Menoufia Faculty of Medicine
Accredited

وحـدة
ضمـان
الجودة

5+2 Program
Level 2

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Semester 3

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Respiratory Module

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online resources).

d4. Express them freely and adequately.

d5. Deal with the patient as a whole rather than a lesion or a specimen.

d6. Maintain a professional image in manner, dress, speech and interpersonal relationships that is consistent with the medical professions accepted contemporary standards in the community.

d7. Manage time efficiently and work in group.

d8. Adopt the principles of using international guidelines and multidisplinary team MDT.

Course content

1-Anatomy topics:

N	Lecture	ILOS	Time
1	- Overview of Structure and Function of Respiratory System - Anatomy of the Nose, Nasal Cavity, Paranasal Sinuses and nasopharynx	1. Illustrate the components of the respiratory system. 2. Identify the bony and cartilaginous parts of the nose and walls of nasal cavity. 3. Define the features of the lateral wall of the nose and site of openings of paranasal sinuses. 4. Localize the different paranasal sinuses and know their important functions.	1.5 h
2	Anatomy of the Larynx , Trachea and main bronchi	1. Identify the single and paired cartilages of the larynx. 2. Identify ligaments, membranes and cavity of the larynx. 3. Describe the anatomy of the laryngeal muscles. 4. Mention the nerve supply, blood supply, and lymph drainage of the larynx. 5. Identify the site, structure, and functions of the trachea and main bronchi.	1.5 h
3	Anatomy of the pleura and lungs	1. Describe the anatomy of the pleurae (visceral and parietal). 2. Outline the surface anatomy of pleurae	1.5 h

		and pleural recesses. 3. Outline the anatomy of the lungs. 4. Illustrate the blood and nerve supply of pleura and lung.	
4	Development and Congenital Anomalies of the Respiratory System	1. Describe the development of the respiratory tract 2. Discuss the congenital anomalies of the respiratory tract.	1.5 h

N	Practical	ILOS	Time
1	**Structure of the Nose, Paranasal Air Sinuses, Pharynx, Larynx, and Trachea**	1. Identify of the parts forming the nose. 2. Demonstration of the parts of the pharynx. 3. Describe the larynx and trachea. 4. Identify the pharyngeal opening of auditory tube. 5. Identify the sites of tonsils: pharyngeal, tubal, palatine and lingual tonsils.	1.5 h
2	**Thoracic Cavity and Pleural Cavities**	1. Identify the structures in the thoracic cavity. 2. Describe the visceral and parietal pleurae. 3. Draw the surfaces, borders, and lobes of the lungs.	1.5 h
3	**Important Relations of the Lungs and Structures Forming Lung Root**	1. Describe the structures forming the root of each lung. 2. Describe the structures related to each lung.	1.5 h

4	**Important Relations of the Lungs and Structures Forming Lung Root**		1.5 h
5	**Radiological anatomy of Chest wall**	1. Demonstrate the normal chest X ray. 2. Identify normal chest structures using CT and MRI.	1.5 h
6	**Revision**		1.5 h

N	Tutorial	ILOS	Time
1	**Sinusitis.**	Demonstrate anatomical basis of each paranasal sinus.	1.5 h
2	**Pneumothorax ,heamthorax and pleural effusion.**	Identify different plural disease.	1.5 h
3	**Tracheostomy , Bronchoscopy and chest tube**	Demonstrate anatomical basis of these manoeuvres.	1.5 h
	TBL		
	Nasal obstruction sinusitis	**TBL**	1.5 h
	Pneumonia **premature lung disease**	**TBL**	1.5 h
	Bronchogenic Carcinoma	**TBL**	1.5 h

	Pleural effusion		

2-Histology topics:

Topics	Teaching methods	Title of lecture or practical lessons	Actual hours
Respiratory	Lecture	• Conducting portion of the respiratory system	1.5h
Respiratory	Lecture	• Respiratory portion of the system	1.5h
Respiratory	Practical	• trachea	1.5h
Respiratory	Practical	• Adult lung • Fetal lung • Injected lung	1.5h
Respiratory	Practical	• Revision	1.5h
Respiratory	Tutorial	• Epithelial lining of upper respiratory tract and clinical hints	1.5h
Respiratory	Tutorial	• Epithelial lining of lower respiratory tract and clinical hints	1.5h
Respiratory	Homework		1.5h
Skin	Lecture	• Histology of thick & thin skin	1h

Skin	Lecture	• Skin appendages	1h
Skin	Practical	• Thick skin	1.5h
Skin	Practical	• Thin skin	1.5h
Skin	Tutorial	• The skin and clinical hints	1h
Skin	Tutorial	• Skin appendages and clinical hints	1.5h
Skin	Homework		0.5h
TBL			
Respiratory	TBL	Nasal obstruction sinusitis	1.5h
Respiratory	TBL	Pneumonia premature lung disease	1.5h

3- physiology topics:

Total credit hours: 1.5hours (Lect.0.6 + Pract. 0.45 + Activ 0.45 credit hours)

	Topic	Teaching method	Credit hours	Actual hours
Lecture				

	Topic	Teaching method	Credit hours	Actual hours
1	Mechanics of respiratory ventilation and lung volumes & capacities			1.5
2	Gas exchange through respiratory membrane			1.5
3	Oxygen & carbon dioxide transport in blood			1.5
4	Control of respiration			1.5
5	Regulation of respiration			1.5
6	Respiratory disorder			1.5
	lartcarP			
1	Static lung volumes		0.45	1.5
2	Static lung capacities			1.5
3	Dynamic lung volumes& capacities			1.5
4	ABG			1.5
5	Revision			1.5
6	Spirometry: Respiratory function tests			1.5
7	Exercises on diagnosis of obstructive& restrictive lung diseases using spirometer curves			1.5
8	Auscultation of breath sounds			1.5
9	Revision			1.5
	Tutorial			
1	Respiratory distress syndrome		0.45	1.5
2	Respiratory disorders			3
3	Physiology of high altitude			3

	Topic	Teaching method	Credit hours	Actual hours
LDS				
4	Gas exchange across pulmonary membrane			3
5	Bronchial asthma			3
6	Central & peripheral chemoreceptors			3
7	Differences between dyspnea of respiratory &cardiac origins			3
8	Diving physiology			3
LBS				
9	Chronic obstruction pulmonary disease COPD			1.5
10	Pneumonia premature lung disease			1.5
11	Dyspnea			1.5

4- Biochemistry topics:

week	Title	Teaching method	Actual hours	Pre-requisite
1	Oxidative phosphorylation and respiratory chain	Lecture	1.5	
2	pH and buffer	Lecture	1.5	
3	Acid base balance disorder	Lecture	1.5	

1	Main lab. Instrumentation used to measure pH	Practical	1.5	
2	Measure pH of body fluids	Practical	1.5	
3	How to read and interpret ABG results	Practical	1.5	
4	How to interpret the result of pH of the blood	Practical	1.5	
3	Instruments	Practical	1.5	
1	Phospholipids and their biochemical role in ARDS	Tutorial	1.5	
2	Anion gap and Paradoxical alkalosis	Tutorial	1.5	
	CO poisoning	SDL	2	
	Genetic defect related to respiratory system	SDL	3	
	Dyspnea	TBL	1.5	

5- Pharmacology topics:

Lectures heading	Lectures Subheading	Date	Time	Name
1- Chemotherapy used in treatment of chest infections	- chemotherapy used in treatment of chest infections - Mechanism of action, adverse effects, contraindications and drug interactions of chemotherapy used in	/9/2019	1.5 hours	Dr /

	treatment of chest infections			
2- Drug therapy of bronchial asthma (BA)	Bronchodilators Anti-inflammatory drugs used in ttt of BA Distinguish between drugs used in acute severe asthma and drugs used in chronic BA Outline management of bronchial asthma	/9/2019	1.5 hours	Dr /

Practical heading	Practical subheading	Date	Time	Name
Pharmacology				
Case of pneumonia	- Definition - Causes - Clinical picture of pneumonia and treatment		1.5 hours	
Case of bronchial asthma	- Treatment of bronchial asthma - cough therapy		1.5 hours	
Case of COPD	- Treatment of COPD		1.5 hours	
Activity heading	**Activity Subheading**	**Date**	**Time**	**Name**

Allergic rhinitis	- **Tabulate different types of histamine receptors** - **Describe actions of Antihistaminic, their clinical use, adverse effects** - **Compare between first and second generations of antihistaminics**		**1.5 hours**	
Pharmacotherapy of TB	- **Describe the kinetics, mechanism of action, therapeutic uses of anti-tuberculous** - **Enumerate adverse effects of chemotherapy of TB.** - **Discuss lines of treatment of TB.**		**1.5 hours**	
TBL				
Nasal obstruction **sinusitis**			**1.5 hours**	
Chronic obstruction pulmonary disease COPD			**1.5 hours**	
Pneumonia **premature lung disease**			**1.5 hours**	

6-Pathology topics:

