



**The Hashemite University**  
**Course Syllabus**  
**Genitourinary System**

1	Course title	Genitourinary System
2	Course number	0111501304
3	Credit hours (theory, practical)	7 credit hours
	Contact hours (theory, practical)	86 (theory 76, practical 10)
4	Course meeting time	Variable (Timetable at the end of this syllabus)
	Course location	Faculty of Medicine Theater
5	Program title	MD
7	Awarding institution	The Hashemite University
8	Faculty	Faculty of Medicine
9	Department	Basic Medical Sciences
10	Level of course	Third year
11	Year of study and semester (s)	Third year , second semester
12	Final Qualification	MD
13	Other department (s) involved	None
14	Language of Instruction	English
15	Date of production/revision	1/ 2019

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**Course Description:**

The Genitourinary System is an intensive multidisciplinary 6 credit hour course designed to provide students the basic sciences and clinical framework for topics in genitourinary system. The course is designed to assist the student in integrating the different disciplines' lectures and practicals in each system including anatomy, physiology, pathology, microbiology, pharmacology, biochemistry, and community medicine.

**Course outcomes:**

**Intended Learning Outcomes (ILOs):** Upon successful completion of this course students will be able to ...

1. Describe the gross morphology of different organs forming the Genito-Urinary System.
2. Understand the normal development of the Genito-Urinary System and its congenital anomalies.
3. Discuss the vasculature, lymphatic drainage and innervation of different parts of the Genito-Urinary System.
4. Understand various functions of the Genito-Urinary System.
5. Describe the microscopic appearance of different components of the Genito- Urinary System.
6. Discuss the microorganisms that infect the Genito-Urinary System.
7. Understand the pathogenesis of various diseases of the Genito-Urinary System.
8. List and describe the pharmacology of various drugs acting on the Genito-Urinary System.
9. Understand the bases of the inherited diseases.

**Topic Outline and Schedule:**

Week	Topic	Achieved ILOs
<b>1. Anatomy Lectures:</b>		
1	Gross Anatomy of kidney	<ol style="list-style-type: none"><li>1. Overview of parts &amp; functions of urinary system.</li><li>2. Understand the location, shape and surfaces of kidney.</li><li>3. Describe the coverings of kidney its significance, and the relations of both kidneys.</li><li>4. Understand the gross structure of a coronal section of the kidney.</li><li>5. describe the blood supply, nerves and lymphatic drainage of kidney</li></ol>
2	Histology of	<ol style="list-style-type: none"><li>1. Understand the parts of nephron.</li></ol>

	kidney	<p>2. Describe the histology of renal corpuscle with LM &amp; EM.</p> <p>3. Understand the histological features &amp; functions of; proximal convoluted tubule, loop of Henle, distal convoluted tubule, collecting tubule, and renal calyces.</p> <p>4. Describe the structure &amp; functions of juxtaglomerular apparatus.</p>
3	Anatomy & Histology of Urinary Passages	<p>1. Understand the course, relations, blood &amp; nerve supply, lymph drainage and histology of ureters.</p> <p>2. Understand the location, shape, surfaces, relations, blood &amp; Nerve supply, function and the histology of urinary bladder.</p> <p>3. Understand the location, relations, sphincters, blood &amp; nerve supply, lymph drainage, and histology of male and female urethra.</p>
4	Embryology of Urinary System	<p>1. Understand the development of the kidney.</p> <p>2. Understand the development of urinary passages (ureter, urinary bladder, urethra).</p> <p>3. Describe the developmental anomalies of urinary system.</p>
5	Gross Anatomy & Histology of Male Genital System	<p>1. Outline the parts &amp; functions of male genital system.</p> <p>2. Understand the location, shape, coverings, relations, blood &amp; nerve supply, lymph drainage, and histology.</p> <p>3. Describe the process of spermatogenesis.</p>
6	Anatomy & Histology of Urinary Passages	<p>1. Understand the course, relations, blood &amp; nerve supply, lymph drainage and histology of ureters.</p> <p>2. Understand the location, shape, surfaces, relations, blood &amp; Nerve supply, function and the histology of urinary bladder.</p> <p>3. Understand the location, relations, sphincters, blood &amp; nerve supply, lymph drainage, and histology of male and female urethra.</p>
7	Gross Anatomy of Female Genital System	<p>1. Outline the parts &amp; functions of female genital system.</p> <p>2. Describe the location, shape, relations, blood &amp; nerve supply, support &amp; lymph drainage of ovary.</p> <p>3. Describe the gross anatomy of uterine tubes, vagina and external genitalia.</p>
8	Histology of Female reproductive System	<p>1. Describe the histology of ovary.</p> <p>2. Understand the ovarian &amp; menstrual cycles.</p> <p>3. Describe the histology of uterine tubes.</p> <p>4. Describe the histology of uterus, cervix &amp; vagina.</p>
10	Embryology of Male & Female Genital Systems	<p>1. Describe the development of the testis &amp; ovary</p> <p>2. Describe the development of male genital ducts, associated glands &amp; external genitalia.</p> <p>3. Describe the development of female genital ducts, associated glands &amp; external genitalia.</p> <p>4. Understand the developmental anomalies of male &amp; female genital systems.</p>
11	The Posterior Abdominal and Pelvic Walls & Related Structures	<p>1. Describe the structure of posterior abdominal wall.</p> <p>2. Describe the Bones and muscles forming the wall of pelvic cavity.</p> <p>3. Describe the blood vessels and nerves of pelvic cavity.</p>

