



كلمة رئيس القسم

تخصص فني مختبرات طبية أحد تخصصات قسم المهن الصحية، ويهدف القسم الى إعداد فني مختبرات طبية وتأهيلهم بخبرة عالية من الناحية العلمية والعملية بالإضافة الى تقديم خدمة امنية ومميزة للمرضى في جميع المؤسسات الصحية (المستشفيات او العيادات او المختبرات). تتميز هذه المهنة بشموليتها لجميع الحقول الطبية العلمية.

حيث يقوم القسم بتخريج فني المختبرات الطبية وإعدادهم لسوق العمل، وفي مختلف المجالات (مختبرات المستشفيات، المختبرات الخاصة وعيادات الأطباء) وحيث أننا نتمكن طلابنا من الاطلاع على أحدث الوسائل التكنولوجية في مجال المختبرات الطبية. ونظرا لتعدد التخصصات والخبرات لأعضاء هيئة التدريس وتميز الطلاب بالقسم فنتوقع مستقبل مشرق بعون الله، يتجلى بالأثر الايجابي على خريجي هذا القسم وعلى المجتمع بشكل عام.

مسؤول القسم

أ: صابرين العواضي



الخطة الدراسية لقسم فني مختبرات

First year- first semester 16 weeks		السنة الاولى- الفصل الاول ١٦ اسبوع دراسي		
No.	Course name	Theoretical hours	Lab. hours	Contact hours
1	Basic of biochemistry	2	-	32
2	Basic of microbiology	1	4	80
3	Medical laboratory technology	1	4	80
4	English language and medical English I	2	-	32
5	Islamic culture	1	-	16
6	Analytical chemistry	1	2	48
7	First aid	1	2	48
8	Anatomy and physiology	2	-	32
9	Public health	1	-	1
10	Basic epidemiology	1	-	1
11	Computer skills	-	2	32
Total		13	14	432

First year- second semester 16 weeks		السنة الاولى- الفصل الثاني ١٦ اسبوع دراسي		
No.	Course name	Theoretical hours	Lab. hours	Contact hours
1	Hematology I	1	4	80
2	Systemic bacteriology I	1	4	80
3	Parasitology I	2	4	96
4	English language and medical English I I	2	-	32
5	Clinical chemistry I	1	4	80
6	Basic immunology	2	4	96
Total		9	20	464



Second year- first semester 16 weeks		السنة الثانية- الفصل الاول ١٦ اسبوع دراسي		
No.	Course name	Theoretical hours	Lab. hours	Contact hours
1	Hematology II	1	4	80
2	Systemic bacteriology II	1	4	80
3	Parasitology II	2	4	96
4	Blood bankI	1	4	80
5	Clinical chemistry II	1	4	80
6	Clinical immunology	1	2	48
7	Body fluid	1	4	80
Total		8	26	544

Second year- Second semester 16 weeks		السنة الثانية- الفصل الثاني ١٦ اسبوع دراسي		
No.	Course name	Theoretical hours	Lab. hours	Contact hours
1	Hematology III	1	4	80
2	Diagnostic bacteriology	1	8	160
3	Diagnostic Parasitology	1	4	80
4	Blood bank II	1	4	80
5	Clinical chemistry III	1	4	80
6	Mycology	1	2	48
7	Virology	1	2	48
Total		7	28	576



Third year- first semester 16 weeks		السنة الثالثة- الفصل الاول ١٦ اسبوع دراسي			
No.	Course name	Theoretical hours	Lab. hours	clinical	Contact hours
1	Quality control	1	-	-	16
2	Research methodology	1	-	-	16
3	Health statistics	1	-	-	16
4	health managements	1	-	-	16
5	Field training	-	-	27	432
Total		4	-	27	496



منهج مستول اول – فصل اول

خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الاول		
عدد الساعات ٣٢		مقرر Basic of biochemistry
No.	Subject	Contact hours
1	Carbohydrate: Definition , importance , chemical nature , classification (mono , oligo , poly (starch glycogen , cellulose . agar , inulin , hyaluronic acid) and monosaccharide derivatives	6
2	Lipids : Definition , function , classification , (simple , conjugated , derived) fatty aced and steroids	4
3	Proteins : Amino aced , classification (according to structure , polarity , nutritional , metabolic) peptides formation , proteins (definition , classification (according to function , shape , chemical classification) , and structure levels of protein organization)	4
4	Enzymes : Definition , names , active site , cofactors , zymogens , lysozymes , factor effecting reaction velocity , and enzyme inhibitors . - Mid-term exam	4
5	Nucleic acids : Types , importance , structure	2
6	Carbohydrate metabolism Definition of metabolism , Carbohydrate digestion and absorption , fate of absorbed glucose , glycolysis , krebs cycle , gluconeogenesis , PPP , glycogen metabolism	6
7	Proteins metabolism Protein digestion and absorpction , catabolism of amino acids, urea cycle , fate of carbon skeleton of amino acids	2
8	Lipids metabolism : Digestion and fate of absorbed lipids , fatty acid oxidation ketone bodies , lipoproteins (LDL)	4
Total		32



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الأول الفصل الأول		
مقرر Basic of microbiology نظري		عدد الساعات ١٦
No.	Subject	Contact hours
1	Introduction of microbiology : 1- Definitions 2- History of microbiology sciences 3- Branches of microbiology 4- Microbial diversity	1
2	Host – pathogen relationship 1- Parasitism 2- Normal flora 3- KOCHs postulates 4- Infection and its cycle and stages	1
3	Bacteria cell structure 1- Composition 2- Cell wall structure 3- Function	1
4	Bacterial growth : 1- Growth cycle 2- Growth requirement 3- Nutrition and metabolism 4- Reproduction of bacteria	1
5	Cultivation of bacteria 1- Culture media ingredients and preparation 2- Type of media 3- Inoculation of culture media 4- Incubation of bacteria	1
6	Classification of bacteria : 1- Morphology and biochemical classification 2- Serotyping of bacteria 3- Nucleic acid-based taxonomy 4- Clinical classification of bacteria	1
7	Pathogenesis of bacteria 1- Sources and mode of transmission 2- Virulence factors 3- Bacterial toxins 4- Invasion and intracellular survival	1
8	Laboratory diagnosis of bacteria : 1- Direct exam 2- Different staining methods 3- Gram stain 4- Zeihl-neelsen stain	1
9	Midterm exam	1
10	Laboratory diagnosis of bacteria 1- Isolation 2- Biochemical identification of bacteria 3- Serotype of bacteria 4- Nonculture methods for bacterial identification	1
11	Bacterial genetics 1- Bacterial genome 2- Mutation 3- Transfer of DNA between bacteria and recombination	1
12	Antibiograms 1- Definition 2- Antibiotics classes 3- Mod of action and antibiotics resistant	1
13	Antibiograms susceptibility test 1- Terms 2- Disc diffusion methods Kirby and bauer methods 3- Dilution method , MIC and MBC	1
14	Sterilization and disinfection 1- Sterilization 2- Disinfection 3- Decontamination	1
15	Virology overview 1- Viruses structure 2- Viral replication 3- Laboratory diagnosis of virus	1
16	Mycology overview 1- Cell structure 2- Replication 3- Clinical classification 4- Lab diagnosis	1
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الاول		
مقرر Basic of microbiology عملي		عدد الساعات ٦٤
No.	Subject	Contact hours
1	Introduction of microbiology	4
2	Smear preparation	4
3	Gram stain	4
4	Ziahl-neelse stain	4
5	Media preparation	4
6	Kirby and bauer method susceptibility test	4
7	Inoculation of media	4
8	Sterilization and disinfection	4
9	Catalase test	4
10	Coagulase test	4
11	DNA- ase test	4
12	CAMP test , bile solubility test	4
13	Urease test Oxidase test	4
14	Citrate utilization test	4
15	Kligers iron agar (KIA)	4
16	Sulphur indole motility test (SIM)	4
	Total	64



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الأول الفصل الأول		
مقرر English language and medical English I		عدد الساعات ٣٢
No.	Subject	Contact hours
1	Introduction to English language and medical terminology - The sentence : its analysis and structure - General subject and predicate , classification of sentence (on the base of their construction) - How suffixes and prefixes are used to form words	2
2	The hospital team : Listening : An admission Vocabulary : verbs of describing hospital jobs	2
3	Language spot : present simple v.present continuous Speaking : talking personally	2
4	Writing : profile of student nurse Reading : the nursing profession	2
5	(2) In and around the hospital Vocabulary : hospital department Pronunciation : where is the stress Language spot : preposition of place and movements	2
6	Listening : directions Writing : giving direction via email	2
7	Speaking : on the word Reading : wheelchairs	2
8	(3) hospital admissions Vocabulary : the admissions procedure Listening : A patient record form	2
9	Speaking : admission of patient Language spot : past sample v past continuous	2
10	Reading : bad hand writing Writing : patient summary	2
11	(4) accidents and emergencies Vocabulary : first aid Language spot : instruction	2
12	Speaking : emergency helping Listening : instruction	2
13	Reading : A surprise passenger . signs and symptoms Writing : information poster	2
14	5) pain : Vocabulary : describing pain Listening : 1- a pain chart 2- a pain relief Language spot : making composition Reading1- pain	2
15	Patient care : question to assess pain Speaking : filling in a pain chart Writing: A pain report	2
16	Language spot : perfect tenses Unite revision . practice file Exercises of the units	2
	Total	32



