Course Syllabus - MBBCh

1. Course title: Renal Module		Course code: (REN22)
2. Credit/contact hours:	**86 hours**	
3. Number of weeks	**3**	
4. Level/year at which this course is offered:	**Year 2 semester 2**	
5. Pre-requisites for this course (if any)**: Year2 Semester1**		
6. Co-requisites for this course (if any)**: Medicine, Surgery, Gynecology**		

Course Description

The course is designed to impart an integrated approach to the learning of normal development, structure and functions and pathophysiology of the Renal system using different modalities of teaching. Knowledge regarding alterations in the structure and function of the Renal system which contributes to the clinical manifestations seen in diseases of the system will also be imparted.
Regular procedures used in diagnosing and managing Renal system diseases, and interpretation of laboratory data and radiological investigations commonly performed in patients with Renal system diseases will be explained.
Management of common Renal system disorders will be described.
PBL and TBL sessions will be held to explain causes, epidemiology, pathogenesis and management of common renal disorders.
Clinical skills and ICM sessions will be conducted for development of clinical and communication skills and vertical integration of learning

Course Learning Outcomes

CLOs		Aligned-PLOs
	Knowledge	
K1	Describe the structures of renal system organs	A1
K2	Explain the gross and microscopic features of the renal system organs in health and disease	A1
K3	Explain the biochemical changes in renal disease	A1
K4	Describe how common pathogens and parasites affect structural and functional changes in the organs of the renal system	

CLOs		Aligned-PLOs
K5	Correlate the etiopathogenesis, morphological and functional alterations in renal disorders with clinical features.	A2
K6	Analyze and interpret clinical scenarios of Renal system diseases, utilizing knowledge of basic sciences,	A3
	Skills	
S1	Interpret laboratory data obtained in renal function tests for diagnosing common renal disorders	B2
S2	Identify the key structures of the renal system organs on gross and microscopy in health and disease in the laboratory	B2
S3	Elicit a relevant clinical history & examine a case of renal disease	B1
S4	Plan/create model prescription for different medications used in renal diseases	B3
	Attitude	
A1	Demonstrate the ability for collaboration and teamwork in evaluating clinical scenarios and laboratory results related to renal diseases.	C1

Course Delivery Plan

Title	Method of Teaching	Instructor	
Kidney & Suprarenal 1	L	Dr Shifan	
Kidney & Suprarenal 2	SBIL	Dr Shifan	
Kidney , Renal Pelvis, Nephron	L	Prof. Nadia	
Renal Courpuscle, Juxtaglomerular apparatus	L	Prof. Nadia	
Microcirculation of the kidney	SGD	Prof. Nadia	
Functions of Renal System	SBIL	Prof. Abeer	
Functions of the nephron & Juxtra glomerular apparatus	SDL	Prof. Abeer	**week 1**
Renal circulation	L	Prof. Abeer	
Renal Blood Flow and its regulation	SDL	Prof. Abeer	
Measurment of renal blood flow	L	Prof. Abeer	
Dynamics of the glumerular filtration & the glomerular filtration rate	CAL	Prof. Abeer	
Development of the kidneys and ureters	L	Dr Shifan	
Congenital anomalies of the urinary system	L/TBL	Dr Shifan	

Congenital Diseases of kidney	CBL/TBL	Prof. Ghazala	
Diseases of the glomeruli-1	L	Dr. Mariam	
Diseases of the glomeruli-2	SBIL	Dr. Mariam	
Investigations of renal function -1	L	Prof. Nagla	
Investigations of renal function -2	L	Prof. Nagla	
Urethra	PBL	Dr Shifan	
Practical	P		
Introduction to UTI and Clinical syndromes	L	Prof. Magda	
Organisms causing urinary tract infections (Bacteria, viruses, Fungi)	CBL	Prof. Magda	
Uropathogenic E.coli and Proteus mirabilis, Pseudomonas	SBIL	Prof. Magda	
Post-Strep-acute glomerulonephritis	SBIL	Prof. Magda	
Control of glomerular filtration rate	L	Prof. Abeer	
Measurment of the glomerular filtration rate	L	Prof. Abeer	
Functions of the proximal convoluted tubules	CAL/PBL	Prof. Abeer	
Function of the loop of Henle	PBL	Prof. Abeer	
Functions of renal tubules	CAL	Prof. Abeer	
Renal Handling of Glucose, Tubular load & tubular transport maximum	L	Prof. Abeer	
Renal Handling of Sodium & its balance	L	Prof. Abeer	
Renal Handling of Potassium & its balance	SP	Prof. Abeer	**week 2**
Diseases of the glomeruli-3	L	Dr. Mariam	
Diuretics-I	SBIL	Prof. Tasneem	
Treatment of UTI-I	L	Prof. Tasneem	
Treatment of UTI-II	SBIL		
Biochemical changes in renal diseases	L	Prof. Nagla	
Urine analysis: Physical properties	P		
Urinary Schistosomiasis	SBIL	Dr. Dina	
Practical	P		
Diseases of the glomeruli-4	CBL	Dr. Mariam	
Practical	P		
Tubulo-interstitial diseases	SBIL	Dr. Mariam	
Obstructive uropathy	L	Prof. Ghazala	
Renal Calculi	SDL	Prof. Ghazala	