12	The Perineum	<ol style="list-style-type: none"> <li>1. Understand the location, definition and parts of perineum.</li> <li>2. Understand the perineal pouches and their arrangement.</li> <li>3. Understand the contents of superficial perineal pouch of male and female.</li> <li>4. Understand the contents of deep perineal pouch of male &amp; female.</li> </ol>
13	Radiological Anatomy Of Uro-Genital System	<ol style="list-style-type: none"> <li>1. Outline the radiological techniques used in the study of gross anatomy of urogenital system.</li> <li>2. Be oriented with radiological appearance of common diseases of urinary</li> <li>3. Be oriented with radiological appearance of common diseases of male &amp; female genital system</li> </ol>
14		Revision, Questions & Answers
<b>2. Pathology Lectures</b>		
1	Diseases of The Kidney: Glomerular Diseases (I)	<ol style="list-style-type: none"> <li>1. Define Prerenal, Renal, &amp; Post Renal Azotemia &amp; Uremia. Defined the 8 Major Syndromes of renal diseases, according to their clinical manifestations</li> <li>2. Describe the Normal Glomerulus (G).</li> <li>3. Classify Glomerular Diseases: [Primary, Secondary to Systemic Diseases, &amp; Hereditary Disorders].</li> <li>4. Describe the Pathogenesis, Light, Electron, &amp; Immunofluorescence Microscopic Changes &amp; Fate of:               <ol style="list-style-type: none"> <li>(I) Glomerulonephritis (GN) Caused by Circulating Immune Complexes,</li> <li>(II) Anti-Glomerular Basement Membrane Antibody GN, &amp;</li> <li>(III) Antibodies reacting in situ with previously "planted" nonglomerular Ags.</li> </ol> </li> </ol>
2	Glomerular Diseases (II) & The Nephrotic Syndrome (I)	<ol style="list-style-type: none"> <li>1. Define the Mediators of Immune Injury in GN:               <ol style="list-style-type: none"> <li>(1) Complement-leukocyte-mediated,</li> <li>(2) Complement-dependent but not neutrophil- dependent injury</li> <li>(3) Cytotoxic Abs directed to Glomerular cell Antigens.</li> </ol>               Other mediators of G damage: Monocytes &amp; macrophages, Platelets, Resident G cells (endothelial, epithelial, &amp; mesangial cells), &amp; Fibrin-related products.                Other Mechanisms of G Injury: (A) Podocyte Injury, (B) Nephron Loss             </li> <li>2. Describe the Components Of, Pathogenesis, Causes, Prevalence in Children &amp; adults, Pathologic Features, and Effects &amp; complications of the Nephrotic Syndrome.</li> <li>3. Define &amp; Describe the Pathogenesis, Light &amp; Electron, &amp; Immune Fluorescence Microscopy Features, Clinical Course &amp; Prognosis Of The Following 4 Causes of Nephrotic Syndrome:               <ol style="list-style-type: none"> <li>(1) Minimal-Change Disease (Lipoid Nephrosis).</li> <li>(2) Focal and Segmental Glomerulosclerosis (FSGS).</li> </ol> </li> </ol>

3	The Nephrotic Syndrome (II).	<p>(3) Membranous Nephropathy or Membranous GN</p> <p>(4) Membranoproliferative GN, both types I &amp; II.</p> <p>4. Describe the Components Of, Causes, &amp; Light Microscopic Features of the Nephritic Syndrome.</p> <p>5. Define &amp; Describe the Pathogenesis, Light, Electron, &amp; Immune Fluorescence Microscopic Features, Clinical Course &amp; Prognosis of:</p> <p>(1) Acute Poststreptococcal GN.</p>
4	The Nephrotic Syndrome(III) & Chronic GN	<p>(2) IgA Nephropathy (Berger Disease).</p> <p>(3) Hereditary Nephritis.</p> <p>(4) Rapidly Progressive (Crescentic) GN Groups A, B, &amp; C.</p> <p>(5) Chronic GN.</p>
5	Pyelonephritis & Interstitial Nephritis	<p>1. Describe the Pathogenesis, Routes, Importance of Vesicoureteral Reflux in ascending infection, Predisposing Conditions, Gross &amp; Microscopic Features, &amp; Clinical Features Of acute pyelonephritis</p> <p>2. Define the Predisposing Conditions, Pathognomonic Feature, &amp; Effects of papillary necrosis.</p> <p>3. Describe The Causes, Gross &amp; Microscopic Features, &amp; Clinical Course, Effects, &amp; Diagnosis of Chronic Pyelonephritis &amp; Reflux Nephropathy</p>
6	Vascular Diseases Of The Kidney	<p>1. Describe the Pathogenesis, Gross &amp; Microscopic Features, &amp; Clinical Course Of:</p> <p>(1) Acute Drug-Induced Interstitial Nephritis,</p> <p>(2) Analgesic Nephropathy, &amp; (3) Acute Tubular Necrosis (Both Ischemic &amp; Nephrotoxic forms).</p> <p>2. Describe the Pathogenesis, Gross &amp; Microscopic Features, &amp; Clinical Course of Benign &amp; malignant Nephrosclerosis</p> <p>3. Define Thrombotic Microangiopathies &amp; Enumerate their Causes.</p> <p>4. Describe the Frequency, Pathogenesis, Microscopic Features, &amp; Clinical Course of: Childhood hemolytic uremic syndrome.</p>
7	Cystic Diseases Of The Kidney, Renal Stones & Hydronephrosis.	<p>1. Describe renal Simple Cysts &amp; Dialysis-associated acquired renal cysts.</p> <p>2. Describe the Pathogenesis, Gross &amp; Microscopic Features, &amp; Clinical Course of:</p> <p>(a) Autosomal Dominant (Adult) Polycystic,</p> <p>(b) Autosomal Recessive (Childhood) Polycystic</p> <p>(c) Medullary Cystic Disease of the Kidney</p> <p>3. Describe the Prevalence, Pathogenesis, Effects &amp; Complications of renal stones. Enumerate the most common Causes of Hydronephrosis.</p> <p>4. Describe the Pathogenesis, Gross &amp; Microscopic Features, &amp; Effects Of Unilateral &amp; Bilateral; Partial &amp; Complete Obstruction Of The Urinary Tract; Above &amp; Below The Bladder.</p>