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الأول الفصل الأول		
مقرر Medical laboratory technology نظري		عدد الساعات ١٦
No.	Subject	Contact hours
1	Laboratory safety Types of hazard , universal precaution & safety Instruction , safety equipment & bio waste disposal	
2	General laboratory ware Definition , composition & specification	1
3	Pipettes : description & specification of : graduated , volumetric , Pasteur , automatic & westergren pipettes	1
4	Microscope : type & importance Bright field microscope : principle , parts , lenses , magnification & specification	1
5	Centrifuge type , principle ,, components & specification	1
6	Incubator : principle ,, components & specification Water bath : principle ,, components & specification	1
7	Hot air oven : principle ,, components & specification Autoclave : principle ,, components & specification	1
8	Mid – term exam	1
9	Stills and deionizer : distillation & de-ionization description principle ,, components & specification Balance : type principle ,, components & specification	1
10	Spectroscopy (nature of light beers law Type principle ,, components & specification	1
11	Automated hematology analyzer Principle, basic components & specification	1
12	Immunoassay ; different methods principle , application	1
13	Automated biochemistry analyzer : Principles , basic component	1
14	Role of laboratory in human health and diseases Laboratory policies (definition and principles) Laboratory services network (levels of laboratories)	1
15	Safe laboratory design & organization Basic infrastructure facilities , safety signs & designing of laboratory sections	1
16	Standard operating procedures (s.o.ps) Contents , importance & use Results : standardization in reporting test result	1
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الأول الفصل الأول		
مقرر Medical laboratory technology عملي		عدد الساعات ٦٤
No.	Subject	Contact hours
1	General instruction , laboratory rules , responsibilities and related safety measures.	4
2	General laboratory ware : use , care and simple maintenance of : Beakers , bottles , flasks , funnels , tubes , burette , cylinder , petri-dish , spatula , forceps	4
3	General laboratory ware : use , care and simple maintenance of : Haemocytometer (chambers) racks , wire loop , gauze net , Bunsen burner , dissector , cuvettes	4
4	Pipetting and dispensing techniques Using calibrating and simple maintenance of : Graduated , volumetric, Pasteur , automatic & westergren pipettes	4
5	Preparation of cleaning solution (sulfuric acid – dichromate) Care and cleaning of different glassware	4
6	Microscope : Installation & control of eyepiece , objectives , condenser & changing the lamp or a fuse lamp Use of a microscope with 10× & 40 × objective	4
7	Microscope Use of a microscope with 100× objective Replacement parts and simple maintenance of the microscope	4
8	Centrifuge & microhematocrit centrifuge : Installation, using cleaning calibrating & simple maintenance	4
9	Incubator & water bath : Installation, using cleaning calibrating & simple maintenance	4
10	Hot air oven , autoclave Installation, using cleaning calibrating & simple maintenance	4
11	Still deionizer & balances : Installation, using cleaning calibrating & simple maintenance	4
12	Spectrophotometer Installation, using cleaning calibrating & simple maintenance	4
13	Automated haematology analyzer Operation , calibration – performing – troubleshooting	4
14	Immunoassay analyzer Installation, using cleaning calibrating & simple maintenance	4
15	Automated biochemistry Installation, using cleaning calibrating & simple maintenance	4
16	Final practical exam	4
	Total	64



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الاول		
عدد الساعات ١٦		مقرر
No.	Subject	Contact hours
1	معنى كلمة التوحيد – شروطها واثارها	1
2	توحيد الالهية – توحيد الربوبية- توحيد الاسماء والصفات	1
3	اهمية الاخلاص في قبول الاعمال – اخلاص النية لله في كل عمل، و مايقام به من اعمال تحاه المرضى	1
4	النتائج المترتبة على الاخلاص	1
5	مفهوم الايمان- حقيقة الايمان	1
6	الايمان بالقضاء و القدر	1
7	البعد الايماني البعد الاجتماعي	1
8	البعد التشريعي البعد السياسي البعد الحضاري	1
9	النظافة- التدوي- الوقاية من الامراض- التنفس خارج الاناء – غسل اليدين قبل الاكل وبعده- تقليل الاكل	1
10	تنظيم النسل- الاجهاض- زرع الاعضاء	1
11	نقل الدم – تشريح الجنث	1
12	الاهتمام بالدراسة و التفوق- عدم التعالي والكبر	1
13	الامانة- الصدق- السرية- حسن المظهر- اتقان العمل	1
14	القنوة الحسنة- عدم الخلوة بالنساء- غظ البصر- مواكبة التقدم العلمي والابحاث الجديدة- عدم التعامل مع الادوية المحرمة	1
15	فضيلة العلم- فضيلة التعلم وثوابه- آداب طلب العلم وحق معلمه عليه	1
16	الاسلام وعلوم الحياة	1
Total		16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الاول		
مقرر Analytical chemistry نظري		عدد الساعات ١٦
No.	Subject	Contact hours
1	Introduction 1- Definition 2- Classes 3- Methods analytic	1
2	Solution 1- Definition for types 2- Components 3- Classes 4- Factors effect (temperature solubility)	2
3	Concentration A. Percent % : 1- Definition 2- Types 3- Uses 4- Preparation methods 5- Roles , calculation of roles	1
4	B. Molarity (normality molality) 1- Definition 2- Roles 3- Units 4- Principle 5- Calculation of roles Mid term exam	4
5	C. Dilution 1- Definition 2- Roles 3- Units 4- Calculation of roles 5- Preparation of solution	1
6	Concept (PH) + buffer solution 1- Definition 2- Roles 3- Types 4- Calculation of roles 5- Components , use , methods and important	3
7	Acid base and salt : 1- Definition 2- Description 3- Properties , types , classes 4- Reaction of acid and base	2
8	Titration : A. Precipitation B. Neutralization C. Oxidation , reduction 1- Definition 2- Types 3- Indication 4- Roles 5- Factor effect	2
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الاول		
مقرر Analytical chemistry عملي		عدد الساعات ٣٢
No.	Subject	Contact hours
1	Introduction 1- Identify of application or material in lab	2
2	Solution 1- Preparation of acid and base 2- Detection of sol	
3	Solution 1- Preparation of salt solution 2- Detection of sol	2
4	Preparation of solution usage in laboratory	2
5	chemical equilibria 1- Preparation of solution 2- Factors effect for equilibria	2
6	Concentration (M . N) : 1- Preparation molar , normal solution 2- Calculate on roles 3- Write the result	2
7	Percent (V/V %) : 1- Preparation of sol by percent 2- Calculate on roles 3- Write the result	2
8	Percent (W/V %) : 2- Preparation of sol by percent 3- Calculate on roles 4- Write the result	2
9	Dilution 1- Preparation of diluted solution	2
10	Buffer solution 1- Preparation of solution 2- Calculate on roles 3- Unites	2
11	PH : 1- Measurement of PH 2- Calculate on roles 3- Write the result	2
12	Titration (neutralization) : 1- Preparation of sol for strong acid + strong base 2- Calculate on roles 3- Write the result	2
13	Titration (neutralization) : 1- Preparation of sol for weak acid + weak base 2- Calculate on roles 3- Write the result	2
14	Titration (neutralization) : 1- Preparation of sol for weak acid + strong base 2- Calculate on roles 3- Write the result	2
15	Titration (A – precipitation) : 1- Preparation of sol 2- Calculate on roles 3- Write the result	2
16	B – oxidation reduction	2
	Total	32



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الاول		
مقرر First aid نظري		عدد الساعات ١٦
No.	Subject	Contact hours
1	Introduction 1- Concept of first aid 2- Objective of first aider 3- Responsibilities of first aider	1
2	Hemorrhage and cut wounds 1- External bleeding 2- Cuts wound	2
3	shock 1- Definition 2- Types 3- First aid treatment of shock Unconscious ness 1- Definition 2- First aid treatment 3- Heart massage Epileptic fits 1- First aid treatment	2
4	Splint and bandage 1- Aims of bandaging 2- Aim of splinting 3- Method of apply bandages	2
5	Fracture and dislocation 1- Definition Fracture 2- Types Fracture 3- Signs and symptoms 4- First aid treatment	2
6	Definition of dislocation The First aid treatment	2
7	Burns and scalds 1- Heat burns 2- Chemical scalds 3- First aid treatment	2
8	Asphyxia 1- Artificial respiration 2- P.R	1
9	Poisoning 1- Types 2- Cause 3- Classification 4- Treatment Vital signs Rout of injection administration	2
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الاول		
عدد الساعات ٣٢		مقرر
No.	Subject	Contact hours
1	1- Concept of first aid 2- Responsibilities of first aider	4
2	Hemorrhage and cut wounds	4
3	shock 1. First aid treatment of shock Unconscious ness 1- First aid treatment 2- Heart massage Epileptic fits 1- First aid treatment	4
4	Splint and bandage 1- Method of apply bandages	4
5	Fracture and dislocation 1- First aid treatment	4
6	Burns and scalds 1- First aid treatment	4
7	Asphyxia 3- Artificial respiration 4- P.R	4
8	Poisoning 1. Treatment Vital signs Rout of injection administration	4
	Total	32



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الأول الفصل الأول		
عدد الساعات ٣٢		مقرر Anatomy and physiology
No.	Subject	Contact hours
1	Fundamentals & cell physiology 1- Transport in , through & between cells (active , passive transport & osmosis) 2- Energy production & metabolism 3- Electrical membrane potential & ion channels	4
2	Nerve & muscle , physical work 1- Nerve – motor unit (neuron structure, action potential . motor end plate . contractile apparatus of striated muscle) 2- Smooth muscle contraction	2
3	Nerves system 1- CNS 2- Autonomic nervous system	2
4	Blood 1- Composition& function of blood 2- Blood homeostasis 3- Immune system	4
5	Cardiovascular system 1- Cardiac circulation & cycle 2- Myocardial oxygen supply 3- Circulatory shock	4
6	Respiratory system 1- Lung function & respiration 2- Mechanism of respiration 3- Pulmonary gas exchange	4
7	urinary system 1- Kidney structure & function (renal circulation , filtration , reabsorption and excretion) 2- Body fluid homeostasis (salt . H ₂ O . acid – base balance	2
8	Acid – base homeostasis 1- Acidosis (metabolic & respiratory) 2- Alkalosis (metabolic & respiratory)	2
9	Thermoregulation	2
10	Nutrition& digestive 1- Steps of digestion & absorption of food components 2- Neural & hormonal control of digestion	2
11	Hormones 1- Types 2- Control & effects	2
12	Hormones & reproduction 1- Hormone control of menstrual cycle 2- Hormone control of pregnancy & birth 3- Androgen & testicular function	2
	Total	32



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الاول		
عدد الساعات 16		مقرر Public health
No.	Subject	Contact hours
1	Public health Definition health , definition public health and environment, environmental health	2
2	The determinants of health Introduction and the determinants of health	2
3	Personal hygiene Public health importance of Personal hygiene Component of Personal hygiene The health benefits of physical activity Miscellaneous : food and drink , constipation habits	3
4	Periodic medical examination Important , components	1
5	Safe water supply Water , important source , water pollution and water contamination and disease purification of water Mid term exam	2
6	Air pollution : Sources , prevention and control of air pollution	2
7	Waste disposal : Solid waste , excrete disposal , sanitary principles and methods of disposal	2
8	Housing House design and health , poor housing and health	2
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الاول		
عدد الساعات ١٦		مقرر
No.	Subject	Contact hours
1	Definition of epidemiology. Historical evolution of epidemiology Epidemiology approach : Concepts of disease occurrence	2
2	Epidemiological studies : ☐ Observation studies ☐ Experimental studies ☐ Descriptive studies ☐ Ecological studies ☐ Cross – sectional studies ☐ Case – control studies ☐ Cohort studies	6
3	Measures of risk ☐ Morbidity frequency measures ☐ Mortality frequency measures ☐ Natality (birth) measures Midterm exam	2
4	Communicable diseases : Epidemiology surveillances and response Epidemic and endemic disease Public health surveillances	4
5	Epidemiology and prevention Level of prevention Screening	2
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الاول		
مقرر عملي Computer skills عدد الساعات ٣٢		
No.	Subject	Contact hours
1	introduction of information technology	2
2	introduction of computer features uses and component	2
3	storage unit, units of measurement of capacity and speed, keyboard and mouse	2
4	introduction of operatingsystem (Microsoft Windows) desktop taskbar start menu	2
5	the search methodsaccessories program	2
6	control panel	2
7	create folder copy cut past and shortcuts	2
8	use the storage unit how to install and use applications	2
9	introduction of Microsoft office word and how to use standard toolbar mid term exam	4
10	how to use formatting toolbar (write the format your text	2
11	how to table and borders toolbar (create and format tables	2
12	how to use drawing toolbar (insert and format pictures clip art shape diagram text box and word art	4
13	concepts of internet	2
14	internet searching and email using	2
	Total	32



