

MINISTRY OF EDUCATION AND SCIENCE OF UKRAINE

Petro Mohyla Black Sea National University

Medical Institute

Department of Surgical Disciplines

"I APPROVE IT"

First Vice-Rector

N. M.



201

WORKING PROGRAM OF THE ACADEMIC DISCIPLINE

"Urology "

Specialty 222 "Medicine "

Developer

Zaborovskiy V. I.

Head of the Developer Department

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## Description of the academic discipline

Naming of the indicator	Characteristics of the discipline	
Name of the discipline	Urology	
Area of expertise	22 "healthcare"	
Specialization	222 "Medicine"	
Specialization (if any)		
Educational program	Urology	
Higher education level	Master's Degree	
Discipline status	Regulatory information	
Course of study	4	
Academic year	2021 - 2022	
Semester numbers:	Full-time form	Correspondence form
	Seven	-
Total number of ECTS credits/hours	3 credits / 90 hours	
Course structure:  <ul style="list-style-type: none"> <li>• lectures</li> <li>• practical exercises</li> <li>• hours of independent work of students</li> </ul>	Full-time form	Correspondence form
	6	-
	34 50	
Percentage of audience load	Classroom load - 44.4 %, SRS-55.6 %	
Language of instruction	english	
Interim control form (if any)		
Final control form	Differentiated credit	

## **2. Purpose, objectives and results of studying the discipline**

**The purpose** of teaching the academic discipline "Urology" is to master the methods of diagnosis, treatment and prevention of diseases of the urinary and male reproductive systems, and first of all those that are most widely used. Structures of the urology department, its features, measures to organize the sanitary and epidemic regime in the department, mastering the basics of clinical urology; methodology of examination of a urological patient.

### **Learning objectives:**

- to study the etiology, pathogenesis of diseases, classification, clinical manifestations
- master the basic methods of examination and treatment of patients with urological pathology.
- master the ethical and deontological foundations of the future profession of a doctor, securing it in practical classes and independent work.
- get enough knowledge and practical skills for medical practice.

### **Prerequisites for studying the discipline (mydisciplinarny svyazi).**

Urological pathology is often found in injuries of the abdominal cavity, pelvic bones, chest cavity and extremities. Inflammatory diseases of the genitourinary system are combined with inflammatory diseases of the abdominal cavity, have side symptoms. Chronic kidney diseases coincide with chronic diseases of the therapeutic profile. Kidney failure is often a complication of diseases of the lungs, heart, and central nervous system.

Therefore, urology is closely related to such disciplines as anatomy, topographic anatomy, physiology and pathological physiology, surgery, orthopedics and traumatology, therapy, cardiology, neurosurgery, oncology, anesthesiology and resuscitation.

**Expected learning outcomes.** As a result of studying the discipline, students should::

### **To know:**

1. General principles of examination of patients with urological pathology.
2. Special methods of examination of urological patients.
3. Basic methods of conservative and operative treatment of patients with urinary system pathology.
4. Diagnosis of the most common urological diseases.

5. Indications for surgical and conservative treatment methods.
6. Main advantages and disadvantages of conservative and operative methods of treatment.
7. Possible complications in the use of conservative and operative methods of treatment and ways to prevent them.

**Be able to:**

1. Identify the most common clinical symptoms and syndromes in the clinic of urological diseases
2. Diagnose and provide medical care in case of emergency conditions in the clinic of urological diseases
3. Demonstrate proficiency in the moral and deontological principles of a medical specialist and the principles of professional subordination in urology
4. Interpret the general principles of treatment, rehabilitation and prevention of the most common urological diseases
5. Make life and working capacity forecasts for the most common urological diseases
6. Determine the main etiological and pathogenetic factors of the most common urological diseases
7. Classify and analyze the typical clinical picture of the most common urological diseases
8. Make a survey plan and analyze the data of laboratory and instrumental examinations in the typical course of the most common urological diseases
9. Determine indications and contraindications for surgical interventions in planned and urgent urology
10. Determine the tactics of managing the postoperative period, prescribe the necessary treatment, demonstrate the ability to perform the necessary medical manipulations

**Master your skills:**

1. Collect complaints and medical history of patients with urological pathology;

2. Conduct a clinical examination;
3. Create a program and be able to interpret the results of laboratory and instrumental examination;
4. Formulate a preliminary diagnosis, conduct a differential diagnosis,
5. Formulate a final diagnosis for a specific nosology;
6. Determine the treatment strategy and fill out the list of appointments for a patient with urological pathology for a specific nosology.

