



مركز الاعتماد  
وَضمان الجودة  
ACCREDITATION & QUALITY ASSURANCE CENTER



**The University of Jordan**

**Accreditation & Quality Assurance Center**

## **Course Syllabus**

**Course Name:**  
**Genitourinary System**

1	Course title	Genitourinary System
2	Course number	500361
3	Credit hours (theory, practical)	6 credit hours
	Contact hours (theory, practical)	94 hours (84, 10)
4	Prerequisites/corequisites	
5	Program title	Doctor of Medicine MD
6	Program code	
7	Awarding institution	University of Jordan
8	Faculty	Faculty of Medicine
9	Department	
10	Level of course	bachelor
11	Year of study and semester (s)	3 <sup>rd</sup> year medical students
12	Final Qualification	MD degree
13	Other department (s) involved in teaching the course	Anatomy, Physiology, Pathology, Microbiology, Biochemistry, Pharmacology, Internal medicine, Obstetrics & gynecology.
14	Language of Instruction	English
15	Date of production/revision	2016

### 16. Course Coordinator:

Office numbers, office hours, phone numbers, and email addresses should be listed.

Dr. Nisreen Abu Shahin

Office number: Pathology Department, 3<sup>rd</sup> floor, Outpatient clinic building, Jordan University Hospital

Office hours: Sunday 11-12, Tuesday 11-12

Phone number: +962 6 5353666 - 2808

Email addresses: n.abushahin@ju.edu.jo

### 17. Other instructors:

*Office numbers, office hours, phone numbers, and email addresses should be listed.*

Name	Topic	Office number	Office hours	Phone number	Email
Faraj Bustami	Anatomy	118	2-4 Th	23429	fbustami@ju.edu.jo
Salim Khraisha	Physiology	112	1-3 S, T	23474	salimkh@ju.edu.jo
Yanal shafagoj	physiology	113	1-3, S,T	23475	yanals@ju.edu.jo
Hassan AbuRaghe	Microbiology	212	10-12 daily	23495	har1947@ju.edu.jo
Ashraf Khasawneh	Microbiology	Adjunct		0799157366	ashrafkh@hu.edu.jo
Sameer Naji	Microbiology	Adjunct		0799768949	sameer@hu.edu.jo
Suhail zmeili	Pharmacology	307	11-12 T	23456	suheilzmeili@ju.edu.jo
Ayman Qatawneh	Clinical	JUH	12-1 S, T	23453	aymenfida@yahoo.com

**18. Course Description:**

*As stated in the approved study plan.*

This course covers the study of the uro-genital organ systems, which include the kidneys, lower urinary tract, male genital system, and female genital systems. The course encompasses anatomy and histology of the mentioned organs; the physiology of fluid and electrolyte balance, as well as the reproductive functions of the male and female genital organs; therapeutics of renal filtration and hormonal regulation and therapeutics. Moreover, the pathology section is concerned with the study of the diseases that affect those organs including disturbances of glomerular function, tubular disorders, various types of infections and neoplastic disorders that affect each of the above mentioned organs. The course also covers the clinical aspects of nephrology, urology, and obstetrics and gynecology; including major signs and symptoms, history taking and physical examination. The contact hours and course contents are summarized in the table below:

<b>Topic</b>	<b>Hours</b>
Anatomy and histology	22
Physiology	14
Pathology	28
Microbiology	10
Pharmacology	7
Epidemiology	2
Clinical Aspects	5
<b>Total</b>	<b>94</b>