مقرر مستوى اول فصل ثاني

خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الثاني		
مقرر Hematology I نظري		عدد الساعات 16
No.	Subject	Contact hours
1	Introduction of hematology Blood physiology – blood circulatory system	1
2	Hematopoiesis and hematopoietic organs Hematopoiesis - Hematopoiesis in fetus hematopoietic organs 1-pirmary hematopoietic organs 2-The secondary hematopoietic organs (Reticuloendothelial system – RES)	1
3	Hematopoiesis - regulation of Hematopoiesis Types Hematopoiesis in adult Blood cells production Properties of stem cell Progenitor cells - Regulation of Hematopoiesis	1
4	Erythropoiesis Erythrocytes maturation Erythrocytes maturation stages (Erythropoiesis) Reticulocytes : Definition : content , period of life	1
5	Leukopoiesis and Thrombopoesis Granulopoiesis The maturation stages of the neutrophil The maturation of the eosinophil , basophil and monocyte Thrombocytes production (Thrombopoesis) The non- granular cells (Lymphoid group)	2
6	Hemoglobin structure and function Hemoglobin structure Polypeptide chain of the Hb The main hemoglobin in embryonic life – fetal life – Newborn – Adult	1
7	Energy requirement and Iron metabolism : Energy metabolism of red blood cells Importance of iron The forms of iron in the body Daily intake , Iron storage Iron recycled Proteins participate in iron metabolism Total body's iron	1
8	Med exam	1
9	Vitamin B12 and Folate metabolism Vitamin B12 sources :importance , absorption daily requirement and storage site Folate : sources :importance , absorption daily requirement and storage site	1
10	Anticoagulant and blood composition Anticoagulant materials in the lab Definition ,types and mechanism Anticoagulant in vivo , blood composition , cells (RBC , WBC and PLT) plasma – Serum	1
11	Peripheral blood cells properties Peripheral blood cells 1-Erythrocytes properties 2-Granular cells properties Non – granular cells (Lymphoid cells) Normal percentages of the WBC in the peripheral blood and bone marrow	2



12	FBC evaluation and methods : Full blood count (FBC) or complete blood count (CBC) Names : CBC evaluation Information , that can get from the CBC test Part of the FBC or the CBC RBC – Indices or RBC electronic indices RBC parameters 1-Manual method properties 2-Automatoid method properties Packed cell volume (PCV) or hematocrit (Hct) Normal Hct values %	2
13	Cells study on the FBC Reticulocytes count test or reties test Methods and importance White blood cells study on FBC include Absolute count and relative count and their importance , platelets or thrombocytes on FBC	1
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الثاني		
عدد الساعات ٦٤		مقرر Hematology I عملي
No.	Subject	Contact hours
1	Blood cells production: Morphology of the RBC maturation (photo)	8
2	Anticoagulant materials- plasma- serum	4
3	Hematology instrumentation: Count Chamber, slides. Microscope, pipettes, spectrophotometer etc	8
4	Hematology stains. Preparation ,uses .	8
5	Hematology reagents: Drabkin , Turk solution, methelene crysel blue preparation, uses .	4
6	White blood cells: Types morphology (photo) Microscopic observation of blood cells and Recognition	8
7	Platelets: morphology (photo, slides)	4
8	Blood collection, Blood collection form different ages (infant, child, adult), Venous blood collection—Instruments & Materials (containers, anticoagulant, alcohol, etc) - Evacuated collection systems Patient's data registration.	4
9	Blood collection, - Capillary blood collection – principle- Instruments & Materials, capillaries, microtainers, lancet for whom capillary blood is collected- procedures - Quality control	4
10	Uses and preparation of anticoagulant	4
11	Blood film preparation	8
	Total	64



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الثاني		
مقرر Systemic bacteriology II نظري		عدد الساعات ١٦
No.	Subject	Contact hours
1	Staphylococcus aureus 1-properties structure and classification 2-pathogenesis 3-Laboratory diagnosis 4-Antibiotics susceptibility pattern 5-Treatment and prevention	2
2	Coagulase negative Staphylococci 1-properties structure and classification 2-pathogenesis 3- Laboratory diagnosis 4-Treatment and prevention	1
3	Streptococcus pyogen 1-properties structure and classification 2-pathogenesis 3-Laboratory diagnosis 4- Treatment and prevention 5- other B hemolytic Streptococci	1
4	Streptococcus pneumonia 1-properties structure and classification 2-pathogenesis , 3- Laboratory diagnosis 4- Treatment and prevention , 5- Viridians group Streptococci	1
5	Enterococci 1-properties structure and classification 2-pathogenesis 3- Laboratory diagnosis 4-Treatment and prevention	1
6	Bacillus anthracis and Bacillus cereus 1-properties structure and classification 2-pathogenesis 3- Laboratory diagnosis 4-Treatment and prevention	1
7	Clostridium tetani and clostridium botulinum 1-properties structure and classification 2-pathogenesis 3- Laboratory diagnosis 4-Treatment and prevention	1
8	Clostridium perfringens and clostridium difficile 1-properties structure and classification 2-pathogenesis 3- Laboratory diagnosis 4-Treatment and prevention	1
9	Corynebacterium diphtheria 1-properties structure and classification 2-pathogenesis 3- Laboratory diagnosis	1
10	Mycobacterium tuberculosis 1-properties structure and classification 2-pathogenesis and epidemiology 3- Laboratory diagnosis 4-Treatment and prevention 4-Treatment and prevention	1
11	Listeria monocytogens 1-properties structure and classification 2-pathogenesis 3-Laboratory diagnosis 4-Treatment and prevention Cryspelothrix risuopathiae	1
12	Mycobacterium leprae 1-properties structure and classification 2-pathogenesis 3-Laboratory diagnosis 4-Treatment and prevention	2
13	Actinomyces species 1-properties structure and classification 2-pathogenesis 3-Laboratory diagnosis 4-Treatment and prevention	1
14	Nocardia species 1-properties structure and classification 2-pathogenesis 3-Laboratory diagnosis and Treatment Streptomyces species	1
		16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الثاني		
مقرر Systemic bacteriology II عملي		عدد الساعات 64
No.	Subject	Contact hours
1	Introductions to laboratory isolation and identification of Gram positive cocci	4
2	Laboratory isolation and identification of staphylococcus aureus	4
3	Laboratory isolation and identification of Coagulase negative staphylococci	4
4	Laboratory isolation and identification of streptococcus pyogen	4
5	Laboratory isolation and identification of Streptococcus pneumonia	4
6	Laboratory isolation and identification of Enterococci	4
7	Laboratory isolation and identification of Bacillus anthracis and Bacillus cereus	4
8	Laboratory isolation and identification of Clostridium tetani and Clostridium botulinum	4
9	Midterm exam	4
10	Laboratory isolation and identification of Clostridium perfringens and clostridium dificile	4
11	Laboratory isolation and identification of Corynebacterium diphtheria	4
12	Laboratory isolation and identification of Listeria monocytogens	4
13	Laboratory isolation and identification of Mycobacterium tuberculosis	4
14	Laboratory isolation and identification of Mycobacterium leprae	4
15	Laboratory isolation and identification of Actinomyces israelii and Nocardia asteroides	4
16	Practical review of Gram positive	4
	Total	64



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الثاني		
عدد الساعات ٣٢		مقرر
نظري		Parasitology I
No.	Subject	Contact hours
1	Introduction to parasitology Definition of parasitology, parasite, and host. Types of parasite and host . Parasite- host relationship .	2
2	Protozoa Definition of protozoa . General characters, Classification	2
3	Rhizppoda (Amoeba): Entamoebahistoltyica . Definition . Morphology characters . Pathogenesis . Prevention and control . Entamoeba coli & Iod-amoeba butschlii Morphology characters.	2
4	Gairdia lamblia Definition. Morphology characters. Pathogenesis. Prevention and control.	2
5	Trichomonasvaginalis & Trichomonashomonis Definition. Morphology characters. Pathogenesis. Prevention and control.	2
6	Leishmania domovani Leishmania tropica Definition. Morphology characters. Pathogenesis. Prevention and control	2
7	African Trypanosoma & American Trypanosoma Definition. Morphology characters. Pathogenesis. Prevention and control.	2
8	Mid term exam	2
9	Malaria parasites (Plasmodium) Definition. - Types. - Morphology characters.	4
10	Malaria parasites (Plasmodium) Pathogenesis (mode of transmission, life cycle clinical manifestations), and prevention and control.	4
11	Toxoplasma gonodii Definition. - Morphology characters. - Pathogenesis. Prevention and control	2
12	Blantidium coli Definition. - Morphology characters. - Pathogenesis. - Prevention and control.	2
13	Blantidium coli Definition. - Morphology characters. - Pathogenesis. - Prevention and control.	2
	Total	32



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الثاني		
عدد الساعات 64		مقرر Parasitology I عملي
No.	Subject	Contact hours
1	Entamoeba histolytica Identification of the cyst microscopy. Identification of the trophozoite forms microscopy.	4
2	Entamoeba coli and Iodamoeba butchilli Identification of the cyst microscopy. Identification of the trophozoite forms microscopy	8
3	Giardia lamblia Identification of the cyst microscopy. Identification of the trophozoite forms microscopy.	4
4	Trichomonas vaginalis & Trichomonas hominis Identification of the trophozoite forms microscopy.	4
5	Leishmania donovani Identification of the Amastigote forms microscopy.	4
6	Leishmania tropica Identification of the Amastigote forms microscopy.	4
7	African Trypanosoma & American Trypanosoma Identification of Trypomastigote forms microscopy. Identification of the Amastigote forms microscopy.	8
8	Malaria parasites (P . falciparum) Identification of the Ring, Trophozoite Schizont, and Gametocyte forms microscopy.	8
9	Malaria parasites (P . vivax) Identification of the Ring, Trophozoite Schizont, and Gametocyte forms microscopy	8
10	Malaria parasites (P . malarie) Identification of the Ring, Trophozoite, Schizont, and Gametocyte forms microscopy	4
11	Malaria parasites (P . ovale) Identification of the Ring, Trophozoite, Schizont, and Gametocyte forms microscopy.	4
12	Blantidium coli Identification of the cyst microscopy. Identification of the trophozoite forms microscopy.	4
	Total	64



