Course Specification
(2025-2026)

1. Basic Information

Course Title (according to the bylaw)	**Urinary System**			
Course Code (according to the bylaw)	**URS-243**			
Department/s participating in delivery of the course	**Anatomy, Histology, Physiology, Biochemistry, Pathology, Microbiology ,Parasitology, Pharmacology, Urology, Internal Medicine**			
Number of credit hours/points of the course (according to the bylaw)	**Theoretical**	**Practical**	**Other (class activities)**	**Total**
	1.6	**1.2**	**1.2**	**4**
Course Type	اجباري			
Academic level at which the course is taught	الفرقة/المستوي الثاني			
Academic Program	**بكالوريوس الطب والجراحة (2+5) نظام الساعات المعتمدة**			
Faculty/Institute	**Faculty of Medicine**			
University/Academy	**Benha University**			
Name of Course Coordinator	**Dr. Shaimaa Attia**			

Course Specification Approval Date	**9/16/2025**
Course Specification Approval (Attach the decision/minutes of the department /committee/council ....)	**-Education and student affairs committee** **-Faculty council NO (500)** **Department council date 2/9/2025**

2. Course Overview (Brief summary of scientific content)

The aim of studying the urinary system is to provide medical students with a solid understanding of the structure, function, and diseases of the kidneys and urinary tract, in order to prepare them for clinical practice, also to recognize the relationship between the urinary system and cardiovascular, endocrine, and other organ systems.

3. Course Learning Outcomes CLOs

Matrix of course learning outcomes CLOs with program outcomes POs (NARS/ARS)

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		**Course Learning Outcomes** Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
4.5	Outline the pharmacokinetics, pharmacodynamics, indications, interactions, contraindications, and side effects of various therapeutic modalities (pharmacological and non-pharmacological) for acute, chronic and life-threatening illnesses	**4.5.1**	List diuretic therapy, urinary antiseptic drug therapy and nephrotoxic drugs

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
4.7	Integrate the facts of the basic sciences with clinical data.	**4.7.1**	Describe the anatomical structure of the kidney, ureters , bladder and urethra.
		4.7.2	Identify the histological features of the kidney (capsule, cortex, medulla, and parts of uriniferous tubule).
		4.7.3	Assess of renal function and discuss Mechanisms of formation of concentrated and diluted urine.
		4.7.4	Recognize the Mode of Tubular reabsorption and secretion of different substances (E. Glucose, Amino Acids And Urea) and mechanism of glomerular filtrate formation.
		4.7.5	Discuss regulation of acid-base balance & renal blood flow and its control.
		4.7.6	Discuss development and congenital anomalies of the kidney, ureter, urinary bladder and urethra

Program Outcomes (NARS/ARS) (according to the matrix in the program specs)		Course Learning Outcomes Upon completion of the course, the student will be able to:	
Code	**Text**	**Code**	**Text**
		4.7.7	Discuss the causes, pathogenesis and morphology of renal tubular& interstitial diseases 4.3.4 Discuss Cystic diseases of the kidney 4.3.5 4.3.6 .
		4.7.8	Discuss the causes, pathogenesis and morphology of glomerular diseases
		4.7.9	Discuss mechanisms of formation of concentrated & diluted urine
		4.7.10	Discuss Cystic diseases of the kidney
		4.7.11	Generate a list of clinical aspects: epidemiology, distribution, and risk factors of the tumors affecting the urinary tract.
		4.7.12	Discuss causes, signs .symptoms of UTI
		4.7.13	List Parasites affecting renal system.
		4.7.14	Discuss the causes, pathogenesis of hydronephrosis and renal stones

4. Teaching and Learning Methods

1- Modified Lectures : 26 lectures(CDs of lectures including (video films, brain storming, problem solving, etc.…)
2. Practical sessions:12 sessions (available jars, microscopic specimens, eperiments and video films and photos)
3. Tutorials: 5 tutorials
4. Case Based Learning:1
5. Skill Lab:1
6. Directed Self-Learning (DSL): 1
7. **Lectures on Benha E- learning platform & survey. موقع منصة التعليم الإلكتروني الخاص بجامعة بنها(thinqi)**
   https://belc.bu.edu.eg/%D9%85%D9%86%D8%B5%D8%A9-%D8%AB%D9%8A%D9%86%D9%83%D9%89 /

