



COURSE UNIT DESCRIPTION

Course unit title	Code
Nephrology and Urology (2023-2024)	

Lecturer(s)	Department(s)
Coordinator: Assoc. prof. Laurynas Rimševičius Other: Prof. (HP) Dr. Feliksas Jankevičius, Prof. Dr. Marius Miglinas, Assoc. prof. Arūnas Želvys, Assist. Albertas Čekauskas, Assist. Robertas Adomaitis, Assist. Arnas Bakavičius, Assist. Diana Sukackienė, Assist. Marija Barisienė, J.Assist. Ernesta Mačionienė, J.Assist. Aivaras Grybas, Lect. Agnė Kerpauskienė, Lect. Alvița Vickienė	Vilnius University, Faculty of Medicine, Institute of Clinical Medicine, Clinic of Gastroenterology, nephrourology and surgery, Santariskiu str. 2. Vilnius.

Cycle	Level of the course unit	Type of the course unit
Integrated studies (stages I and II)	-	Mandatory course

Mode of delivery	Period of delivery	Language of instruction
Lectures that will be held in the general auditorium; and practical training which will be held in auditoria, operating theater and other premises in Center for Nephrology and Center for Urology	9 semester	English, Lithuanian

Prerequisites and corequisites	
Prerequisites: A student must have completed the following courses: human anatomy and histology, propaedeutics of internal medicine, pharmacology, biochemistry, microbiology, pathology and immunology, radiologic diagnostics, general and abdominal surgery, laboratory diagnostics	Corequisites (if any): none

Number of ECTS credits allocated to the course unit	Total student's workload	Contact hours	Self-study hours
5 credits	133 hours	66 hours	67 hours

Purpose of the course unit Programme competences to be developed		
Module objectives – to provide basic contemporary knowledge on etiology, pathogenesis, clinical signs, diagnostics, differential diagnostics, prevention and management of renal and urological diseases. After completion of the course, student will learn how to conduct examination of patients with renal and urological disorders, and after evaluation the results of laboratory, radiology, nuclear and pathology investigations will be able to choose optimal treatment strategy. Attendance is compulsory in all seminars/practicals. Lecturer will define the assessment method for students who missed the seminars/practicals. Lecture attendance is recommended. Final exam test attempt can be made if student has evaluations of tests during seminars, has presented clinical cases, and liquidated attendance debts (if had).		
Learning outcomes of the course unit	Teaching and learning methods	Assessment methods
Generic competences (At the end of the study programme graduate will be able):		
After successful completion of this module, students will learn to follow ethical clinical obligations, properly communicate with patients and clinic staff. They will learn analytical way of thinking and how to be initiative and creative.	Examination of patients in hospital wards; discuss collected information	Continuing evaluation of the knowledge obtained at the time of practical training
To evaluate the extent of their competence, to solve clinical	Practical training in	Continuing evaluation of

problems and make decisions, communicate and work within a team of different medicine specialists.	hospital wards and auditorium	the knowledge obtained at the time of practical training
To analyse and synthesize, to learn, including independent life-long learning, to use knowledge in practice, to teach others, to carry out scientific research	Practical training in hospital wards and auditorium	Continuing evaluation of the knowledge obtained at the time of practical training
Subject-specific competences students (At the end of the study programme graduate will be able):		
To assure emergent care for patients with renal disease and to administer for specialized consulting	Analysis of cases during practical courses	Continuing evaluation of practical knowledge
To continue management of patient with renal disease	Analysis of cases during practical courses	Continuing evaluation of practical knowledge
To understand assigning renal replacement therapy for patients with renal disease	Analysis of cases during practical courses	Continuing evaluation of practical knowledge
To perform these procedures: inspection, percussion, palpation, auscultation; to know rules of dialysis access care (central venous or peritoneal catheter, arteriovenous fistule or graft); to assist for kidney biopsy, central line puncture; to observe haemodialysis, peritoneal dialysis	Analysis of cases during practical courses	Continuing evaluation of practical knowledge
To examine the patient suspicious for urological disorder and pre-plan his further specific examination	Examination of patients in hospital wards	Continuing evaluation of practical tasks
To evaluate results of laboratory tests (immunological, serological, biochemistry etc.); radiology (ultrasound, radiological, CT, MRT, angiography), and pathology examinations and to state diagnosis in case of standard clinical situation.	Practical tasks are being held in the auditorium and hospital rooms	Continuing evaluation of practical tasks
To direct an appropriate treatment (etiopathogenetic, symptomatic) for patients with urological disorders; and to warn about possible adverse drugs effects and dangerous drug interactions.	Practical tasks are being held in the auditorium and hospital rooms	Continuing evaluation of practical knowledge
To administer adequate and appropriate treatment, to combine the relevant medicines and other treatment methods in the clinical context, to assess the appropriateness and potential benefit and harm of medicines and other treatment methods, to alleviate pain and stress situations	Practical tasks are being held in the auditorium and hospital rooms	Continuing evaluation of practical knowledge
To understand the principles of co-operation with other medical specialists, communicating with patients and their relatives.	Practical tasks are being held in the auditorium and hospital rooms	Continuing evaluation of obtained practical knowledge;
To use scientifically-based evidence in practice, to search for the relevant literature, critically assess published medical literature	Practical tasks are being held in the auditorium and hospital rooms	Continuing evaluation of practical knowledge
To protect medical documentation, be able to use hospital electronic data base, to search for the new information sources, and how to update professional skills.	Seminars, practical tasks and individual work	Continuing evaluation of practical knowledge
To apply scientific principles, methods and knowledge in medical practice and research	Lectures are being held in the auditorium	Continuing evaluation of practical knowledge