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الثاني		
مقرر	English language and medical English II	عدد الساعات ٣٢
No.	Subject	Contact hours
1	(1)Symptoms: - Listening : 1- Symptoms 2- A helping call - Language spot : Question forms . - Signs and symptoms	2
2	- Speaking : Asking questions on a helpline . - Writing : Symptoms report .	2
3	- Reading : Mystery syndromes . - BODY BITS : Tongue diagnosis .	2
4	(2) Blood : - Vocabulary : Testing Blood . - Listening : Blood types . - Writing : Describing blood cells .	2
5	- Speaking : Blood in history. – Making difficult decision . - Language spot : Zero and first conditional - Reading : Blood pattern analysis - The heart	2
6	(3) Monitoring the patient : - pronunciation : Talking readings . - Vocabulary : describing readings . - Listening : A coma patient – A scan .	2
7	- Speaking : patient care : Taking vital signs - Anesthetics procedures - Language spot : The passive. .	2
8	Reading : General anesthetice - Writing : Describing a procedure	2
9	(4) Medication : - Vocabulary : Types and forms of medication . - Listening : patient medication	2
10	Speaking : patient medication . - Language spot : Be going to v present continuous for future .	2
11	Reading : pandemics and Tamiflu . - Types and forms of medication - Writing : writing up an experiment .	2
12	(5) Alternative treatments : - Vocabulary : Types of therapy . - Reading : Wild treatments . -	2
13	Listening : Qigong . - Language spot : Giving reasons . - Speaking : Tow healers .	2
14	Conventional medicine and homeopathy . - Writing : Advice to a friend via email .	2
15	(6) Laboratory tests : - A MICROBIOLOGY REQUEST FORM . - A Biochemistry and haematology lab report - Terms used to describe lab Result . - Exercises .	2
16	(7) The Urinary system : - Urinary symptoms . - Urinalysis . - Exercises .	2
	Total	32



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الثاني		
مقرر Clinical chemistry I نظري		عدد الساعات 16
No.	Subject	Contact hours
1	Introduction to metabolism : 1- Blood glucose . 2- Hormonal regulation of plasma glucose.	1
2	Diabetes mellitus : 1- Insulin dependent diabetes mellitus . 2- Non-insulin dependent diabetes mellitus . 3- Gestational diabetes mellitus	1
3	Methods diagnosis of diabetes mellitus : 1- Fasting blood sugar . 2- Post-prandial blood sugar . 3- Random blood glucose . Methods diagnosis of diabetes mellitus : 4 - Oral glucose tolerance . 5 -Glycocyated haemoglobin (HbA1C)	2
4	Introduction to lipids and lipoproteins: 1- Cholesterol . 2- Triglycerides . 3- Low-density lipoproteins . 4- High density lipoproteins . 5- Very low density lipoprotein	1
5	Cholesterol , Triglycerides , Chylomicrone, LDL, HDL, VLDL: 1- Defenition . 2- Description . 3- Clinical significant . 4- Interpretation and Indication	3
6	Classification of electrophoresis plasma proteins: 1-Albumin . 3- Alph 1 globulin . 4- Alph 2 globulin . 5- beta globulin . 6- gama globulin .	1
7	Albumin and total protein : 1- Defenition . 2- Description . 3- Clinical significant . 4- Interprctation and indication .	1
8	Globulins (Alpha-pheto protein and alpha- antitrypsin, seruloplasmin , Globulins (Ferritin and transferrin):- 1- Defenition . 2- Description . 3- Clincl significant . 4- Inerpretation and indication .	2
9	Renal function : 1- Renal blood flow . 2-Glomerular filtration rate . 3-Reabsorbtion . 4- Excretion .	1
10	Creatinine and creatinine clearance , Urea and blood urea nitrogen , Uric acid : 1- Defenition . 2- Description . 3- Clincl significant . 4- Inerpretation and indication .	3
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الثاني		
عدد الساعات 64		مقرر Clinical chemistry I عملي
No.	Subject	Contact hours
1	Introduction to clinical biochemistry laboratory and safety measures	4
2	Spectrophotometry	4
3	Estimation of Fasting and postprandial blood sugar	4
4	Estimation of Glucose tolerance test (GTT).	4
5	Estimation of glycated hemoglobin HbA1c	4
6	Estimation of serum triglycerides	4
7	Estimation of serum cholesterol Total	4
8	Estimation of serum cholesterol LDL	4
9	Estimation of serum cholesterol HDL	4
10	Estimation of serum albumin	4
11	Estimation of total proteins	4
12	Estimation of serum uric acid	4
13	Estimation of blood urea	4
14	Estimation of creatinine	4
15	Estimation of creatinine clearance	4
	Total	64



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الثاني		
عدد الساعات ٣٢		مقرر
No.	Subject	Contact hours
1	Introduction Definition Important Discoveries	2
2	Natural or innate immunity Definition , Types , Mechanisms Natural or innate immunity Phagocytosis and Natural Killer cells Definition , Types , Mechanisms Complement system Definition , Metabolism , Activation , Control Biological effects	4
3	Acquired or adaptive immunity Definition- Types- Mechanisms- Differentiation – Properties	2
4	Tissue and Cells of the Immune system Primary lymphoid Tissue Secondary lymphoid Tissue Precursor cells , Stem cells T. & B. Lymphocyte Definition – Derivation- Properties –Functional	4
5	Antigens (immunogens). Definition , Determinants (epitops) Factors governing of antigenicity Types , Hapten , Heterophil	2
6	Immunohematology and Tissue typing .(HLA) Blood groups Principles of blood groups Tissue typing Definition -Types -Function - Principles of tissue typing Recognition of antigen (Antigen presenting cells "APC")	4
7	Serology Definition – principles – titration – rising titer Miscellaneous agglutination assay Serology Widel test lab Definition – principles – sample - Qualitative and semi – Qualitative Result - Interpretation of result	4
8	RPR, VDRL ,ASO ,RF,CRP ,Pregnancy, Toxoplasma , Puul- Bunneltest , Brucella and Helicobacter Definition – principles – sample Qualitative and semi – Qualitative - Result - Interpretation of result	4
9	Percipitation test Definition – principles – sample – types – procedure – result - Interpretation of result	2
10	ELISA test Definition – principles – sample – types – procedure – result Interpretation of result Detection of : HBsAg , HIV , BhcG and Toxoplasma(IgG,IgM)	2
	Total	32



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الاول الفصل الثاني		
مقرر	Basic immunology عملي	عدد الساعات 64
No.	Subject	Contact hours
1	Immunohematology and Tissue typing (HLA) Blood group Principles of blood groups	4
2	Detection of typhoid fever by Widal test : 1-Principles 2- procedures 3 – result 4- comment 5 – interpretation of result	8
3	Detection of Rheumatoid fever & Detection of Anti –streptolysin O 1- Principles 2- procedures 3 – result 4- comment 5 – interpretation of result	8
4	Detection of C- reactive protein : 1-Principles 2- procedures 3 – result 4- comment 5 – interpretation of result	8
5	Detection of syphilis: 1-Principles 2- procedures 3 – result 4- comment 5 – interpretation of result	8
6	Screening test for Brucella antibodies 1-Principles 2- procedures 3 – result 4- comment 5 – interpretation of result	4
7	Detection of HCG hormone : 1-Principles 2- procedures 3 – result 4- comment 5 – interpretation of result	4
8	Detection of Helicobacter pylori : 1-Principles 2- procedures 3 – result 4- comment 5 – interpretation of result	4
9	Detection of Toxoplasma 1-Principles 2- procedures 3 – result 4- comment 5 – interpretation of result	8
10	Detection of Hepatitis : 1-Principles 2- procedures 3 – result 4- comment 5 – interpretation	4
11	Detection of HIV: 1-Principles 2- procedures 3 – result 4- comment 5 – interpretation	4
	Total	64



منهج مستوى ثاني فصل اول

خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الاول		
مقرر Clinical chemistry II نظري		عدد الساعات ١٦
No.	Subject	Contact hours
1	Liver enzyme 1- Definition 2- Description 3- Clinical significant 4- Interpretation and indication	6
2	Myocardial enzyme 1- Definition 2- Description 3- Clinical significant 4- Interpretation and indication	4
3	Prostatic enzymes : 1- Definition 2- Description 3- Clinical significant 4- Interpretation and indication	2
4	Pancreatic enzymes 1- Definition 2- Description 3- Clinical significant 4- Interpretation and indication	2
5	Bone and tumor enzymes 1- Definition 2- Description 3- Clinical significant 4- Interpretation and indication	2
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الاول		
مقرر Clinical chemistry II عملي		عدد الساعات ٣٢
No.	Subject	Contact hours
1	Estimation of liver function 1- Tests (LFT) 2- (ALT) 3- AST 4- LDH 5- ALP 6- GGT 7- Bilirubin (total & direct)	24
2	Estimation of cardiac enzyme LDH , total creatine kinase (T-CK) CKMB Troponin	16
3	Estimation of Prostatic enzymes : Acid phosphatase	4
4	Estimation Pancreatic enzymes Amylase	4
5	Estimation Bone and tumor enzymes ALP	4
6	Estimation of malignancy enzyme (AC15 , AC25 , and AFP)	12
	Total	64



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الاول		
مقرر	systemic bacteriology II نظري	عدد الساعات 16
No.	Subject	Contact hours
1	Escherichia coli 1- Characteristic 2- Pathogenesis 3- Laboratory diagnosis and treatment	1
2	Klebsiella pneumonia 1- Characteristic 2- Pathogenesis 3- laboratory diagnosis and treatment citrobacter , enterobacter and serratia	1
3	Salmonella species 1- Characteristic 2- Pathogenesis 3- Laboratory diagnosis and treatment Shigella species	1
4	Proteus species 1- Characteristic 2- Pathogenesis 3- Laboratory diagnosis and treatment Morganella and providencia	1
5	Pseudomonas aeruginosa 1- Characteristic 2- Pathogenesis 3- Laboratory diagnosis and treatment Moraxella species	1
6	Vibrio species 1- Characteristic 2- Pathogenesis 3- Laboratory diagnosis and treatment Morexella species	1
7	Helicobacter and campylobacter 1- Characteristic 2- Pathogenesis 3- Laboratory diagnosis and treatment	1
8	Bacteriodes 1- Characteristic 2- Pathogenesis 3- Laboratory diagnosis and treatment	1
9	Midterm exam	1
10	Neisseria species 1- Characteristic 2- Pathogenesis 3- Laboratory diagnosis and treatment	1
11	Haemophilus influenza 1- Characteristic 2- Pathogenesis 3- Laboratory diagnosis and treatment Haemophilus ducreyi	1
12	Bordetella pertussis : 1- Characteristic 2- Pathogenesis 3- Laboratory diagnosis and treatment	1
13	Brucella 1- Characteristic 2- Pathogenesis 3- Laboratory diagnosis and treatment Pasteurella multocid and yersia pestis	1
14	Chlamydia and rickettsia 1- Characteristic 2- Pathogenesis 3- Laboratory diagnosis and treatment Coxiella burnetii	1
15	Spirochetes , 1- Characteristic 2- Pathogenesis 3- Laboratory diagnosis and treatment	1
16	legionella and mycoplasma 1- Characteristic 2- Pathogenesis 3- Laboratory diagnosis and treatment	1
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الاول		
عدد الساعات 64		مقرر systemic bacteriology II عملي
No.	Subject	Contact hours
1	Laboratory isolation and identification of Escherichia coli	4
2	Laboratory isolation and identification of Klebsiella pneumonia	4
3	Laboratory isolation and identification of citrobacter , enterobacter	4
4	Laboratory isolation and identification of Salmonella species Laboratory isolation and identification of Shigella species	4
5	Laboratory isolation and identification of Proteus species	4
6	Laboratory isolation and identification of Pseudomonas aeruginosa	4
7	Laboratory isolation and identification of Vibrio species	4
8	Laboratory isolation and identification of Helicobacter and campylobacter	4
9	Midterm exam	4
10	Laboratory isolation and identification of Bacteriodes bordetella pertussis	4
11	Laboratory isolation and identification of Haemophilus influenza	4
12	Laboratory isolation and identification of Neisseria species	4
13	Laboratory isolation and identification of Brucella Chlamydia and rickettsia	4
14	Laboratory isolation and identification of Spirochetes	4
15	Laboratory isolation and identification of legionella and mycoplasma	4
16	Practical review of Gram positive	4
	Total	64