**19. Course aims and outcomes:**

**A- Aims:**

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

- 1- identify the external and internal gross anatomical and micro-anatomical features of each organ of the urinary system
- 2- describe the arterial supply, venous drainage, lymphatic drainage and nerve supply of each organ
- 3- identify the external and internal gross anatomical features of each organ of the Male and female Reproductive Systems and their blood and nerve supply.
- 4- describe the functional anatomy of the kidney. Role of the renal system in homeostasis.
- 5- Describe Glomerular filtration and its relations in term of (rate, compositions, dynamics, control, and measurements etc.
- 6- Define tubular re-absorption and secretion (The concept of clearance by the kidney and its interpretations). Understand tubular re-absorption and secretion for  $\text{Na}^+$ ,  $\text{K}^+$ , and  $\text{H}^+$ .
- 7- describe how germ cells (Spermatozoa and oocyte) are formed and the regulation of their production.
- 8- mention variation in sex hormones formation(at different age periods), regulation, metabolism and specific function of each one.
- 9- describe menstrual cyclic and its disorders.
- 10- mention the optimum period of fertility, early pregnancy and implantation
- 11- explain the concept of positive and negative feedback mechanism and hypothalamic pituitary gonadal axis.
- 12- describe the hormonal changes of pregnancy with emphasis on early stage.
- 13- describe breast development, milk production and secretion
- 14- describe Puberty, menopause / andropause, meaning of terms and endocrinology of these stages.
- 15- mention the pathologic basis and clinical manifestations of diseases affecting the female and male genital tracts and mammary glands.
- 16- describe the pathologic basis and clinical manifestations of renal diseases and collecting system.
- 17- describe the major causative agents, transmission and antimicrobial treatment of urinary tract infection and sexually transmitted diseases in males and females.
- 18- mention laboratory methods used in isolation and identification of causative agents leading to urinary tract infection and sexually transmitted diseases.
- 19- list risk factors of sexually transmitted diseases, their prevalence, control and prevention.
- 20- describe the pathogenesis and manifestations of the immunological diseases affecting the urogenital system of the males and females.
- 21- list drugs used for the treatment of urinary and genital tract disorders, their pharmacological actions, their mechanism of action, their clinical uses, their major side effects and drug-drug interactions.
- 22- mention major clinical manifestations of urological, renal and genital diseases
- 23- take proper history and conduct comprehensive physical examination of the urogenital system in males and females

**A- Aim****B- Inte**

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

1-6 Gross Anatomy of the Urinary System (Kidneys, Urinary tract, bladder)

7-9 Gross Anatomy of Male Reproductive System (Testis, Epididymis, Vas deferens and Spermatic Cord, Seminal Vesicles, Prostate and Penis)

10-12 Gross Anatomy of Female Reproductive System (Uterus, Uterine tubes, Ovaries, Vagina, and Mammary gland)

13-15 Histology of urinary tract: kidney, urinary system

16-18 Histology of Male Reproductive System

19-22 Histology of Female Reproductive System

23- Understand General physiological concepts of Renal Physiology

24-Assessment of renal function. Glomerular filtration Rate (Tubular load: Measurements: Dynamics: Control). Regulation of Renal Blood Flow

25-Tubular function I: General concepts: The micropuncture technique.

Different forms of transport. Clearance (definition, usages & interpretations).

26- Tubular function II. Reabsorption and secretion. Absorptive capabilities of different tubule segments (Transport maximum ( $T_m$ ) and Glucose Titration curve).