Lectures heading	Lectures Subheading	Hours for lectures 6H	Time
Upper respiratory	Nose and sinuses Pharynx Larynx	1.5 hours	أالسبوع االول
COPD	Chronic bronchitis Bronchial asthma emphysema	1.5 hours	أالسبوع الثانى
Inflammation	Pneumonia Bronchiactasis Lung abscess Acute tracheo-bronchitis	1.5 hours	أالسبوع الثالث
Lung atelectasis and collapse Tumors of the lung Diseases and tumors of pleura		1.5 hours	أالسبوع الرابع

Practical heading	Practical Subheading		Hours for Practical 9H	Time
	Slides	Jars		
Upper respiratory	Nasal polyp Rhinoscleroma Angiofibroma	----------	1.5 hours	أالسبوع االول
Upper respiratory	Inverted papilloma	Laryngeal carcinoma	1.5 hours	أالسبوع الثانى
Lower respiratory	Emphysema Bronchiactasis	Emphysema Bronchiactasis	1.5 hours	أالسبوع الثالث

Lower respiratory	Bronchogenic carcinoma Mesothelioma	Bronchogenic carcinoma	1.5 hours	أالسبوع الرابع
Revision			1.5 hours	أالسبوع الخامس
Revision			1.5 hours	أالسبوع السادس

Tutorial heading	Tutorial Subheading	Hours for tutorial 4.5H	Time
Upper respiratory	Nose and sinuses Pharynx Larynx	1.5 hours	أالسبوع االول
Inflammation	Pneumonia Bronchiactasis Lung abscess Acute tracheo-bronchitis	1.5 hours	االسبوع الرابع
Tumors of the lung Diseases and tumors of pleura		1.5 hours	االسبوع الخامس
	TBL		
	Nasal obstruction sinusitis		1.5 hours
	Chronic obstruction pulmonary disease COPD		1.5 hours
	Pneumonia premature lung disease		1.5 hours
	Bronchogenic Carcinoma Pleural effusion		1.5 hours

7-Parasitology topics:

Lecture heading	Lecture Subheading	Date	Time	Name
Paragonimus westermani	1- *Paragonimus westermani* :	8 /10/2019	1.5 hours	Dr /

and house dust mites	**-Geographical distribution -Habitat -Definitive and intermediate hosts -Pathogenesis and clinical picture -Diagnosis -Treatment and control 2- House dust mites: - Geographical distribution -Habits -Life cycle -Pathogenesis and clinical picture -Diagnosis -Treatment -Prevention and control**			

Practical heading	Practical subheading	Date	Time	Name
1-*Paragonimus westermani*	**-Geographical distribution -Habitat -Definitive and intermediate hosts -Morphology of adult, egg and cercaria -Life cycle**	**8/10/2019 & 9/10/2019**	**1.25 hours**	
2-Hydatid disease	**- Definition - Causes -*Echinococcus granulosus* morphology, geographical distribution, habitat, life cycle, D.H. and I.H. -Morphology of hydatid cyst - Pathogenesis and clinical picture -Diagnosis - Treatment -Prevention and control**	**16/10/2019**	**1 hours**	

Activity heading	Activity Subheading	Date	Time	Name

Visceral larva migrans (VLM)	- Describe parasites causing VLM, its geographical distribution, habitat, morphology and life cycle. - Discuss the pathogenesis and clinical presentations of VLM. -Describe the methods used for VLM diagnosis and infer differential diagnosis. -Conclude the diagnostic test of choice to confirm or exclude the provisional diagnosis. - Estimate the effective treatment. -Deduce and understand the methods used for prevention and control.	12/10/2019 13/10/2019 & 14/10/2019	1.5 hours	
TBL	Dyspnea		1.5 h	

8- Microbiology topics:

Lecture	Lecture Contents	Time	Date	Name
-Upper respiratory tract infections - lower respiratory tract infections	1-Normal flora and immunity 2-Clinical infections 3- causative organisms 4- Laboratory diagnosis 5-prevention and treatment	1.5 h	2/10/2019	Dr-Asmaa Sh3ban

Practical Heading	Topic subheading	Time	Date	Name
1-Bacterial causes of Upper respiratory tract infections and lower respiratory tract - infections	Microscopic examination Culture character Biochemical reaction Prevention	1.5 h	30/3/2019 31/3/2019 1/4/2019	Demonstrators and assistant lecturers of Microbiology

Tutorial Heading	Contents	Time	Name
- pulmonary tuberculosis(T.B)	- Pathogenesis; Immunity and diagnosis of pulmonary tuberculosis - TBL cases of pulmonary tuberculosis	1.5 h	Dr-Asmaa Sh3ban
TBL			
	Nasal obstruction sinusitis	1.5 h	
	Pneumonia		

4 – Teaching and learning methods

1. Lectures for acquisition of knowledge:

1- Two groups
2- The lecturers are conducted using:
   a. Audiovisual aids through animations and diagrams
   b. Interaction with the students through questions
   c. Self-learning through giving them certain topics to search, collect data and give presentation

2. Practical sessions:

1- Practical classes including; dissection, demonstration and museum.

2- The students are divided into 6 groups each group has 1.30 individual hours (individual section) and 2 hours sharing with another group (grouped section). Each group is subdivided into three subgroups (1, 2, 3)

3- The practical teaching is conducted using:

- Models

Cardiovascular Module

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combinations of antihypertensives & the different methods of prevention of recurrent rheumatic fever.

C20.Explain the essential lines of treatment of acute attack

C21.Select the proper antihypertensive during pregnancy

C22. Identify causative micro-organisms of cardiovascular infections by microscopic examination, culture character, biochemical and serological reactions.

d- General and transferable skills:

d1. Adopt the principles of continuous medical education; CME.

d2. Use internet and learn searching skills.

d3. Communicate effectively and respectively with staff members.

d4. Establish a concise activity according to standard scientific thinking and integrity.

d5. Manage time efficiently and work in group.

d6. Evaluate his own and other's work through construction feedback

d7. Effectively manage time and resources and set priorities.

Course content

i-Anatomy Topic

Total credit hours for anatomy: 1.25hours (Lect.0.5 + Pract. 0.375 + Activ 0.375 credit hours)

Week	Lectures		Actual hours	Teacher/ facilitator
	Title	Subtitle		
1	Introduction & Anatomy of the heart	-Subdivision of the mediastinum. -External features of the heart. -Internal features of the heart -Surface anatomy of the heart and valves with referral to the sites of	1 hour	

		auscultation		
2	Blood and nerve supply of the heart & Anatomy of pericardium	-origin, termination, main branches, distribution of the coronary arteries. -Venous drainage of the heart -Nerve supply of the heart -Types of the pericardium -Innervation of pericardium	1 hour	
3	Heart and related vessels	-Arteries: [ascending aorta, arch of aorta, descending aorta]:- (origin, termination, branches, distribution & main relations of each). -Veins: [SVC, IVC, pulmonary veins] origin & termination, main relations of each	1 hour	
4	Blood vessels within the abdominopelvic region	[Abdominal aorta, external and internal iliac]: Origin, termination, main course, important relations, branches, distribution and important related clinical points of each.	1 hour	
5	Carotid and subclavian system	Origin, termination, main course, important relations, branches, distribution and important related clinical points of each	1 hour	

6	Venous drainage of the body	Trace the venous drainage of the body [superficial and deep veins]. Beginning, termination, important relation, tributaries and important related clinical points of each	1 hour	
7	Development and anomalies of the heart and main blood vessels	-Parts of primitive heart. -Process of the internal septum development. -Stages of heart development. -Development of the big vessels. -Common congenital heart diseases with their clinical presentation and signs.	1.5 hour	
Week	Practical		Actual hours	Teacher/ facilitator
	Title	Subtitle		
1	External / internal features of the heart	Demonstration of the external and internal features of the heart chambers	1.5 hour	
2	Blood supply of the heart – pericardium	Demonstration of the coronary arteries, coronary venous sinus. Demonstration of the pericardium layers and sinuses	1.5 hour	
3	Heart and related vessels	Demonstration of SVC, IVC, pulmonary veins, ascending aorta, arch of aorta, descending aorta, pulmonary trunk	1.5 hour	

4	Abdominopelvic vessels	Demonstration of abdominal aorta and its main branches, EIA, IIA	1.5 hour	
5	Carotid and subclavian system	Demonstration of carotid and subclavian vessels and their branches	1.5 hour	
6	Blood vessels of extremities	Demonstration of the arteries of upper and lower limbs: axillary, brachial, radial, ulnar, femoral, popliteal, anterior and posterior tibial.	1.5 hour	
7	Veins of the body	Demonstration of veins all over the body (superficial & deep)	1.5 hour	
8	Revision		1.5 hour	
Week	Tutorial		Actual hours	Teacher/ facilitator
	Title	Subtitle		
1	Areas of auscultation of heart sounds	auscultation of mitral, tricuspid, aortic and pulmonary valves and their clinical importance	1 hour	
2	Myocardial infarction/ Angina pectoris	Definition, clinical picture and how to deal with such cases	1 hour	
3	Pericarditis / Pericardial effusion	Definition, clinical picture and how to deal with such cases	1 hour	
4	Aortic aneurism/ Epigastric pulsation	Definition, clinical picture and how to deal with such case.	1 hour	

