The Hashemite University

الجامعـــــة الهاشميـــــة

Deanship of Academic Development and International Outreach

عمادة التطوير الأكاديمي والتواصل الدولي

Syllabus: Genitourinary System (0111501304)

Second Semester 2025/2026

COURSE INFORMATION	
Course Name: Genitourinary System **Semester:** Second 2025/2026 **Department:** Microbiology, Pathology and forensic medicine **Faculty:** Medicine	**Course Code:** 0111501304 **Section:** **Core Curriculum**:
Day(s) and Time(s): All week: TBD **Classroom:** TBD	**Credit Hours:** 7 **Prerequisites**: None

COURSE DESCRIPTION
The Genitourinary System is an intensive multidisciplinary 7 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 practical sessions in each system including anatomy, physiology, pathology, microbiology, pharmacology, biochemistry, and community medicine.

DELIVERY METHODS
The course will be delivered through a combination of active learning strategies. These will include: ● PowerPoint lectures and active classroom based discussion ● Relevant films and documentaries ● Video lectures ● E-learning resources: e-reading assignments and practice quizzes through Model and Microsoft Team

FACULTY INFORMATION	
Name	**Ali Al Khader**
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Office Hours:	**Sunday** 11:30 -13:00 **Tuesday** 11:30 -13:00

REFERENCES AND LEARNING RESOURCES	
Author	**Title**
Anatomy:	
G.J. Tortora	Principles of Human Anatomy latest edition.
R. S. Snell, latest edition.	Clinical Anatomy for Medical Students, latest edition
Frank H. Netter or Grants	Atlas of Human Anatomy
Moree's Essential Clinical Anatomy	Clinical anatomy for medical students
L. Carlos Junqueira	Basic Histology. latest edition
K. L. Morre & T. V. N. Persaud	Before we are born. latest edition
Physiology:	
Recommended Text Guyton & Hall, latest edition.	Guyton and Hall Textbook of Medical Physiology (Guyton Physiology) 15th Edition by John E. Hall PhD (Author), Michael E. Hall MD MSc. Publication Date: 11 Jul 2025 Copyright © 2021 by Elsevier, Inc
Suggested texts	1.Costanzo Physiology, 7th Edition, Author : By Linda S. Costanzo, PhD: 9780323793339 ISBN Copyright © 2021 by Elsevier, Inc. 2.Ganong's Review of Medical Physiology, Twenty Sixth Edition, 26th Edition By Kim E. Barrett, Susan M. Barman, Jason Yuan and Heddwen L. Brooks ISBN10: 1260122417 | ISBN13: 9781260122411 © 2019 Published December 31, 2018 Copyright © 2026 McGraw Hill

Biochemistry: Robert K. Murray & Co.	Harper's Biochemistry Harper's Biochemistry, latest edition
Pathology: Kumar, et al.	Robbins & Kumar Basic Pathology, latest edition
Microbiology: Sheries	Medical Microbiology. An Introduction to Infectious Diseases. latest edition.
Pharmacology: Lippincott's	Illustrated Reviews Pharmacology, 8th edition.
Public Health (Community Medicine)	Supplementary Departmental Handouts

STUDENT LEARNING OUTCOMES MATRIX*

Program Learning Outcomes	Course Objectives	Course Student Learning Outcomes	Assessment Method
PHAR-LO-1: 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 GenitoUrinary System. 4. Understand various functions of the Genito-Urinary System.	1. Knowledge and understanding: By the end of the course, the student will be able to	1. Overview of parts & functions of urinary system. 2. Understand the location, shape and surfaces of kidney. 3. Describe the coverings of kidney its significance, and the relations of both kidneys. 4. Understand the gross structure of a coronal section of the kidney. 5. describe the blood supply, nerves and lymphatic drainage of Kidney 6. Define Prerenal, Renal, & Post Renal Azotemia & Uremia. 7. Defined the 8 Major Syndromes of renal diseases, according to 8. their clinical manifestations	● Exams ● "On-line' reading assignments ● Self-tests

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.y used drugs in clinical practice.		9. Describe the Normal Glomerulus (G). 10. Classify Glomerular Diseases: [Primary, Secondary to Systemic 11. Diseases, & Hereditary Disorders]. 12. Describe the Pathogenesis, Light, Electron,& 13. Immunofluorescence Microscopic Changes & Fate of: 14. Glomerulonephritis (GN) Caused by Circulating Immune Complexes, 15. (II) Anti-Glomerular Basement Membrane Antibody GN, & 16. (III) Antibodies reacting in situ with previously "planted" nonglomerular Ags 17. . List kidney functions 18. Describe the functions of the nephron and the major steps of urine formation 19. Explain the process of renal blood flow and glomerular filtration. 20. Illustrate the glomerular membrane, and the dynamics of glomerular filtration. 21. List the factors that affect glomerular filtration rate (GFR). Describe tubular functions (Reabsorption and secretion) of various filtered substances 22. Describe the mechanism of urine concentration by the nephrone 23. Describe the role of the kidney in acid base homeostasis 24. . Understand the role of E. coli and other gram negative 25. bacteria as well as gram positive organisms in UTI. 26. 2. The laboratory diagnosis and susceptability of these 27. microorganisms to antibiotics. 28. Define STD 29. Discuss the epidemiological importance of STD 30. Classify the causative pathogens Methods of Transmission	

