

**PRIVATE HIGHER EDUCATIONAL INSTITUTION  
"INTERNATIONAL ACADEMY OF ECOLOGY AND MEDICINE"  
Department of Surgery**

**WORKING PROGRAM OF EDUCATIONAL DISCIPLINE**

**"UROLOGY"**

**LEVEL OF HIGHER EDUCATION** Second (master's) level

**DEGREE OF HIGHER EDUCATION** Master's degree

**BRANCH OF KNOWLEDGE** 22 Healthcare

**SPECIALTY** 222 Medicine

Reviewed and approved  
at the meeting of the department of surgery  
Protocol No. 1, dated August 31 , 2022

Working program of educational discipline **Urology** for the preparation of students of higher education of the second (master's) level of higher education in specialty 222 Medicine.

Agreed

The first vice-rector

A handwritten signature in blue ink, appearing to read 'ASOROKA', written over a horizontal line.

(signature)

Oleksandra SOROKA

(initials and surname)

## Introduction

The work program defines volumes knowledge, which should master student in accordance to requirements educational and qualification characteristics of the future specialist, algorithm study of the educational material of the discipline taking into account interdisciplinary connections, which excludes duplication of training material when studying problems common to different courses, it is necessary methodological support, components and "technology" of knowledge assessment students exactly:

### **based on student learning :**

medical and biological physics: explain physical foundations of diagnostic and physiotherapeutic (treatment) methods used in medicine equipment interpret general physical and biophysical patterns, what lie down in basis life activities a person

anatomy person: to determine topographical and anatomical relationship bodies and human systems, interpret gender, age and individual features structures body a person

microbiology, of virology and immunology: interpret biological properties pathogenic and non-pathogenic microorganisms, viruses and regularities their interaction with macroorganism, with population a person and external environment interpret the main ones mechanisms formation immune answers body a person

histology, cytology and embryology: interpret the microscopic structure of various human organs in the aspect of interrelationships of the tissues included in their composition different aged periods and also in conditions physiological and reparative regeneration (MON.051);

physiology: analyze state sensory processes in security human activities; explain the physiological basis of the methods research body functions

internal diseases : determine tactics driving the patient at most common therapeutic diseases, put diagnosis and give emergency assistance at basic emergencies in clinic internal diseases ;

surgery: provide emergency medical care for the most common surgical diseases ; plan examination the patient interpret the results laboratory and instrumental of research at most common surgical diseases and their complications;

pathomorphology : interpret etiology, pathogenesis and morphological changes on at different stages of disease development, structural foundations recovery, complications and consequences diseases ;

pathophysiology: interpret reasons mechanisms development and manifestations typical pathological processes;

radiology: choose optimal method radial research for detection of functional and morphological changes in the pathology of various organs and systems;

different clinical forms tuberculosis and is integrated with by these disciplines;

## **1. Description of the academic discipline**

educational disciplines	Number hours, with them				Year teaching	Kind control
	In total, Hours/ Credits	Auditory		S.S		
		Lectur es	Practic e classes			
General load	90/3 loans ECTS	10	50	30	4	Differentiat ed scoring

## **2. Goal and task educational disciplines "urology"**

The purpose of studying urology - mastering methods of diagnosis and treatment and prevention diseases bodies urinary and men's sexual systems and first of all those from them, which have most wide spread.

IN as a result study educational disciplines "urology" student should know:

clinical anatomy, physiology and methods research bodies urinary and men's sexual systems;

etiological and pathogenetic factors diseases bodies urinary and men's sexual systems;  
 Be able:  
 put previous diagnosis the most common urological diseases;  
 determine tactics treatment the patient at most spread out diseases bodies urinary and men's sexual systems;  
 diagnose and give urgent medical help sick with urological pathology;  
 use the basic principles of urological prevention diseases

### 3. Competencies and program learning outcomes:

General competences (CG)	
ZK-1	Ability to abstract thinking, analysis and synthesis.
ZK-2	Ability to learn and master modern knowledge.
ZK-3	Ability to apply knowledge in practical situations
ZK-4	Knowledge and understanding of the subject area and understanding of professional activity
ZK-5	Ability to adapt and act in a new situation
ZK-6	Ability to make informed decisions.
ZK-7	Ability to work in a team.
ZK-8	Ability to interpersonal interaction.
ZK-10	Ability to use information and communication technologies.
ZK-11	Ability to search, process and analyze information from various sources.
ZK-12	Determination and persistence in relation to assigned tasks and assumed responsibilities.
Professional competences (FC)	
FC-1	Ability to collect medical information about the patient and analyze clinical data.
FC-2	Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.
FC-3	Ability to establish a preliminary and clinical diagnosis of the disease.
FC-4	The ability to determine the necessary regime of work and rest in the treatment and prevention of diseases.
FC-5	The ability to determine the nature of nutrition in the treatment and prevention of diseases.
FC-6	Ability to determine the principles and nature of treatment and prevention of diseases.
FC-7	Ability to diagnose emergency conditions.
FC-8	Ability to determine tactics and provide emergency medical care.
FC-10	Ability to perform medical manipulations.
FC-11	Ability to solve medical problems in new or unfamiliar environments in the presence of incomplete or limited information, taking into account aspects of social and ethical responsibility.
FC-16	Ability to maintain medical documentation, including electronic forms.
FC-21	It is clear and unambiguous to convey one's own knowledge, conclusions and arguments on health care problems and related issues to specialists and non-specialists, in particular to people who are studying.
FC-24	Adherence to ethical principles when working with patients and laboratory animals.
FC-25	Adherence to professional and academic integrity, to be responsible for the reliability of the obtained scientific results.
Program Learning Outcomes (PLP)	
PRN-1	Have thorough knowledge of the structure of professional activity. To be able to carry out professional activities that require updating and integration of knowledge. To be responsible for professional development, the ability for further professional training with a high level of autonomy.
PRN-3	Specialized conceptual knowledge, which includes scientific achievements in the field of health care and is the basis for conducting research, critical understanding of problems in the field of medicine and related interdisciplinary problems.