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الاول		
عدد الساعات ٣٢		مقرر Parasitology II نظري
No.	Subject	Contact hours
1	Introduction to helminthes Definition of helminthes General characters Classification	2
2	Tenia saginata & tenia solium Definition , Morphology characters , Pathogenesis , Prevention and control	2
3	Hymenolepis nana & Hymenolepis diminuta Definition , Morphology characters , Pathogenesis , Prevention and control	2
4	Diphyllobothrium latum Definition , Morphology characters , Pathogenesis , Prevention and control	2
5	Echinococcus granulosus Definition , Morphology characters , Pathogenesis , Prevention and control	2
6	Fasciola hepatica & fasciolopsis buski Definition , Morphology characters , Pathogenesis , Prevention and control	2
7	Heterophyes Heterophyes Definition , Morphology characters , Pathogenesis , Prevention and control	2
8	Midterm exam	2
9	Schistosoma haematobium & schistosoma mansoni Definition , Morphology characters , Pathogenesis , Prevention and control	2
10	Ascaris lumbricoids Definition , Morphology characters , Pathogenesis , Prevention and control	2
11	Ancylostoma duodenale Definition , Morphology characters , Pathogenesis , Prevention and control	2
12	Strongyloids stercoralis Definition , Morphology characters , Pathogenesis , Prevention and control	2
13	Trichuris trichiura Definition , Morphology characters , Pathogenesis , Prevention and control	2
14	Enterobius vermicularis Definition , Morphology characters , Pathogenesis , Prevention and control	2
15	Wuchereria bancrofti Definition , Morphology characters , Pathogenesis , Prevention and control	2
16	Onchocerca volvulus Definition , Morphology characters , Pathogenesis , Prevention and control	2
	Total	32



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الاول		
مقرر	Parasitology II عملي	عدد الساعات 64
No.	Subject	Contact hours
1	Tenia saginata & tenia solium Identification of the ova microscopically Identification of the gravid segment microscopically	4
2	Hymenolepis nana & Hymenolepis diminuta Identification of the ova microscopically	4
3	Diphyllobothrium latum Identification of the ova microscopically	4
4	Echinococcus granulosus Identification of the hydrated cyst microscopically	4
5	Fasciola hepatica & fasciolopsis buski Identification of the ova microscopically Heterophyes Heterophyes Identification of the ova microscopically	4
6	Schistosoma haematobium Identification of the ova microscopically	4
7	Midterm exam	4
8	schistosoma mansoni Identification of the ova microscopically	4
9	Ascaris lumbricoids Identification of the adult worm microscopically Identification of the ova microscopically	4
10	Ancylostoma duodenale Identification of the ova microscopically	4
11	Strongyloids stercoralis Identification of the ova microscopically	4
12	Trichuris trichiura Identification of the ova microscopically	4
13	Enterobius vermicularis Identification of the ova microscopically	4
14	Wuchereria bancrofti & Onchocerca volvulus Identification of the ova microscopically	4
15	Final exam	4
	Total	64



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الاول		
عدد الساعات ١٦		مقرر Hematology II
No.	Subject	Contact hours
1	Introduction of anemia Definition – symptoms – classification – RBC parameters – RBC morphology changes	1
2	Erythrocytes disorders – microcytic anemia : Iron deficiency anemia Definition – types – causes – symptoms – lab diagnosis – blood film CBC result – chemistry	1
3	Normocytic anemia : Definition – types – causes – symptoms – lab diagnosis – blood film CBC result – chemistry 1- Anemia of chronic diseases 2- Sideroblastic anemia (SA)	٢
4	Normocytic anemia : Definition – types – causes – symptoms – lab diagnosis – blood film CBC result – chemistry 3- Aplastic anemia (AA) 4- Parasites that cause anemia 5- Anemia of pregnancy	1
5	Macrocytic anemia : 1- Megaloblastic anemia (B12 and folate) 2- Pernicious anemia Normocytic anemia : Characteristic of Macrocytic anemia and Pernicious anemia - causes – symptoms – lab diagnosis – blood film CBC result – chemistry	1
6	Hemolytic anemia Introduction – definition – proteins remove the toxic iron Plasma hemoglobin Laboratory documentation of hemolysis Classification	1
7	Mid – term exam	1
8	Hemoglobinopathies (1 -1 Quantitative Hb pathies : Thalassemia - definition – cause of thalassemia – classification 1-Alpha (a) thalassemia – types – a-HbH disease symptoms – lab diagnosis – blood film CBC result – chemistry b-Hb –barts (hydrops fetalis)	1
9	Hemoglobinopathies (1 -2 Quantitative Hb pathies : 2-β thalassemia syndromes Type of β- thalassemia syndromes a- β- thalassemia major (Cooley's anemia) symptoms – lab diagnosis – blood film CBC result – chemistry b- β- thalassemia trait (minor) symptoms – lab diagnosis – blood film CBC result – chemistry	1
10	Hemoglobinopathies (2 -1 Qualitative Hb pathies Sick cell anemia syndromes Introduction - types of Sick cell anemia a- Sick cell disease (HbSS) : mechanism - symptoms – lab diagnosis – blood film CBC result – chemistry b- Sick cell trait (HbAS) : mechanism - symptoms – lab diagnosis – blood film CBC result – chemistry	1
11	Hemoglobinopathies (2 -1 Qualitative Hb pathies Hemoglobin C disease Introduction - mechanism – types a- HbCC : symptoms – lab diagnosis – blood film CBC result – chemistry b- HbCA : symptoms – lab diagnosis – blood film CBC result – chemistry Hemoglobin E disease Introduction - mechanism – types a- HbEE : symptoms – lab diagnosis – blood film CBC result – chemistry b- HbEA : symptoms – lab diagnosis – blood film CBC result – chemistry Hemoglobinopathies combination	1
12	Metabolic disorders of RBC and red cells membrane disorder : Hemolytic anemia due to 1- G-6-PD deficiency : about G6PD importance – causes of G6PD deficiency Mechanism: type - symptoms – lab diagnosis – blood film CBC result – chemistry 2- Red cell membrane disorders - Introduction - types a- H.spherocytosis Mechanism:	2



	type - symptoms – lab diagnosis – blood film CBC result – chemistry b- Hereditary Elliptocytosis (HE) Mechanism: type - symptoms – lab diagnosis – blood film CBC result – chemistry	
13	CBC interpretation and evaluation	1
14	General revision	
15	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الاول		
مقرر		hematology II عملي
عدد الساعات 64		
No.	Subject	Contact hours
1	The CBC form (data content) - Registering data importance - parts of CBC cells - RBC test , Hb , pcv . MCV,MCH,MCHC RDW , what means its importance - WBC and platelets test - why we write the report - What means routine test in the CBC and specific test - The specific tests , ESR , blood group , PT , PTT , MPs , etc - Methods of CBC manual and by blood cells analyzer , advantage and disadvantages of each one - Blood cells analyzer principle , which cells direct measured and which cells calculated - Blood cells analyzer and quality control	8
2	Estimation of the hemoglobin concentration sahli haemocytometer - Principles - procedure - calculation the RBC count - Results : how write the result - Normal value - Interpretation : normal . low . high - Quality control – units of measurement	4
3	Haemoglobincyanid photometer method - Principle - material and reagent - Spectrophotometer (colorimeter) - Test tube - test tube rack - Blood (sahli) pipettes , 0.2ml - Drabkin dilution fluid - Reference solution	4
4	Calibration of the Spectrophotometer methods - Procedure - calculation - results - Reference range - Interpretation : normal . low . high - Quality control	4
5	Hemoglobin (Hb) curve preparation - Principles - procedure - calculation- results - Reference range - Interpretation : normal . low . high - Quality control	4
6	Red Blood Cells counting - Instrument & material : blood sample , microscope . counting chamber , cover glass . sahli pipette . hand tally counter . Pasteur pipettes - Principles - procedure - calculation- results - Reference range - Interpretation : normal . low . high - Quality control	4
7	Staining thin blood films by giemsa stain (May – grunwald – giemsa stain) - Principles - procedure - results - Interpretation - Quality control	4
8	Red Blood cells Morphology 1- Normal red cells 2- Morphological abnormalities and variants - Microcytic RBCs Fe deficiency thalassemia trait - Macrocytic RBCs B12 or folate deficiency - Dimorphic RBCs Fe deficiency responding to iron , mixed Fe and B12 / folate - Deficiency , sidroblastic anemia , post transfusion -	8



	Reticulocyte : response to bleeding haemolysis - Spherocytes : hereditary spherocytosis - Pencil / rod cells Fe deficiency anemia - Elliptocytes hereditary Elliptocytosis - Fragment red cells renal failure TTP - Teardrop RBCs myelofibrosis - Sickle cells anemia other sickle syndrome (not sickle trait) Target cells liver disease , Fe deficiency thalassemia , HbC syndromes - Burr cells renal failure - Acanthocytes hereditary Acanthocytosis - Bit cell G6PD deficiency - Basophilic stippling lead poisoning - Rouleaux formation : paraproteinaemia , myeloma - Reticulocytes Bleeding haemolysis - Heinz bodies G6PD deficiency - Howell- jolly bodies post – splenectomy	
9	Hematocrit (Ht , Hct) packing cells volume (PCV) and measurement technique - Principles - procedure - calculation - results - normal value - Relationship between the erythrocyte volume fraction and the haemoglobin concentration - Interpretation : normal . low . high - Quality control	4
10	Measurement of the erythrocyte sedimentation rate - Principles - procedure - calculation - results - normal value - Interpretation : normal . low . high - Quality control	4
11	Sickling tests - Principles - procedure - results - Interpretation - Quality control	4
12	Reticulocyte count - Principles - procedure - results - Interpretation - Quality control	4
13	RBC indices Mean cell hemoglobin concentration MCHC Mean cell haemoglobin (MCH) Mean cell volume (MCV) - Principles - procedure - calculation - results - normal value - Interpretation : normal . low . high - Quality control	8
	Total	64