		31. Describe different types of STD regarding clinical presentation and treatment 32. Discuss strategies for control of STD	
	2. Practical skills: By the end of the course, the student will be able to	1. Perform with precision different techniques of diagnosis urogenital disease 2. Select the proper drug(s) for the proper common clinical situations in proper dosage (bacterial infections, STIs)	● Exams ● "On-line' reading assignments ● Self-tests
	3. Professional Attitude and Behavioural skills: By the end of the course, the student will be able to	1. Demonstrate respect and work effectively as a member or a leader of an interdisciplinary team. 2. Establish good relations with colleagues to share all types of inter-professional activities including shared learning. 3. explain clearly therapeutic plan for different clinical situations specified in	● Exams ● "On-line' reading assignments Self-tests
	4. Communication skills: By the end of the course, the student will be able to	1. Communicate clearly, sensitively, and effectively with colleagues from a variety of health and social care professions. 2. Establish good relations with other health care professionals regardless their degrees or rank. 3. Communicate effectively with individuals regardless of their social, cultural, ethnic backgrounds, or their disabilities. 4. Cope up with difficult situations as breaking news. 5. Respect superiors, colleagues, and all members of the health profession.	● Exams ● "On-line' reading assignments ● Self-tests
	6. General and transferable skills : By the end of the course, the student will be able to	1. Establish life- long self- learning required for continuous professional development. 2. Use the sources of biomedical information and communication technology to remain current with advances in knowledge and practice. 3. Retrieve, manage, and manipulate information, including electronic means. 4. Present information clearly in written, electronic and oral forms. 5. Establish effective interpersonal relationship to communicate ideas and arguments. 6. Work effectively as a member or a leader of an interdisciplinary team.	● Exams ● "On-line' reading assignments ● Self-tests

ACADEMIC SUPPORT

It is The Hashemite University policy to provide educational opportunities that ensure fair, appropriate and reasonable accommodation to students who have disabilities that may affect their ability to participate in course activities or meet course requirements. Students with disabilities are encouraged to contact their Instructor to ensure that their individual needs are met. The University through its Special Need section will exert all efforts to accommodate for individual's needs.

Special Needs Section: Student Services and Care Unit
Tel: 053903333ext. 4132 / 4583 / 5023
Location: Deanship of Students Affairs
Email: stydent@hu.edu.jo

COURSE REGULATIONS

Participation

Class participation and attendance are important elements of every student's learning experience at The Hashemite University, and the student is expected to attend all classes. A student should not miss more than 15% of the classes during a semester. *Those exceeding this limit of 15% will receive a failing grade regardless of their performance*. It is a student's responsibility to monitor the frequency of their own absences. **Attendance record begins on the first day of class irrespective of the period allotted to drop/add and late registration. It is a student's responsibility to sign-in; failure to do so will result in a non-attendance being recorded.**

In exceptional cases, the student, with the instructor's prior permission, could be exempted from attending a class provided that the number of such occasions does not exceed the limit allowed by the University. The instructor will determine the acceptability of an absence for being absent. A student who misses more than 25% of classes and has a valid excuse for being absent will be allowed to withdraw from the course.

Plagiarism

Plagiarism is considered a serious academic offence and can result in your work losing marks or being failed. HU expects its students to adopt and abide by the highest standards of conduct in their interaction with their professors, peers, and the wider University community. As such, a student is expected not to engage in behaviours that compromise his/her own integrity as well as that of the Hashemite University.

Plagiarism includes the following examples and it applies to all student assignments or submitted work:

- **Use of the work, ideas, images or words of someone else without his/her permission or reference to them.**
- **Use of someone else's wording, name, phrase, sentence, paragraph or essay without using quotation marks.**
- **Misrepresentation of the sources that were used.**

<u>The instructor has the right to fail the coursework or deduct marks where plagiarism is detected</u>

Late or Missed Assignments

In all cases of assessment, students who fails to attend an exam on the scheduled date without prior permission, and are unable to provide a medical note, will automatically receive a fail grade for this part of the assessment.

- In cases where a student misses an assessment on account of a medical reason or with prior permission; in line with University regulations an incomplete grade for the specific assessment will be awarded and an alternative assessment can be arranged.

Student Complaints Policy

Students at The Hashemite University have the right to pursue complaints related to faculty, staff, and other students. The nature of the complaints may be either academic or non-academic. For more information about the policy and processes related to this policy, you may refer to the students' handbook.