PRN-4	Identify and identify leading clinical symptoms and syndromes (according to list 1); according to standard methods, using preliminary data of the patient's history, data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (according to list 2).
PRN-5	Collect complaints, history of life and diseases, evaluate psychomotor and physical development of the patient, state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information regarding the diagnosis (according to list 4), taking into account the age of the patient.
PRN-6	Establish the final clinical diagnosis by making a reasoned decision and analyzing the received subjective and objective data of clinical, additional examination, differential diagnosis, observing the relevant ethical and legal norms, under the supervision of the head physician in the conditions of the health care institution (according to list 2).
PRN-7	Assign and analyze additional (mandatory and optional) examination methods (laboratory, functional and/or instrumental) (according to list 4) of patients with diseases of organs and body systems for differential diagnosis of diseases (according to list 2).
PRN-8	Determine the main clinical syndrome or what causes the severity of the condition of the victim/injured (according to list 3) by making a reasoned decision and assessing the person's condition under any circumstances (in the conditions of a health care institution, outside its borders) , including in conditions of emergency and hostilities, in field conditions, in conditions of lack of information and limited time.
PRN-9	Determine the nature and principles of treatment (conservative, operative) of patients with diseases (according to list 2), taking into account the patient's age, in the conditions of a health care institution, outside its borders and at the stages of medical evacuation , including in field conditions, on the basis of a preliminary clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes, in case of the need to expand the standard scheme, be able to justify personalized recommendations under the control of the head physician in the conditions of a medical institution.
PRN-10	Determine the necessary mode of work, rest and nutrition on the basis of the final clinical diagnosis, observing the relevant ethical and legal norms, by making a reasoned decision according to existing algorithms and standard schemes.
PRN-14	Determine tactics and provide emergency medical care in emergency situations (according to list 3) in limited time in accordance with existing clinical protocols and treatment standards.
PRN-17	Perform medical manipulations (according to list 5) in the conditions of a medical institution, at home or at work based on a previous clinical diagnosis and/or indicators of the patient's condition by making a reasoned decision, observing the relevant ethical and legal norms.
PRN-18	To determine the state of functioning and limitations of a person's vital activities and the duration of incapacity for work with the preparation of relevant documents, in the conditions of a health care institution, based on data about the disease and its course, peculiarities of the person's professional activity, etc. Maintain medical documentation regarding the patient and the contingent of the population on the basis of regulatory documents.
PRN-21	Search for the necessary information in the professional literature and databases of other sources, analyze, evaluate and apply this information.
PRN-22	Apply modern digital technologies, specialized software, and statistical methods of data analysis to solve complex healthcare problems.
PRN-24	To organize the necessary level of individual safety (own and the persons he cares for) in case of typical dangerous situations in the individual field of activity.
PRN-27	Communicate freely in the national and English languages, both orally and in writing to discuss professional activities, research and projects.

#### **4. Program educational disciplines "Urology".**

##### **Module 1. Urology.**

###### ***Content modules:***

- 1. Clinical anatomy, physiology, methods research bodies urinary and men's sexual systems Disadvantages development bodies genitourinary systems.*
- 2. Non-specific and specific inflammatory disease bodies genitourinary systems. Sechokamyana disease.*
- 3. Traumatic damage and neoplasm bodies urinary and men's sexual systems Acute and chronic renal insufficiency.*
- 4. Urgent help at urological diseases*

###### **Content module 1:**

###### **Topic 1-2. Anatomy and physiology bodies urinary and men's reproductive system.**

###### **Semiotics urological diseases Anomalies of development.**

Anatomical structure of kidney, ureter, bladder, urethra, prostate, testicle, penis.

Kidneys Examination of the kidney area. Palpation of the kidneys. Differential diagnostic value of changes in contours of the lumbar area. The main pathological processes palpably simulating kidney disease. The diagnostic value of the symptom of "tapping" in the lumbar region.

Bladder. The main pathological processes that lead to an increase in the bladder. Diagnostic value of examination, palpation and percussion of the bladder.

Prostate gland, seminal vesicles. Technique of rectal digital examination. Adenoma and prostate cancer. Changes in the prostate gland during its inflammation. Diagnostic value of the analysis of prostate secretion.

Urinary tract Methods of examination and palpation and their diagnostic value. Penis. Diagnostic value of palpation data.

Testicle. Methods of examination and palpation and their diagnostic value.

Differential diagnostic value of diaphanoscopy.

Pain in the lumbar region. Their general characteristics, etiology, localization, irradiation. Renal colic. Etiology and pathogenesis of pain in diseases of the bladder, prostate gland and external genital organs.

Urinary disorders. Definition, etiology, pathogenesis. Polyuria, pollakiuria, nocturia. Urinary incontinence, its types. Urinary incontinence. Acute and chronic retention of urine. Residual urine and methods of its determination. Paradoxical ischuria.

Quantitative changes in urine: physiological and pathological polyuria. Oliguria.

Anuria. Types of anuria: pre-renal, renal, post-renal, their causes.

Qualitative changes in urine: hematuria, its types, causes. Pyuria. Bacteriuria, its types. Pneumaturia. Hyluria, its types. Urethrorrhagia, its causes. Urine reaction is normal and pathological. Methods of quantitative evaluation of leukocyturia according to Addis-Kakovskii, Ambyurge, Nechiporenko. Provocative tests. Detection of atypical cells and urine and its diagnostic value.

The frequency of abnormalities in the development of organs of the urinary and male reproductive systems. Modern classification anomaly development Anomalies renal blood vessels kidney, ureters, urachus, urinary bubble, ureter, men's sexual bodies Clinical significance of developmental anomalies, methods of their diagnosis. Violation of uro- and hemodynamics in kidney abnormalities. Diagnostic and tactical errors are possible with anomalies kidney

###### **Topic 3. X-ray radionuclides, thermographic, ultrasonic and instrumental methods examination urological patients.**

Assessment of renal function. Dissolution and concentration tests. Zimnitsky's test. Determination of the content of nitrogenous impurities in the blood.

Overview picture. Interpretation of the image: shadows of the musculoskeletal system, skeleton topography of the kidneys, images of the shadows of the kidneys and pathological formations.