8	Renal cell & Bladder carcinoma	<ol style="list-style-type: none"> <li>1. Classify &amp; Describe the Gross &amp; Microscopic Features, Clinical Manifestations, routes of Spread &amp; Prognosis of:               <ol style="list-style-type: none"> <li>(1) Renal Cell Carcinoma 3 forms Clear cell, Papillary, &amp; Chromophobe RCC.</li> <li>(2) Nephroblastoma (Wilms Tumor).</li> </ol> </li> <li>2. Classify &amp; Describe the Incidence, Risk Factors, Gross &amp; Microscopic Features, Spread, Stages, Clinical Manifestations, Diagnosis &amp; Prognosis of Bladder carcinoma.</li> </ol>
9	The Female Genital System- Diseases of the Vulva, Vagina, & Cervix (CIN)	<ol style="list-style-type: none"> <li>1. Describe the Pathologic Features of vulvitis, contact dermatitis, lichen sclerosis, lichen simplex chronicus, condylomata lata &amp; acuminata of the vulva.</li> <li>2. Define the Causes &amp; Pathologic Features of vulvar carcinoma &amp; extramammary Paget diseases</li> <li>3. Define the Causes, Pathologic Features, &amp; Effects of vaginitis, vaginal clear cell adenocarcinoma &amp; sarcoma botryoides</li> <li>4. Describe The Etiology, Risk Factors, Grades Of, Pathologic Features, Fate, &amp; Prognosis of Cervical Intraepithelial Neoplasia (CIN).</li> </ol>
10	Carcinoma of the Cervix & Diseases of the Uterus (I)	<ol style="list-style-type: none"> <li>1. Describe the Gross &amp; Microscopic Features, Stages, Clinical Manifestation, Early Diagnosis, Prognosis &amp; Prevention of invasive carcinoma of the cervix.</li> <li>2. Define Cervical Polyp, Acute &amp; Chronic Endometritis.</li> <li>3. Define the Causes &amp; Effects Of Acute &amp; Chronic endometritis &amp; adenomyosis.</li> <li>4. Describe Endometriosis Sites, Pathogenesis, Gross &amp; Microscopic Features, &amp; Clinical Effects.</li> </ol>
11	Diseases of the Uterus (II)	<ol style="list-style-type: none"> <li>1. Enumerate the Causes of Dysfunctional Uterine Bleeding.</li> <li>2. Describe the Incidence, Etiology, Types, Gross &amp; Microscopic Features, &amp; Effects of: Endometrial Hyperplasia, polyp, carcinoma, Uterine leiomyoma &amp; Leiomyosarcoma.</li> <li>2. Define the Causes &amp; Effects of Salpingitis.</li> <li>3. Define the follicular, luteal cysts, &amp; Stein-Leventhal syndrome of the ovary.</li> </ol>
12	Tumors Of The Ovary	<ol style="list-style-type: none"> <li>1. Describe the Origin, Frequency, Gross &amp; Microscopic Features, Effects, &amp; Prognosis of ovarian: Benign, borderline &amp; malignant Serous, Mucinous, &amp; Endometrioid tumors, Benign (Mature) Cystic &amp; malignant Teratomas.</li> <li>2. Define: Dysgerminoma, Granulosa-thecal, Thecoma-fibroma, Sertoli-Leydig cell &amp; Brenner Tumors.</li> <li>3. Describe the clinical manifestation of all ovarian tumors.</li> </ol>
13	Diseases Of Pregnancy	<ol style="list-style-type: none"> <li>1. Describe the Causes, Gross &amp; Microscopic Features, &amp; Complications of ectopic pregnancy.</li> <li>2. Describe the Incidence, Etiology, Pathogenesis, Gross &amp; Microscopic Features, Complications, &amp; Prognosis of the Gestational Trophoblastic Diseases:               <ol style="list-style-type: none"> <li>(1) Hydatidiform moles (complete &amp; partial), (2) Invasive mole, &amp;</li> </ol> </li> </ol>