COURSE ASSESSMENT

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

Grading Policy:

Grades can be based on the following:

- First in-course exam (Theory) = 40%.
- Second in-course exam (Practical) = 20%.
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- Final end-course exam (Theory) = 40%.
- Total Points 100

- All exams are in integrated form.

**Dates of the exams:* TBD

Grades are not negotiable and are awarded according to the following criteria*:

Letter Grade	Description	Grade Points
A+	Excellent	4.00
A		3.75
A-		3.50
B+	Very Good	3.25
B		3.00
B-		2.75
C+	Good	2.50
C		2.25
C-		2.00
D+	Pass	1.75
D	Pass	1.50
F	Fail	0.00
I	Incomplete	-

WEEKLY LECTURE SCHEDULE AND CONTENT DISTRIBUTION

"Lecture hours and weeks are approximate and may change as needed"

-Kidney: Homeostasis and Disease

1. General topographic anatomy of the urinary system (Anatomy 1)

2. Histology of the kidney (anatomy 2)

3, 4. Renal hemodynamics and glomerular filtration (physiology 1 and 2)

5. Urea, Creatinine metabolism (biochemistry 1)

6. Gross anatomy and histology of the ureter, urinary bladder and urethra (anatomy 3)
7.8 Tubular functions: Reabsorption and secretion. (physiology 3 and 4)
9. Gross anatomy of the urinary system, blood vessels, lymphatic drainage and innervation (anatomy 4)
10, 11, 12, 13. Glomerular diseases (pathology 1&2&3&4)
14. Renal clearance (physiology 5)
15, Urine components (biochemistry 2)
16. Concentration and dilution of urine (physiology 6)
17, 18. Diuretics (Pharmacology 1 and 2)
19. Renal Acid-base balance regulation (physiology 7)
20. Vascular diseases of the kidney, Cystic diseases of the kidney, nephrolithiasis and hydronephrosis (pathology 5)
21. Upper urinary tract infections (microbiology 1)
22. Lower urinary tract infections (microbiology 2)
23. Treatment of urinary tract infections (pharmacology 3)
24. Embryology of urinary system (anatomy 5)
25. Renal cell and bladder carcinoma (pathology 6)

Men's Health
26. Anatomical components of the male reproductive system (Anatomy 6)
27. Histology of the male reproductive system (anatomy 7)
28, 29. Male reproductive physiology (physiology 8 and 9)
30. Diseases of the prostate (pathology 7)
31, 32. Diseases of the penis, testis and epididymis 1 (pathology 8&9)
33. Androgen therapy (pharmacology 4)

-Women's Health
34, 35 Anatomical components of the female reproductive system (anatomy 8 and 9)
36. Histology of the female reproductive system (anatomy 10)
37, 38. Female reproductive physiology (physiology 10 and 11)
39. The female genital system diseases of the vulva, vagina, & cervix (pathology 10)
40. Carcinoma of the cervix (pathology 11)
41. Diseases of the uterus (pathology 12)
42. Tumors of the ovary (pathology13)
43. Candidiasis (Microbiology 3)
44, 45 Gestational physiology and maternal changes in pregnancy (physiology 12 and 13)
46. Diseases of pregnancy (pathology 14)
47. Diseases of the breast (pathology 15)
48. Breast cancer (pathology 16)
49, 50. Female sex steroids and contraceptive agents (pharmacology 5 and 6)
51. Uterine acting drugs (pharmacology 7)
-52. Embryology of male and female reproductive systems (anatomy 11)
-Radiological Anatomy
53, 54, Radiological anatomy of urinary tract (anatomy 12, 13)
Embryology of male and female reproductive systems

-Sexually Transmitted Infections (STIs)
55, 56. Epidemiology of STIs (2 lectures)
57. Gonorrhea (Microbiology 4)
58. Trichomoniasis and ectoparasites (Microbiology 5)
59. Infections by chlamydia, gardnerella and ureaplasma (Microbiology 6)

60. Syphilis (Microbiology 7)
61. Herpes, cytomegalovirus, human (Microbiology 8)
Papilloma virus and moluscum contagiosum
Clinical lecture(s)

- ANATOMY
- General topographic anatomy of the urinary system (1 lecture)
- Histology of the kidney (1 lecture)
- Gross anatomy and histology of the ureter, urinary bladder and urethra (1 lecture)
- Gross anatomy of the urinary system, blood vessels, lymphatic drainage and innervation (2 lecture)
- Embryology of urinary system (1 lecture)
- Pelvis, perineum and relations (2 lectures)
- Anatomical components of the female reproductive system (1 lecture)
- Histology of the female reproductive system (1 lecture)
- Anatomical components of the male reproductive system (1 lecture)
- Histology of the male reproductive system (1 lecture)
- Embryology of male and female reproductive systems (1 lecture)