Excretory urography, its types. Types of contrast agents. Implementation method. Interpretation

of excretory urograms . Contraindications to excretory urography . Possible complications and their prevention.

Retrograde ureteropyelography . Types of contrast agents for retrograde ureteropyelography , the amount of the drug that must be injected into the bowl. Interpretation of ureteropyelograms . Advantages and disadvantages of retrograde ureteropyelography .

Computed tomography and nuclear magnetic tomography, indications for their use, diagnostic possibilities.

Renal angiography, its types. Angiogram phases. The value of renal angiography as a functional and morphological method. Indications and contraindications for renal angiography. Complications and their prevention. Angiographic signs of various pathological processes in the kidneys. Combination of diagnostic vascular methods with therapeutic manipulations in urological diseases: balloon dilatation of renal artery stenoses, embolization therapy. Indications for them and methods of implementation.

Cystography . The essence of the method, indications and methods of implementation. Modifications of cystography : sedimentary, micturition , polycystography , pericystography . Prevention of inflammatory complications during cystography .

Urethrography , its types: ascending and micturition descending , execution method, diagnostic value. Complications during urethrography and their prevention. Lymphadenography . Genitography , method of execution, diagnostic value.

Isotopic renography , nephroscintigraphy , scanning, method of execution. Diagnostic value.

Methods of studying urodynamics : X- ray and television pyeloureteroscopy , uroflowmetry , cystomanometry .

Thermographic methods: definitions, types, indications for use.

Diagnostic value.

Ultrasound examination: definition, types: transcutaneous endovesical , transrectal and transvaginal examination, indications for them. Puncture examination of the kidney, renal pelvis and prostate gland under ultrasound control.

Electrophysiological research methods: reorenography , electromyography of the urinary bladder and ureter . Definition, indications for use, diagnostic significance.

Types of catheters. Elastic catheters of Nelaton , Thimans , Foley , Petzer , indications for their use. Charrier scale for determining the diameter of the catheter. Catheterization urinary bubble men and women Possible complication catheterization urinary bubble, their prevention and treatment. Method carrying out metal catheter in men

Urethroscopy. Cyst- and chromocystoscopy. Tools for endoscopic examination. Machinery implementation urethroscopy, cystoscopy, chromocystoscopy. Complication cystoscopy, their prevention and treatment. Catheterization technique ureters Ureteroscopy , pyeloscopy .

## ***Content module 2.***

*Nonspecific and specific inflammatory diseases of organs urinary and men's sexual systems. Sechokamyan disease. Hydronephrosis.*

### ***Specific purposes:***

- *Determine the main ones clinical manifestations inflammatory diseases urinary and men's sexual bodies*
- *Understand reasons and mechanisms development inflammatory diseases*
- *Create schemes diagnostics and treatment typical cases at inflammatory diseases and propose plans for treatment measures independencies from clinical course pathological process.*
- *Analyze and interpret clinical and laboratory results methods research.*
- *Create differential diagnostic criteria basic clinicalmanifestations diseases bodies urinary and men's sexual systems.*
- *To assess the prognosis for recovery and restoration of functions in patients with inflammatory diseases and urolithiasis the disease*
- *Give urgent help at renal rings \_*

➤ *Give urgent help at sharp epididymitis*

#### **Topic 4-5. Acute pyelonephritis . Chronic pyelonephritis**

Classification. Etiology, pathogenesis, ways contagion. The value of pelvic -renal reflux , venous stasis the general state of the organism, its immunobiological reactivity in the emergence pyelonephritis local factors which contribute development pyelonephritis Different pathomorphological forms sharp pyelonephritis: serous, apostematous , kidney carbuncle, kidney abscess, necrotic papillitis . Clinic, diagnosis. Treatment: conservative and operational Urgent methods restoration passage of urine from the kidney: catheterization, stent placement , puncture transdermalnephrostomy .

*Clinic. Diagnostics. Treatment.*

Pyonephrosis: clinic, diagnosis, treatment. The most common antibacterial drugs Value definition sensitivity microflora urine

Sharp and chronic paranephritis Disease Ormond .

Paranephritis: definition, ways penetration infections Clinic. Pathspulling dung Diagnostics. Treatment.

Disease Ormond or retroperitoneal fibrosis: definition, etiology, clinical picture, diagnosis, treatment.

#### **Topic 6. Nephrogenic arterial hypertension.**

A symptom of many diseases, but 35-40% of patients with "hypertensive disease" are patients with kidney damage. This type of blood pressure increase is called nephrogenic (renal) arterial hypertension, it is allocated to a separate group of hypertension . Arterial hypertension is quite often observed in acute diffuse kidney diseases (for example, acute glomerulonephritis , nephrotic syndrome of any origin, especially in the initial stage). In such cases, hypertension accompanies swelling and disappears after the swelling subsides and a significant decrease in proteinuria and hematuria. It is caused by overflow of vessels with blood ( hypervolemia ) and is a consequence of retention of sodium and water in the body. Over time, hypertension can manifest itself as a complication of some chronic kidney disease, in particular glomerulonephritis , pyelonephritis, urolithiasis, tuberculosis, etc.

Nephrogenic arterial hypertension is observed in almost all kidney diseases and anomalies - hydronephrosis, tuberculosis, cysts, tumors, urolithiasis, radiation damage, etc. But most often it is caused by pyelonephritis - primary or that developed against the background of other diseases.

#### **Topic 7. clean , prostatitis , urethritis , epididymitis , cavernites \_**

To clean : classification, ways penetration infections factors, which contribute to the occurrence of cystitis : local, general. Symptoms. Diagnostics. Treatment.

Prostatitis: definition, classification, etiology, clinic. Diagnostics.

Paths breakthrough abscess prostate glands Treatment prostatitis .

Urethritis: etiology and pathogenesis, classification. Kinds causative agents Clinicalcourse, diagnosis Treatment urethritis and their complications.

Epididymitis : definition, etiology, pathogenesis. Clinical course, diagnosis and treatment.

Cavernitis : definition, etiology, clinical course, diagnosis, treatment.