Practical	P		
History taking for urology	Case Based	Prof. Samia	
Ureters	SDL	Dr Shifan	
Urinary Bladder	SBIL	Dr Shifan	
Development of urinary bladder and urethra	L	Dr Shifan	
UB & Urethra	P		
Urinary Bladder, Ureters & Urethra	SGD	Prof. Nadia	
Practical	P		
Chloride, Bicarbonate and calcium & phosphate balance	SP	Prof. Abeer	
Renal Handling of H_2O	L	Prof. Abeer	
Countercurrent mechanisms	CAL	Prof. Abeer	
Renal regulation of blood volume and extracelular fluid volume	L	Prof. Abeer	
Diuresis and diuretics	SDL	Prof. Abeer	
Case study about renal function test.	L	Prof. Nagla	**week 3**
Urine analysis: Chemical properties	P		
Renal Tumors	CBL	Prof. Ghazala	
Renal failure	L	Prof. Ghazala	
Infections of urinary bladder	SDL	Dr. Mariam	
Tumors of urinary bladder	L	Dr. Mariam	
Urethritis, Cystitis & Pyelonephritis	CBL	Prof. Magda	
Hospital acquired UTI (Nosocomial infection)	L	Prof. Magda	
Laboratory diagnosis of UTI	P		
Diuretics-II	SDL	Prof. Tasneem	
Antidiuritics	SDL	Prof. Tasneem	
Practical	P	Prof. Tasneem	
procedures catheter male	Simulation	Prof. Samia	

Teaching and Assessment

1. Alignment of Course Learning Outcomes with Teaching Strategies and Assessment Methods

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
	Knowledge		
K1	Describe the structures of renal system organs	L SBIL SDL Practical Session TBL	MCQs, spotter, OSPE
K2	Explain the gross and microscopic features of the renal system organs in health and disease	L CBL PBL SBIL SDL Practical Session TBL	MCQs, spotter, OSPE
K3	Explain the biochemical changes in renal disease	L Practical Session	MCQs
K4	Describe how common pathogens and parasites affect structural and functional changes in the organs of the renal system	L SBIL CBL Practical Session	MCQs, spotter
K5	Correlate the etiopathogenesis, morphological and functional alterations with clinical features in renal disorders	L SBIL CBL SDL Practical Session	MCQs, spotter
K6	Analyze and interpret clinical scenarios of Renal system diseases, utilizing knowledge of basic sciences,	Clinical skills-Practical	OSCE
	Skills		
S1	Identify the key structures of the renal system organs on gross and microscopy in health and disease in the laboratory	Practical	Spotter, OSPE

Code	Course Learning Outcomes	Teaching Strategies	Assessment Methods
S2	Interpret laboratory data obtained in renal function tests for diagnosing common renal disorders	Practical	OSPE
S3	Elicit a relevant clinical history & examine a case of renal disease	Clinical skills	OSCE
S4	Plan/create model prescription for different medications used in renal diseases	Practical	OSPE
	Attitude		
A1	Demonstrate the ability for collaboration and teamwork in evaluating clinical scenarios and laboratory results related to renal diseases.	PBL	MCQs, SAQ

2. Assessment Tasks for Students

#	Assessment task*	Week Due	Percentage of Total Assessment Score	Date
1	Mid semester Comprehensive Exam	Week 3	15%	8 May 2023
2	Continuous assessments (Attendance, Quiz, elective projects, group discussion, Assignments, PBL, TBL, Clinical Skills)	Throughout the module	15%	
3	Final examination- MCQs, Oral, Practical	End of semester	70%	June 2023

***Assessment task** (i.e., written test, oral test, oral presentation, group project, essay, etc.)

Learning Resources and Facilities

1.Learning Resources

Required Textbooks	• Agur, A. M., & Dalley, A. F. (2009). Grant's atlas of anatomy. Lippincott Williams & Wilkins. Pathology: Kumar, V., Abbas, A. K., &