27- Tubular function III. Reabsorption and secretion of Na <sup>+</sup> , K <sup>+</sup> & H <sup>+</sup> . Concentration and dilution of urine. The Countercurrent Mechanism. The minimum obligatory urine output. Why we need to make diluted or concentrated urine. Understand and describe the renal handling of urea	
28-Specific Gravity versus osmolality.	
29- The diuretics and their mechanism of action	
30- Acid base balance I. Acidosis. Alkalosis. Defense Against Changes in hydrogen ion concentration [H <sup>+</sup> ]. (buffers: Lungs: Kidneys). Volatile acid and non-volatile acid. Henderson-Hasselbalch Equation.	
31- Acid base balance II. Renal Control of Acid-Base Balance The three major goals of the kidney in Acid-Base Balance	
32- Acid-Base Imbalance III. Acidosis Vs Alkalosis. Metabolic Vs Respiratory. Compensation	
33- Physiology of the reproductive system Spermatogenesis: Hormonal factors regulating initiation, maintenance of spermatogenesis; Function of sex organs	
34-Androgens. Regulation of secretion. Mechanism of action, metabolism. Chronological pattern of secretion	
35- Oogenesis, Follicular recruitment and development. Monthly follicular and hormonal changes and subsequent endometrial changes.	
36- Ovulation, fertility period, Corpus luteum (CL) formation, life span endocrine function, regression and consequences. Changes in the female following ovulation. CL of pregnancy Extended function of CL	
37- Female hormones, regulation of secretion and different functions. Hypothalamic pituitary gonadal (testis and ovaries) regulation. Positive and negative feedback; Other hormones as prolactin.	
38- Early stage of embryo development and implantation in the maternal endometrium. Pregnancy hormones (hCG, Somatomammotropin) secretion and importance of such hormones). Materno-feto-placental hormone secretion	
39- Breast development. Hormonal interaction. Milk synthesis and secretion. Milk letdown reflex	
40- Puberty (male and female), menopause, andropause physiological changes. Physiological aspect of infertility.	
41- Pathology of the female genital system: Vulvitis; Non -neoplastic epithelial disorders, (Vulvar dystrophies) -Lichen sclerosus -squamous hyperplasia	
42- Tumors of vulva: Condylomas; Carcinoma of the vulva; Intraepithelial neoplasia; Extramammary paget's disease; Melanoma of the vulva	
43- Vaginal pathology: Vaginitis; Vaginal intraepithelial neoplasia and squamous cell carcinoma; Sarcoma Botryoides	
44- Pathology of the cervix: Cervicitis; Tumors of the cervix; Endocervical polyp -cervical intraepithelial neoplasia (IN), squamous intraepithelial lesion (SIL) -Invasive carcinoma of the cervix	
45- Endometrial pathology: Endometritis; Adenomyosis; Endometriosis; Dysfunctional uterine bleeding ; Endometrial hyperplasia	
46- Tumors of the endometrium and myometrium: Endometrial polyps; Leiomyoma and leiomyosarcoma; Endometrial carcinoma	
47- ovarian pathology: follicle and luteal cysts; polycystic ovaries; tumors of the ovary	
48- Surface epithelio-stromal tumors: Serous tumors; Mucinous tumors; Endometrioid tumors; Cystadenofibroma; Benner tumor	
49- Diseases of pregnancy: Placental inflammations and infections; Ectopic pregnancy	
50- Gestational trophoblastic disease: Hydatidiform mole: Complete and partial; Invasive mole; Chorioarcoma	
51- Breast diseases (non neoplastic)	
52- Breast diseases (neoplastic)	
53- Pathology of the kidney and its collecting system: Clinical manifestations of renal diseases	
54- Glomerular disease: Pathogenesis of glomerular diseases; Circulating immune complex nephritis; Other mechanisms of glomerular injury	
55- The nephrotic syndromes and disorders: Minimal change disease; Focal segmental glomerulosclerosis; Membranoproliferative glomerulonephritis	

56- The nephritic syndrome: Acute proliferative glomerulonephritis; Rapidly progressive glomerulonephritis (Crescentic ); IgA nephropathy (Berger's disease )
57- Hereditary nephritis; Chronic glomerulonephritis
58- Tubulointerstitial nephritis: Acute pyelonephritis; Chronic pyelonephritis and reflux nephropathy
59- Drug - induced interstitial nephritis; Acute tubular necrosis
60- blood vessel disorders: Benign nephrosclerosis; Malignant hypertension and malignant nephrosclerosis; Thrombotic microangiopathies
61- Cystic diseases of kidney: Simple cysts; Autosomal dominant (adult) polycystic kidney disease; Autosomal recessive (Childhood ) polycystic kidney disease
62- Urinary outflow obstruction: Renal stones; Hydronephrosis
63- Renal tumors: Renal cell carcinoma; Wilms' tumor
64- Tumors of the urinary bladder and collecting system
65- THE MALE GENITAL SYSTEM: Penis Malformations; Inflammatory lesions; Neoplasms
66- 67Scrotum, testis, and epididymis: Cryptorchidism and testicular atrophy; Inflammatory lesions; Testicular Neoplasms
68- Prostate: Prostatitis; Nodular hyperplasia of the prostate; Carcinoma of the prostate
69- Sexually transmitted diseases: Syphilis; Gonorrhea; Gonococcal Urethritis and Cervicitis; Chancroid ( soft chancre ); Granuloma inguinale; Lymphogranuloma venereum; Trichomoniasis; Genital herpes simplex; Human papillomavirus infection
70- Microbiology of the genital system: Enterobacteriaceae, Pseudomonas , Enterococcus, Staphylococcus species , Strep. Group B
71- N. gonorrhoea, Mycoplasma, Ureaplasma, Chlamydia
72- Mycobacteria, Treponema species, Haemophilus ducrei
73- Candida, Trichomonas, Schistosomiasis,
74- Herpes viruses, Papilloma viruses, HIV.
75- Hepatitis, Mumps virus
76- Immunology of the genital system: Mucosal immunity
77- Placental immunology
78- Immunity in pregnancy, immunology of infertility and abortion
79-80 Immune renal diseases
81-82 Epidemiology of sexually transmitted diseases
83-85 Renal pharmacology: Diuretics; Antidiuretic hormone
86-89 Pharmacology of the reproductive system Drugs acting on the uterus; Pharmacology of GnRH, LH, FSH in males and females; Pharmacology of androgens and antiandrogens; Pharmacology of estrogens, progestins and oral contraceptive pills
90-94 Clinical aspects of the genitourinary system: 90-91 Urology: Introduction to history, physical examination and clinical manifestations of urological disorders. 92-93 Nephrology: Introduction to history, physical examination and clinical manifestations of renal disorders 94- Gynecology: Introduction to history, physical examination and clinical manifestations of gynecological disorders