		<p>(3) Choriocarcinomas.</p> <p>3. Define Preeclampsia &amp; eclampsia, their pathogenesis &amp; effects (DIVC &amp; placental changes).</p>
14	Diseases of the breast	<p>1. Describe the Nonproliferative (Cysts &amp;/Or Fibrosis) &amp; Proliferative (Epithelial Hyperplasia, Ductal Papillomatosis, Atypical Hyperplasia, &amp; Sclerosing Adenosis) Lesions of Fibrocystic Changes of Breast</p> <p>2. Define the relationship of fibrocystic changes to breast ca.</p> <p>3. Describe the Etiology, Gross &amp; Microscopic Features, &amp; Effects of: Acute mastitis, Mammary duct ectasia, Traumatic fat necrosis; Breast Fibroadenoma, Phyllodes Tumor, &amp; Intraductal Papilloma</p>
15	Carcinoma of the Breast	<p>1. Classify carcinoma of the breast &amp; Describe its Epidemiology, Risk Factors, &amp; Pathogenesis.</p> <p>2. Describe the main Gross &amp; Microscopic Features Of Breast:</p> <p>(A) Noninvasive ca: Ductal ca in situ, Lobular ca in situ, &amp; Paget disease of the nipple.</p> <p>(B) Invasive ca: Invasive Ductal Ca ("Not otherwise Specified"), Invasive Lobular Ca, Medullary Ca, Colloid Ca, Tubular Ca, &amp; Inflammatory Ca.</p> <p>3. Describe the Locations, Invasion Sites, Routes Of Spread, Stages, Clinical Manifestations, Diagnosis, &amp; Factors Affecting The Prognosis Of Breast Carcinoma.</p> <p>4. Finally, What is the differential diagnosis of a FEMALE BREAST MASS? Enumerate the Causes of Gynecomastia &amp; briefly describe male breast carcinoma.</p>
16	The male genital system (I) Penis, Testis & epididymis	<p>1. Define: hypospadias, epispadias, balanitis; balanoposthitis, phimosis, &amp; para phimosis.</p> <p>2. Describe the Predisposing Factors &amp; Pathologic Features of (1) Bowen disease, (2) Erythroplasia of Queyrat, (3) Bowenoid papulosis, &amp; (4) Squamous cell carcinoma of penis.</p> <p>3. Describe the Etiology, Gross &amp; Microscopic Features, &amp; Effects of Cryptorchidism, Nonspecific epididymitis &amp; orchitis, mumps, &amp; Granulomatous Orchitis</p> <p>4. Classify the testicular Germ Cell tumors according to the WHO Classification scheme.</p> <p>5. Describe the: Risk Factors, Types, Gross &amp; Microscopic Features, Routes Of Spread, Importance Of HCG, &amp; AFP Tumor Markers Assay In The Diagnosis &amp; Prognosis Of The Testicular: Seminoma, Embryonal carcinoma, Yolk sac tumor Choriocarcinoma, pure teratoma variants (mature, immature &amp; teratoma with somatic-type malignancies), &amp; Mixed germ cell tumors.</p>
17	The Male Genital System (II) Prostate	<p>1. Describe the Causes, Gross &amp; Microscopic Features, Clinical Manifestations, &amp; Complications of Acute bacterial prostatitis, Chronic Bacterial &amp; Abacterial prostatitis</p> <p>2. Describe the Incidence, Pathogenesis, Gross &amp; Microscopic Features, Clinical Manifestations, &amp; Complications of Prostatic</p>



		<p>Nodular Hyperplasia.</p> <p>3. Describe the Incidence, Pathogenesis, Gross &amp; Microscopic Features, Gleason System Of Grading, TNM Staging, Clinical Manifestations, Prognosis &amp; Assay Of Serum Levels Of Prostate-Specific Antigen (PSA) In The Diagnosis of Prostatic Adenocarcinoma.</p>
<b>3. Physiology Lectures:</b>		
1	Glomerular filtration (GF).	<ol style="list-style-type: none"> <li>1. List kidney functions</li> <li>2. Describe the functions of the nephron.</li> <li>3. Explain the process of renal blood flow and glomerular filtration.</li> <li>4. Illustrate the glomerular membrane, and the dynamics of glomerular filtration.</li> <li>5. List the factors that affect glomerular filtration rate (GFR).</li> </ol>
2	Reabsorption and secretion.	<ol style="list-style-type: none"> <li>1. Explain transport mechanisms across epithelial membranes.</li> <li>2. Illustrate the reabsorption of H<sub>2</sub>O and electrolytes.</li> <li>3. Illustrate the reabsorption of glucose, urea, creatinine and protein</li> <li>4. Illustrate the reabsorption of calcium, phosphate</li> </ol>
3	Regulation of the GF and renal-blood flow (RBF).	<ol style="list-style-type: none"> <li>1. Explain the autoregulation and tubuloglomerular feedback.</li> <li>2. Describe the juxtaglomerular apparatus and its role in renin-angiotensin system.</li> <li>3. Define the glomerulotubular balance.</li> </ol>
4	Parameter of renal active transport.	<ol style="list-style-type: none"> <li>1. Explain the renal tubular transport maximum (T<sub>m</sub>).</li> <li>2. Define the filtered load and excretion.</li> <li>3. Assess the glucose and para-aminohippuric acid (PAH) titration curve</li> </ol>
5	Renal clearance.	<ol style="list-style-type: none"> <li>1. Explain the mechanisms of renal clearance and its applications.</li> <li>2. Analyse the inulin, creatinine and PAH clearance.</li> </ol>
6	Renal concentration and dilution of urine.	<ol style="list-style-type: none"> <li>1. Explain the mechanisms of dilution and concentration <ul style="list-style-type: none"> <li>- Counter current multipliers.</li> <li>- Counter current exchangers.</li> </ul> </li> <li>2. Illustrate the role of urea on urine concentration mechanism</li> </ol>
7	Regulation of Acid-Base Balance	<ol style="list-style-type: none"> <li>1. List renal buffer systems</li> <li>2. Illustrate the role of kidney in acid base balance</li> </ol>
8	Hormonal regulation of sex determination.	<ol style="list-style-type: none"> <li>1. Describe fetal differences in male and female gonads</li> <li>2. Illustrate the role of various hormones and factors involved in sex differentiation</li> <li>3. Compare and contrast male and female reproductive systems</li> </ol>
9	Male reproductive physiology.	<ol style="list-style-type: none"> <li>1. Describe the hypothalamic pituitary gonadal axis</li> <li>2. Describe the endocrine regulation of male reproduction.</li> <li>3. Illustrate the functions of the male reproductive Organ and glands.</li> <li>4. Illustrate the spermatogenesis process.</li> </ol>