- Anthony, L. M. (2013). Junqueira's basic histology: text and atlas.
- EroscPhysiology: Hall, J. E., & Hall, M. E. (2020, June 16). Guyton and Hall Textbook of Medical Physiology.
- Kumar, V., Abbas, A. K., & Aster, J. C. (2017). Robbins Basic Pathology (10th ed.). Elsevier - Health Sciences Division.
- Walter, J. B., & IC, T. (1996). Walter & Israel General Pathology 1996. Chp, 52, 831.
- Al-Kobaisi, M. F. (2007). Jawetz, Melnick & Adelberg's Medical Microbiology 24th Edition. Sultan Qaboos University Medical Journal [SQUMJ], 7(3), 273-275.
- Cornelissen, C. N., Harvey, R. A., & Fisher, B. D. (2012). Microbiology (Vol. 3). Lippincott Williams & Wilkins.
- Chatterjee, M. N., & Shinde, R. (2002). Textbook of Biochemistry, Jaypee brothers.
- Garcia, L. S. (2006). Diagnostic medical parasitology. American Society for Microbiology Press.
- John, D. T., & Petri, W. A. (2013). Markell and Voge's medical parasitology-e-book. Elsevier Health Sciences.
- Paniker, C. J. (2007). Textbook of medical parasitology (No. Ed. 6). Jaypee Brothers Medical Publishers (P) Ltd.
- Neva, F. A., & Brown, H. W. (1994). Basic clinical parasitology (No. Ed. 6). Appleton & Lange.
- Gunn, A., & Pitt, S. J. (2022). Parasitology: an integrated approach. John Wiley & Sons.
- Zeibig, E. (2014). Clinical parasitology: A practical approach. Elsevier Health Sciences.
- Schmidt, G. D., & Roberts, L. S. (1977). Foundations of parasitology. CV Mosby Company, 11830 Westline Industrial Drive, St. Louis, Missouri 63141, USA (distributed in UK by Henry Kimpton Publishers, 7 Leighton Place, Leighton Road, London NW52QL)..
- Goyal, R. C. (2010). Research methodology for health professionals. JAYPEE BROTHERS PUBLISHERS.
- Battin, M. P., Francis, L. P., Jacobson, J. A., & Smith, C. B. (2008). The patient as victim and vector: ethics and infectious disease. Oxford University Press.
- Katzung, B. G., & Trevor, A. J. (Eds.). (2012). Basic & clinical pharmacology.
- Whalen, K. (2018). Lippincott® Illustrated Reviews: Pharmacology. Wolters kluwer india Pvt Ltd.
- Trevor, A. J., Katzung, B. G., Masters, S. B., & Kruidering-Hall, M. (2010). Pharmacology examination & board review (pp. 121-132). New York: McGraw-Hill Medical.
- KIM, M. K., MOORE, J. H., KIM, J. K., CHO, K. H., CHO, Y. W., KIM, Y. S., ... & SHIN, M. H. (2011). Goodmann & Gilman's The Pharmacological Basis of Therapeutics Goodmann & Gilman's The Pharmacological Basis of Therapeutics, 521-547, 2001. Journal of human genetics, 56(1), 71-76.

	• Breslow, L. Encyclopedia of Public Health (AG). • Community Medicine: Control of Communicable Diseases Manual. (2022, February 28). In D. L. Heymann (Ed.), An Official Report of the American Public Health Association. APHA Press.
Essential References Materials	• Pathology: Strayer DS, Rubin E, Saffitz JE, Schiller AL (2019). Rubin's Pathology: Mechanisms of Human Disease. Lippencott-Wolters Kluwer. • Physiology: Barrett, K. E., & Ganong, W. F. (2010, January 1). Ganong's Review of Medical Physiology. • Microbiology: Levinson, W. E., Chin-Hong, P., Joyce, E. A., Nussbaum, J., & Schwartz, B. (2022, February 25). Review of Medical Microbiology and Immunology, Seventeenth Edition. • Parasitology: Ghosh, S. (2020, October 23). Paniker's Textbook of Medical Parasitology. • Community Medicine: Blokdyk, G. (2019, September 19). Occupational Health and Safety a Complete Guide - 2020 Edition. • Pharmacology: Katzung, B. G., & Trevor, A. J. (2020, December 5). Basic and Clinical Pharmacology 15e. McGraw-Hill Education / Medical. • Pharmacology: DiPiro, J. T., Talbert, R. L., Yee, G., Wells, B., & Posey, L. M. (2014, March 16). Pharmacotherapy a Pathophysiologic Approach.
Electronic Materials	• Web-Pathology • Web medicine-Utah • Amboss • UpToDate • https://accesspharmacy.mhmedical.com/
Other Learning Materials	Library resources, Handouts

2. Facilities Required

Item	Resources
Accommodation (Classrooms, laboratories, demonstration rooms/labs, etc.)	Classrooms, laboratories, demonstration rooms, simulation lab, Museum

Item	Resources
Technology Resources (AV, data show, Smart Board, software, etc.)	AV, data show, Smart Board, LMS
Other Resources (Specify, e.g., if specific laboratory equipment is required, list requirements or attach a list)	Projection microscope, Lab equipment and glassware for Microbiology, Parasitology and Biochemistry Practicals

Course Coordinator: <dr.ghazala@dmcg.edu>

Instructors:

Prof. Ghazala: <dr.ghazala@dmcg.edu>

Dr. Shifan: <dr.shifan@dmcg.edu>

Prof. Naglaa: <nagla@dmcg.edu>

Prof. Tasneem: <Prof.Tasneemsandozi@dmcg.edu>

Prof. Magda: <magda@dmcg.edu>

Dr. Dina Salah: <dmohamed@dmcg.edu>

Dr. Rania: <dr.rania@dmcg.edu>

Dr. Rasha: dr.rasha@dmcg.edu