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الاول		
عدد الساعات 16		مقرر Blood bank I
No.	Subject	Contact hours
1	Historical overview of blood transfusion Blood components	1
2	The discovery of ABO blood group Blood group genetics The role of H-Gene in the expression of ABO genes	2
3	Inheritance of the ABO Groups Secretors and non secretors Blood group antigens	2
4	Characteristic of ABO antibodies Clinical significance of ABO antibodies	1
5	Weaker subgroup of ABO system Bombay blood group	1
6	Midterm exam	1
7	Production of subgroup of A and B The Hh blood group	1
8	Antigens and antibodies In blood banking Antiserum Manifestation and interpretation of Ag-Ab reaction	2
9	Historical background of Rh-Hr blood grouping Nomenclature & genetic theories	1
10	The antigens of the Rh-Blood group system Variation of Rh antigen	1
11	Rhesus antibodies □ Uncommon Rh phenotype	1
12	General and brief about 1. The cell blood group system 2. The Duffy blood group 3. MNS system 4. Kidd blood group system 5. Lewis system	2
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الاول		
مقرر Blood bank I عملي		عدد الساعات ٦٤
No.	Subject	Contact hours
1	Blood bank introduction Standard operating procedure (SOPs) Blood bank importance Organization of blood transfusion service at Blood bank working plan	4
2	Blood bank instrumentation Blood collection pack and paediatric blood collection pack The anticoagulant solution used in blood collection bags	4
3	Field training – in to central blood bank	8
4	Blood bank reagents preparation (normal saline , AHg . anti A , anti B sera etc) Names , preparation , uses	4
5	Preparation of red cells suspension Preparation of washed red cell suspension (3-5% and 20 – 30 %)	4
6	Preparation known cells (A cells – B cells – 0 cells) Use of anti sera (anti A – anti B – anti AB – anti D etc)	4
7	The antisera for A blood group Anti A and anti A1 , uses and importance	4
8	Techniques of The direct ABO blood grouping Slid method	4
9	Techniques of ABO blood grouping Test tube method	4
10	The indirect ABO blood grouping Test tube method	4
11	Midterm exam	4
12	Method of Rh Technique Slide test method – rhesus (D) typing	4
13	Method of Rh Technique Modified Test tube method	4
14	Du typing using indirect anti- globulin test (IAT)	4
15	Manifestation and interpretation of Antigen – antibody reaction Agglutination : the strength of an Agglutination reaction Hemolysis	4
	Total	64



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الاول		
عدد الساعات ١٦		مقرر Clinical immunology
No.	Subject	Contact hours
1	Immunochromatography Definition - principle - types - procedure - results - interpretation of result Detection of (syphilis , pregnancy , anti - HCV) Radioimmunoassay (RIA) Definition - principle - types - procedure - results - interpretation of result Immunofluorescence antibody assay (IFAA) Definition - principle - types - procedure - results - interpretation of result Detection of Rabies and autoimmune antibodies	2
2	Immune response (1) humoral immunity Definition - structure Types (IgA , IgG , IgM , IgD , IgE) Properties Importance in clinical medicine (2) cellular immunity Definition - types - mechanism - biological significant Infection involving CMI	4
3	Adverse reaction of immune system -1 Hypersensitivity reactions Definition - types - mechanism - clinical feature Midterm exam	4
4	Adverse reaction of immune system -11 Auto immunity disease Definition - types - etiology - feature	2
5	Immunodeficiency (Id) 1- Congenital - Humeral (Id) - Cell – mediated (Id) - Phagocytosis (Id) - Complement (Id) 2- Acquired Immunodeficiency - Definition - types - mechanism	4
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الاول		
clinical immunology عملي		مقرر
عدد الساعات ٣٢		
No.	Subject	Contact hours
1	The enzyme linked immunosorbent assay (ELISA) direct Principles - procedure - results - comment - interpretation of results	4
2	In direct (ELISA) Principles - procedure - results - comment - interpretation of results	4
3	Sandwich (ELISA) Principles - procedure - results - comment - interpretation of results	4
4	Competitive (ELISA) Principles - procedure - results - comment - interpretation of results	2
5	Immunofluorescence assay Principles - procedure - results - comment - interpretation of results	4
6	Autoimmune disease Principles - procedure - results - comment - interpretation of results	4
7	ANA Principles - procedure - results - comment - interpretation of results	2
8	AMA Principles - procedure - results - comment - interpretation of results	2
9	ASMA Principles - procedure - results - comment - interpretation of results	2
10	RIA Principles - procedure - results - comment - interpretation of results	4
	Total	32



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الاول		
عدد الساعات 16		مقرر Body fluids
No.	Subject	Contact hours
1	Urine formation . normal composition Physical examination (normal and abnormal color . volume , PH and specific gravity) Chemical examination (glucose – proteinuria – bilirubin – urobilinogen – and ketone bodies) Microscope examination	9
2	Semen Introduction – formation of semen and normal composition	2
3	Cerebrospinal fluid Formation – function – normal composition – collection techniques	2
4	Pleural effusion Exudate & transudate effusion Chylous and pseudo-chylous Collection techniques Physical , chemical and microscopic examination	1
5	Synovial fluid Collection techniques Physical , chemical and microscopic examination	2
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الاول		
عدد الساعات 64		مقرر Body fluids عملي
No.	Subject	Contact hours
1	Urine collection techniques concentration and usage of urine preservatives	8
2	Physical examination of urine	4
3	Chemical examination of urine	8
4	Microscope examination of urine	8
5	Semen Collection techniques Physical and chemical examination	8
6	microscopic examination (sperm count and morphology)	4
7	Physical and chemical examination of Cerebrospinal fluid	8
8	Bacteriology and serology tests of CSF	8
9	Collection techniques Physical , chemical and microscopic examination of Synovial fluid	8
	Total	64



منهج مستوى ثاني فصل ثاني

خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الثاني		
مقرر Diagnostic bacteriology عملي		عدد الساعات ١٢٨
No.	Subject	Contact hours
1	Introduction	8
2	Introduction Analytical profile index API	8
3	Throat and mouth swab culture Frist day: culture Second day: isolation & Identification Antibiotics sensitivity	8
4	Nasopharyngeal aspiration, sinuses and nasal swabs for culture Frist day: culture Second day: isolation & Identification Antibiotics sensitivity	8
5	Ears swab for culture Frist day: culture Second day: isolation & Identification Antibiotics sensitivity	8
6	Sputum and respiratory specimen culture Frist day: culture Second day: isolation & Identification Antibiotics sensitivity	8
7	Eyes swabs for culture Frist day: culture Second day: isolation & Identification Antibiotics sensitivity	8
8	Stool culture Frist day: culture Second day: isolation & Identification Antibiotics sensitivity	8
9	Urine culture Frist day: culture Second day: isolation & Identification Antibiotics sensitivity	8
10	Swab of skin and soft tissue for culture Frist day: culture Second day: isolation & Identification Antibiotics sensitivity	8
11	Purulent, exudate and pus culture Frist day: culture - Second day: isolation & Identification - Antibiotics sensitivity	8
12	High vaginal swab for culture Frist day: culture - Second day: isolation & Identification - Antibiotics sensitivity	8
13	Urethral discharge for culture Frist day: culture - Second day: isolation & Identification - Antibiotics sensitivity	8
14	Blood Culture Frist day: culture - Second day: isolation & Identification - Antibiotics sensitivity	8
15	Cerebrospinal fluid (CSF) Culture Frist day: culture - Second day: isolation & Identification - Antibiotics sensitivity	8
16	Practical review of diagnostic bacteriology first day : culture – second day : isolation & identification antibiotic sensitivity	8
	Total	128



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الثاني		
مقرر		Diagnostic bacteriology نظري
عدد الساعات 16		
No.	Subject	Contact hours
1	Diagnostic bacteriology overview: 1-Conventional and automated biochemical identification 2-Serotyping 3-Genotyping	1
2	Upper respiratory tract infection (throat and mouth) 1-Possible pathogens 2-Procedure of isolation 3-Identification and reporting	1
3	Nasopharyngeal aspiration, sinuses and nasal swabs 1-Possible pathogens 2-Procedure of isolation 3-Identification and reporting	1
4	Infection of ears 1-Possible pathogens 2-Procedure of isolation 3-Identification and reporting	1
5	Lower respiratory tract infection (LRT) 1-Possible pathogens 2-Procedure of isolation 3-Identification and reporting	1
6	Infection of eyes 1-Possible pathogens 2-Procedure of isolation 3-Identification and reporting	1
7	Infection of gastrointestinal tract (GIT) 1-Possible pathogens 2-Procedure of isolation 3-Identification and reporting	1
8	Mid term exam	1
9	Infection of urinary tract (UT) 1-Possible pathogens 2-Procedure of isolation 3-Identification and reporting	1
10	Infection of skin and soft tissue 1-Possible pathogens 2-Procedure of isolation 3-Identification and reporting	1
11	Purulent, exudate and pus 1-Possible pathogens 2-Procedure of isolation 3-Identification and reporting	1
12	Infection of genital tract 1-Possible pathogens 2-Procedure of isolation 3-Identification and reporting	1
13	Infection of blood circulation 1-Possible pathogens 2-Procedure of isolation - 3-Identification and reporting	1
14	Infection of (CNS) 1-Possible pathogens 2-Procedure of isolation 3-Identification and reporting	1
15	Antibiotics Resistant	1
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الثاني		
مقرر	Diagnostic parasitology نظري	عدد الساعات 16
No.	Subject	Contact hours
1	Introduction to Diagnostic Parasitology Types of specimens. Normal & abnormal stool specimens.	1
2	Preparation of normal saline 0,9% Definition - Principle Using - Storage	1
3	Preparation of lugol's iodine 0.5% Definition - Principle Using - Storage	1
4	Wet preparation of stool specimen Definition Types of specimen Content of specimen - Principle of preparation Error sources of diagnosis	1
5	Stool concentration method by normal saline 0.9% Definition Types of specimen Content of specimen - Principle of preparation Error sources of diagnosis	1
6	Stool concentration method by Formol-Ether Definition Types of specimen Content of specimen - Principle of preparation Error sources of diagnosis	1
7	Stool concentration method by Saturated normal Saline Definition Types of specimen Content of specimen Principle of preparation Error sources of diagnosis	1
8	Midterm exam	1
9	Occult blood test Definition Types of specimen Principle of the test Error sources of diagnosis	1
10	Thick Blood Film Definition - Types of specimen - Principle - Characters of the film. Error sources of diagnosis	1
11	Thin Blood Film Definition - Types of specimen - Principle - Characters of the film. Error sources of diagnosis	1
12	Skin scraping test Definition - Types of specimen - Principle - Error sources of diagnosis	1
13	Skin snip test Definition - Types of specimen - Principle - Error sources of diagnosis	1
14	Urine sedimentation method Definition - Types of specimen - Principle - Error sources of diagnosis	2
15	Wet preparation of Vaginal discharge Definition - Types of specimen - Principle - Error sources of diagnosis	1
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الثاني		
مقرر	Diagnostic parasitology عملي	عدد الساعات 64
No.	Subject	Contact hours
1	Preparation of normal saline 0.9% Equipments . Procedures of preparation . Storage.	4
2	Preparation of lugol's iodine 0.5% Equipments . Procedures of preparation . Storage	4
3	Wet preparation of stool specimen Macroscopic examination Equipments Procedures of preparation . Microscopic examination. Report.	4
4	Stool concentration method by using of Nael 0.9% Macroscopic examination Equipments Procedures of preparation . Microscopic examination. Report.	4
5	stool concentration method by using formol ether Macroscopic examination Equipments Procedures of preparation . Microscopic examination. Report	4
6	Stool concentration method by using saturated Nacl Macroscopic examination Equipments Procedures of preparation . Microscopic examination. Report.	4
7	Stool Occult Blood test Macroscopic examination Equipments Procedures of test Reading and writing the result.	4
8	Thick Blood Film Equipments. Procedures of preparation . Staining Microscopic examination. Report.	8
9	Thin Blood Film Equipments. - Procedures of preparation . Staining - Microscopic examination. - Report.	12
10	Skin Seraping test Equipments - Procedures of preparation . - Staining - Microscopic examination. - Report.	4
11	Skin Snip test Equipments - Procedures of preparation . - Staining - Microscopic examination. Report.	4
12	Urine sedimentation method Equipments - Procedures of preparation . Microscopic examination - Report.	4
13	Wet preparation of Vaginal discharge Equipments - Procedures of preparation . Microscopic examination. -Report.	4
	Total	64