TOTAL: 13 lectures

PHYSIOLOGY

1. Renal hemodynamics and glomerular filtration (2 lecture)
2. Renal clearance (1 lecture)
3. Tubular functions: Reabsorption and secretion. (2 lecture)
4. Concentration and dilution of urine (1 lecture)
5. Renal acid-base balance regulation (1 lecture)
6. Female reproductive physiology (2 lecture)
7. Gestational physiology and maternal changes in pregnancy (2 lectures)
8. Male reproductive physiology (2 lecture)

TOTAL: 13 lectures

PATHOLOGY

1. Glomerular diseases (3-4 lectures)
2. Vascular diseases of the kidney, Cystic diseases of the kidney, nephrolithiasis and hydronephrosis (1-2 lecture)
3. Renal cell and bladder carcinoma (1 lecture)
4. The female genital system diseases of the vulva, vagina, & cervix (1 lecture)
5. Carcinoma of the cervix (1 lecture)
6. Diseases of the uterus (1 lecture)
7. Tumors of the ovary (1 lecture)

8. Diseases of pregnancy (1 lectures)
9. Diseases of the breast (1 lectures)
10. Breast cancer (1 lectures)
11. Diseases of the penis, testis and epididymis (2 lectures)
12. Diseases of the prostate (1 lecture)

TOTAL: 16 Lectures

MICROBIOLOGY

1. Upper urinary tract infections (1 lecture)
2. Lower urinary tract infections (1 lecture)
3. Candidiasis (1 lecture)
4. Gonorrhea (1 lectures)
5. Trichomoniasis and ectoparasites (1 lectures)
6. Infections by chlamydia, gardnerella and ureaplasma (1 lectures)
7. Syphilis (1 lectures)
8. Viral sexual transmitted infection (1 lectures)

TOTAL: 8 Lectures

PHARMACOLOGY

1. Diuretics (2 lectures)
2. Treatment of urinary tract infections (1 lecture)
3. Female sex steroids and contraceptive agents (2 lecture)
4. Uterine acting drugs (1 lecture)
5. Androgen therapy (1 lecture)

TOTAL: 7 Lectures

EPIDEMIOLOGY

1. Epidemiology of STIs (2 lectures)

TOTAL: 2 Lectures

Biochemistry

1. Urea and creatinine metabolism/ regulation of hydrogen ions and bicarbonate buffer system
2. Normal and abnormal composition of urine

TOTAL: 2 Lectures

Clinical lecture(s)

#	Lecture Title	Lecture Objectives
1	Introductory case presentation for the urinary part of the system (Multidisciplinary)	1. Understand the general outline of the urinary system. 2. Be familiar with the modalities of teaching throughout the course. 3. Acknowledge the important relation between normal and abnormal structure and function. 4. Appreciate the importance of basic sciences in clinical application.
2	Anatomy 01 Anatomy & Histology of kidneys	1. Describe the shape, function, location, fascial sheaths, gross feature, and relations of kidneys. 2. Understand the gross structure of a sagittal section of kidney. 3. Discuss the blood & nerve supply, and lymphatic drainage of kidneys. 4. Describe the microscopic appearance of kidneys.
3	Anatomy 02 Anatomy and Histology of ureters, Urinary bladder, and urethra	1. Understand the extension, relations, blood &nerve supply, and lymphatic drainage of ureters. 2. Outline the three constrictions of the ureters. 3. Describe the shape, location, surfaces, relations, blood & nerve supply, and lymphatic drainage of urinary bladder. 4. Understand the Intraperitoneal and extraperitoneal rupture of urinary bladder. 5. Describe the gross anatomy of male and female urethra. 6. Describe the histology of the ureter, urinary bladder and urethra.
4	Anatomy 03 Embryology of Urinary System	1. Understand the normal development of kidneys, ureters, urinary bladder, and urethra. 2. Understand congenital anomalies of the urinary system
5	Anatomy 04 Radiology of urinary system and pelvis	1. Understand the standard anteroposterior radiograph, intravenous and retrograde pyelography. 2. Describe the sex differences of the pelvis. 3. Describe the pelvic inlet and outlet. 4. Understand the greater and lesser pelvis. 5. Describe the muscles of the lesser pelvis.
6	Anatomy 05 Anatomy of perineum	1. Understand the gross anatomy of perineum. 2. Describe the urogenital and anal triangle. 3. Understand the urogenital diaphragm, superficial & deep perineal pouches and their contents in both sexes.
7	Anatomy 06 Anatomy of the male reproductive system	1. Describe the gross anatomy of scrotum, testes, intratesticular ducts, excretory genital ducts, penis, and