Topics	Contact work hours							Time and tasks of self-study	
	Lectures	Consultations	Seminars	Practice	Laboratory work	Practical training	Total contact hours	Self-study	Tasks
Evaluating of renal function	-	-	2	2			4	4	To understand microanatomy and macroanatomy of kidney; to know main functions; to evaluate and differentiate symptoms; to prescribe instrumental investigation and laboratory analysis; to determine indications for kidney biopsy and know its complications; to differentiate causes of hematuria, proteinuria and electrolyte imbalance (potassium, sodium)
Acute kidney injury	1	-	2	2			5	4	To understand etiology of acute renal injury (prerenal, intrinsic, postrenal azotemia), pathogenesis, classifications (AKIN, RIFLE), principles of treatment
Chronic kidney disease	1	-	2	2			5	8	To recognize chronic kidney disease; to know etiology, pathogenesis, classification, complications, clinical findings; to evaluate anemia, hyperhydration and metabolic disease in renal failure
Glomerulopathies	1	-	2	2			5	4	To differentiate nephritic and nephritic syndromes, to know its' etiology, pathogenesis and management; to understand etiology, pathogenesis, clinical picture and management of these diseases: minimal change nephropathy, focal segmental glomerulosclerosis, acute postinfectious glomerulonephritis, rapidly progressive glomerulonephritis, membranoproliferative glomerulonephritis, IgA nephropathy, membranous nephropathy
Other renal diseases	2	-	2	2			6	4	To understand etiology, pathogenesis, clinical picture and management of these diseases: diabetic nephropathy, hypertensive nephropathy, renovascular hypertension, acute and chronic tubulointerstitial nephritis (analgetic nephropathy, balkan endemic nephropathy, aristolochic acid nephropathy, heavy metal nephrotoxicity; to recognize primary and secondary amyloidosis
Infections of genitourinary system: nefrology	-	-	-	-			-	4	To know etiology, pathogenesis, clinical picture and management of acute and chronic pyelonephritis and cystitis
Renal replacement therapy: hemodialysis	1	-	2	2			5	4	To understand indications for renal replacement therapy in acute versus chronic kidney disease; to know contraindications, complications (infectious, mechanic, other) and availability for individual patients for hemodialysis
Renal replacement therapy: peritoneal dialysis	1	-	2	2			5	4	To understand indications for renal replacement therapy in acute versus chronic kidney disease; to know contraindications, complications (infectious, mechanic, other) and availability for individual patients for

									peritoneal dialysis
Renal transplantation	1	-	2	2			5	4	To understand indications and organization of kidney transplantation; to know peculiarities of donor- recipient pairing; to recognize complications of transplantation (surgery, infectious, medicamentary, cancerous) in early and late period after operation; to know etiology, clinical findings and management of chronic allograft nephropathy and acute transplant rejection
Total Nephrology	8	1	16	16			40	40	80

Urinary stone disease	1		1	1			3	4	To learn about the pathophysiology and prevention of urinary stones; the signs, modern diagnostics as well as methods of drug and extracorporeal and endoscopic surgical treatment options.
Female and male urinary incontinence	1		1	1			3	3	To learn about male and female continence physiology; different cause of urinary incontinence; the role of urodynamic investigations and modern conservative and surgical management
Prostate cancer	1		2	1			4	3	To learn about the most recent advances in prostate cancer pathogenesis; the pro and cons of PSA based screening; diagnostics and management of local and advanced disease; and possibility of active surveillance
Oncological urology (Kidney, bladder and testicular cancers)	1		2	1			4	4	To learn about the risk factors of the most common urological cancers; the methods of modern diagnostics and management
Infections of genitourinary system: urology	1		1	1			3	4	To learn classification of UTI; diagnostic microbiological and laboratory examinations, the level of infection. The principals of antibacterial therapy of most common urological infections; the causes of urosepsis, it's pathophysiology and biochemical markers; prophylaxis and clinical algorithm for management
Urological trauma	1		1	1			3	3	To learn about mechanisms modern diagnostics and management of renal, bladder, urethral, and male genitalia trauma
Kidney transplantation	1		1	1			3	3	To learn the methods of donor kidney preservation; surgical transplant techniques; immunosuppression after kidney transplantation and management of early and late complications
Obstructive uropathy	1		1	1			3	3	To learn about the common causes of obstructive uropathy, symptoms, radiologic investigations and management
Exam preparation and examination									
Total Urology	8	-	10	8			26	27	53
Total	16	1	26	24			66	67	133 hours