		Normal and abnormal epigastric pulsation		
5	Site of arterial pulsation/ Ischemia	Determine the different sites of arterial pulsation Definition, types, clinical picture and how to deal with limb ischemia	1 hour	
6	DVT/varicose vein	Definition, clinical picture and how to deal with such case	1 hour	
7	Congenital heart diseases	Based on embryological knowledge: explanation, clinical picture and how to deal with such cases	1hour	

ii- Histology Topics

Total credit hours for Histology: 0.45 hours (Lect.0.18+ Pract. 0.135 + Activ 0.135 credit hours)

Week	Lectures		Actual hours	Teacher /facilitator
	Title	Subtitle		
1	Cardiac muscle	-Cardiac muscle fibers -Conducting system of the heart	1.5 hour	
4	Vascular System	-General structure of blood vessels & its significance -Large, medium sized & small arteries -large, medium sized &Small veins -Types, sites & structure of Arteriovenous connections	1.5 hour	

Week	**Practical**		**Actual hours**	**Teacher /facilitator**
	Title	**Subtitle**		
1	**Cardiac muscle**	**-Cardiac muscle & valve** **-Moderator band**	1.5 hour	
4	**Vascular System**	**-Aorta** **-Basilar artery** **-Medium sized artery & vein**	1.5 hour	
8	**Revision**			
Week	**Tutorial**		**Actual hours**	**Teacher /facilitator**
	Title	**Subtitle**		
1	**Heart failure**	**-Structure of cardiac muscle** **-Parts and function of SAN**	**1 hour**	
4	**Artherosclerosis**	**-wall of blood vessels** **- difference between large and medium sized artery**	**1 hour**	

iii- Medical Biochemistry

Total credit hours for Biochemistry: 2.2hours (Lect.0.88 + Pract. 0.66 + Activ 0.66 credit hours)

Week	**Lectures**		**Actual Hours**	**Teacher/ facilitator**
	Titles	**Subtitles**		

1	Glycolysis	-Importance -Site -Steps -Energy generated Regulation -Glycolysis in RBCs	1.5 hour	
1	Citric acid cycle	-oxidation of pyruvate -site -importance -reactions -energy generated -regulation -amphibolic role of it	1.5 hour	
2	Hexose monophosphate pathway, uronic acid pathway, gluconeogenesis	-site -importance -reactions -regulation	1.5 hour	
4	Glycogen metabolism	-glycogen synthesis)Steps&regulation) -glycogenolysis)Steps&regulation)	1.5 hour	
5	Lipogenesis	-fatty acid synthase -Steps Regulation -Elongation of fatty acid	1.5 hour	
5	Fatty acid oxidation	-steps of β oxidation	1.5	

		-energy generated -regulation -alternative oxidation pathways	hour	
6	Cholestrol&ketone bodies metabolism	-Ketogenesis)Steps&regulation) -ketolysis)Steps&regulation) -steps &regulation of cholesterol -cholesterol transport& degradation	1.5 hour	
7	Lipid transport	-classification of lipoprotein -apolipoprotein -Metabolism of lipoproteins	1.5 hour	
7	-integration of metabolism	-overview of the fed state -overview of fasting state	1.5 hour	

week	Tutorial		Actual hours	Teacher/ facilitator
	Titles	Subtitles		
1	-Digestion& absorption of carbohydrates -Inborn errors of monosaccharaides	-Galactosemia -fructosemia - hereditary fructose intolerance	1 hour	

2	-Inborn error of glycolysis - Inborn error of hexose monophosphate pathway	-hemolytic anemia -favism	1 hour	
4	Inborn error of glycogen metabolism	Glycogen storage disease	1 hour	
4	Case study reports on different inborn error of carbohydrate metabolism	Case study	1 hour	
5	Digestion&absorption of lipids -bile salts metabolism	-Clinical significance of bile acid synthesis -bile salt deficiency(cholestasis)	1 hour	
5	Inborn error of fatty acid oxidation	-Regulation of fatty acid metabolism -clinical significance of fatty acid metabolism	1 hour	
6	-Importance of phospholipids -Metabolism of eicosanoids	-degradation of phosphoglycerols&sphinomyelin - clinical significance of sphingolipides -respiratory distress syndrome -sphingolipidosis Multiple sclerosis Function of eicosanoids	1 hour	
7	Triacyl glycerol metabolism	Fatty liver -Metabolism of adipose tissue		

7	Integration of metabolism	Obesity	1	
week	**Practical**		Actual hours	Teacher/ facilitator
	Titles	Subtitles		
1	Investigation of a case of diabetes mellitus	-what is diabetes -criteria for diagnosis of diabetes -colorimetric determination of blood glucose -Identify causes of hypoglycemia and hyperglycemia	1.5 hour	
1	Investigation of a case of diabetes mellitus	Interpret the results of oral glucose tolerance curve	1.5 hour	
2	Investigation of a case of diabetes mellitus	-Identify glucosuria and its causes -Identify fructosuria and its causes -Identify glycosylated hemoglobin, C peptide, fructosemia	1.5 hour	
4	Investigation of a case of diabetes mellitus	Case study	1.5 hour	
5	Inborn error of metabolism	Case study	1.5 hour	
5	Inborn error of metabolism	Case study	1.5hour	
6	Investigation of a case dyslipidemia	Lipid profiles& causes of dyslipidemia	1.5 hour	
7	Investigation of a case dyslipidemia	Colorimetric determination of cholesterol	1.5 hour	

7	Investigation of a case dyslipidemia	Case study	1.5 hour	
8	Investigation of a case of myocardial infarction	Cardiac markers	1.5 hour	
8	Investigation of a case of myocardial infarction	Interpret the results of hyperlipidemia & myocardial infarction	1.5 hour	
8	Investigation of a case of myocardial infarction	Case report studies applying the out-comes of previous parameters	1.5 hour	
8	Revision		1.5 hour	

IV-Microbiology topics

Total credit hours for Biochemistry: 2.2hours (Lect.0.88 + Pract. 0.66 + Activ 0.66 credit hours)

Week	Lectures		Actual hours	Teacher /facilitator
	Title	Subtitle		
3	Infectious diseases of the heart	1-Endocarditis 2-Myocarditis 3-Pericarditis	1.5 hour	
Week	Practical		Actual hours	Teacher /facilitator
	Title	Subtitle		

2	**Rheumatic fever**	**-Diagnosis of Post-streptococcal immunologic diseases by microscopic examination, culture character, biochemical and serological reactions** **-Prevention of Post-streptococcal immunologic diseases**	1.5 hour	
3	**Infective endocarditis**	**- Recognize the most important microorganisms causing infective endocarditis and how to identify them by microscopic examination, culture character and biochemical reaction** **-Know the technique and precautions of blood culture** **-Interpret the results of blood cultures** **-Prevention of infective endocarditis**	1 hour	
Week	**Tutorial**		**Actual hours**	**Teacher /facilitator**
	Title	**Subtitle**		
3	**Vasculitis**	**- Identify the infectious diseases and autoimmune diseases causing vasculitis** **Outline the laboratory diagnosis of vasculitis.**	**1 hour**	
8			**1 hour**	

V pharmacology Topics

Total credit hours for pharmacology: 0.95 hours (Lect.0.38 + Pract. 0.285 + Activ 0.285 credit hours)

Week	Lectures		Actual hours	Teacher/ facilitator
	Title	Subtitle		
3	Drug therapy of heart failure	Positive inotropic drugs Diuretics Vasodilator Beta blockers (BB)	1.5 hour	
5	Antihypertensive drugs	Sympathetic depressants Diuretics Calcium channel blockers Renin-angiotensin-aldosterone system inhibitors Direct vasodilators	1.5 hour	
5	Drug therapy of ischemic heart disease	Nitrate Calcium channel blockers (CCBs) Beta blockers (BB) Other antianginal drugs Adjuvant drugs	1.5 hour	
7	Antiarrhythmic drugs	Class I: sodium channel blockers Class II: BB Class III: amiodarone Class IV: CCBs	1.5 hour	
Week	Practical		Actual hours	Teacher/ facilitator
	Titles	Subtitles		
3	Effect of unknown on isolated rabbit heart	Experimental	1.5 hour	
5	Treatment of heart failure	Clinical case	1.5 hour	
5	Treatment of acute rheumatic fever	Clinical case	1.5 hour	
7	Treatment of hypertension	Clinical case	1.5 hour	

8	Treatment of ischemic heart disease	Clinical case	1.5 hour	
8	Revision		1.5 hour	
Week	**Tutorial**		Actual hours	Teacher/ facilitator
	Titles	Subtitles		
3	Diuretics	-List 5 major groups of diuretics -Explain the mechanism of action of drugs used in heart failure and hypertension -List the main adverse effects of thiazide, frusemide, potassium sparing diuretics	1 hour	
5	Sympathetic depressants	-List sympathomimetics used in heart failure and hypotension -Explain the adverse effects of sympathomimetics	1 hour	
5	Sympathetic depressants	-List sympathetic depressants used in treatment of Hypertension -Outline different types of beta blockers and select the appropriate drug for different disease states -Explain adverse effects of beta blockers	1 hour	

		and alpha blockers		
7	**Arrhythmia**	**-Discuss the choices of different antiarrhythmic drugs in various types of arrhythmias** **-List adverse effects of main antiarrhythmic drugs**	**1 hour**	