		genital glands (prostate, seminal vesicles and bulbourethral glands). 2. Study the spermatic cord, its covering sheaths, and its contents.
8	Anatomy 07 Histology of the male reproductive system	1. Describe the microscopic appearance of male sexual organs and glands. 2. Understand the processes of spermatogenesis and spermiogenesis.
9	Anatomy 08 Anatomy of the female reproductive system (1)	1. Understand the anatomy of the breast, blood & nerve supply, and lymphatic drainage. 2. Discuss the location, shape, relations, blood & nerve supply, and lymphatic drainage of ovary. 3. Describe the anatomy of uterine tube.
10	Anatomy 09 Anatomy of the female reproductive system (2)	1. Describe the anatomy of uterus, location, parts, relations, blood & nerve supply, and lymphatic drainage. 2. Understand the true (fibrous) ligaments supporting the uterus in its position. 3. Discuss the broad and round ligaments. 4. Understand the normal (antiversion and antiflextion) &abnormal position of uterus. 5. Describe the anatomy of vagina, relations, blood & nerve supply, and lymphatic drainage. 6. Describe anatomy of female external genitalia & 7. genital glands (greater & lesser vestibular glands, and paraurethral gland).
11	Anatomy 10 Histology of the female reproductive system (1)	**1.** Describe histology of female breast. **2.** Describe the microscopic appearance of ovary and uterine tube. **3.** Understand the histological changes in the ovary during ovarian cycle.
12	Anatomy 11 Histology of the female reproductive system (2)	1. Describe the microscopic appearance of uterus. 2. Understand the histological changes in uterus during uterine cycle. 3. Describe the histology of vagina. 4. Discuss the anatomy and histology of female genital glands (greater & lesser vestibular glands, and paraurethral gland). 5. Histology of female external genitalia.
13	Anatomy 12 Embryology of the reproductive system (1)	1. Understand the development of indifferent gonads. 2. Describe the development of testes. 3. Describe the development of ovaries. 4. Describe the development of male genital ducts.

		5. Describe the development of male genital glands. 6. Understand congenital anomalies of the male reproductive system.
14	Anatomy 13 Embryology of the reproductive system (1)	1. Describe the development of female genital ducts. 2. Describe the development of female genital glands. 3. Describe the development of male and female external genital organs. 4. Understand congenital anomalies of the female reproductive system.
15	Glomerular filtration (GF). (Physiology 1)	1. Review the functions of the nephron. 2. Understand the process of renal blood flow and glomerular filtration. 3. Understand the glomerular membrane, and the dynamics of glomerular filtration. 4. List the factors that affect glomerular filtration rate (GFR).
16	Reabsorption and secretion. (Physiology 2)	1. Understand the transport and the pathways of reabsorption. 2. Discuss the reabsorption of water and electrolytes. 3. Discuss the reabsorption of glucose, urea, creatinine and protein.
17	Regulation of the GF and renal-blood flow (RBF). (Physiology 3)	1. Understand the autoregulation and tubuloglomerular feedback. 2. Understand the juxtoglomerular apparatus and its role in renin-angiotensin system. 3. Understand the glomerulotubular balance.
18	Parameter of renal active transport. (Physiology 4)	1. Discuss the renal tubular transport maximum (Tm). 2. Define the filtered load and excretion. 3. Understand the glucose and para-aminohippuric acid (PAH) titration curve.
19	Renal clearance. (Physiology 5)	1. Understand the mechanisms of renal clearance and its applications. 2. Describe the inulin, creatinine and PAH clearance.
20	Renal concentration and dilution of urine. (Physiology 6)	1. Understand the mechanisms of dilution and concentration - Counter current multipliers. - Counter current exchangers. 2. Discuss the role of urea.
21	Hormonal regulation of sex determination.	Discuss the role of various hormones and factors involved in sex differentiation.

	(Physiology 7)	
22	Male reproductive physiology. (Physiology 8)	1. Discuss the endocrine regulation of male reproduction. 2. Understand the functions of the male reproductive organs and glands 3. Discuss the spermatogenesis process. Discuss the male reproductive dysfunction.
23	Erection. (Physiology 9)	1. Discuss the mechanism and disorders of the erection process.
24	Female reproductive physiology-I. (Physiology 10)	1. List the hormones of female reproduction and describe their functions. 2. List the functions of the female reproductive system. 3. Describe the pituitary ovary axis and the changes that occur in the ovaries leading up to and following ovulation during an ovarian cycle.
25	Female reproductive physiology-II. (Physiology 11)	1. Describe the normal sequence of events of puberty in the female. 2. Discuss the structural changes that occur in the endometrium during the menstrual cycle and explain how these changes are hormonally controlled. 3. Describe the physiology of the menopause. 4. Describe the disorders of reproductive function.
26	Physiology of pregnancy. (Physiology 12)	1. Describe, fertilization, transport and implantation of the developing ovum. 2. Describe the function of placenta. 3. Describe the response of the mother's body to pregnancy. Describe and discuss fetal circulation.
27	Parturition and lactation. (Physiology 13)	1. Discuss the factors currently thought to be involved in the initiation of parturition. 2. Discuss the hormonal requirements for mammary gland development and establishment of lactation. Describe the milk composition.
28 , 29	Special aspects of renal metabolism. Role of kidney in acid base balance. (Biochemistry 1+2)	1. Discuss urea and creatinine metabolism/ cycle. 2. Understand the basic principles on the role of kidney in the regulation of hydrogen ions and bicarbonate buffer system to understand abnormalities in urine composition. 3. Discuss amino acids absorption by the kidney and their disorders 4. Discuss normal and abnormal composition of urine 5. Interpret the results of routine urine analysis
30	Glomerulonephritis.	• Discuss the pathogenesis of glomerulonephritis.