## 20. Topic Outline and Schedule:

Topic	Week	Instructor	Achieved ILOs	Evaluation Methods	Reference
Anatomy and histology	Weeks 1-3	Dr. Faraj Bustami	1-22	Written & practical exam	1
Physiology	Weeks 1,2 and 5,6	Drs, Yanal shafagoj, Salem khresha	23-32; 33-40	Written & practical exam	2
Pathology	Weeks 3-7	Dr. Nisreen Abu	41-69	Written &	3

		shahin		practical exam	
Microbiology	Weeks 1-4	Dr. Asem Shehabi	70-80	Written & practical exam	6
Pharmacology		Dr. Suhil Zmeili	83-89	Written exam	4
Epidemiology	Week 4	Community medicine	81-82	Written exam	5
Clinical Aspects	Week 5,7	Dr. Ayamn Qatawneh; Nephrology	90-94	Written exam	

### 21. Teaching Methods and Assignments:

Development of ILOs is promoted through the following <u>teaching and learning methods</u> :	Develop
Lectures Colored images Light microscopy	

### 22. Evaluation Methods and Course Requirements:

Opportunities to demonstrate achievement of the ILOs are provided through the following <u>assessment methods and requirements</u> :
Written (70%) & practical (20%) exams

### 23. Course Policies:

<p>A- Attendance policies: is granted 10 marks at the end of the course.</p> <p>B- Absences from exams and handing in assignments on time: Make up exams are held for students who did not attend regular exams if they present acceptable reasons to relevant committee.</p> <p>C- Health and safety procedures: we call the student emergency clinic or civil defense office for emergency cases</p> <p>D- Honesty policy regarding cheating, plagiarism, misbehavior: Students who do misconducts such as cheating, plagiarism, misbehavior are reported to the dean office for an interrogation committee</p>	
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E- Grading policy:

40% final exam, 30% midterm exam, 20% practical exam, 10% attendance

F- Available university services that support achievement in the course:

Faculty members website uploaded course material, power point exhibits, gross specimens, color pictures.

#### 24. Required equipment:

Data show, laboratories facilities.

#### 25. References:

A- Required book (s), assigned reading and audio-visuals:

B- Recommended books, materials, and media:

1. Snell, R.: Clinical Anatomy, 7<sup>th</sup> edition, 2002  
Lippincott, Williams & Wilkins.
2. Guyton & Hall: Textbook of Medical physiology, 10<sup>th</sup> edition  
Saunders, 2002.
3. Kumar, Cotran, Robins: Basic Pathology 9<sup>th</sup> edition, 2013 Saunders.
4. Craig, CR. & Stitzel, RE: Modern Pharmacology  
with clinical applications 6<sup>th</sup> edition 2004
5. Devlin K: Textbook of Biochemistry with clinical applications 5<sup>th</sup> edition  
Willey liss
6. JAWETZ, Melnick & Adelberg: Medical Microbiology. 5<sup>th</sup> edition, LANGE

#### 26. Additional information:

Name of Course Coordinator: -Dr. Nisreen Abu Shahin. Signature: ----- Date: 17/2/2016.

Head of curriculum committee/Department: ----- Signature: -----

Head of Department: ----- Signature: -----

Head of curriculum committee/Faculty: ----- Signature: -----

Dean: ----- -Signature: -----



Copy to:

Head of Department

Assistant Dean for Quality Assurance

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