VI- pathology topics

Total credit hours for Pathology: 1.1hours (Lect.0.44 + Pract. 0.33 + Activ 0.33 credit hours)

Week	Lectures		Actual hours	Teacher/facilitator
	Titles	Subtitles		
2	Rheumatic fever	Rheumatic fever • Definition • Pathogenesis and risk factors • Pathological picture • Clinical picture and Complications	1.5 hour	
3	Endocarditis, Pericarditis, cardiomyopathy & heart failure	Endocarditis • Definition • Types • Gross and microscopic picture • Clinical picture and complications Pericarditis • Definition • Gross and microscopic picture • Clinical picture and complications Cardiomyopathy • Definition • Pathogenesis • Pathologic features Heart failure • Definition • Causes of acute heart failure • Causes of chronic heart failure	1.5 hour	
4	Atherosclerosis, hypertension & aneurysm	Atheroscelerosis: • Definition • Etiology and risk factors • Pathological picture • Complications Hypertention	1.5 hour	

		• Definition • Etiology • Types • Pathological picture • Clinical picture • Comparison between two types of hypertention • Causes of death **Aneurysm** • Definition • Types • Causes **Complications**		
6	**ischemic coronary heart diseases and peripheral vascular diseases**	**ARTERIOSCLEROTIC HEART DISEASE (GRADUAL INCOMPLETE CORONARY OCCLUSION)** • Definition • Etiology • Pathological features • Effects **SUDDEN COMPLETE CORONARY ARTERY OCCLUSION** • Etiology • Fate of coronary occlusion **Peripheral Vascular Diseases**	**1hour**	

7	Myocardial infarction and tumors of blood vessels	Myocardial infarction • Sites • Pathological features of both recent infarct and • Microscopic picture • Fate and complication Tumors of blood vessels • Classification • Pathologic features of Capillary hemangioma • Pathologic features of Cavernous hemangioma • Pathologic features of Glomangioma • Pathologic Features Of Kaposi Sarcoma • Pathologic Features Of Angiosarcoma	1 hour	
Week	**Tutorial**		**Actual hours**	**Teacher/facilitator**
	Titles	**Subtitles**		
2	Rheumatic fever	Major and minor criteria of Jones Rheumatic vegetations Aschoff nodules	(1 h)	
3	Endocarditis, Pericarditis, cardiomyopathy & heart failure	Acute and subacute infective endocarditis Non bacterial thrombotis endocarditis Libman sac endocarditis	(1 h)	
4	Atherosclerosis, hypertension & aneurysm	Pathological picture of atherosclerosis Risk factors of atherosclerosis Complications of	(1 h)	

		atherosclerosis Pathological picture of the two types of hypertention Cause of death of the two types of hypertention Causes of anuerysm		
6	ischemic coronary heart diseases	• Case of angina pectoris	(1 h)	
7	Myocardial infarction and tumors of blood vessels	• Pigmented skin lesion/swelling • Recent infarct vs old/healed infarct • Clinical picture of myocardial infarction • Fate and complication of myocardial infarction	(1 h)	
Week	Practical		Actual hours	Teacher/facilitator
	Title	Subtitles		
2	Rheumatic fever	• Bread and butter pericarditis • Fish mouth valvulitis • Rheumatic vegetations Aschoff nodules		
3	Endocarditis, Pericarditis, cardiomyopathy & heart failure	• Infective vs non infective endocarditis • Complications of endocarditis • Pathologic features o pericarditis • Pathologic features of cardiomyopathy		

4	Atherosclerosis , hypertension & aneurysm	• Atheroma • Virchows triad • Effect of hypertension on blood vessels and kidney • True vs false aneurysm • Complications of aneurysm		
6	ischemic coronary heart diseases and peripheral vascular diseases	• Atherosclerosis of coronary artery restricting blood flow • Acute myocardial infarction • Progression of plaque build up in coronary artery • Heart attack		
7	Myocardial infarction and tumors of blood vessels	• Microscopic picture of capillary hemangioma • Microscopic picture of cavernous hemangioma • Microscopic picture of glomangioma, Kaposi and Angiosarcoma • Gross pictures of myocardial infarction		
8	Revision			
8	Revision			

VII-Physiology Topics

Total credit hours for Physiology: 3.3hours (Lect.1.32 + Pract. 0.99 + Activ 0.99 credit hours)

Week	Lectures		Actual Hours	Teacher/ facilitator
	Titles	Subtitles		
1	Cardiac properties 1	-Introduction. -Definition of excitability. -Resting membrane potential. -Cardiac muscle action potential and ionic basis. -Excitability changes during action potential	1.5 hour	
1	Cardiac properties II	-Definition of rhythmicity. -Pacemaker tissue action potential. - Autonomic control of S-A node. - Definition of conductivity. -Pathway of impulse conduction. -Velocity of spread of action potential	1.5 hour	
2	Cardiac cycle	-Phases of cardiac cycle -Left ventricular pressure volume relationship during the cycle -Aortic pressure changes during the cycle -Atrial pressure changes during the cycle	1.5 hour	
2	Heart rate		1.5 hour	

2	ECG	-Principle of ECG recording. -Components of ECG and its correlation with cardiac cycle. -Cardiac vector.	1.5 hour	
3	Cardiac output	-Factors affecting COP -Regulation of COP -Ejection fraction	1.5 hour	
3	Cardiac work, reseve& energetics	-Cardiac curves -O2 consumption	1.5 hour	
4	Haemodynamic	-Functional parts of the circulation -Pressure in various portions of the circulation -Vascular endothelium -Blood flow	1.5 hour	
4	ABP	-Determination of MABP -Factor determine ABP -Basic mechanisms of circulatory control	1.5 hour	
5	Regulation of ABP	-Autoregulation -Systemic regulation intermediate and long term regulation -Rapid regulation by the nervous system	1.5 hour	
6	Coronary circulation	-Anatomical consideration	1.5	

		-Normal values of coronary blood flow & measurement -Regulation of coronary blood flow -Variation of coronary blood flow during cardiac cycle -Coronary heart diseases (angina – myocardial infarction)	hour	
6	Capillary circulation	-Capillary circulation -Structural considerations -Capillary vasomotion -Equilibrium with interstitial fluid & exchange of materials across capillary wall -Capillary fragility -Capillary response to mechanical stimuli	1.5 hour	
7	Pulmonary & venous circulation	-Pulmonary circulation -Anatomical consideration -Control of pulmonary circulation -Venous circulation -Function of veins -Venous pressure -Factors help venous return against gravity	1.5 hour	

week	Practical		Actual hours	Teacher/ facilitator
	Titles	Subtitles		
1	Determination of the pacemaker of the heart	Appratus: Kymograph Dissection of frog heart Procedure Comment and Result	1 hour	

1	Effect of Drug on frog heart	Apparatus, dissection and Procedure:Result	1 hour	
2	Extrasystole	Apparatus, dissection and Procedure:Result as before Procedure:. Comment Result	1 hour	
2	Demonstration of impulse conduction(Heart block) in frog.	Apparatus, dissection and Procedure:Result as before Procedure:. Comment Result	1 hour	
2	Electrocardiograph and Normal ECG	Clinical uses How it used for different records Normal ECG record from different leads.	1 hour	
2	Effect of respiration on ECG record	Apparatus Electrocardiograph Procedure Comment ECG record is normal P wave, QRS waves and T wave PR interval and ST segment. Result	1 hour	

3	Effect of body posture on ECG record	Apparatus : Electrocardiograph Procedure: 1- Record normal ECG in leads II in the resting supine position. 2-Ask the subject to sit upright and record again. 3- Compare ECG including HR, waves intervals and segment. Comment	1 hour	
3	Effect of exercise on ECG record.	Apparatus Electrokymograph Procedure 1-Record the normal resting ECG in leads II. 2- Ask the subject to exercise by running in place for 5 min. 3- Immediately after exercise record again. 4- Record after 30min. rest after exercise. Comment		
3	Heart sounds	Tool Stethoscope Types of heart sounds 1- Audible sounds(first and second). 2- Non audible sounds (third and fourth). Causes of turbulent blood flow	1	
4	Arterial pulse	Radial pulse Procedure and Result Comment (Clinical significance) Definition of pulse Abnormal pulse Abnormal Jugular venous pulse		
4	Arterial blood pressure	Tool 1- Sphygmomanometer.		

	measurement	2- stethoscope Korotkoff sound It is produce due to turbulence of blood flow which set up vibration that heard as sound. 1- Moderate loud sound systolic pressure. 2- Sound become softer with murmur. 3- Loud sound again. 4- Muffled and reduce in intensity Diastolic pressure. 5- Silence.		
4	Effect of exercise on ABP.	Tool 1- Sphygmomanometer. 2- Stethoscope. Procedure 1- Measure ABP in resting sitting position. (systolic, diastolic, PPand mABP) 2- Repeat the measurement after doing exercise for 5 min. Result Comment		
5	Effect of respiration on ABP	Tool 1- Sphygmomanometer. 2- stethoscope. Procedure 1- Measure ABP in resting sitting position. (systolic, diastolic, PPand mABP) 2- Repeat the above measurement but At the end of prolonged deep inspiration prior to expiration. Immediately after expiration following deep inspiration. Result Comment		