	Nephritic syndrome. (Pathology 1)	• Recognize the basic reactions of glomerulus to injury. • List the different renal syndromes associated with renal Pathology. • • Discuss the manifestations and mechanism of nephritic syndrome. • List the types of glomerulonephritis associated with nephritic syndrome. • Discuss the etiology, pathogenesis, morphology and clinical features of the common types of glomerulonephritis leading to nephritic syndrome.
31	Nephrotic syndrome. (Pathology 2)	1. List the components of nephrotic syndrome. 2. Discuss the pathogenesis of nephrotic syndrome. 3. List the main causes of nephrotic syndrome. 4. Discuss the etiology, morphology, pathogenesis and clinical features of the common types of glomerulonephritis leading to nephrotic syndrome.
32	Glomerular pathology in systemic disease. (Pathology 3)	1. Discuss the glomerular lesions associated with - Diabetes mellitus. - Systemic lupus erythematosis. - Henoch-shonlein purpura. - Multiple myeloma. - Gout. - Endocarditis.
33 34	*Diseases of blood vessels; renal failure. *Tubulointerstitial nephritis; urinary tract infection. *Congenital and cystic diseases of the kidney. (Pathology 4,5)	• Define causes, pathogenesis, pathology and presentation of renal diseases of blood vessels. • Contrast acute and chronic renal failure with the emphasis on pathogenesis, causes, morphology and clinical course • Define the features and general morphology of tubulointerstitial nephritis. • Define the pathogenesis, morphology and clinical features of drug induced tubulointerstitial nephritis. • Define the morphology and clinical features of acute and chronic pyelonephritis. • Define the morphology and clinical features of obstructive uropathy and the common sites of ureteric obstruction. • Discuss the pathogenesis, clinical features and types of urinary stones.

		• Discuss the predisposing factors, causes and pathology of cystitis. • Define the main congenital diseases of the kidney. • Understand different types, pathogenesis, morphology, and presentation of cystic diseases of the kidney.
35	Renal tumors; pathology of ureter and urinary bladder. (Pathology 6)	1. Discuss the main features of angiomyolipoma and oncocytoma (benign renal neoplasms) 2. Discuss the risk factors, morphology and clinical features of renal cell carcinoma (RCC). 3. List the main features of urothelial carcinoma of the renal pelvis 4. Discuss the risk factors, morphology and clinical features of nephroblastoma. 5. Describe the pathology of bladder cancer including; epidemiology, types, grading, staging and prognosis.
36	Disease of the vulva and vagina. (Pathology 7)	1. Recognize the histopathology and clinical significance of Lichen sclerosis, squamous hyperplasia, vulvar dystrophy, leukoplakia, extramammary Paget's disease, condyloma acuminate, condyloma lata and vulvar intraepithelial neoplasia types (I,II,III). 2. Describe the pathologic characteristics and sites of metastases for squamous cell carcinomas of vulva and vagina.
37	Diseases of the cervix. (Pathology 8)	1. Describe the histopathologic changes, age incidence and risk factors for cervical intraepithelial neoplasia and its association with human papilloma virus. 2. Discuss the age incidence, predisposing factros, pathologic characteristics and sites of metastases for squamous cell carcinoma of the cervix.
38	Diseases of the breast-I. (Pathology 9)	1. Understand the diagnostic approach to palpable and non-palpable breast lesions. 2. Describe the non-neoplastic disorders and benign tumors of the breast with emphasis on mastitis, fat necrosis, fibrocystic changes in the breast, fibroadenoma, phyllodes tumor, and intraduct papilloma. 3. List breast cancer risk factors.
39	Diseases of the breast-II. (Pathology 10)	1. Describe the major types of breast cancer including, insitu, invasive ductal, lobular, medullary, mucinous and tubular carcinomas.