		5. Illustrate the male reproductive dysfunction
10	Female reproductive physiology-I.	<ol style="list-style-type: none"> <li>1. List the hormones of female reproduction and describe their functions.</li> <li>2. List the functions of the female sex hormones.</li> <li>3. Describe the pituitary ovary axis and the changes that occur in the ovaries leading up to and following ovulation during an ovarian cycle.</li> <li>4. Describe the monthly pattern of female sex hormones</li> <li>5. Illustrate the structural changes that occur in the endometrium during the menstrual cycle and explain how these changes are hormonally controlled</li> <li>6. Describe the compare normal sequence of events of puberty in the male and female.</li> </ol>
11	Female reproductive physiology-II/pregnancy.	<ol style="list-style-type: none"> <li>1. Describe the physiology of the menopause</li> <li>2. Describe the disorders of reproductive function.</li> <li>3. Describe, fertilization, transport of the fertilised oocyte and implantation of the blastocyst</li> <li>4. List requirements of implantation.</li> <li>5. Describe the formation and functions of placenta.</li> <li>7. Describe the response of the mother's body to pregnancy.</li> </ol>
12	Physiology of pregnancy and lactation..	<ol style="list-style-type: none"> <li>1. List factors currently thought to be involved in the initiation of parturition.</li> <li>2. Illustrate the hormonal requirements for mammary gland development and establishment of lactation.</li> <li>3. Describe the milk synthesis, regulation and composition.</li> <li>4. Describe the milk let down reflex</li> </ol>
<b>4. Microbiology Lectures:</b>		
1	Urinary tract infection.	<ol style="list-style-type: none"> <li>1. Understand the role of <i>E. coli</i> and other gram negative bacteria as well as gram positive organisms in UTI.</li> <li>2. The laboratory diagnosis and susceptibility of these microorganisms to antibiotics.</li> </ol>
2	Schistosomiasis.	<ol style="list-style-type: none"> <li>1. Describe <i>Schistosoma hematobium</i>, its pathogenesis, immune response, epidemiology, life cycle and clinical manifestations.</li> <li>2. Describe the laboratory diagnosis, treatment, prevention and control measures.</li> </ol>
3	Gonorrhoea.	<ol style="list-style-type: none"> <li>1. Understand the role of <i>Neisseria gonorrhoeae</i> as the commonest cause of sexually transmitted diseases.</li> <li>1. Describe the laboratory diagnosis, pathogenesis, susceptibility to antibiotics and epidemiology of <i>N. gonorrhoeae</i>.</li> </ol>
4	Trichomoniasis & Ectoparasites.	<ol style="list-style-type: none"> <li>1. Describe <i>Trichomonas vaginalis</i> and other ectoparasites transmitted by sexual means, their morphology, structural features and life cycle.</li> <li>2. Briefly describe clinical presentations and drugs used for treatment.</li> </ol>

5	Infections by <i>Chlamydia</i> , <i>Gardnerella</i> , and <i>Ureaplasma</i> .	<ol style="list-style-type: none"> <li>1. Describe the differences in structure, morphology and replication of these organisms from other bacteria or viruses.</li> <li>2. Describe the pathogenesis stressing the role of virulence factors and their implication on the clinical picture.</li> <li>3. Describe laboratory diagnosis and rationale behind treatment.</li> </ol>
6	Syphilis.	<ol style="list-style-type: none"> <li>1. Describe the morphology of <i>Treponema pallidum</i>, pathogenesis and laboratory diagnosis of the disease.</li> <li>2. Describe the various stages of the disease and appropriate treatment as well as preventive measures.</li> </ol>
7	HIV and AIDS.	<ol style="list-style-type: none"> <li>1. Describe the nature of the virus, life cycle and its role in the understanding of pathogenesis and immunopathology of AIDS with emphasis on its epidemiology.</li> <li>2. Describe the laboratory measures for screening, confirmation and follow up of treatment.</li> <li>3. Highlight the treatment regimens and preventive measures.</li> </ol>
8	Herpes, Cytomegalo Virus, Human Papilloma Virus and Moluscum contagiosum.	<ol style="list-style-type: none"> <li>1. Describe the structure, morphology, replication cycle and serotypes of each virus as well as epidemiology of the diseases they cause.</li> <li>2. Describe the pathogenesis and role of these viruses in cervical cancer.</li> <li>3. Describe the cell culture and serology for identification and highlight role of antiviral drugs in treatment.</li> </ol>
9	Candidiasis.	<ol style="list-style-type: none"> <li>1. Describe the morphology of <i>Candida albicans</i>, its pathogenesis and the association between the immune system and fungal infections.</li> <li>2. Briefly describe clinical presentation and the nature of the vaginal discharge.</li> <li>3. Describe laboratory methods of diagnosis as well as drugs used for treatment.</li> </ol>
<b>5. Pharmacology Lectures:</b>		
1	Diuretic agents-I.	<ol style="list-style-type: none"> <li>1. List major types of diuretics and relate them to their sites of action.</li> <li>2. List the major applications, toxicities, and the efficacy of carbonic anhydrase inhibitors (acetazolamide), osmotic diuretics thiazides, loop diuretics and potassium-sparing diuretics.</li> <li>3. Describe the drugs that reduce potassium loss during diuresis (spironolactone, triamterene, amiloride).</li> </ol>
2	Diuretic agents-II.	<ol style="list-style-type: none"> <li>1. Describe a therapy that will reduce calcium excretion in patients who have recurrent urinary stones.</li> <li>2. Discuss the principle of force diuresis.</li> <li>3. Describe the drugs for reducing urine volume in nephrogenic diabetes insipidus.</li> </ol>