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الثاني		
مقرر Hematology III نظري		عدد الساعات ١٦
No.	Subject	Contact hours
1	Introduction : Introduction-Leukocytes-Leukocytosis - Types of the WBC Types and characteristic of granular cells (Neutrophils-Eosinophils-Basophils and Monocytes (Macrophage)	1
2	Granular cells disorder and evaluation : White blood cells laboratory approach and evaluation Absolute and relative neutrophilia, eosinophilia and basophilia Leukocytosis, Differential diagnosis, Manual counting advantages and disadvantages Automated method advantages and disadvantages	1
3	Non-Granular cells disorders and evaluation: Lymphocytes types- characteristics Lymphocytes, developing, lymphoid organs, Lymphocytosis, absolute and relative, lymphocytes in adult, infant and children	1
4	Leukemia : The malignant Hematological Disorders Classification and laboratory approach and evaluation	1
5	Acute leukemia : Acute myeloblastic leukemia ((AML) Acute lymphoblastic leukemia (ALL) - Risk factors Diagnosis and differential diagnosis	٢
6	Chronic leukemia (1): The chronic myeloproliferative disorders (CMPDs) Chronic myeloid leukemia (CML) Leukemoid Reaction Introduction Risk factors - Diagnosis and differential diagnosis Polycythemia- polycythemia vera (PV) Essential Thrombocythemia (ET)	1
7	Midterm exam	1
8	Chronic leukemia (2): The chronic Lymphoproliferative disorders - Chronic Lymphocytic leukemia (CLL)	2
9	Hemostasis disorders : Introduction - The hemostatic system consists of Blood coagulation, Thrombocytes (Platelets) Platelet Structure, the functions of platelets in homeostasis include, Steps of platelets function The role of blood vessels in hemostasis	1
10	The coagulation factors (1) : The coagulation factors-Properties Concentration of coagulation factors required for normal hemostasis Vitamin – K dependent clotting factors	1
11	The coagulation factors (2): About Factor III, V and VIII – von Willebrand Factor – protein C and protein S : Plasminogen / Plasmin	1
12	Hemostatic process - Hemostatic process components 1-primary hemostasis - 2-secondary hemostasis 3-tertiary hemostasis - The coagulation pathways 1-The extrinsic pathway - 2-Intrinsic pathway 3-The common pathway - Fibrinolytic system – Inhibitors of coagulation	1
13	Bleeding disorders : Bleeding disorders - Causes of bleeding disorders Platelet disorders : Thrombocytosis, Thrombocytopenia Thrombocytopathy - Coagulation factor deficiency- Hemophilia: 1-Hemophilia A (Classic Hemophilia) 2-Hemophilia B (Christmas Disease)	1
14	Bleeding disorders Tests (Laboratory evaluation): Platelets count – Bleeding Time (BT) Prothrombin Time (PT) –partial Thromboplastin Time (PTT or aPTT) Thrombin Time (TT- D-Dimer test	1
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الثاني		
عدد الساعات 64		مقرر Hematology III عملي
No.	Subject	Contact hours
1	White blood cells – normal morphology in the peripheral blood	4
2	WBC- Turk solution preparation –WBC-counting by counting chamber- Manual counting advantages and disadvantages	8
3	WBC- counting by blood cells analyzer – Automated method advantages and disadvantages	4
4	WBC – absolute and relative count practical evaluation – lymphocytes in adult, infant and children WBC – laboratory evaluation leukocytosis – leukocytopenia diagnosis – neutrophilia neutropenia- lymphocytosis- lymphopenia.. etc	4
5	WBC- Dilution counting WBC – blood film practical evaluation and report writing	8
6	Blood films- slides show – report writing WBC – leukemia – Laboratory approach and evaluation -Acute myeloblastic leukemia (AML) -Acute lymphoblastic leukemia (ALL) -Chronic myeloid leukemia (CML) -Leukemoid Reaction - Chronic Lymphocytic leukemia (CLL)	8
7	Platelets normal morphology- reagent preparation Platelets counting by chamber- Manual counting advantages and disadvantages	4
8	Platelets counting by blood cells analyzer- Automated method advantages and disadvantages platelets observing and evaluation on the blood film – Thrombocytopenia- thrompocytosis	4
9	Bleeding time practical evaluation Prothrombin time and INR practical evaluation partial Thrombopastine Time (PTT) practical evaluation for hemophilia	8
10	White blood cells – normal morphology in the peripheral blood	4
11	WBC- Turk solution preparation –WBC-counting by counting chamber- Manual counting advantages and disadvantages	4
12	WBC- counting by blood cells analyzer – Automated method advantages and disadvantages	4
	Total	64



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الثاني		
عدد الساعات 16		مقرر Blood bank II نظري
No.	Subject	Contact hours
1	Blood Bank versus Blood Center Blood Donation Health check before donating blood Goals of Donors screening Donor selection	2
2	Deferral person permanents and short time Types of blood donors Autologous blood donation Collection of Blood Potential Hazards During and after Blood Collection	2
3	Frequency of donation Blood transfusion- RBC Anticoagulant/preservative Solution	1
4	Blood components Blood storage and blood components life span Apheresis of whole blood	1
5	Red cell concentrates(RCC), ("Packed red blood cells"(PRBCs). - Frozen-thawed red cells -Washed Red Blood Cells	1
6	Midterm	1
7	Types of platelet products -Platelet concentrates(PC) -pooled platelets -Apheresis plasma	1
8	Plasma product -Fresh frozen plasma -Frozen plasma -Stored plasma	1
9	Pre transfusion testing for recipients of blood products Basic reaction on blood banking	1
10	Cross matching- Coomb's procedures Types of Cross-Match—Purpose of Cross-Match Selection of Blood for Cross-Match	2
11	Auto Immune Hemolytic Anemia (AIH) Hemolytic Disease of the New Born (HDN)	1
12	Types of Transfusion Reaction Laboratory Tests to be Done When Transfusion Reaction Occurs	1
13	General revision	1
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الثاني		
عدد الساعات 64		مقرر Blood bank II عملي
No.	Subject	Contact hours
1	Donor selection Selection Criteria: Health check before donating blood Deferral persons permanents and short time Types of blood donors.	4
2	1-TESTING DONOR BLOOD a-Donor's ABO and Rh type b-Antibodies to HIV, HTLV, HBs. c-Ag for HIV, Hep B West Nile virus. d-Negative for syphilis	8
3	BLOOD COLLECTION-Technique of collecting blood from a donor The Anticoagulants –ACD- CPD- CPD-A Registration	8
4	1-STORAGE OF BLOOD 2-Mobile blood donation and transportation of blood	8
5	Apheresis of plasma RBC Apheresis of plasma form RBC	8
6	Types of cross matches a)Coomb's test b)Urgent Cross Matching c)Routine Cross Matching d)Detection of Antibodies e)Electronic crossmatch	12
7	Types of Transfusion Reaction Laboratory Tests to be Done When Transfusion Reaction Occurs	4
8	Assessment of HDN Prenatal Postnatal	4
9	QUALITY ASSURANCE IN BLOOD TRANSFUSION PRACTICE a)Patient Identification b)Labeling of Samples c)Mislabelled Samples d)Potential Hazards During & after Blood e)Collection f)Collection Differentcrossmatching tests errors. g) Quality control of reagents- ABO and Rh antisera and AHG h) Quality control of equipment	8
	Total	64



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الثاني		
مقرر	Clinical chemistry III نظري	عدد الساعات 16
No.	Subject	Contact hours
1	Hormones and Electrolytes introduction : 1-Hormones 2-Defention 3-Description 4-Classification 5-Hormones action	2
2	Pituitary hormones: 1-Defention 2-Desription 3-Clinical significant 4-Interpretation and indication	2
3	Thyroid hormones : 1-Defention 2-Desription 3-Clinical significant 4-Interpretation and indication	2
4	Adrenal hormones : 1-Defention 2-Desription 3-Clinical significant 4-Interpretation and indication	2
5	Gonads Hormones : 1-Defention 2-Desription 3-Clinical significant 4-Interpretation and indication	2
6	Electrolytes : 1-Description 2-Function 3-Role of electrolyte in water balance 4-Role of electrolyte in acid base balance	2
7	Calcium, potassium, sodium, chloride, magnesium and phosphate ,: 1-Defention 2-Desription 3-Clinical significant 4- Interpretation and indication	4
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الثاني		
مقرر Clinical chemistry III عملي		عدد الساعات ٦٤
No.	Subject	Contact hours
1	Determination of pituitary hormones (GH, prolactin, FSH, LH).	8
2	Determination of thyroid hormones.(T3& T4, TSH).	8
3	Determination of serum cortisol	4
4	Determination of testosterone	4
5	Determination of serum estradiol	4
6	Determination of progesterone	4
7	Determination of electrolyte for Ca	4
8	Determination of electrolyte for K	4
9	Determination of electrolyte for Na	4
10	Determination of electrolyte for Mg	4
11	Determination of electrolyte for Cl	4
12	Determination of electrolyte for P	4
13	Determination of TIBC	4
14	Determination of serum iron	4
	Total	64



