumors **To classify:** Primary malignant liver tumors: e.g. Hepatocellular carcinoma, hepatoblastoma & angiosarcoma **To know**: etiology, pathogenesis & morphology of Hepatocellular carcinoma **Gallbladder and biliary tree** **To remember:** the anatomy, histology & physiology of the gall bladder & biliary tree **To know:** Cholelithiasis (types of gall stones, risk factors, pathogenesis, morphology & complications) **To identify:** Cholecystitis (definition, classification & complications) • Acute cholecystitis • Chronic cholecystitis **To know:** definition, pathogenesis & morphology of acute & chronic cholecystitis **To define & know:** causes of Choledocholithiasis & cholangitis **To classify:** Tumors of gall bladder (benign tumors: e.g. gall bladder adenoma & malignant tumors e.g. gall bladder adenocarcinoma) **To know:** risk factors & morphology of gall bladder Adenocarcinoma **To classify:** Bile ducts tumors --benign & malignant tumors (primary or secondary)		

Department of Pathology

جامعة البصرة كلية الطب وحدة التسجيل

	To know: definition & risk factors of Cholangiocarcinoma **Pancreas** **To remember:** anatomy, histology & physiology of the pancreas **To define & know:** Pancreas divisum (definition & pathogenesis) **To define & classify:** Pancreatitis - Acute pancreatitis - Chronic pancreatitis **To know:** definition, etiology, pathogenesis, morphology & complications of acute & chronic pancreatitis **To identify:** Pancreas pseudocysts (definition and morphology) **To classify**: pancreatic tumors • Pancreas cystic neoplasms (serous and mucinous cystic neoplasms morphology) • Pancreas ductal adenocarcinoma **To know:** risk factors and morphology of pancreas ductal adenocarcinoma		
Kidney & urinary tract system	**To know**: Clinical manifestations of renal diseases **To know** : classification & Pathogenesis of glomerular diseases - Circulating Immune complexes - In-situ complexes - Cell-mediated immune glomerulonephritis - Mediators of immune injury - Other mechanisms of glomerular injury **To identify :** characteristic of nephrotic syndrome	**Dr. Zaineb Abd Al-Ameer**	10

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	To know: etiology, pathogenesis & morphology of each type of nephrotic syndrome • Minimal – change disease (lipoid nephrosis) • Focal and segmental glomerulosclerosis • Membranous nephropathy (Membranous glomerulonephritis) • Membranoproliferative glomerulonephritis **To know:** characteristic of The nephritic syndrome • Acute post infections (post streptococcal) • IgA nephropathy (Berger disease) • Rapidly progressive (Crescentic) glomerulonephritis **To know**: etiology, pathogenesis & morphology of each type of nephritic syndrome **To define**: Chronic glomerulonephritis **To identify**: Diseases affecting tubules and interstitium ▪ Acute pyelonephritis ▪ Chronic pyelonephritis& reflux nephropathy ▪ Benign & malignant nephrosclerosis ▪ Malignant hypertension **To define** : Nephrosclerosis **To identify & classify**: Cystic diseases of the kidney -Simple cysts -Autosomal dominant (adult) polycystic kidney diseases -Autosomal recessive (childhood) polycystic kidney diseases **To define** :Urinary outflow obstruction		

Department of Pathology

جامعة البصرة
كلية الطب
وحدة التسجيل

	To know: definition, etiology& types of Renal stones **To define**: Hydronephrosis **To know**: type, etiology, pathogenesis & morphology of renal carcinoma • Renal cell carcinoma • Wilm's tumor • Tumors of the renal pelvis and calyces **To identify & know:** Diseases of the Ureter - Obstruction - Tumors **To know**: type, etiology & morphology of each type of bladder tumors		
Female genital system	**Cervix** **To define:** Cervical Intraepithelial Neoplasia **To know**: types, etiology, pathogenesis , & morphology of cervical cancer **To define:** Endocervical polyp **Uterus** **To know**: diseases of the Body of uterus **To define:** Adenomyosis & Endometriosis **To know**: etiology, pathogenesis , & morphology of Adenomyosis **To classify:** prolifertive lesions of the uterus **To define**: Endometrial hyperplasia **To identify**: tumors of uterus **To define**: leiomyoma **To know**: etiology, pathogenesis , & morphology of leiomyoma **To know**: types, etiology, pathogenesis , & morphology of endometrial carcinoma **Ovary**	**Dr.Noor Sabeeh**	5