3	Drugs and the Kidney.	<ol style="list-style-type: none"> <li>1. Understand the usefulness of altering urine pH by drugs.</li> <li>2. Discuss the mechanisms by which drugs and chemicals damage the kidney.</li> <li>3. Understand how to select and prescribe drugs for patients with renal impairment.</li> </ol>
4	Androgens and their antagonists.	<ol style="list-style-type: none"> <li>1. Classify and understand the nature and the mechanism of action of androgens and androgen antagonists.</li> <li>2. Discuss the therapeutic uses of androgens and their abuse potential.</li> </ol>
5	Female sex steroids and contraceptives agents.	<ol style="list-style-type: none"> <li>1. Describe the nature, mechanisms of actions and the adverse effects of female sex steroids and various female contraceptive agents.</li> <li>2. Indicate the therapeutic applications of antiestrogenic agents.</li> </ol>
6	Drugs acting on the uterus.	<ol style="list-style-type: none"> <li>1. Describe drugs (stimulants and relaxants) of the uterus and their therapeutic uses and adverse effects.</li> <li>1. Emphasize the effects of these drugs on uterine receptors in the nonpregnant and pregnant uterus at different stages.</li> </ol>
<b>6. Biochemistry Lectures:</b>		
1	Special aspects of renal metabolism. Role of kidney in acid base balance.	<ol style="list-style-type: none"> <li>1. Discuss amino acids absorption by the kidney and their disorders.</li> <li>2. Discuss creatinine metabolism.</li> <li>3. Understand the role of kidney in the regulation of hydrogen ions and bicarbonate buffer system.</li> </ol>
2	Inherited diseases-I.	<ol style="list-style-type: none"> <li>1. Understand the autosomal dominant inheritance.</li> <li>2. Understand the autosomal recessive inheritance.</li> </ol>
3	Inherited diseases-II.	<ol style="list-style-type: none"> <li>1. Understand the sex-linked inheritance.</li> <li>2. Understand the mitochondrial inheritance.</li> <li>3. Understand the multifactorial inheritance.</li> </ol>
<b>7. Public Health Lectures:</b>		
1	Epidemiology of sexually transmitted diseases (STD) I.	<ol style="list-style-type: none"> <li>1. Define STD</li> <li>2. Discuss the epidemiological importance of STD</li> <li>3. Describe the risk factors</li> <li>4. Classify the causative pathogens</li> <li>5. Methods of Transmission</li> <li>6. Describe different types of STD regarding clinical presentation and treatment</li> <li>7. Discuss strategies for control of STDs</li> </ol>
2	Epidemiology of sexually transmitted diseases (STD) I.	

## Teaching Methods and Assignments:

Development of ILOs is promoted through the following teaching and learning methods:

Integrated Modular System by:

- Lectures-Power Point presentations
- Departmental hand-outs
- animations, educational movies, illustrations
- Self-readings

## Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following assessment methods and requirements:

Grades can be based on the following:

Written Mid-Term exam at the end of the system: 40%

Practical exam at the end of the system: 20%

Final Exam: 40%

Total Points 100

Students who are absent in any exam are allowed to sit a make-up exam after presenting an approved sick leave or any accepted certificate of absence to the assistant of the faculty dean within 72 hours. The Course Coordinator will determine the time of the exam make-up session. Also, according to the Curriculum Committee and the University regulations, the student will be given a similar examination given to the other students. All examinations must be made up within one week of returning to class. Those absents who do not present a clue will be given a zero mark.

### Important Dates to Remember:

13/1/2019 The Start of the Course-Second Trimester, Third Year.

21/2/2019 Mid-Exam – Theory at the end of the course

21/2/2019 Practical Exam – at the end of the course

24/2/2019 Final Exam – Theory at the end of the Semester

## Course Policies:

### **A- Attendance policies:**

Professionalism is a major component of our medical curriculum. We believe students should conduct themselves appropriately in the various educational activities of the curriculum. This conduct includes coming to educational activities on-time. The faculty should also demonstrate professionalism, by starting and ending all scheduled educational activities on time and providing a course schedule with clearly explained course policies in the course syllabus. Any changes in the schedule should be given to the students in a timely manner.

Students respond politely to faculty, staff, and student colleagues, exemplifying their maturity and empathy. Students agree to abide by appropriate biosafety practices when required.

All students are expected to be quiet in their seats in the lecture theatre before the start of the lecture. Engagement in class discussions is encouraged without side chatting.

Cell phones are not allowed to be used during lectures and exams unless prior approval has been taken from the course instructor.

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

Professionalism is a major component of our medical curriculum. We believe students should conduct themselves appropriately in the various educational activities of the curriculum. This conduct includes coming to educational activities on-time. The faculty should also demonstrate professionalism, by starting and ending all scheduled educational activities on time and providing a course schedule with clearly explained course policies in the course syllabus. Any changes in the schedule should be given to the students in a timely manner.

Students will be accountable and personally responsible for attending all educational activities (lectures, labs, examinations, etc.). Unexcused absences reflect negatively on the goals and objectives of the medical curriculum and demonstrate unprofessional behavior by the respective student.

Students are expected to attend all scheduled activities. Students are expected to be on time. Being on time is defined as being ready to start at the assigned time. If a student has an emergency that prevents her/him from attending a scheduled activity, s/he has to notify the Course Coordinator and present an approved sick leave or any accepted certificate of absence by the faculty dean assistant.

Attendance is mandatory. Students are expected to attend all scheduled activities. Students are expected to be on time. Being on time is defined as being ready to start at the assigned time. If a student has an emergency that prevents her/him from attending a scheduled activity, s/he has to notify the Course Coordinator and present an approved sick leave or any accepted certificate of absence by the faculty dean assistant.

Students who exceed the 15% limit without a medical or emergency excuse acceptable to and approved by the Dean of the faculty shall not be allowed to take the final examination and shall receive a mark of zero for the course. If the excuse is approved by the Dean, the student shall be considered to have withdrawn from the course.

**C- Health and safety procedures:**

Students have to attend theoretical and practical lessons in health and safety procedures, this is achieved in microbiology lectures and labs. They are supposed to know how to react in cases of emergency accidents as needle pricks, chemical and potentially infected spills and other accidents in the laboratory. This is in addition to the different safety procedures such as the use of safety cabinets and disposal of different material, the use of the autoclave and eyewash and showers.