#### **Topic 8 . Specific inflammatory diseases of the urinary and male organs sexual systems.**

Kidney tuberculosis: etiology, pathogenesis. Ways of pathogen penetration disease. Stages development disease. Pathological picture. Semiology. Methods diagnostics. Provocative samples with tuberculin Modern methods treatment. Dispensary supervision. Indication to urgent operative treatment.

Tuberculosis of the male genital organs: etiology, pathogenesis, clinical course. Diagnostics and methods treatment.

#### **Topic 9 . Urinary stone disease and hydronephrosis. Spread of urolithiasis diseases**

Recurrent nature disease. Etiology and pathogenesis. Characteristic stones by form, localization and chemical composition X-ray optical properties stones

Stones kidneys: clinical picture, diagnosis, treatment. Coral-like nephrolithiasis, classification, clinic, diagnosis, treatment. Complications of kidney stones. Modern methods of treatment of urolithiasis. Indication to operative treatment.

Stones urinary bladder: etiology, clinical picture, diagnosis, treatment.

Prostate stones : clinic, diagnosis, treatment. hydronephrosis, ureterohydronephrosis : etiology and pathogenesis disease.



Stages hydronephrosis Clinical course. Diagnostics. Methods treatment. Principles and types of plastic surgery for hydronephrosis. Surgical correction ureterohydronephrosis , method ureteroneocystonastomosis , antireflux operations

### **Topic 10. Parasitic diseases in urology.**

Parasitic diseases: etiology, pathogenesis, classification. Ways of pathogen penetration disease. Stages development disease. Pathological picture. Semiology. Methods diagnostics. Modern methods treatment.

**Contentful module 3. Traumatic damage and neoplasm bodies urinary and men's sexual systems. sharp and chronic renal insufficiency.**

#### ***Specific purposes:***

- *Determine the main ones clinical manifestations traumatic damage*
- *Determine the main ones symptoms kidney neoplasms, ureters, urinary bladder and men's sexual bodies*
- *Explain modern classification damage and neoplasms bodies urinary and male gender systems.*
- *Create schemes diagnostics and treatment at traumatic damage bodies urinary and men's sexual systems and to offer plans of treatment measures depending on the clinical I will run pathological process*
- *Analyze and interpret clinical and laboratory results methods research kidney, ureters, urinary bubble, ureter and men's sexual bodies*
- *Create differential diagnostic criteria basic clinical manifestations diseases bodies urinary and men's sexual systems.*
- *Assess the prognosis for recovery and restoration of functions in patients with kidney neoplasms, ureters, bladder*
- *Give the first help in case of damage kidneys, bladder, ureter and men's sexual bodies*
- *Interpret changes with side kidney at general diseases (diabetes, hypertension, etc).*

### **Topic 11. Traumatic damage bodies urinary and male gender systems.**

Kidney damage: open and closed. Kidney damage in combination with injury to other organs. Classification. Clinic. Diagnostics. Conservative and operational treatment.

Iatrogenic damage kidney and ureters: clinic, diagnosis, treatment.

Damage urinary bladder: open and closed, internally- and extraperitoneal \_ Urinary seepage as characteristic consequence damage bladder

Breakaway neck urinary bubble symptoms, diagnosis Sample Zeldovich with filling urinary bubble Cystography – basic method diagnostics damage bladder Machinery implementation.

Damage urinary bubble under time operational interventions on bodies abdominal cavity, small pelvis gynecological operational interventions , childbirth, during endoscopic manipulations and operations. Diagnostics. Treatment. Damage ureter Reasons damage and mechanism injuries

Clinic, diagnosis, treatment. Ascending urethrocytography and its diagnostic value. Epicystostomy and drainage urohematoma . Possibility primary plastics ureter Plastic operational intervention on ureter: operations Holtsova , Undercut -Vyshnevsky , Solovova , their features and remote the results

Damage bodies wickets: species damage, symptoms, diagnosis, treatment.

twist testicles: etiology, symptoms, diagnosis, treatment.

### **Topic 12. Neoplasms bodies urinary and men's sexual systems**

Cancer parenchyma kidneys: etiology, pathological anatomy, symptoms, diagnosis, ways of metastasis, treatment.

Tumor Wilms – adenomyosarcoma : symptoms, diagnosis, treatment.

Cancer renal bowls: symptoms, diagnosis, treatment. Tumors ureters: symptoms, diagnosis, treatment.

Tumors urinary bladder: etiology and pathogenesis. Classification. symptoms, diagnosis Methods treatment: operative, chemotherapy, radial therapy. Place endoscopic surgery in treatment cancer urinary bubble

Hyperplasia prostate glands Etiology and pathogenesis. Pathogenesis stages of hyperplasia. Clinical manifestations. Diagnostics. Treatment: conservative and operational One- and two-stage prostatectomy . Modern minimally invasive methods treatment hyperplasia, indication to them implementation.

Cancer prostate glands Etiology. Stages disease. Clinical picture, diagnosis, treatment. Value PSA in diagnostics cancer prostate glands Estrogenotherapy prostate cancer glands

Testicular tumors. Pathogenetic significance of testicular injury and cryptorchidism in development of testicular tumors. Ways of metastasis. Clinical picture. diagnostics, treatment.

Penile cancer. Etiology. The role of phimosis and balanoposthitis in development cancer sexual member Clinic, diagnosis Principles treatment.