5	Effect of body posture on ABP	Tool 1- Sphygmomanometer. 2- Stethoscope. Procedure 1- Measure ABP in resting sitting position. (systolic, diastolic, PPand mABP). 2- Repeat the above measurement in standing position. Result Comment		
6	Cold pressor test	Tool Procedure 1- Measure ABP in resting sitting position. (systolic, diastolic, PPand mABP). 2- Repeat the above measurement after immerse the opposite hand in ice water to a point above the wrist. (systolic, diastolic, PPand mABP). Result Comment		
6	Capillary fragility (Hiss test)	Tool 1- Sphygmomanometer. Procedure Result Comment		
6	Cutaneous vascular reaction to mechanical stimuli	Tool Procedure Result Causes of edema		
7	18) Reactive hyperemia	Tool 1- Sphygmomanometer and Stop watch. Procedure Result Comment		
7	Revision			

week	Tutorial		Actual hours	Teacher/ facilitator
	Titles	Subtitles		
1	Excitable tissues action potential	1. Name the different excitable tissues in the body. 2. Explain the resting membrane potential and identify its significance. 3. Differentiate the following terms based on the electric changes in the membrane of excitable tissues: potential, polarization, resting membrane potential, depolarization, repolarization, hyperpolarization, action potential. 4. Sketch the action potential changes in the mentioned excitable tissues. 5. Identify the different types of K+ channels including inward rectifying K+ channels and their role in excitability of the cardiac muscles	1 hour	
1	Abnormal impulse generation	1. Identify the normal pace maker of the heart. 2. Define the ectopic foci. 3. Name the parts of the heart that can generate abnormal impulses. 4. Classify cardiac arrhythmia that is caused by the abnormal impulse generation. 5. Define premature contractions or extrasystole. 6. Classify extrasystoles according to site of generation. 7. Define paroxysmal	1 hour	

		tachycardia, atrial flutter, atrial fibrillation. 8. Describe the different characteristics of cardiac arrhythmia that is caused by the abnormal impulse generation and their effect on the cardiac function.		
2	abnormal impulse conduction	1. Identify the different types of abnormal impulse conduction. 2. Differentiate the following terms based on the site of the abnormal impulse conduction: sinoatrial block (A-V nodal rhythm), atrioventricular block (A-V block), incomplete heart block, complete heart block, bundle branch block. 3. Describe the causes of to abnormal impulse conduction. 4. Describe the ECG changes in the different types of abnormal impulse conduction in the heart.	1 hour	
2	correlation of cardiac events	1. Sketch the phases of the cardiac cycle and correlate them with the changes in left ventricular volume, electrocardiogram.	1 hour	
2	cardiac response to exercise	-Identify the effect of various degrees of exercise on COP Sketch a curve of the effect of exercise on the equilibrium between COP and venous return	1hour	
3	cardiac reserve and HF.	-Define cardiac reserve -Differentiate between factors affecting cardiac reserve	1 hour	
3	cardiac output	-work shop of COP curves 1-Identify factors affecting	1 hour	

	curves	COP 2-Interpret different COP curves		
4	Heart rate	1.Define HR 2.Identify the factors affecting HR 3. Describe the effect of HR changes on COP	1 hour	
4	afferent to VM area and reflexes	-Comment on some clinical parameters as ABP meanABP, pulse pressure -Determine the physiological variations affect the ABP	1 hour	
5	Hypertension	-ABP regulatory mechanisms and Hypertension -Differentiate the following terms VMC, reflexes of the heart and its vessels that regulate the ABP -Detemination of types of hypertension.	1 hour	
6	venous return against gravity	-Identify factors helping venous return -Atrial suction -Ventricular suction	1 hour	
6	circulatory shock	-Identify types of circulatory shock -Pathophysiology of different types of shock -Mechanism of refractory shock -Treatment of shock	1 hour	
7	blood brain barrier	-Identify causes of blood brain barrier -Function of blood brain barrier -Clinical implication of blood brain barrier	1 hour	

4 – Teaching and learning methods

1. Lectures for acquisition of knowledge:

1- Two groups
2- The lecturers are conducted using:

Nutrition Module

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d11. Interpret symptoms, signs and biochemical laboratory findings of some diseases.

d12. Perform self learning and show a strong commitment to it.

d13. Use current I.T. for appropriate drug database to reach informations about a specific medication.

B. Module Syllabus

Curriculum of Biochemistry

Lectures:

No.	Topic	Hours	ILOs
1	Synthesis and catabolism of protein and amino acids	2	• Describe amino acids (AA) degradation.
2	Ammonia synthesis and related diseases	2	• Describe sources and fate of ammonia.
3	Conversion of AA to specialized products	2	• Point out specialized products from different AA.
4	Inborn errors of protein metabolism	1:30	• Point out the related inborn errors of metabolism and their clinical application on biochemical basis. • Interpret symptoms, signs and biochemical laboratory findings of some protein metabolic disorders. • Point out the etiology of metabolic

			disturbance in a given case study report
5	Fat- soluble vitamins	1:30	• Define vitamins and their classifications. • Point out dietary sources of vitamins. • Point out symptoms and signs of vitamin deficiency. • Point out manifestations of hypervitaminosis. • Interpret symptoms, signs and laboratory findings of some vitamins deficiency diseases. • Point out the etiology of vitamins deficiency disease in a given case study report
6	Water-soluble vitamins	1:30	
7	Free radicals and antioxidants	1:30	• Define types of free radicals (FR). • Illustrate the endogenous and exogenous sources of FR. • Describe toxic effect of free radicals. • Describe role of antioxidants in preventing and scavenging these toxic effects. • Point out human diseases associated with oxidative stress

Practical:

No.	PRACTICAL	ACTUAL HOURS	ILOs
1	Colorimetric assessment of serum Albumin	2 h	• Estimate serum level of albumin by colorimetric methods. • Point out the clinical significance of determination of serum level of albumin.
2	Electrophoresis of plasma protein normal and abnormal	2 h	• Interpret the normal and abnormal electrophoresis curve for plasma proteins. • Work effectively in a group in lab or during preparation of seminars. • Respect the role of staff and co-staff members regardless of degree or occupation.
3	Cases discussion and lab results interpretation	2 h	• Interpret symptoms, signs and biochemical laboratory findings of some diseases.
4	Revision	2h	
5	Revision or exam	2h	

Tutorial:

N	Topic	ILOS
1	Ammonia intoxication and aminoaciduria	• Enumerates sources and fate of ammonia • Understand the biochemical basis of ammonia intoxication. • Enumerate the symptoms of ammonia intoxication. • Define aminoaciduria • Enumerate causes and types of aminoaciduria.
2	Sulfur-containing amino acids	• Enumerate metabolic disorders of sulfur-containing AA • Explain its biochemical basis • Enumerate transmethylation reactions
3	Error of protein metabolism associated with mental retardation (MR)	• Enumerate error of protein metabolism associated with mental retardation (MR). • Describe the biochemical basis of each disorder.
4	Megaloblastic anemia	• Define megaloblastic anemia • Enumerate causes of megaloblastic anemia. • Describe the biochemical bases of megaloblastic anemia

E. learning

- Parenteral Nutrition

TBL

- Protein Energy Malnutrion (PEM)

SDL

- Assessment of nutritional status
- Vitamin B complex deficiency
- Nutrient derived antioxidant

Curriculum of Medical Physiology

	Title	Teaching method	Credit hours	Actual hours
1	- Metabolic rate & body temperature regulation	Lecture	0.14	1:30
2	- Regulation of food intake and Specific dynamic action of food	Lecture		1:30
3	- Measurement and factors affecting metabolic rate	Practical	0.105	1:30
4	- Measurement of body temperature and - Regulation of body temperature upon exposure to hot & cold weather	Practical		1:45
5	- Starvation, obesity and Body mass index calculation	Tutorial	0.105	1:30

Curriculum of pharmacology:

Lecturers	Practical	Tutorial
Lipid lowering drugs	• Pharmacotherapy of obesity • Food-Drug interactions	• drugs causing electrolyte disturbance • vitamins (D – K)
1:30 Minutes ☺	1:30 hours	0.45 Hours

C. Assessment of Module Outcomes

I. **Formative:** This form of assessment is designed to help the students to identify areas for improvement. It includes a multiple choice questions, problems-solving exercises and independent learning activities in all subjects. These will be given during tutorial and practical sessions. The Answers are presented and discussed immediately with you after the assessment. The results will be made available to the students.

II. **Summative** This type of assessment is used for judgment or decisions to be made about the students' performance. It serves as:

1. Verification of achievement for the student satisfying requirement
2. Motivation of the student to maintain or improve performance
3. Certification of performance
4. Grades

III. **FEEDBACK:** From the students and faculty to further improve the module.

Semester 4

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Gastrointestinal System Module

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examination, culture character, biochemical and serological reactions.

C.24. Apply their knowledge on peptic ulcer, diarrhea, gall stones cases and outline treatment.

D- General and transferable skills:

By the end of this course the student should be able to:

D.1. Adopt the principles of continuous medical education; CME.

D.2. Gather and organize material from various sources (including library, electronic and online resources).

D.3. Express them freely and adequately.