**D- Honesty policy regarding cheating, plagiarism, misbehavior:**

Cheating will not be tolerated. Each individual student is responsible for his behavior and is expected to maintain standards of academic honesty and professionalism. If any instance of academic dishonesty (cheating, plagiarism, etc.) is discovered by a coordinator or an instructor, it is his or her responsibility to take appropriate action. Such action may include giving a failing grade to the student in the course and/or referring the student for Judicial Procedures Office review and possible disciplinary action, which may include disciplinary suspension or dismissal from the College.

**E- Available university services that support achievement in the course:**

Professionalism is a major component of our medical curriculum. We believe students should conduct themselves appropriately in the various educational activities of the curriculum. This conduct includes coming to educational activities on time. The faculty should also demonstrate

professionalism, by starting and ending all scheduled educational activities on time and providing a course schedule with clearly explained course policies in the course syllabus. Any changes in the schedule should be given to the students in a timely manner.

Students respond politely to faculty, staff, and student colleagues, exemplifying their maturity and empathy. Students agree to abide by appropriate biosafety practices when required.

All students are expected to be quiet in their seats in the lecture theatre before the start of the lecture. Engagement in class discussions is encouraged without side chatting.

Cell phones are not allowed to be used during lectures and exams unless prior approval has been taken from the course instructor.

### Required equipment:

1. Lecture theatres with computers and data show.
2. Well-equipped laboratories.

### References:

#### Anatomy:

- Principles of Human Anatomy. By G.J. Tortora, latest edition.
- Clinical Anatomy for Medical Students: By R.S. Snell, latest edition.
- Basic Histology, By L. Carlos Junqueira, latest edition.
- Before we are born. By K.L. Morre and T.V.N. Persaud, latest edition.
- Grant Atlas of Anatomy, latest edition.

#### Physiology:

- Textbook of Medical Physiology. By Guyton and Hall, latest edition.
- Supplementary Departmental Handouts.

#### Biochemistry:

- Harper's Biochemistry. By Robert K. Murray and Co., latest edition.
- Supplementary Departmental Handouts.

#### Pharmacology:

- Lippincott's Illustrated Reviews: Pharmacology, latest edition.
- Supplementary Departmental Handouts.

#### Pathology:

- Basic Pathology. By Kumar, Cotran and Robbins, latest edition.
- Supplementary Departmental Handouts.

#### Microbiology:

- Medical Microbiology. An Introduction to Infectious Diseases. By Sherris, latest edition.
- Supplementary Departmental Handouts.

#### Public Health (Community Medicine):

- Supplementary Departmental Handouts.

## Additional information:

Timetable for the academic year 2018-2019									
1st Week	Day/Date	8.0 – 9.0	9.0–10.0	10.30-11.30	11.30-12.30	12.30-13.30	13.30-14.30	14.30-15.30	
	Sun 13/1	<b>Anat 1</b> General.Topogr aphic Anatomy of Urinary System	<b>Micro 1</b> Urinary tract infection	<b>Path 1</b> Congenital and cystic diseases of the kidney	<b>Path 2</b> Nephritic syndrome				
	Mon 14/1	<b>Anat 2</b> Gross anatomy of US, blood vessels, lymph drainage and innervation	<b>Path 3</b> Nephrotic syndrome	<b>Path 4</b> Nephrotic syndrome	<b>Anatomy Lab 1 A</b>		<b>Anatomy Lab 1 B</b>		
	Tue 15/1	<b>Anat 3</b> Histology of the Kidney	<b>Micro 2</b> Schistosomiasis -Schistosoma hematobium	<b>Anat 4</b> Gross anatomy & histology of ureter, urinary bladder&uretha		<b>Cl. Skills Group A</b>			
	Wed 16/1	<b>Anat 5</b> Embryology of the urinary system	<b>Phys 1</b> Glomerular filtration	<b>Phys 2</b> Reabsorption and secretion	<b>Anatomy Lab 1 C</b>		<b>Anatomy Lab 1 D</b>		
	Thu 17/1	<b>Anat 6</b> Living and radiologic anatomy	<b>Anat 7</b> Pelvic walls, perineum & pelvic diaphragm	<b>Phar 1</b> Diuretics	<b>Phar 2</b> Diuretics				

2nd Week	Day/Date	8.0 – 9.0	9.0–10.0	10.30-11.30	11.30-12.30	12.30-13.30	13.30-14.30	14.30-15.30	
	Sun 20/1	<b>Anat 8</b> Urogenital diaphragm in both males & females	<b>Micro 3</b> Gonorrhoea	<b>Micro 4</b> Trichomoniasis and Ectoparasites	Path L1 A+B		Path L1 C+D		
	Mon 21/1	<b>Path 5</b> Glomerular pathology in systemic disease	<b>Path 6</b> Diseases of blood vessels; Renal failure	<b>Phys 3</b> Regulation of the GF and renal-blood flow	Anatomy Lab 2 D		Anatomy Lab 2 C		
	Tue 22/1	<b>Anat 9</b> Anatomical components of the male reproductive system	<b>Anat 10</b> Histology of male reproductive system	<b>Phys 4</b> Parameter of renal active transport		Cl. Skills Group C			
	Wed 23/1	<b>Anat 11</b> Anatomical components of the female internal reproductive	<b>Path 7</b> Tubulo-interstitial nephritis; urinary tract infection	<b>Path 8</b> Renal tumors; Pathology of ureter and urinary bladder	Anatomy Lab 2 B		Anatomy Lab 2 A		
					Cl. Skills Group D				
	Thu 24/1	<b>Anat 12</b> Histology of the female reproductive system	<b>Anat 13</b> Developmental anatomy "Embryology" of the Rep Syst	<b>Phys 5</b> Renal clearance	<b>Phys 6</b> Renal concentration and dilution of urine				