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	To know: types, pathogenesis , & morphology of ovarian cyst **To classify:** Non- neoplastic ovarian cysts - Follicular and luteal cyst - Polycystic ovaries - Chocolate cyst. **To know**: types & causes of ovarian tumors - Surface epithelial stromal tumors • Serous tumors • Mucinous tumors - Germ cell tumors ✓ Teratomas • Benign (mature) cystic teratoma • Immature malignant teratoma ✓ Dysgerminoma ✓ Choriocarcinoma ✓ Yolk sac tumor - Sex cord stromal tumors • Granulosa cell tumor • Thecoma- fibroma • Sertoli- Leydig cell tumors - Metastatic • Krukenberg's tumor. **To identify:** Diseases of placenta (pregnancy) ▪ Gestational trophoblastic disease ▪ Hydatidiform mole, complete and partial ▪ Invasive Mole ▪ Choriocarcinoma **To know**: types, etiology, & morphology of Hydatidiform mole **To recognize**: etiology, pathogenesis , & morphology of Choriocarcinoma		
The breast	**To define**: Non infective inflammatory lesions	**Dr. Aseel Hamid**	5

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	- Mammary ductectasia - Galactocele **To know**: Fibrocystic disease of the breast **To classify**: Benign tumors of the breast: ▪ Fibroadenoma **To know & classify:** Breast carcinoma ✓ In situ carcinoma : ductal, lobular ✓ invasive lobular carcinoma ✓ invasive Ductal carcinoma (classical) **To identify:** Miscellaneous tumors of the breast : Phyllodes tumor **To know**: Tumors of male breast		
Male genital System	**To know & classify**: testicular neoplasm • Germ cell tumor ✓ Seminoma - Variants ✓ Non seminomatous • Teratomas • Embryonal carcinoma • Yolk sac tumor • Choriocarcinoma ✓ Mixed germ cell tumor • Sex cord stromal tumor ✓ Sertoli-Leydig cell tumor • Mixed testicular tumor • Testicular lymphoma **To know**: Diseases of the prostate - Prostatic Hyperplasia - Prostatic carcinoma	**Dr. Zaineb Abd Al-Ameer**	2
Endocrine system	**Thyroid gland** **To know**: definition and causes of Hyperthyroidism **To know**: definition and causes of Hypothyroidism **To define** : Thyroiditis	**Dr.Noor Sabeeh**	2

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	To know: classification & morphology of thyroiditis - Chronic lymphocytic (Hashimoto) thyroiditis - Sub acute granulomatous (de Quervain) - Sub acute lymphocytic thyroiditis - Other forms of thyroiditis **To know**: causes , signs & symptoms of Graves diseases **To understand**: Diffuse simple & multinodular goiter **To know**: type & morphology of Thyroid tumors • Adenomas • Carcinomas - Papillary Carcinoma - Follicular Carcinoma - Medullary Carcinoma - Anaplastic Carcinoma		
Bone, joints & skeletal muscles	**To remember:** histology & anatomy of bone **To define** : Osteoporosis **To define & compare between** : Rickets and osteomalacia **To identify**: Paget disease of bone **To define** : Osteomyelitis **To know & classify**: Bone tumors ▪ Bone forming tumors: osteoma, osteoid osteoma & osteogenic sarcoma ▪ Cartilage forming tumors: Osteochondroma, chondroma& chondrosarcoma ▪ Miscellaneous tumors: ➢ Ewing sarcoma ➢ Giant cell tumor ▪ Metastatic tumors of bone **To know :** etiology, pathogenesis & morphology of bone tumors	**Dr. Hind Alaa**	2

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Central and peripheral nervous system	**To remember:** Cells of the nervous system -Neurons -Astrocytes -Oligodendrocytes -Ependymal cells -Microglia **To define**: Edema and hydrocephalus -Cerebral edema -Hydrocephalus **To know & classify**: Vascular diseases - Global hypoxic-ischemic encephalopathy - Infarcts - Intracranial hemorrhage • Primary brain parenchymal hemorrhage • Saccular aneurysm & subarachnoidal hemorrhage **To identify:** Central nervous system trauma - Epidural hematoma - Subdural hematoma **To classify**: Infections of the nervous system - Leptomeningitis • Acute purulent leptomeningitis • Acute lymphocytic (viral)meningitis • Chronic meningitis - Parenchymal infections (encephalitis) • Brain abscess • Viral encephalitis **To know**: classification, morphology & etiology of the central nervous system tumors -Primary neuroglial tumors (Gliomas) ▪ Astrocytomas ▪ Oligodendrogliomas	**Dr. Saad Abdulbaqi**	2

Department Of Pathology

	▪ Ependymomas -Primitive neuroepithelial neoplasms -Meningiomas -Metastatic neoplasms		

Department of Pathology

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