D.4. Deal with the patient as a whole rather than a lesion or a specimen.

D.5. Maintain a professional image in manner, dress, speech and interpersonal relationships that is consistent with the medical professions accepted contemporary standards in the community.

D.6. Manage time efficiently and work in group.

D.7. Adopt the principles of using international guidelines and MDT.

D.8. Communicate effectively and respectively with staff members.

D.9. Present clearly and effectively a scientific topic in the practical class, a staff meeting or the yearly scientific day.

D.10. Establish a concise activity according to standard scientific thinking and integrity.

D.11. Evaluate his own and others work through construction feedback.

D.12. Effectively manage resources and set priorities.

D.13. Use and improve their computing skills, internet search and self learning.

D.14. Apply effective communication either written or oral.

D.15. Maintain honesty and integrity in all relations with teaching staff, colleagues and laboratory technicians.

D.16. Recognize the scope and limits of their role as students and respect time factor and dates.

D.17. Maintain a professional image concerning behavior, dress and speech.

D.18. Search for recent medical information to keep updated with the continued progress in medical sciences.

D.19. Respond appropriately according to the seriousness of pathologic diagnosis in acceptable human manner.

D.20. Respect the role of staff & co-staff members regardless of degree or occupation

D.21. Recognize the scope and limits of their role as student, as well as the necessity to seek and apply collaboration with other workers.

D.22. Organize, plan and manage a demanding workload.

D.23. Work in a team or separately in research and preparing a scientific topic.

D.24. Present clearly and effectively a scientific topic in the practical class, a staff meeting or the yearly scientific day.

3. Module Syllabus:

1. Course content:

WEEK 1	NO.	LECTURES	ACTUAL	TEACHER/ FACILITATOR

			HOURS	
	1	*Oral cavity (mouth, tongue, salivary glands, palate) and *Pharynx.	1.5	**Anatomy:**
	2	*Oesophagus, *stomach, *intestine and *mechanism of deglutition.	1.5	**Anatomy:**
	3	*Histology of oral cavity	1.5	**Histology:**
	4	*Teeth and esophagus	1.5	**Histology:**
	5	*Introduction *Control of function of GIT *Salivary secretion *swallowing	1.5	**Physiology:**
	6	*Oral cavity and *salivary glands	1.5	**Pathology:**
WEEK 1	**No.**	**PRACTICAL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
	1	*Oral cavity and *Pharynx.	1.5	**Anatomy:**
	2	* Oesophagus and *stomach	1.5	**Anatomy:**
	3	*Lip (Slide 33) *Tongue (Slide 34) *Papillae folliata (Slide 35)	1.5	**Histology:**
	4	*Esophagus dog (Slide 36) *Esophagus cat (Slide 37) *GEJ (Slide 38)	1.5	**Histology:**
	5	*Oral cavity and salivary glands	1.5	**Pathology:**
WEEK 1	**NO**	**TUTORIALS**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
	1	* Compare between small and large intestine and their related surgical importance.	1.5	**Anatomy:**
	2	*Histological structure of lip and tongue *Clinical hints (discoloration of lip, Tongue ulcers)	1.5	**Histology:**

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WEAK 2	No.	LECTURES	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	*Liver and *biliary system	**1.5**	**Anatomy:**
	2	*Stomach & *PDJ	**1.5**	**Histology:**
	3	*Small and large intestine	**1.5**	**Histology:**
	4	*Physiology of the stomach *vomiting	**1.5**	**Physiology:**
	5	*Esophagus and *stomach	**1.5**	**Pathology:**
	6	*Gastoenteritis and food poisoning	**1.5**	**Microbiology:**
	7	Peptic Ulcer	**1.5**	**Pharmacology**
WEAK 2	**No.**	**PRACTICAL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
	1	* Intestine	**1.5**	**Anatomy:**
	2	*Fundus (slide 39) *Pylorus (slide 40) *PDJ (slide 41)	**1.5**	**Histology:**
	3	Duodenum (Slide 42) *Ileum (Slide 43) *Large intestine (Slide 44) *Appendix (Slide 45)	**1.5**	**Histology:**
WEAK 2	**No.**	**TUTORIAL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
	1	* Surgical segmentation of liver	**1.5**	**Anatomy**
	2	*Histological structure of the esophagus and clinical hints (GERDs & esophageal varicese)	**1.5**	**Histology**
	3	*Problem solving about sialadenitis, leukoplakia, GERD and H-pylori gastritis	**1.5**	**Pathology**
WEAK 2	**No.**	**TBL**	**actual hours**	**TEACHER/ FACILITATOR**
	1	*** Peptic Ulcer +GERD:** (Anatomy, Histology ,Physiology, Pathology & Microbiology)	**1.5**	

WEAK 3	No.	LECTURES	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	*Pancreas, *peritoneum * Blood supply of gastrointestinal tract.	**1.5**	**Anatomy:**
	2	*Salivary glands and *pancreas	**1.5**	**Histology:**
	3	*Liver	**1.5**	**Histology:**
	4	*Pancreatic secretion *The liver and billiary secretion.	**1.5**	**Physiology:**
	5	*Role of liver in metabolism	**1.5**	**Biochemistry**
	6	*Hepatic Trematodes (Fasciola) * Intestinal Trematodes (Heterophys Heterophys)	**1.5**	**Parasitology:**
	7	*Diseases of small and large intestine	**1.5**	**Pathology:**
WEAK 3	**No.**	**PRACTICAL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
	1	*Liver and *biliary system	**1.5**	**Anatomy:**
	2	*Pancreas, *peritoneum	**1.5**	**Anatomy:**
	3	*Revision	**1.5**	**Histology:**
	4	*Fasciola *Heterophys heterophys	**1.5**	**Parasitology:**
	5	*Esophagus and stomach *Diseases of small and large intestine	**1.5**	**Pathology:**
	6	*Food –borne infections	**1.5**	**Microbiology:**
WEAK 3	**No.**	**TUTORIAL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
	1	* Peritonitis, Peritoneal pouch and its clinical importance	**1.5**	**Anatomy**
	2	*Histological structure of stomach and clinical hints (gastritis and gastric ulcer)	**1.5**	**Histology**
	3	Pancreatic secretion	**1.5**	**Physiology**
	4	*Hepatitis B	**1.5**	**Microbiology**
WEAK 3	**No.**	**TBL**	**actual hours**	**TEACHER/ FACILITATOR**
	2	**Medical Acute Abdomen:** (Anatomy, Histology ,Physiology)	**1.5**	

WEAK 4	No.	LECTURES	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	*The small intestine *Large intestine. *Defecation reflex.		Physiology
	2	*Taeniae (Ascaris Lumbricoides)	1.5	Parasitology
	3	*Hook Worms (Strongyloides Stercoralis)	1.5	Parasitology
	4	*Diarrheal diseases	1.5	Microbiology
	5	GERD and antiemetics		Pharmacology
WEAK 4	**No.**	**PRACTICAL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
	1	* Blood supply of gastrointestinal tract	1.5	Anatomy
	2	*Mixed salivary gland (Slide 46) *Parotid gland (Slide 47) *Pancreas (Slide 48)	1.5	Histology
	3	Record of intestinal motility.	1.5	Physiology:
	4	*Liver function tests	2	Biochemistry
	5	*Taeniae (Ascaris Lumbricoides)	1.5	Parasitology
	6	*Hook Worms (Strongyloides Stercoralis)	1.5	Parasitology
	7	* Diseases of small and large intestine	1.5	Pathology
	8	*Gastroenteritis/diarrheal diseases and hepatitis	1.5	Microbiology
WEAK 4	**No.**	**TUTORIAL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
	1	* Vasculature of gastrointestinal tract and their clinical importance.	1.5	Anatomy
	2	*Histological structure of small and large intestine *Histological structure of recto anal canal	1.5	Histology
	3	Intestinal Motility	1.5	Physiology:
	4	*Hymenolepis Nana *Hymenolepis Diminuta *Dipylidium Caninum	2	Parasitology
	4	*Other types of viral hepatitis	1.5	Microbiology
WEAK 4	**No.**	**TBL**	**actual hours**	**TEACHER/ FACILITATOR**
	3	**Surgical Acute Abdomen:** (Anatomy, Parasitology & Pathology)	1.5	

WEAK 5	NO.	LECTURES	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	*Development of gastrointestinal tract	**1.5**	**Anatomy**
	2	*Enzymology and tumour markers of GIT	**1.5**	**Biochemistry**
	3	*Capillaria * Nematodes of Large Intestine	**1.5**	**Parasitology**
	4	*Diseases of the liver	**1.5**	**Pathology**
WEAK 5	**No.**	**PRACTICAL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
	1	* Radiology	**1.5**	**Anatomy**
	2	Effect of drugs on intestinal motility record.	**1.5**	**Physiology**
	3	*Human liver and gall bladder (Slide 49)	**1.5**	**Histology**
	4	*Estimation of AST and ALT	**2**	**Biochemistry**
	5	*Capillaria * Nematodes of Large Intestine	**1.5**	**Parasitology**
	6	*Diseases of liver *Diseases of gallbladder, appendix, pancreas and peritonium	**1.5**	**Pathology**
	7	*Peptic ulcer	**1.5**	**Pharmacology**
WEAK 5	**No.**	**TUTORIAL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
	1	*Biochemical manifestation of liver cirrhosis and hepatic failure	**1.5**	**Biochemistry**
	2	Trichustrongylus Clobriformis * Diphyllobothrium Latum	**2**	**Parasitology**
	3	*Problem solving about colon cancer	**1**	**Pathology**
	4	*Purgatives(Tutorial)	**1.5**	**Pharmacology**
WEAK 5	**No.**	**TBL**	**actual hours**	**TEACHER/ FACILITATOR**
	4	**Portal Hypertension:** (Anatomy, Biochemistry, parasitology, Pathology & Microbiology)	**1.5**	