	Day/Date	8.0 – 9.0	9.0–10.0	10.30-11.30	11.30-12.30	12.30-13.30	13.30-14.30	14.30-15.30
	Sun 27/1	<b>Micro 5</b>	<b>Micro 6</b>	<b>Path 9</b>				



3rd Week		Infections by Chlamydia, Gardnerella & Ureaplasma	Syphilis	Disease of the penis, scrotum and testis	Path L 2 C+D		Path L 2 A+B	
	Mon 28/1	CM 1 Sexually transmitted diseases	CM 2 Epidemiology of Sexually transmitted diseases	Path 10 Diseases of the prostate	Anatomy Lab 3 A		Anatomy Lab 3 B	
	Tue 29/1	Micro 7 HIV and AIDS	Micro 8 Herpes, CMV, HPV and Molluscum contagiosum	Bio 1 Special aspects of renal metabolism. Role of kidney in acid base balance		Cl. Skills Group A		
	Wed 30/1	Anat 14 Anatomical components of the female external reproductive system	Phys 7 Hormonal regulation of sex determination	Bio 2 Inherited diseases-I	Anatomy Lab 3 C		Anatomy Lab 3 D	
					Cl. Skills Group B			
	Thu 31/1	Phys 8 Male reproductive physiology	Phys 9 Female reproductive physiology	Bio 3 Inherited diseases-II and KFT				

4th Week	Day/Date	8.0 – 9.0	9.0–10.0	10.30-11.30	11.30-12.30	12.30-13.30	13.30-14.30	14.30-15.30
	Sun 3/2	<b>Micro 9</b> Candidiasis - Candida albicans	<b>Micro L 1 A+B</b> Urinalysis and Urine Culture			<b>Path L 3 A+B</b>		<b>Path L 3 C+D</b>
	Mon 4/2	<b>Path 11</b> Disease of the vulva and vagina	<b>Path 12</b> Diseases of the cervix	<b>Phys 10</b> Female reproductive physiologyIII/ Pregnancy	<b>Anatomy Lab 4 D</b>		<b>Anatomy Lab 4 C</b>	
	Tue 5/2			<b>Micro L 1 C+D</b> Urinalysis and Urine Culture		<b>Cl. Skills Group C</b>		
	Wed 6/2	<b>Path 13</b> Diseases of the breast-I	<b>Path 14</b> Diseases of the breast-II	<b>Phys 11</b> Pyberty/ Menopause & Andropause	<b>Anatomy Lab 4 B</b>		<b>Anatomy Lab 4 A</b>	
						<b>Cl. Skills Group D</b>		
Thu 7/2								

	Day/Date	8.0 – 9.0	9.0–10.0	10.30-11.30	11.30-12.30	12.30-13.30	13.30-14.30	14.30-15.30
	Sun 10/2	<b>Path 15</b> Disease of the uterus	<b>Path 16</b> Gestational disease	<b>Phar 3</b> Gonadotropines	<b>Phar 4</b> Gonadal Hormones &	<b>Micro L 2 A+B</b> Urethral discharge		

5th Week					Inhibitors		
	Mon 11/2	Path 17 Diseases of the ovaries & fallopian tubes	Phys 12 Female reproductive physiologyII/ Pregnancy	Micro L 2 C+D Urethral discharge			
	Tue 12/2		Phar 5 Gonadal Hormones & Inhibitors	Phar 6 Male Hormones & Contraception		Cl. Skills Lectures	
	Wed 13/2	Path L 4 C+D		Path L 4 A+B			
	Thu 14/2	Phar 7 Drugs acting on the Uterus	Phar 8 used in Neoplasms of the Urogenital System	Phar 9 Drugs used in Neoplasms of the Urogenital System			

<b>6th Week</b>	<b>Day/Date</b>	<b>8.0-9.0</b>	<b>9.0-10.0</b>	<b>10.30-11.30</b>	<b>11.30-12.30</b>	<b>12.30-13.30</b>	<b>13.30-14.30</b>	<b>14.30-16.0</b>
	<b>Sun 17/2</b>							
	<b>Mon 18/2</b>							
	<b>Tue 19/2</b>							
	<b>Wed 20/2</b>							
	<b>Thu 21/2/2019</b>	<b>Genito – Urinary Module Mid-Exam (Theory 40 marks and Practical 20 Marks)</b>						
	<b>Sun 24/2/2019</b>	<b>Genito – Urinary Module Final Exam (40 Marks)</b>						

### Summary of Lectures & Practicals:

<b>*Anatomy</b>	<b>(Dr. Raith Al Saffar)</b>	<b>14 L</b>	<b>4 P</b>
<b>*Physiology</b>	<b>(Dr. Shaymaa)</b>	<b>12 L</b>	<b>---</b>
<b>*Biochemistry</b>	<b>(Dr. Thanaa Hamed)</b>	<b>3 L</b>	<b>---</b>
<b>*Pathology</b>	<b>(Dr. Mohd Weswasy)</b>	<b>17 L</b>	<b>4 P</b>
<b>*Microbiology</b>	<b>(Dr. Sameer Naji)</b>	<b>9 L</b>	<b>2 P</b>
<b>*Pharmacology</b>	<b>(Dr. Sherif Shaltout)</b>	<b>9 L</b>	<b>---</b>
<b>*Community Medicine</b>	<b>(Dr. Iman Al kamel)</b>	<b>2 L</b>	<b>---</b>
		<b>67 L</b>	<b>10 P</b>