### **Topic 13. Acute and chronic kidney failure. Indication and contraindication to transplantation kidneys**

Acute renal failure: etiology, pathogenesis, stages of the disease. symptoms, diagnosis Principles conservative therapy Intestinal dialysis, peritoneal dialysis and hemodialysis in treatment sharp renal deficiencies

Etiology and pathogenesis of chronic renal failure. Stages and forms clinical course. Clinic, diagnosis, treatment. Indications for conducting peritoneal dialysis and hemodialysis

Kidney transplantation. Indications for kidney transplantation. Preparation recipient . Choice donor Conducting postoperative period Modern immunosuppressive drugs

#### ***Contentful module 4. Urgent help at urological diseases***

##### ***Specific purposes:***

- *Determine the main causes and clinical manifestations of urgent conditionsgenitourinary bodies*
- *To describe the pathogenetic mechanisms of the development of urgent diseases genitourinary bodies*
- *Use differential diagnostic criteria basic clinical manifestations urgent became genitourinary bodies for evaluations state the patient*
- *Analyze and interpret clinical results and laboratory methods research with urgent diseases*
- *Create algorithms diagnostic and medical tactics at injuries, renal rings , bleeding, acute urinary retention, anuria*
- *To demonstrate the main methods of providing assistance in emergency casesurological diseases*
- *Evaluate forecast of recovery and restoration functions in patients with urgent urological pathology*

### **Topic 14. Emergency care for chronic diseases in urology.**

Nirkova colic. Mechanism occurrence renal how much The main ones signs renal how many Differential diagnosis with by others diseases Purchase methods renal how many sharp delay urine Reasons. Diagnostics. The first help. Anury. Types of anuria. Causes of anuria. Symptoms.

Diagnostics. Treatment. Injuries kidneys, urinary bubble, ureter and testicles Symptoms. Diagnostics. The first help. Boogie narrowing ureter

## 5. Structure educational disciplines "Urology"

Topic	Lectures	Practical occupation	SRS	Individual SRS
<i>Contentful module 1. Clinical anatomy, physiology, methods research and defects development urinary organs and men's sexual systems</i>				
1. Clinical anatomy and physiology of urinary organs systems. Malformations of the organs of the urinary system. Nephroptosis .		3	2	
2. Semiotics urological diseases		3	1	
3. Modern and endoscopic methods of diagnosis and treatment in urology		3	2	
<i>Contentful module 2. Incendiary disease and urolithiasis</i>				
1. Acute pyelonephritis.	2	3	3	
2. Chronic pyelonephritis, pyonephrosis, retroperitoneal fibrosis, acute paranephritis		3	3	
3. Nephrogenic arterial hypertension.		3	3	
4. Cystitis, prostatitis, urethritis, cavernite ,epididymitis .		3	2	
5. Tuberculosis urinary ways and bodies men's sexual systems.	3		2	
6. Urinary stones disease, hydronephrosis	3		2	
7. Parasitic disease in urology	2	3	2	
<i>Contentful module 3. Traumatic damage and neoplasm bodies urinary and men's sexual systems</i>				
1. Traumatic damage.		3	3	
2. Neoplasms.	2	3	2	
3. Acute and chronic renal insufficiency.	2	3	3	
<i>Contentful module 4. Urgent help at diseases bodies urinary and men's sexual systems</i>				
1. Urgent help at diseases organs of the urinary and male reproductive system. Genitourinary fistula in women	2	3	4	
<b>Differential calculation</b>				
<b>In total hours: 10 46 34</b>				

### 5.1. Thematic plan lectures

No	TOPIC	Number hours
1	Non-specific and specific inflammatory disease bodies urinary and male sex systems.	2
2	Sechokamyran disease.	2
3	Neoplasm bodies urinary and men's sexual systems.	2
4	Acute and chronic renal failure.	2
5	Emergency conditions in urology.	2
	<b>Together:</b>	<b>10</b>

## 5.2. Topics practical classes

No	TOPIC	Number hours
1	Clinical anatomy, physiology bodies urinary systems Malformations of the organs of the urinary system. Nephroptosis .	3
2	Semiotics urological diseases	3
3	Modern methods urological examination patients	3
4	Infectious inflammatory disease bodies urinary systems. Acute pyelonephritis.	3
5	Chronic pyelonephritis, pyonephrosis,retroperitoneal fibrosis, acute paranephritis	3
6	Nephrogenic arterial hypertension.	3
7	Cystitis, prostatitis, urethritis, cavernite ,epididymitis .	3
8	Tuberculosis bodies urinary systems.	3
9	Sechokamyan disease.	3
10	Parasitic diseases in urology.	3
11	Traumatic damage bodies men's sexual systems.	3
12	Tumors urinary organs systems.	3
thirteen	Acute and chronic renal failure.	3
14	Emergency care for chronic diseases in urology.	3
15	Differential calculation	4
	<b>Total:</b>	<b>46</b>

## 5.3. Independent work

No z.p. _	TOPIC	Number hours	Kind control
1	Preparation to practical classes - theoretical preparation and processingpractical skills	17	Current control under time practicalclasses
2	Topics for independent processing:		
	- nephroptosis	3	Current CONTROL
	- parasitic disease in urology	3	Current CONTROL
	- neurogenic disorders urination	3	Current CONTROL
	- genitourinary fistula in women	3	Current CONTROL
	- nephrogenic arterial hypertension	3	Current CONTROL
	-modern endoscopic methods diagnosis and treatment of diseases of the bladder, urethra and prostate glands	2	Current CONTROL
	<b>Together:</b>	<b>34</b>	

## 6. Individual tasks.

Individual tasks are one of the forms of organization of training, which aims to deepen, generalize and consolidate the knowledge that students receive in the learning process, as well as the application of this knowledge in practice. Individual tasks are performed by students independently under the guidance of the teacher.

Individual tasks include: writing essays and creating multimedia presentations with reports at meetings of the department's scientific student circle, participation in the department's scientific and research work, participation in writing theses and articles for reports at student scientific conferences.

List of tasks for individual student work: Protection of an individual research project ; participation in the work of the student scientific circle and speeches at scientific forums; participation in the student Olympiad in discipline; selection of video and audio materials from sections of the academic discipline; selection of materials and creation of a presentation on a relevant topic or section of the discipline.

## 7. Teaching methods

According to the sources of knowledge, teaching methods are used: verbal - story, explanation, lecture, instruction; visual - demonstration, illustration; practical - practical work, problem solving. According to the nature of the logic of knowledge, methods are used: analytical, synthetic, analytical-synthetic, inductive, deductive. According to the level of independent mental activity, the following methods are used: problem-based, searching, research.