WEAK 6	No.	LECTURES	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	*amoebae - *Balantidium coli-*	1.5	Parasitology
	2	*Giardia Lamblia *Cryptosporidium	1.5	Parasitology
	3	*Diseases of gallbladder, appendix, pancreas and peritonium	1.5	Pathology
WEAK 6	No.	PRACTICAL	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	*Revision	1.5	Anatomy
	2	*Revision	1.5	Histology
	3	*Quiz and check list	2	Biochemistry
	4	*Amoebae *Balantidium coli	1.5	Parasitology
	5	*Giardia Lamblia *Cryptosporidium	1.5	Parasitology
	6	*Revision	1.5	Microbiology
	7	*Diarrhoea	1.5	Pharmacology
WEAK 6	No.	TUTORIAL	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	*Fatty liver	1.5	Biochemistry
	2	*Gastric Myasis and *medical importance of flies	2	Parasitology
	3	*Problem solving about liver diseases	1.5	Pathology
	4	*Treatment of GIT infections	1.5	Pharmacology

WEAK 7	NO.	LECTURES	ACTUAL HOURS	TEACHER/ FACILITATOR
WEAK 7	**No.**	**PRACTICAL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
	1	Lab Diagnosis of intestinal Parasites	**1.5**	**Parasitology**
	2	*Revision	**1.5**	**Parasitology**
	3	*Revision	**1.5**	**Pathology**
	4	*Revision	**1.5**	**Pathology**
	5	*Gall bladder stones	**1.5**	**Pharmacology**
	6	*Rrevision	**1.5**	**Pharmacology**
WEAK 7	**No.**	**TUTORIAL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
WEAK 7	**No.**	**SDL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
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Renal &Urinary System Module

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C18. Identify causative micro-organisms of urinary tract infections by microscopic examination, Culture character and Biochemical reaction.

d- General and transferable skills:

d1. Adopt the principles of continuous medical education; CME.
d2. Use internet and learn searching skills.
d3. Communicate effectively and respectively with staff members.
d4. Establish a concise activity according to standard scientific thinking and integrity.
d5. Manage time efficiently and work in group.
d6. Evaluate his own and other's work through construction feedback
d7. Effectively manage time and resources and set priorities.

E) Module Syllabus:

1. **Course content:**

A. WEEK 1

WEEK 1	No.	LECTURES	ACTUAL HOURS	TEACHER/ FACILITATOR
W1	1	Anatomy of the kidney& ureter 1	1.5	Anatomy
W1	2	Development of the kidney & ureter	1	Anatomy
W1	3	Histological Structure of Kidney	1.5	Histology
W1	4	Excretory passage of urinary system	1.5	Histology
W1	5	Glomerular filtration rate (GFR)	1.5	Physiology
W1	6	Filtration fraction Renal clearance	1.5	Physiology
W1	7	Normal & abnormal Constituents of urine	1.5	Biochemistry
W1	8	Congenital anomalies of the kidney + acute glomerulonephritis	2	Pathology
	No.	PRACTICAL	ACTUAL HOURS	TEACHER/ FACILITATOR
W1	1	Examination of prosection of urinary system. Revision on posterior abdominal wall (spots)	1.5	Anatomy
W1	2	Kidney and ureter	1.5	Anatomy
W1	3	Urinary bladder and urethra	1.5	Anatomy
W1	4	Histological Structure of Kidney	1.5	Histology
W1	5	Simple urine examination & Specific gravity	1.5	Physiology
WEAK1	NO	TUTORIALS	ACTUAL HOURS	TEACHER/ FACILITATOR

W1	1	Functional anatomy & Juxta-glomerular apparatus	1.5	Physiology
W1	2	Hormones related to kidney	2	Biochemistry
W1	3	Surface anatomy of the kidney	1.5	Anatomy
WEAK1	NO	STUDENT DEPENDANT LEARNING	ACTUAL HOURS	TEACHER/ FACILITATOR
W1		----------		
WEAK1	No.	TBL	actual hours	TEACHER/ FACILITATOR
W1		----------		

B. WEEK 2

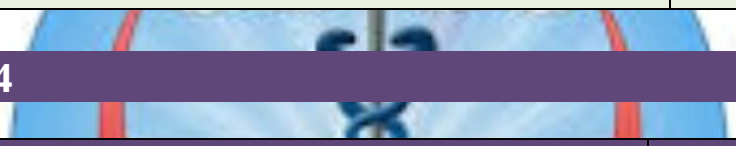
WEAK2	No.	LECTURES	ACTUAL HOURS	TEACHER/ FACILITATOR
W2	1	Anatomy of ureter2, urinary bladder & urethra	1.5	Anatomy
W2	2	Development of urinary bladder and urethra	1.5	Anatomy
W2	3	Tubular transport-1	1.5	Physiology
W2	4	Tubular transport-2 Physiology of micturition	1.5	Physiology
W2	5	Chemistry and metabolism of purine	1.5	Biochemistry
W2	6	Chronic glomerulonephritis+ obstructive uropathies	1.5	Pathology
W2	7	Urinary stones+ kidney tumors	1.5	Pathology
W2	8	Urinary tract infections	1	Microbiology
WEAK2	No.	PRACTICAL	ACTUAL HOURS	TEACHER/ FACILITATOR
W2	1	Radiology	1.5	Anatomy
W2	2	Excretory passage of urinary system	1.5	Histology
W2	3	Serum uric acid	2	Biochemistry
W2	4	Kidney & bladder	1.5	Pathology
W2	5	Bacterial causes of urinary tract infections	1.5	Microbiology
W2	6	Pharmacological aspects of Antimicrobials used for urinary infections	1.5	Pharmacology
W2	7	Renal clearance (sheet)	1.5	Physiology
WEAK2	No.	TUTORIAL	ACTUAL HOURS	TEACHER/ FACILITATOR

W2	1	Ureteric constrictions	1.5	Anatomy
W2	2	Debate on internal and external urethral sphincter	1.5	anatomy
W2	3	Juxta glomerular apparatus(JGA)	1	Histology
W2	4	Factors affecting glomerular filtration rate	1.5	Physiology
W2	5	Glomerulonephritis	1.5	Pathology
W2	6	Alteration of Urinary PH Drugs which induce discoloration of urine Drug induced nephrotoxicity	1.5	Pharmacology
WEAK	No.	SDL	ACTUAL HOURS	TEACHER/ FACILITATOR
W2	1	Sodium handling in renal tubules	1.5	Physiology
W2	2	Counter current mechanisms in the kidney	2	Physiology
W2	3	Revision on slides and jars of GN	2	Pathology
WEAK2	No.	TBL	actual hours	TEACHER/ FACILITATOR
W2	1	UTI (Pathology + Pharmacology+ microbiology and histology)		Microbiology

C. WEEK 3

WEAK3	No.	LECTURES	ACTUAL HOURS	TEACHER/ FACILITATOR
W3	1	Pharmacology of diuretics	2	Pharmacology
W3	2	Regulation of extracellular fluid osmolarity & Na^+ conc.	1.5	Physiology
W3	3	Physiology of acid-base balance	2	Physiology
W3	4	Cystitis + bladder tumors	1.5	Pathology
W3	5	Chemistry and metabolism of pyrimidines	1	Biochemistry
WEAK	No.	Practical		TEACHER/ FACILITATOR
W3	1	Revision	1.5	Anatomy
W3	2	Revision	1.5	Histology
W3	3	Abnormal urine constitutes & pH of urine	1.5	Physiology
W3	4	Kidney & bladder	1.5	Pathology
W3	5	Urinary Antiseptics	1.5	Pharmacology
W3	6	Serum creatinine and creatinine clearance	2	Biochemistry

W3	6	Revision	2	Pathology
WEAK	No.	TUTORIAL	ACTUAL HOURS	TEACHER/ FACILITATOR
W3	1	Kidney tumours & bladder diseases	1.5	Pathology
W3	2	Gout	2	Biochemistry
WEAK	No.	SDL	ACTUAL HOURS	TEACHER/ FACILITATOR
W3	1	Kidney buffer systems	2	Physiology
W3	2	Acid-base disturbances	2	Physiology
W3	3	Revision on slides and jars of Kidney tumor	2	Pathology
W3	4	Revision on slides and jars of bladder disease	2	Pathology
WEAK	No.	TBL	actual hours	TEACHER/ FACILITATOR
W3	1	Urinary incontinence (Physiology + anatomy)		Physiology