		2. List the important factors in assessing the prognosis of breast cancer. 3. Understand the role of estrogen and progesterone receptors in the management of breast cancer.
40	Disease of the uterus. (Pathology 11)	1. Distinguish between endometriosis, adenomyosis and endosalpingiosis by clinical, pathological features and natural history. 2. Distinguish between the different types of endometrial hyperplasia by histological appearance, clinical and natural history. 3. Understand the age incidence, and pathologic findings, of leiomyoma and leiomyosarcoma of uterus. 4. Identify age incidence, predisposing factors, hormonal influence, pathologic characteristics and sites of metastases for endometrial carcinoma.
41	Diseases of the ovaries and fallopian tubes. (Pathology 12)	1. Classify ovarian tumors with the emphasis on serous, mucinous, endometrioid carcinoma, epighelial tumors and germ cell tumors of the ovary. 2. Describe the age incidence, predisposing factors, pathological characteristics, sites of metastases for epithelial tumors and germ cell tumors of the ovary.
42	Gestational disease. (Pathology 13)	1. Describe age incidence, predisposing factors, natural history and pathological characteristics for complete and partial hydatidiform mole, invasive mole and gestational choriocarcinoma.
43 , 44	Disease of the penis, epididymis and testis. (Pathology 14, 15)	1. Identify the pathologic features of condyloma acuminatum, Bowen's disease, Bowenoid papulosis, and erythroplasia of Queyrat. 2. Identify the etiology, pathology and complications of cryptorchidism. 3. Various inflammatory/infective conditions 4. Classify testicular tumors with emphasis on the tumor markers of seminoma, embryonal carcinoma, teratoma, yolk sac tumor and choriocarcinoma.
45	Diseases of the prostate. (Pathology 16)	1. Identify the pathologic features of acute prostatitis, chronic prostatitis and chronic non-bacterial prostatitis. 2. Discuss the incidence, hormonal effects and pathology of prostatic nodular hyperplasia. 3. Recognize the incidence, hormonal effects, pathology, clinical, pathways of spread, staging, and tumor markers of prostatic carcinoma.

46	Pharmacology 1 Diuretics1	1. -Define diuretics 2. -List major types of diuretics and describe the basic sites of diuretic action in the nephron. 3. - Describe the actions of thiazide & loop diuretics, examples, uses, and adverse effects. 4. - Enumerate the risk factors associated with diuretics and potassium loss.
47	Pharmacology 2 Diuretics2	1. - Describe the drugs that reduce potassium loss during diuresis (spironolactone, triamterene, amiloride). 2. - Provide examples of potassium supplements. 3. -Describe a therapy that will reduce calcium excretion in patients who have recurrent urinary stones. 4. - Discuss the principle of force diuresis. 5. - Determine the drugs for reducing urine volume in nephrogenic diabetes insipidus.
48	Pharmacology 3 Treatment of urinary tract infection	1. - Identify general measures taken in UTI. 2. - List major classes of chemotherapeutic agents used for the treatment of UTI. 3. - Describe the mechanism of action, major pharmacokinetic properties, and toxic effects of chemotherapeutic agents used in UTI. 4. - Enumerate urinary antiseptics, discuss their role inthe treatment of UTI.
49	Pharmacology 4 Andrology therapy	1. - Discuss biochemical synthesis of male sex hormones. 2. - Explain the action, uses, side effects, and contraindications of androgens. 3. -Describe uses and contraindications of anabolic steroids 4. -List therapeutic uses and preparations of antiandrogens.
50 51	Pharmacology 5,6 Female sex steroids and Contraceptive agents	1. Classify contraceptives.- 2. -Explain the mechanism of action of hormonal contraceptives. 3. - List advantages, disadvantages, uses, contraindications, and drug interactions of hormonal contraceptives 4. 5. -Discuss physiological action, uses, side effects of estrogen. 6. -Explain the mechanism of action and uses of antiestrogens.

		7. Discuss the physiological action, uses, and side effects of progesterone. 8. -Describe the mechanism of action progesterone antagonist. 9. - List uses of progesterone antagonist. -
52	Pharmacology 7 Uterine-acting drugs	1. -Enumerate drugs (stimulants and relaxants) of the uterus and their therapeutic uses and adverse effects. 2. -Describe the pharmacological basis of using drugs for the termination of labour or induction of delivery. 3. -Illustrate the potential use of drugs for the management of premature delivery.
53	Urinary tract infection (UTI). (Microbiology 1)	1. Understand the role of *E.coli* and other gram negative bacteria as well as gram positive organisms in UTI, their laboratory diagnosis and susceptability to antibiotics.
54	Schistosomiasis. (Microbiology 2)	1. Describe *Schistosoma Hematobium*, its pathogenesis, immune response, epidemiology, life cycle and clinical manifestations. 2. Describe the laboratory diagnosis,treatment, prevention and control measures.
55	Gonorrhoea. (Microbiology 3)	1. Understand the role of *Neisseria gonorrhoea* as the commonest cause of sexually transmitted diseases. 2. Describe the laboratory diagnosis, pathogenesis, susceptibility to antibiotics and epidemiology of *N.gononrrhoea.*
56	Trichomoniasis & Ectoparasites. (Microbiology 4)	1. Describe *Trichmonas vaginalis* and other ectoparasites transmitted by sexual means, their morphology, structural features and life cycle. 2. Briefly describe clinical presentations and drugs used for treatment.
57	Infections by *Chlamydia,Gardnerella,* and*Ureaplasma.* (Microbiology 5).	1. Describe the differences in structure, morphology and replication of these organisms from other bacteria or viruses. 2. Describe the pathogenesis stressing the role of virulence factors and their implication on the clinical picture. 3. Describe laboratory diagnosis and rationale behind treatment.