Course Schedule

Number of the Week	Scientific content of the course (Course Topics)	Total Weekly Hours	Expected number of the Learning Hours			
			Theoretical teaching (lectures/discussion groups/ tutorials/ CBL .....)	Training (Practical/Clinical/ .....)	Self-learning (Tasks/ Assignments/ Projects/ / DSL...)	Other (Skill lab)
1	-(Anatomy): Anatomy of kidney & ureter -(Histology): Histology of kidney& Ureter - (Anatomy): Development and congenital anomalies of the kidney, ureter -(Physiology): Introduction to renal physiology&renal blood flow -(Biochemistry): urea cycle , Creatine& creatinine metabolism & blood gas analysis -(Anatomy): Development and congenital anomaly of urinary bladder &urethra -(Histology): Histology of urinary bladder &urethra -(Biochemistry): Assessment of renal function -(Physiology): Renal function: glomerular filtration & its control -(Biochemistry): Renal regulation of acid base balance	19	1 1 1 1 1 1 1 1 1 2 (TUT)	2 2 2 2		

2	-(Anatomy): Anatomy of urinary bladder& urethra -(Biochemistry): Specific gravity , urine report -(Microbiology): Organisms of UTI -(Pathology): Glomerular Diseases I &II -(Physiology): Renal function: Tubular processing of the glomerular filtrate -(Pathology): Hydronephrosis and renal stones -(Pathology): Renal Tubular& Interstitial diseases -(Physiology): Tubular reabsorption & secretion of different substances I & II -Catheterization of male & female urethra	18	1 1 2 2(TUT) 1 1 2	2 2 2		2
3	-(Physiology): Micturition -(Pathology): Congenital and glomerular diseases -(Pharmacology): Treatment of UTI -Parasitology): parasites affecting renal system I&II -(Pathology): Tubular and interstitial diseases and hydronephrosis and renal stones	14	2(TUT) 2	2 2 2		

	-(Biochemistry): Urine composition and renal stone **-Catheterization of male & female urethra**		**2(TUT)** **1**			**2**
4	**-(Pathology): Renal tumor** **-(Pathology): Bladder disease and tumors** **-(Physiology): Control of H2O, electrolytes balance** **-(Biochemistry): Metabolism of purines** **-Biochemistry): Metabolism of pyrimidines &gout** **-(Physiology): Mechanisms of formation of concentrated & diluted urine** **-UTI** **-(Pharmacology): Principles of diuretic therapy I&II** **Polycystic kidney**	**13**	**1** **1** **2(TUT)** **1** **1** **1** **1 (CBL)** **2**	**1** **1**		**1**

5. Methods of students' assessment

No.	Assessment Methods *	Assessment Timing (Week Number)	Marks/ Scores	Percentage of total course Marks
1	Formative exam	**Third week**	0	0
2	Mid module assessment	**Third week**	24	24%
3	Final Written Exam	**End of term**	40	40%
4	Final practicalExam	**End of fourth week**	30	30%
5	Assignments / Project /Portfolio/ Logbook	**End of fourth week**	3	3%
6	Field training / skill lab	**Second week**	3	3%