D. WEEK 4

WEAK	NO.	LECTURES	ACTUAL HOURS	TEACHER/ FACILITATOR
W4	1			
WEAK	No.	PRACTICAL	ACTUAL HOURS	TEACHER/ FACILITATOR
W4	1	Acid-base abnormalities	1.5	Physiology
WEAK	No.	TUTORIAL	ACTUAL HOURS	TEACHER/ FACILITATOR
W4	2	Abnormalities of acid-base balance	1.5	Physiology
WEAK	NO.	SDL	ACTUAL HOURS	TEACHER/ FACILITATOR
W4	1			
WEAK	No.	TBL	actual hours	TEACHER/ FACILITATOR
W4	1	Renal failure (Biochemistry + physiology + anatomy)		Physiology

Reproductive system & Breast Module

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Menoufia Faculty of Medicine

Accredited

E) Module Syllabus:

1. Course content:

A. WEEK 1

WEEK 1	NO.	LECTURES	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	Anatomy of Breast, blood supply, lymphatic drainage.	1.5	Anatomy Dr.Neveen
	2	Uterus(anatomy, blood supply, peritoneal covering, clinical notes) & uterine tube (anatomy, blood supply, peritoneal covering)	1.5	Anatomy Dr. Wael
	3	Female genital system (Ovary)	1.5	Histology
	4	Female genital system (Fallopian tube – Uterus – vagina)	1.5	Histology
	5	Mammary gland (Resting – Lactating) - Placenta	1.5	Histology
	6	Oogenesis, female sexual cycles (ovarian & endometrial) Ovarian hormones; Fertilization ; Implantation & Puberty	1.5	Physiology Dr. Sohair saleh
	7	Endocrinal functions of the ovary, fertilization, implantation & functions of placenta.	1.5	Physiology Dr. Sohair saleh
	NO.	PRACTICAL	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	Anatomy of breast	1.5	Anatomy
	2	Gross Anatomy of the Female Reproductive Tract (1) (Uterus)	1.5	Anatomy
	2	Female genital system (Ovary)	1.5	Histology
	3	Female genital system (Fallopian tube – Uterus – vagina)	1.5	Histology
	4	Pregnancy test	1.5	Physiology
WEAK1	NO	TUTORIALS	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	Breast in Clinical Medicine – Breast mass	1.5	Anatomy
		Ovulation with its clinical correlation	1.5	Histology
WEAK1	NO	STUDENT DEPENDANT LEARNING	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	Examination of breast and its lymphatic drainage.		Anatomy

B. WEEK 2

WEAK2	No.	LECTURES	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	Ovary (anatomy, blood supply, peritoneal covering) & Vagina (anatomy, blood supply) & pelvic diaphragm, perineal pouches	1.5	Anatomy Dr.Neveen
	2	embryology of female reproductive system	1.5	Anatomy Dr. Wael
	3	Male genital system (Testes)	2	Histology
	4	Parturition, lactation, menopause, testicular functions &regulation of spermatogenesis.	1.5	Physiology Dr. Essam Omar
	5	Pharmacology of female sex hormones and contraception	1.5	Pharmacology Dr. Fatma ElDosokey
	6	Female genital system (1) - Infections - Abnormal uterine bleeding - Tumours of the Vulva - Tumours of the Vagina Tumours of the Uterus	1.5	Pathology Prof.Dr.Hayam
	7	Female genital system (2) - Tumours of the Ovary - Diseases of the Placenta	1.5	Pathology Prof.Dr.Hayam
WEAK2	**No.**	**PRACTICAL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
	1	Gross Anatomy of the Female Reproductive Tract (2) (Uterine tube , ovary and vagina)	1.5	Anatomy
	2	Gross Anatomy of the Male Reproductive Tract (1) (Testis)	1.5	Anatomy
	3	Placenta-Mammary gland	1.5	Histology
	4	Male genital system (Testes)	1.5	Histology
	5	Birth control methods	1.5	Physiology
	6	Utrine Stimulants & relaxants	1.5	Pharmacology
	7	Sexually transmitted diseases	1.5	Pharmacology
	8	Endometrial changes (secreatory and proliferative), Endometrial hyperplasia,squamous cell carcinoma cervix	1.5	Pathology

	9	Dermoid cyst, mucinous cystadenoma, Brenner tumour	1.5	Pathology
WEAK2	No.	TUTORIAL	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	Uterine prolapse	1.5	Anatomy
	2	Cyclic changes during menstrual cycle	1.5	Histology
	3	Antiestrogen & antiprogesterone	1.5	Pharmacology
	4	Female Genital System	1.5	Pathology
WEAK	No.	SDL	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	Uterine mass		Pathology
WEAK2	No.	TBL	actual hours	TEACHER/ FACILITATOR
W2	2	Uterine bleeding (Pathology + Histology +Pharmacology + Anatomy)	1.5	

C. WEEK 3

WEAK3	NO.	LECTURES	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	Scrotum &Testis (anatomy, blood supply and lymphatics, clinical notes).	1.5	Anatomy Dr.Neveen
	2	Vas, epididymis, seminal vesicle , ejaculatory ducts, prostate, penis (anatomy, blood supply, clinical notes)	1.5	Anatomy Dr. Wael
	3	Male genital system (Accessory gland –ext. genitalia)	2	Histology
	4	- Bacterial vaginosis - Pelvic inflammatory disease (PID) - Diseases transmitted from mother to fetus by breast feeding and by genital tract.	1.5	Microbiology
	5	Toxoplasma and phyrus pubis	1.5	Parasitology Dr. Fatma Shalan
	6	Breast Pathology (Inflammatory lesions	1	Pathology

		Neoplasia)		
WEAK	No.	PRACTICAL	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	Gross Anatomy of the Male Reproductive Tract (2) "The epididymis, the vas deferens, prostate, the seminal vesicles and the ejaculatory ducts".	1.5	Anatomy
	2	Pelvic diaphragm and Perineal body	1.5	Anatomy
	3	Accessory gland – ext. genitalia	1.5	Histology
	4	Revision	1.5	Histology
	5	Semen analysis report.	1.5	Physiology
	6	Toxoplasma and phyrus pubis	1.5	Parasitology
	7	FCD of breast, Fibroadenoma, invasive duct carcinoma	1.5	Pathology
WEAK	No.	TUTORIAL	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	Pelvic diaphragm Role of Levator ani in normal labor	1.5	Anatomy
	2	Spermatogenesis	1.5	Histology
	3	anovulation	1.5	Physiology
	4	Breast (Pathology + Histology +Pharmacology + Anatomy)	1.5	Pathology
WEAK	No.	SDL	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	Perineum	1.5	Anatomy
	2	Cyclic changes of estrogen and progesterone hormone	1.5	Physiology
	3	Breast mass	1.5	Pathology
WEAK	No.	TBL	actual hours	TEACHER/ FACILITATOR
W3	3	Breast mass (Pathology + Histology +Pharmacology + Anatomy)	1.5	

D. WEEK 4

WEAK	NO.	LECTURES	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	Embryology of male reproductive system	1.5	Anatomy Dr. Wael

	2	Endocrinal functions of the testis, semen and puberty (male & female).	1.5	Physiology Dr. Essam Omar
	3	Trichomonus vaginalis, Scabis and Mite transmitted parasite.	1.5	Parasitology Dr. Fatma Shalan
	4	Male genital system (Prostate – Testis)	1.2	Pathology Prof.Dr.Asmaa
WEAK	No.	PRACTICAL	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	Radiology.	1.5	Anatomy
	2	Revision of female reproductive system	1.5	Anatomy
	3	Revision	1.5	Histology
	4	1- Gonorrhea 2- Syphilis 3- Candida albicans	1.5	Microbiology
	5	Trichomonus vaginalis, Scabis and Mite transmitted parasite.	1.5	Parasitology
	6	Nodular prostatic hyperplasia, Seminoma	1.5	Pathology
	7		1.5	
WEAK	No.	TUTORIAL	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	Varicocele	1.5	Anatomy
	2	Abnormal ovarian and testicular function	1.5	physiology
	3	Breast infections (mastitis) Epidydimitis, orchitis and prostatitis	1.5	Microbiology
	4	Male Genital System	1.5	Pathology
	5	Trichomonus vaginalis, Scabis and Mite transmitted parasite.	1.5	Parasitology
WEAK	No.	SDL	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	External genitals	1.5	Anatomy
	2	Countercurrent exchange	1.5	physiology
	3			
WEAK	No.	TBL	actual hours	TEACHER/ FACILITATOR
4	4	Male infertility (Physiology + Pathology + Histology + Microbiology + Parasitology)	1.5	

E. WEEK 5

WEAK	No.	LECTURES	ACTUAL HOURS	TEACHER/ FACILITATOR
	1	Revision	1.5	
	2	Final Theoretical exam		
WEAK	**No.**	**PRACTICAL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
	1	Revision of male reproductive system	1.5	Anatomy
	2	Revision of breast and radiology	1.5	Anatomy
	3	Final Practical exam		
WEAK	**No.**	**TUTORIAL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
	1	Prostatic enlargement	1.5	Anatomy
WEAK	**No.**	**SDL**	**ACTUAL HOURS**	**TEACHER/ FACILITATOR**
WEAK	**No.**	**TBL**	**actual hours**	**TEACHER/ FACILITATOR**