1. Verbal methods: lecture, conversation;
2. Visual methods: illustration, demonstration, demonstration at the patient's bedside;
3. Practical methods: performing practical work and solving clinical situational tasks to develop skills and abilities; simulation training.
4. Students' independent work on understanding and assimilation of new material
5. Use of control and educational computer programs
6. Innovative teaching methods: Case - based learning (Learning through the analysis of a clinical case, situation); brainstorming; educational discussion; educational debate; role play; training in a team (Team-based learning).

The types of training according to the curriculum are: lectures; practical training; independent work of students.

## 8. Control methods

**Current control** is carried out on the basis of control theoretical knowledge, practical skills and abilities.

**Forms of current control** are: *in the dream* survey (frontal, individual, combined), interview; **practical verification of the formed professional skills** (carried out based on the results of solving clinical cases, working with medical documentation, performing practical skills, working at the patient's bedside); **test control** ("open" and "closed" test tasks).

Current control is mandatory. During the evaluation of mastering of each topic from all disciplines of the curriculum for the current educational activity, the student is given grades on a 4-point (traditional scale) taking into account the approved evaluation criteria for the discipline. All types of work provided by the curriculum are taken into account. The student must receive a grade in each topic. The teacher conducts a survey of each student in the group at each lesson and assigns a grade in the journal of attendance and student performance according to the traditional scale ("5", "4", "3", "2").

When evaluating the student's current educational activity, 20% of the grade is the student's independent work, which takes into account the knowledge of the topic of independent study and the performance of work in the notebook.

**The final (summary) control is carried out :**

- in the form of a written test, which includes test tasks, theoretical questions
- control of practical skills (solving clinical cases, defense of medical history, assessment of the correctness of practical skills - practical-oriented exam.

According to the specifics of professional training, preference is given to test and practically oriented control.

**Differential** assessment is a form of final control of the student's assimilation of theoretical and practical material from the academic discipline.

## 9. Scheme of calculation and distribution of points received by students.

The maximum number of points for a discipline is 200 points. The ratio between the results of the evaluation of the current educational activity and the final control of knowledge is 60% and 40%.

**The study of the discipline** ends with a final control in the form of a differential assessment.

Only those students who do not have academic debt (all missed classes have been completed) and whose average score for the current educational activity in the academic discipline is at least "3" are admitted to the differential credit.

**The maximum number of points** that a student can score for the current educational activity for admission to the diff. credit is 120 points and is defined as the sum of the arithmetic average of all grades received in the semester.

**The minimum number of points** that a student must score for the current educational activity is 72 points. Recalculation of the average grade for the current academic performance (on a 120-point scale) in the table. 1.

**Table 1.**

**Recalculation of the average grade for the current academic performance in a multi-point scale for disciplines ending with a differential credit**

4-point scale	200-point scale	4-point scale	200-point scale	4-point scale	200-point scale
5	120	4.29	103	3.58	86
4.96	119	4.25	102	3.54	85
4.92	118	4.21	101	3.50	84
4.87	117	4.17	100	3.46	83
4.83	116	4.12	99	3.42	82
4.79	115	4.08	98	3.37	81
4.75	114	4.04	97	3.33	80
4.71	113	4.00	96	3.29	79
4.67	112	3.96	95	3.25	78
4.62	111	3.92	94	3.21	77
4.58	110	3.87	93	3.17	76
4.54	109	3.83	92	3.12	75
4.50	108	3.79	91	3.08	74
4.46	107	3.75	90	3.04	73
4.42	106	3.71	89	3	72
4.37	105	3.67	88	Less than 3	Not enough
4.33	104	3.62	87		

The maximum number of points that a student can score when taking a differential assessment is 80 (the minimum number is at least 50).

Discipline assessment is defined comprehensively as the sum of points for the current educational activity and points for differential assessment.

From the allocated 120 points for the current educational activity, 4 to 12 additional points are allocated for the assessment of individual independent work of higher education applicants, according to

the work curriculum. Encouragement points are added to the final grade for the discipline at the end of its study.

Points with disciplines for students, which successfully completed the program are converted into the national scale and ECTS system (Table 2).

**Table 2**

**Scale assessment: national and ECTS**

Total points for all types of educational activity	Rating ECTS	Rating by national scale	
		for exam, diff. offset	for offset
180-200	A	perfectly	counted
160-179	B	okay	
150-159	C		
130-149	D	satisfactorily	
120-129	E		
50-119	FX	unsatisfactorily with the possibility of refolding	not counted with possibility of rearrangement
0-49	F	unsatisfactorily with mandatory repeated studying of the discipline	not counted with mandatory repeated study of disciplines

**10. Methodological support**

1. Work program of the academic discipline;
2. Plans of lectures, practical classes and independent work of students;
3. Abstracts of lectures on the discipline;
4. Methodical instructions for practical classes for students;
5. Methodical materials that ensure independent work of students;
6. Test and control tasks for practical classes;
7. List of exam questions

**11. List questions, what are carried out on differential calculation**

1. Main directions of development and achievements of modern urology.
2. Organs of the urinary and male reproductive system, their functional significance.
3. Clinical anatomy of the organs of the urinary and male reproductive systems.
4. Pain in kidney disease.
5. Pain in diseases of the ureters and bladder.
6. Pain in diseases of the urethra and male genital organs.
7. Differential diagnosis of renal colic and acute surgical diseases of the abdominal cavity.
8. Nocturia, its diagnostic significance.
9. Lorin-Epstein method of blocking the elements of the spermatic cord and the round ligament of the uterus.
10. Polyuria and pollakiuria. In what diseases are they observed?
11. Urinary incontinence, its types.
12. Acute retention of urine.
13. Chronic retention of urine.
14. Symptom of residual urine.
15. Anuria, its types.