6. Learning Resources and Supportive Facilities *

Learning resources (books, scientific references, etc.) *	**The main (essential) reference for the course**	• Hand out of staff members • Cell biology & Histology (2017): Gartner L.P. & Hiatt J.L., 7th Ed., Wolters Kluwer, Philadelphia, New York, London. • Lippincott's Illustrated Review . Pharmacology, 5thedition • Lippincott Illustrated Reviews: Integrated Systems ; Sandra K. Leeper-Woodford and Linda R. Adkison, Wolters Kluwer, Inc. 2015. • Anatomy for diagnostic imaging Stephanie Ryan etal. 2nd edition,2004. • Clinically oriented Anatomy. 6th Ed. (2010). K .Moore • Histology a Text & Atlas with correlated cell and molecular biology (2016): Ross, M.H. and Pawlina, W., 7th Ed., Wolters Kluwer, Philadelphia, New York, London. • Rang & Dale's Pharmacology: by Humphrey P. Rang; James M. Ritter ; Rod Flower Churchill Livingstone; 6 edition • USMLE Road map physiology; James N. Pasley. McGraw Hill Medical Company, 2003. • Book of systemic pathology of pathology departement , faculty of medicine , Benha University. • Harper's Illustrated Biochemistry 31st Edition 2018 • Lippincott Illustrated Review Biochemistry 7th Edition 2017

		• Sherwood L., Human Physiology: From Cells to Systems, 9th edition (2016). • Levinson, W., Chin-Hong, P., Joyce, E. A., Nussbaum, J., & Schwartz, B. (2022). *Review of Medical Microbiology and Immunology: A Guide to Clinical Infectious Diseases* (17th ed.). • Basic Pathology: Kumar, Cortan and Robbins, 11th edition (2025). • Parasitic Diseases, 8th edition (latest). •
	Other References	• Gray' Anatomy for students (2016) • Junqueira's Basic Histology; Text & Atlas (2018): Mescher A. L., 15th Ed., McGraw-Hill Education. New York, London, Toronto • Textbook of Medical Physiology; 11thed. Guyton AC and Hall JE; Saunders/Elsevier Co.; 2005. • Robbins Basic pathology (2017) 10th edition • Textbook of Human Parasitology, 5th edition (2018). • Paniker's Textbook of Medical Parasitology, 9th edition (2020). • Mims' Medical Microbiology, fifth edition. • Khonsary SA. Goodman and Gilman's: the pharmacological basis of therapeutics. Surg Neurol Int 2023; 14:91 • Langman's Medical Embryology; 15th ed.; Sadler T.W. and Langman J., Wolters Kluwer, 2023. • Hoffbrand, Moss and Pettit: Essential Haematology, 9th edition (2024). •
	Electronic Sources	Periodicals, Web sites, etc: 1. A Physiological Society; https://www.pjournal/advanhysiology.org/ ces 2. American Physiological Society; https://www.physiology.org/journal/ajpendo 3. Egyptian society for physiological science; http://espsb.mans.edu.eg/eulc_v5/libraries/EPublishedJournal.aspx?DefaultLang=En 4. Experimental Physiology; https://physoc.onlinelibrary.wiley.com/journal/1469445x 5. European Journal of Applied Physiology; https://www.springer.com/biomed/human+physiology/journal/421. 6. Pathology outline .com https://radiopaedia.org/ https://radiologyassistant.nl/ 7-Parasitology lectures (Benha Faculty of Medicine) [https://medicalparasitology.shutterfly.com/]. 8-www.ekb.eg . (Egyptian knowledge Bank)

		9-http://www.pubmed.com . 10-http://sciencedirect.com .
	Learning Platforms	• Leaning platform of Benha University: https://credit.bu.edu.eg/static/index.html
	Other	---
Supportive facilities & equipment for teaching and learning *	**Devices/Instruments**	• Microscopes, Audiovisual equipments, computers
	Supplies	Lecture Room with enough number of comfortable seats & • supplied with ; - Audiovisual equipments needed for power point presentation data show – smart boards – sound system- desktop Whiteboard with markers are provided • Class rooms for small group teaching (instrument for physical examination like beds , blood pressure measuring devices , stethoscope)
	Electronic Programs	--
	Skill Labs/ Simulators	• Skill lab of Benha University
	Virtual Labs	--
	Other	· Library: available reference textbooks and internet access Egyptian knowledge bank

Name and Signature
Course Coordinator
Dr. Shaimaa Attia

Name and Signature
Program Coordinator
Prof.Dr/ Eman Araby