عدد الساعات 16		Virology نظري	مقرر
No.	Subject	Contact hours	
1	General properties of viruses : 1-terms and definition 2-virus structure 3-classification of medically important viruses	1	
2	Viruses replication and pathogenesis : 1-general steps in viral replication cycle 2-transmission of viral diseases 3-pathogenesis of viruses	1	
3	Sample collection for virology tests : 1-specimens collection of viral diseases 2-transport of viral specimens 3-processing of viral specimens	1	
4	Laboratory diagnosis of viruses : 1-culturing of viruses 2-detection of viral antigens and antibodies 3-seroconversion . acute phase and convalescent phase 4-detection of vrial nucleic acid	1	
5	DNA enveloped viruses : Important properties , diseases and laboratory diagnosis of: 1-Herps simplex virus and varicella – zoster virus 2-Cytomegalovrius 3-Epstein – Barr virus 4-Smallpox virus	1	
6	DNA non enveloped viruses : Important properties , diseases and laboratory diagnosis of: 1-B19 virus 2-Human papilloma virus 3-Adenovirus	1	
7	RNA non enveloped viruses : Important properties , diseases and laboratory diagnosis of: 1-poliovrius 2-Rhinovrius virus 3-Rotavirus and Norwallk virus	1	
8	Midterm exam	1	
9	RNA enveloped viruses : Important properties , diseases and laboratory diagnosis of: 1-Rubella virus 2-Measles virus 3-Mumps virus and Respiratory syncytial virus	1	
10	RNA non enveloped viruses : Important properties , diseases and laboratory diagnosis of: 1-Influenza A,B and C viruses 2-Parainfluemza viruses 3-Coronavirus	1	
11	RNA non enveloped viruses : Important properties , diseases and laboratory diagnosis of: 1-Dengue virus 2-Ebola virus , Marburg virus , Yellow fever virus , West Nile virus	1	
12	Hepatitis B virus : 1-important properties 2-pathogenesis 3-laboratory diagnosis	1	
13	Hepatitis viruses : Important properties , diseases and laboratory diagnosis of: 1-Hepatitis C virus 2- Hepatitis A virus 3-other hepatitis viruses	1	
14	Human Immunodeficiency virus : 1-disease and important properties 2-transmission and epidemiology 3-pathogenesis 4-laboratory diagnosis	1	
15	Antigen and antibodies detections : principles of latex , device chromatography complement fixation , hemagglutination and immunofluorescence methods for viral diagnosis	1	
16	ELISA : Principles of enzyme linked immunosorbent assay for viral Diagnosis	1	
	Total	16	



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الثاني		
عدد الساعات ٣٢		مقرر
No.	Subject	Contact hours
1	Introduction to virology lab	2
2	Specimens collection , transport and processing	2
3	Latex agglutination test for the detection of Hepatitis B(HBsAg)	2
4	Immunochromatography (device) test for the detection of (HBsAg)	2
5	Enzyme – linked immunosorbent assay (ELISA) test for the detection of HBsAg	2
6	Enzyme – linked immunosorbent assay (ELISA) test for the detection of HCV	2
7	Enzyme – linked immunosorbent assay (ELISA) test for the detection of IgM antibodies to Rubella	2
8	Enzyme – linked immunosorbent assay (ELISA) test for the detection of IgM antibodies to CMV in serum	2
9	Midterm exam	2
10	Enzyme – linked immunosorbent assay (ELISA) test for the detection of IgG antibodies to CMV in serum	2
11	Immunochromatography (device) test for the detection of (HIV)	2
12	Enzyme – linked immunosorbent assay (ELISA) test for the detection of antibodies to HIV -1 and HIV-2	2
13	Enzyme – linked immunosorbent assay (ELISA) test for the detection of antibodies to Dengue virus	2
14	Safety practices in handling of high risk viruses	2
15	Review	2
16	Final exam	2
	Total	32



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الثاني		
عدد الساعات 16		مقرر
Mycology نظري		
No.	Subject	Contact hours
1	General properties of fungi: -Terms and definition - -Fungal cell structure -Classification of medically important fungi	1
2	General properties of fungi: -Nutrition and habitat - -Mode of fungal growth -Sexual and asexual sporulation	1
3	Laboratory diagnosis of fungi: Collection and transport of the following specimens : - Skin, nails and hair -Mucous membrane, Ear and Eye specimen -Blood and body fluid specimen -Tissue and bone marrow	1
4	Laboratory diagnosis of fungi: -Microscopic examination of fungi -Fungal culture - Serological tests	2
5	Superficial fungi: Characteristics, disease and laboratory diagnosis of the following: - Piedra hortae and Trichosporon beigeli -Exophiala werneri -Malassezia furfur	1
6	Cutaneous fungi: Characteristics, disease and laboratory diagnosis of Dermatophytes: -Trichophyton -Microsporum -Ectomycophyton	2
7	Subcutaneous fungi : Disease, characteristics and laboratory diagnosis of the following : -Sporothrix schenckii -Chromoblastomycosis agents (Cladosporium carrionii, Fonsecaea pedrosoi and phialophora verrucosa) Eumycetoma agents	1
8	Mid term exam	1
9	Systemic opportunistic fungi: Characteristics, diseases and laboratory diagnosis and treatment of Candida species	2
10	Systemic opportunistic fungi: Characteristics, diseases and laboratory diagnosis of the following: -Cryptococcus neoformans -Asperillus species -Mucor, Rhizopus	1
11	Systemic True pathogens dimorphic fungi: Characteristics, diseases and laboratory diagnosis of the following: -Histoplasma capsulatum -Blastomyces dermatitidis - Coccidioides immitis -Paracoccidioides brasiliensis	1
12	Biosafety consideration : -Biosafety cabinets -Precautions to take in handling of fungal specimens -Disinfectant and waste disposal	1
13	Antifungal susceptibility test: -Principle -Procedure -Common antifungal -MIC and its clinical important	1
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثاني- الفصل الثاني		
مقرر	Mycology عملي	عدد الساعات ٣٢
No.	Subject	Contact hours
1	Collection and transport of the mucous membrane ,Ear and Eye specimen - Blood and Body fluid specimen - Tissue and Bone marrow specimen	2
2	Skin scraping for fungal examination	2
3	Nail scraping for fungal examination	2
4	Hair scraping for fungal examination	2
5	Sabuoraud dextrose agar (SDA) preparation	2
6	Corn meal agar preparation	2
7	Preparations of potassium hydroxide and lactophenol – cotton blue stain	2
8	Midterm exam	2
9	Laboratory examinations of dermatophytes	2
10	Laboratory examinations of mycetoma	2
11	Laboratory examinations of candida infection	2
12	Germ tube examination	2
13	Laboratory examinations of Cryptococcus neoformans	2
14	Laboratory diagnosis of systemic mycosis	2
15	Antifungal susceptibility testing procedure	2
16	Antifungal susceptibility reporting of test	2
	Total	16



منهج مستوى ثالث الفصل الاول

خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثالث- الفصل الاول		
مقرر	Quality control	عدد الساعات 16
No.	Subject	Contact hours
1	Introduction Definition – importance – goal	1
2	Accuracy Definition – example – calculation Precision Definition – example – calculation	2
3	Reproducibility Definition – example – importance - calculation Specificity Definition – example – importance - calculation	2
4	Sensitivity Definition – example – importance - calculation Reliability & validation Definition – example True value , correct value & normal value Definition – example	2
5	Laboratory errors Definition – types – causes - consequence – preventing	1
6	Laboratory tests Definition – types - factors that influence Measurements Definition – types	1
7	Methods of QA and QC Pre-analytical - analytical – post – analytical	4
8	Total quality management Definition – importance – goal - requirements – application	3
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثالث- الفصل الاول		
عدد الساعات 16		مقرر
No.	Subject	Contact hours
1	Introduction of research	1
2	Ethics in health researches	1
3	Types of researches	1
4	Research title	1
5	Research question & problem statement	2
6	Literature review Study objectives	1
7	Variables	1
8	Study designs (introduction)	1
9	Non – interventional studies	1
10	interventional studies	1
11	Sample types & sampling technique	1
12	Sample size determination , tools & data analysis	2
13	Work plan & budget	1
14	Proposal writing (theory)	1
	Total	16



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثالث- الفصل الاول		
مقرر	Health statistics	عدد الساعات 16
Contact hours	Subject	No.
1	مقدمة في علم الإحصاء	1
1	مراحل العملية الإحصائية – وظائف علم الإحصاء	2
1	مصادر جمع البيانات- اساليب جمع البيانات مصادر تاريخية- ميدانية اسلوب الحصر الشامل- اسلوب العينة الإحصائية	3
1	طرق جمع البيانات- الاستبيان و المقابلة و الملاحظة	4
2	تصنيف و تفريع البيانات- انواع المتغيرات كيفية تفريع البيانات	5
2	عرض البيانات عرض جولي – عرض بياني	6
2	مقاييس النزعة المركزية – الوسط الحسابي- الوسيط- المنوال	7
2	مقاييس التشتت- المدى -الانحراف المعياري- التباين	8
1	المؤشرات الصحية -تعريف المؤشر -اهمية المؤشر-خصائص المؤشر- معايير اختيار المؤشر	9
1	مقدمة في علم الاحصاء الحيوي-التعريف- الاهداف-معدل المواليد الخام- معدل المواليد الموتي وغيرها	10
1	معدل الوفيات-معدل الوفيات الخام-معدل وفيات الامهات- معدل وفيات الرضع-معدل وفيات حديثي الولادة-معدل الاسقاط	11
1	معدلات الخصوبة والمرضاة-معدل الخصوبة العام وحسب العمر معدل الاصابة و معدل الانتشار و معدل الشفاء و معدل الهلاك	12
16	Total	



خطة توزيع المقررات الدراسية لقسم فني مختبرات طبية المستوى الثالث- الفصل الاول		
عدد الساعات 16		مقرر
No.	Subject	Contact hours
1	Introduction health system	1
2	Introduction health management (definition – importance)	1
3	The developments of health care system	1
4	Factors that affect the utilization of health service	2
5	General principle in health management	1
6	Midterm exam	1
7	Management of hospital and health program	1
8	Medical staff in hospitals	1
9	Administrative serves in hospital	1
10	Quality in health service	2
11	Quality of health care & patient safety	1
12	Health information system	2
13	Health` policy	1
	Total	16