16. Causes of prerenal form of anuria.
17. Causes of the renal form of anuria.
18. Causes of postrenal anuria.
19. What is &quot;hidden leukocyturia " and methods of its detection?
20. Hematuria: types, causes, methods of determination.
21. Bacteriuria , its types.
22. Hyluria , its types.
23. Pyuria .
24. Pneumaturia .
25. Urethrorrhagia .
26. Survey urography and its interpretation.
27. Excretory urography , its types, method of execution.
28. Types of radiopaque substances.
29. Contraindications to excretory urography .
30. Retrograde ureteropyelography , method of execution.
31. Retroperitoneum , indications for performance, method of performance.
32. Renal angiography, its types. Diagnostic value.
33. Cystography , types: sedimentary, micturition , polycystography , indications for performance, diagnostic significance.
34. Urethrography , types, method of execution.
35. Radioisotope renography , performance technique, diagnostic significance.
36. Kidney scan.
37. Scintigraphy , types, diagnostic significance.
38. Computed tomography, nuclear magnetic tomography.
39. Ultrasound sonography .
40. Thermographic studies, their types, diagnostic significance.
41. Uroflowmetry , cystomanometry .
42. Anomalies of renal vessels.
43. Abnormalities of kidneys.
44. Anomalies of the ureters.
45. Abnormalities of the urachus .
46. Anomalies of the urinary bladder.
47. Anomalies of the urethra.
48. Abnormalities of testicles.
49. Phimosis and paraphimosis .
50. Acute pyelonephritis, definition, classification.
51. Ways of penetration of the infection into the kidney.
52. Symptoms of acute serous pyelonephritis.
53. Diagnosis and treatment of acute pyelonephritis.
54. Apostematous nephritis: symptoms, diagnosis, treatment.
55. Kidney carbuncle: symptoms, diagnosis, treatment.
56. Kidney abscess: symptoms, diagnosis, treatment.
57. Pyelonephritis of pregnant women: causes, clinic, diagnosis, treatment.
58. Bacteremic shock: stages, symptoms, diagnosis, treatment.
59. Etiology of chronic pyelonephritis, symptoms, diagnosis, treatment.
60. Pyonephrosis: symptoms, diagnosis, treatment.
61. Methods of detecting hidden leukocyturia .
62. Nephrogenic hypertension: types, causes, diagnosis, treatment.
63. Acute paranephritis: definition, ways of infection, symptoms, diagnosis, treatment.
64. Ways of pus breakthrough in paranephritis.
65. Retroperitoneal fibrosis: definition, etiology, symptoms, diagnosis, treatment.
66. Cystitis : classification, symptoms, diagnosis, treatment.



67. Cystalgia: symptoms, diagnosis, treatment.
68. Urethritis: classification, symptoms, diagnosis, treatment.
69. Prostatitis: classification, symptoms, diagnosis, treatment.
70. Ways of pus breakthrough in prostate abscess.
71. Acute epididymitis : etiology, symptoms, diagnosis, treatment.
72. Cavernitis : symptoms, diagnosis, treatment.
73. Etiology and pathogenesis of kidney tuberculosis.
74. Clinical and radiological classification of kidney tuberculosis.
75. Symptoms and diagnosis of kidney tuberculosis. Diagnostic value of provocation tests with tuberculin.
76. Modern methods of treatment of kidney tuberculosis.
77. Symptoms, diagnosis and treatment of tuberculous epididymitis.
78. Etiology and pathogenesis of urolithiasis.
79. Clinical picture of kidney stones.
80. Complications of kidney stones.
81. Methods of diagnosing kidney stones.
82. Modern methods of treatment of urolithiasis.
83. Coral-like stones , their classification.
84. Stones of the ureters: symptoms, diagnosis, treatment.
85. Bladder stones: clinic, diagnosis, treatment .
86. Hydronephrosis: stages, symptoms, diagnosis, treatment.
87. Classification of closed kidney damage.
88. Symptoms, diagnosis and treatment of closed kidney damage.
89. Classification of open kidney damage, symptoms, diagnosis and treatment.
90. Damage to the ureters. Symptoms, diagnosis, treatment.
91. Bladder damage, types, clinical manifestations.
92. Diagnosis and treatment of bladder injuries.
93. Damage to the urethra, symptoms, diagnosis, treatment.
94. Indications for applying the primary suture of the urethra.
95. Types of plastic surgery for post-traumatic complications damage to the urethra.
96. Modern minimally invasive methods of treating urethral strictures.
97. Damage to the testicles, types, symptoms, diagnosis, treatment.
98. Classification of kidney tumors.
99. Local and extrarenal signs of a kidney parenchyma tumor.
100. Diagnosis and treatment of kidney parenchyma tumors.
101. Cancer of the renal pelvis, symptoms, diagnosis, treatment.
102. Wilms' tumor - adenomyosarcoma , symptoms, diagnosis, treatment.
103. Tumors of the ureters, clinic, diagnosis, treatment.
104. Etiology of bladder tumors.
105. Classification of bladder tumors.
106. Clinic, diagnosis and treatment of bladder tumors.
107. Modern minimally invasive methods of treatment of bladder tumors.
108. Hyperplasia of the prostate gland, stages of the disease.
109. Symptoms, diagnosis and treatment of hyperplasia of the prostate gland.
110. Types of surgical interventions in the treatment of prostatic hyperplasia.
111. Conservative treatment of prostatic hyperplasia.
112. Early and late complications of surgical treatment of hyperplasia prostate gland.
113. Stages of prostate cancer.