Assessment strategy	Weight (%)	Assessment period	Assessment criteria
Tests (part A)	20	During seminars	Test is taken in electronic or written form with multiple choice theoretical and practical questions (one correct answer): 20 nephrology questions and 20 urology questions. One point (1) is given for one correct answer. Total maximum points: in nephrology - 20, in urology - 20. The collected points from both specialities are summed and the mean is calculated.
Clinical case reports (part B)	10	During seminars	Student must present two case reports (one in nephrology and one in urology) in electronic or written form with/without oral presentation. Each case is evaluated as follow: 10: Excellent, no mistakes. 9: Very good, one nonessential mistake. 8: Good. Few nonessential mistakes. 7: Moderate. Some essential mistakes. Originality and self-sufficiency missing. 6: Satisfactory. Many essential mistakes. 5: Poor. Multiple mistakes, but satisfies minimal requirements. 4-1: Unsatisfactory. Minimal demands are not satisfied. 0: not presented
Exam test (part C)	70	At the end of semester	Test is taken in electronic form with 70 (35 nephrology, 35 urology) multiple choice theoretical and practical questions (one correct answer). One point (1) is given for one correct answer. 10: Excellent. 95-100 % 9: Very good. 85-94 % 8: Good 75-84 % 7: Moderate. 65-74 % 6: Satisfactory. 55-64 % 5: Poor. 45-54 % 4: Unsatisfactory. 40-49 % 3: Unsatisfactory. 30-39 % 2: Unsatisfactory. 20-29 % 1: Unsatisfactory. Less 20%
Final evaluation	The final evaluation (FE) is calculated via formula $0,2xA+0,2xB+0,6xC$ The result is rounded to whole mark, i.e. 9.5 is 10 and 9.4 is 9.		

Author	Year of publication	Title	No of periodical or vol. of publication	Publication place and publisher or Internet link
Reading list				
Miglinas M, Juknevičius I, Laurinavičius A, Razukas V, Žekonis M	2003	Inkstų ligos	1st edition	Vaistų žinios, Vilnius
Johnson RJ, Feehally J, Floege J	2018	Comprehensive Clinical Nephrology	6th edition	Saunders
Maarten W. Taal, Glenn M. Chertow, Philip A. Marsden, Karl Skorecki, Alan S. L. Yu, Barry M. Brenner.	2019	Brenner and Rector's The Kidney	11th edition	Saunders
Bullock N, Doble A, Turner W, Cuckow P	2008	Urologijos vadovas	ISBN 978-9955-884-	Vaistų žinios, Vilnius

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Campbell-Walsh	2020	Urology	12th edition	Saunders Elsevier , 2020
European Association of Urology	2021	EAU Guidelines 2021	2021 edition	EAU Gudelines Office 2021, www.uroweb.org
Additional list				
Kidney Disease Improve Global Outcomes	2009-current	Clinical Practice Guidelines		http://kdigo.org/home/guidelines/
Asif A, Agarwal AK, Yevzlin A, Wu S, Beathard GA.	2012	Interventional Nephrology	1st edition	McGraw-Hill Education
Daugirdas JT, Blake PG, Ing TS	2014	Handbook of Dialysis	4th edition	Wolters Kluwer
Kuzminskis V	2015	Klinikinė nefrologija	1st edition	Medicinos spaudos namai
Stuart J. Knechtle, Lorna P. Marson, Peter Morris	2019	Kidney Transplantation - Principles and Practice	8th Edition	Elsevier press.
Pat.F.Fulgham, Bruce R.Gilbert	2017	Practical Urological ultrasound	2nd edition	Springer
Vipul R. Patel, Manickam Ramalingam	2018	Operative atlaso of laparoscopic and robotic reconstructive urology	2nd edition	Springer
K.Strupas, A.Želvys, A.Gula, V.Sokolovas,	2019	Pilvo ertmės organų transplantacijos praktinis vadovas	ISBN 978-609-470-119-1	„Standartų spaustuvė“, 2019, Vilnius
Smith and Tanagho's	2020	General urology	19th edition	Lange
The Journal	2011-2021	European Urology	ISSN 0302 2838	Elsevier press.
The Journal	2021	Der Urologe	ISSN: 1433-0563	Springer Medizin