### **Have competencies**

The developed program corresponds to the educational and professional program (OPP) and is focused on the formation of competencies:

#### **general (ZK) – ZK1-ZK3 OPP:**

- ability to think abstractly, analyze and synthesize; ability to learn and master modern knowledge;
- ability to apply knowledge in practical situations;
- knowledge and understanding of the subject area and understanding of the profession.

#### **professional competencies (FC) – FC1-FC6, 8, 9, 11, 16,18 OPP:**

Patient interviewing skills.

Ability to determine the necessary list of laboratory and instrumental studies and evaluate their results.

Ability to establish a preliminary and clinical diagnosis of the disease.

Ability to determine the necessary mode of work and rest in the treatment of diseases.

Ability to determine the nature of nutrition in the treatment of diseases.

Ability to determine the principles and nature of treatment of diseases.

Ability to determine the tactics of providing emergency medical care.

Skills in providing emergency medical care.

Skills in performing medical manipulations.

Ability to determine the management tactics of persons subject to medical supervision.

Ability to maintain medical records.

In accordance with the educational and professional program, the expected **program learning outcomes (UES) are: enable the skill***LOCATION 11; 13 – 18; 22;25;28;30;32;33;35;41.*

PRN11	<p>Collect data on patient complaints, medical history, life history (including professional history), in the settings of a health care facility, its division, or at the patient's home, using the results of an interview with the patient, according to the standard patient survey scheme. Under any circumstances (in a healthcare institution, department, at the patient's home, etc.), using knowledge about the person, their organs and systems, according to certain algorithms:</p> <p>collect information about the general state of the patient (consciousness, constitution) and appearance (examination of the skin, subcutaneous fat layer, palpation of the lymph nodes, thyroid and mammary glands);</p> <p>evaluate the child's psychomotor and physical development;</p> <p>examine the state of the cardiovascular system (examination and palpation of the heart and surface vessels, determination of the percutaneous boundaries of the heart and vessels, auscultation of the heart and vessels);</p> <p>examine the condition of the respiratory system (examination of the chest and upper legs). chest palpation, percussion and lung auscultation );</p> <p>examine the condition of the abdominal organs (examination of the abdomen, palpation and percussion of the intestines, stomach, liver, spleen, palpation of the pancreas, kidneys, pelvic organs, finger examination of the rectum);</p> <p>examine the musculoskeletal system (examination and palpation);</p> <p>examine the state of the nervous system;</p> <p>examine the state of the genitourinary system;</p>
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	<p>evaluate the state of intrauterine development of the fetus according to the calculation of fetal weight and heartbeat auscultation.</p>
PRN13	<p>In the context of a health care facility, its subdivision, and among the attached population:</p> <p>Be able to identify and record the leading clinical symptom or syndrome (according to list 1) by making an informed decision, using preliminary data from the patient's medical history, data from the patient's physical examination, knowledge about the person, his organs and systems, by adhering to the relevant ethical and legal standards.</p> <p>Be able to establish the most probable or syndromic diagnosis of the disease (according to list 2) by making an informed decision, using comparison with standards, using preliminary data from the patient's medical history and examination data, based on the leading clinical symptom or syndrome, using knowledge about the person, his organs and systems, by adhering to the relevant ethical and legal standards.</p>
PRN14	<p>In the context of a healthcare institution or its subdivision:</p> <ul style="list-style-type: none"> <li>• Assign a laboratory and / or instrumental examination of the patient (according to list 4) by making an informed decision, based on the most probable or syndromic diagnosis, according to standard schemes, using knowledge about the person, his organs and systems, by adhering to the relevant ethical and legal standards.</li> <li>• Perform differential diagnosis of diseases (according to list 2) by making an informed decision, according to a certain algorithm, using the most probable or syndrome diagnosis, data from laboratory and instrumental examination of the patient, knowledge about the person, his organs and systems, adhering to the relevant ethical and legal norms.</li> <li>• Establish a preliminary clinical diagnosis (according to list 2) by making an informed decision and logical analysis, using the most probable or syndromic diagnosis, data from laboratory and instrumental examination of the patient, conclusions of differential diagnosis, knowledge about the person, his organs, etc. system, adhering to the relevant ethical and legal standards.</li> </ul>
PRN15	<p>diseases (according to list 2), in the conditions of a health care facility, at home inDetermine the necessary work and rest regime during the treatment of the patient and at the stages of medical evacuation, including in the field, based on a preliminary clinical diagnosis, using knowledge about the person, his organs and systems, adhering to appropriate ethical and legal standards.legal norms, by making an informed decision based on existing algorithms and standard schemes.</p>
PRN16	<p>Determine the necessary therapeutic nutrition in the treatment of the disease (according to list 2), in the conditions of a health care institution, at the patient's home and at the stages of medical evacuation, including in the field, based on a</p>