58	Syphilis. (Microbiology 6)	1. Describe the morphology of *Treponema pallidum,* pathogenesis and laboratory diagnosis of the disease. 2. Describe the various stages of the disease and appropriate treatment as well as preventive measures.
59	HIV and AIDS. (Microbiology 7)	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. 2. Describe the laboratory measures for screening, confirmation and follow up of treatment. 3. Highlight the treatment regimens and preventive measures.
60	Herpes, Cytomegalo Virus, Human Papilloma Virus and Moluscum contagiosum. (Microbiology 8)	1. Describe the structure, morphology , replication cycle and serotypes of each virus as well as epidemiology of the diseases they cause. 2. Describe the pathogenesis and role of these viruses in cervical cancer. 3. Describe the cell culture and serology for identification and highlight role of antiviral drugs in treatment.
61	Epidemiology of sexual transmitted infections. (Public Health 1)	1. To explain public health significance of the Sexually Transmitted Infections (STIs), Global incidence, risk factors, reservoir and mode of transmission. 2. To outline some common types of infection of the STIs.
62	Prevention of STI (Public Health 2)	1. To know different types of microorganisms involved in the infection of the STIs. 2. To explain prevention and strategies for control of STIs, and management of STIs. . Describe methods to promote community awareness regarding methods of transmission of sexual transmitted diseases and preventive measures ..
Clinical lecture(s)		

A. Practical Laboratory Sessions

Lab #	Lab. Title	Objectives
1	Gross anatomy of the urinary system. **(Anatomy 1)**	1. Define different parts of the urinary system in the abdomen and pelvis. 2. Localize the kidney within posterior abdominal compartment, and its relation to the surrounding organs. 3. Trace the ureter from the pelvis of the kidney until the urinary bladder. 4. Define the urinary bladder and apply knowledge about its relations in the pelvic cavity both in males and females. 5. Compare the urethra in both sexes. 6. Identify all parts of the urinary system in normal conditions on plain X-rays and IVP. 7. Identify major congenital anomalies affecting this system by imaging techniques.
2	Histology. **(Anatomy 2)**	1. Identify the microscopical appearance of the: - Nephron and its parts. - Renal medulla. - Ureter. - Urinary bladder. - Urethra.
3	Glomerular pathology Non-neoplastic diseases of the kidney. Neoplasms of kidney and urothelial tumors. **(Pathology 1)**	1. Identify the main light microscopical features of the different types of glomerulonephritis plus selected examples of electron microscopic (EM) and immunofluorescence (IF). (for this class use Webpath images & glass slides from your slide box). 1. Identify the congenital and cystic diseases of the kidney grossly. 2. Examine kidneys with pyelonephritis grossly and microscopically. 3. Examine kidneys with hydronephrosis, lithiasis and tuberculosis grossly; (for this class use Webpath, glass slides and gross specimens in the museum) 4. Examine the gross and histological slides of renal cell carcinoma and nephroblastoma (Wilms tumor). 5. Examine urinary bladder cancer grossly and histologically; (for this class use the Webpath, glass slides and gross Specimens).
4	**Male reproductive system** **(Pathology 2)**	1. Identify the gross and histological features of: - Benign prostatic hyperplasia. - Carcinoma of the prostate. - Carcinoma of the penis. - Testicular tumors. 2. Identify the gross appearance of hydrocele and torsion of testis. 3. Identify the histological features of testicular atrophy associated with infertility cases. 4. Various non-neoplastic conditions

5	Pelvis I. **(Anatomy 3)**	Describe the following: 1. Bony pelvis. 2. Pelvis muscles. 3. Pelvic peritoneum. 4. Urogenital triangle in males. 5. Anatomy of Male&femal genital organs.
6	Pelvis II. **(Anatomy 4)**	1. Microscopic appearance of male internal & external genital structures. 2. Microscopic appearance of female internal & external genital structures
7	Female reproductive system. **(Pathology 3)**	1. Identify and recognize the pathologic changes in: - Human papilloma virus infection. - Squamous cell carcinoma of the vulva, vagina and cervix. - Dysplasia and squamous intraepithelial neoplasia of the cervix. - Endometrial adenocarcinoma. - Adenomyosis and endometriosis. - Benign and smooth muscle tumors of the uterus.
8	Urine analysis **(Biochemistry 1)**	1. Perform a urine dipstick independently 2. Identify normal and abnormal microscopic urine samples, as viewed on a microscope 3. Correctly interpret a routine urine dipstick/ analysis result and/or microscopic examination of a urine sample to reach a presumptive diagnosis