114. Symptoms, diagnosis and treatment of prostate cancer.
115. Operative treatment of prostate cancer.
116. Modern minimally invasive methods of prostate cancer treatment.
117. What drugs are used to treat prostate cancer glands?
118. Clinic, diagnosis and treatment of testicular tumors.
119. Clinic, diagnosis and treatment of penile cancer.
120. Symptoms, diagnosis and treatment of nephroptosis .
121. Etiology, clinic, diagnosis and treatment of vesico-vaginal fistulae.
122. Etiology, clinic, diagnosis and treatment of urovaginal fistulae.
123. Echinococcosis of the organs of the urinary system.
124. Filariasis of organs of the genitourinary system.
125. Urogenital schistosomiasis ( bilharziasis ): etiology, clinic, diagnosis and treatment.
126. Neurogenic disorders of urination, causes, symptoms, diagnosis and treatment.
127. Foreign bodies of the kidneys and urinary tract: clinic, diagnosis, treatment.
128. Etiology, pathogenesis and classification of acute renal failure.
129. Symptoms, diagnosis and treatment of acute renal failure.
130. Etiology, pathogenesis of chronic renal failure.
131. Stages and forms of the clinical course of chronic renal failure.
132. Diagnosis and treatment of chronic kidney failure.
133. Indications for peritoneal dialysis.
134. Indications for hemodialysis.
135. Fibroplastic induration of the penis, clinic, diagnosis, treatment.
136. Priapism : clinic, diagnosis, treatment.
137. The importance of hemofiltration and plasmapheresis in the treatment of chronic renal failure.
138. Kidney transplantation. Preparation of the patient for surgery, donor selection.
139. Management of the postoperative period after kidney transplantation.
140. Causes and symptomatology of renal colic .
141. Methods of treating renal colic .
142. Method of blocking the elements of the vas deferens in men and the round ligament of the uterus in women.
143. Causes of acute urinary retention.
144. Method of bladder catheterization in men and women.
145. Hematuria, its types, causes.
146. Medical assistance with hematuria.
147. Anuria, its types.
148. Medical assistance for various types of anuria.
149. Emergency care for kidney injuries.
150. Emergency care for injuries of the bladder, urethra, and portal vein.

## **12. Recommended literature**

### **a) Main**

1. Kwiatkovskaya TA Structure and function of the upper urinary tract: monograph [Text ] / Kwiatkovskaya TA- Dnepropetrovsk: RIA Dnepr-VAL, 2015.- 414 p.
2. "Urology". S.P. Pasechnikov , Vinnytsia: Nova kniga, 2019.
3. Kolpakov IS Stone disease: student assistance [Text ] / Kolpakov IS- M.: Akademia , 2016.- 222 p .
4. Forest V.M., Arkatov A.V., Knygavko O. V. Male infertility : etiopathogenesis , diagnosis , treatment. H.: KhNMU . - 2011. - 128 p.

5. Urology. Current protocols of medical care provision: scientific and medical publication / for ed. Professor SP Pasechnikov . — Vynnytsa : "New Book", 2015. — 432 p .
6. Aubyan IA Urinary tract pain in tablets and schemes: informs. Affairs. [Text ] / Abodyan IA, Sknar VA- Rostov n/D, 2015.- 196 p.
7. Akker, LV Hyperactive woman's school in reproductive, peri- and menopause periods / LV Acker, AI Neimark, IA Fedorova, EA Klyzhina . - M.: Honey. information agency, 2015 . . - 176 p.

## **b) additional**

1. Alyaev Yu.G., Krapyvyn A.A. Resection kidneys at cancer.- M.: Medicine, 2001.
2. Urology. Current protocols of medical care provision: scientific and medical publication / for ed. Professor SP Pasechnikov . — Vynnytsa : "New Book", 2015. — 432 p.
3. EAU Guidelines . Edn . presented at the EAU Annual Congress Milan 2021. ISBN 978-94-92671-13-4.
4. Zalobkova prostatectomy in the surgical treatment of benign prostatic hyperplasia: a study guide / Ed. V.I. Horovoy, V.O. Shaprynskyi , I.V. Baralo , O.M. Kapshuka - Vinnytsia: LLC "Tvor", 2021. - 336 p.
5. Radical prostatectomy / sub. ed.. R. Kirby , F. Montorsy , P. Gontero , J. A. Smith , D.Yu. Pushkar; trans. with English \_ under ed. D.Yu. Pushkar - M.: GEOTAR- Media , 2011. - 280 p.
6. Clinical manual \_ urology : Trans. with English./ Ed . \_ F.M. Hanno , S.B. Malkovycha , A.J. Wayne - 3rd ed . - M.: O.O.O. " Medicinskoe ". informative agency ", 2006. - 544 p.
7. Urology according to Donald Smith . Ed . E. Tanaho , J. \_ Makanincha . Trans. with English \_ - M., Practice, 2005. - 819 p.

## **1. Information resources**

1. Website of the European Association of Urologists <https://uroweb.org/>
2. AMA ( American Medical Association ) <https://www.ama-assn.org/>
3. The National Health and Medical Research Council (NHMRC) <https://www.nhmrc.gov.au>
4. Eastern Association for the Surgery of Trauma <https://www.east.org/>

## **Estimated list practical skillsfor the final control of the modules Module "Urology"**

- |  |     |
|--|-----|
| 1. Conduct palpation kidneys in 2-oh provisions  |     |
| 2. Conduct percussion and palpation urinary bubble   | +++ |
| 3. Conduct palpation ureter and bodies gates   | +++ |
| 4. Conduct palpation prostate glands   | +++ |
| 5. Evaluate Indicators general analysis urine  | +++ |
| 6. Evaluate Indicators biochemical analysis of blood   | +++ |
| 7. Execute catheterization bladder elastic and metal catheter  |     |
|  | ++  |
| 8. Perform cystoscopy and chromocystoscopy.  | ++  |
| 9. Interpret results:  | +++ |
| and) inspection and excretory urography ;  |     |
| b) isotopic renography ;   |     |
| in) ultrasonic sonography .  |     |
| 10. Conduct differential diagnosis renal cramps with sharp surgical diseases abdominal organs cavities | +++ |

11. Compose scheme examination and treatment sick with urological pathology +++
12. Conduct blockade elements vas deferens the channel menand round connections ++  
uterus in women
13. To provide urgent help at renal rings , injuries organs ++  
urinary and men's sexual systems, hematuria, anuria, acute delays urine
14. Conduct replacement drainage tubes in urinary bubbles ++
15. Install and fix constant catheter in urinary bubbles +++
16. Provide assistance at phimosis and paraphimosis . +++
17. Conducting the primary surgical processing wounds bodies urinary and men's  
sexualsystems. ++
18. Washing drains . ++
19. Reception smears with cavities ureter ++
20. Toilet nephrostomy and care by nephrostomy drainage. ++
21. Nadlobkova function urinary bubble ++
22. Overlapping suspensory ++
23. Bandages patients after operations on kidney, urinary bubbles,  
external sexualbodies +++

**(++) - be able perform.**

**(+++)- have practical skills and independently apply.**