	preliminary clinical diagnosis, using knowledge about the person, his organs and systems, adhering to appropriate ethical and legal standards. standards, by making an informed decision based on existing algorithms and standard schemes.
PRN17	<p>Determine the nature of treatment (conservative, operative) of diseases(according to list 2), in a health care facility, at the patient's home and at the stages of medical evacuation, including in the field on the basis of a preliminary clinical diagnosis, using knowledge about the person, his organs and systems, adhering to the relevant ethical and legal standards. standards, by making an informed decision based on existingalgorithms and standard schemes.</p> <p>Determine the principles of treatment of the disease (according to list 2), in the conditions of a health care institution, at the patient's home and at the stages of medicalevacuation, including field conditions, based on a preliminary clinical diagnosis, using knowledge about the person, his organs and systems, adhering to appropriate ethical and legal standards, by:making an informed decision based on existing algorithms and standard schemes.</p>
PRN18	decisions and assessments of a person's condition, under any circumstances (at home, on the street, etc.)Establish a diagnosis (according to list 3) by making a reasonabledecision in the health care institution (division), including in an emergency situation, in the field, in conditions of lack of information and limited time, using standard methods of physical examination andpossible medical history, knowledge of the person, his organs and systems, adhering to the relevant ethical and legal standards.
PRN22	Perform medical manipulations (according to list 5) in a medical institution, at home or at work based on a preliminary clinical diagnosis and/or indicators of the patient's condition, using knowledge about the person, his organs and systems, adhering to appropriate ethical and legal standards, by making an informed decision and using standard methods.
PRN28	<p>Organize the implementation of secondary and tertiary prevention activities among the assigned population, using a generalized procedure for assessing the state of human health (screening, preventive medical examination, seeking medical help), knowledge about the person, his organs and systems, adhering to appropriate ethical and legal standards, by making an informed decision, in the conditions of a health care institution, in particular::</p> <p>form dispensary observation groups;</p> <p>organize health-improving activities in a differentiated way from the medical examination group.</p>
PRN30	<p>Conduct in the conditions of a health care institution or its subdivision:</p> <ul style="list-style-type: none"> <li>* detection and early diagnosis of infectious diseases (according to list 2);</li> <li>* primary anti-epidemic measures in the focus of an infectious disease.</li> </ul>
PRN32	In a health care facility or at the patient's home, based on the obtained data on the patient's health status, using standard schemes, using knowledge about the person, his organs and systems, adhering to appropriate ethical and legal standards, by making an informed decision:



	<p>determine the tactics of examination and secondary prevention of patients subject to dispensary observation;</p> <p>determine the tactics of examination and primary prevention of healthy individuals subject to medical supervision;</p> <p>calculate and prescribe the necessary food items for children in the first year of life.</p>
PRN33	<p>and duration of disability with the relevant documents drawn up, Determine the presence and degree of disability, the type and degree of disability of a healthcare institution based on data on the disease and its course, and the specifics of a person's professional activity.</p>
PRN35	<p>In the service area using standard methods of descriptive, analytical epidemiological, and medico-statistical studies:</p> <p>conduct screening for critical noncommunicable diseases;</p> <p>evaluate the dynamics of morbidity rates, including chronic diseases, when compared with statistical average data non-communicable diseases, disability, mortality, integral health indicators;</p> <p>identify risk factors for the occurrence and course of diseases;</p> <p>form population risk groups.</p>
PRN41	<p>In the context of a health care facility or its subdivision using standard methods:</p> <p>conduct selection and use unified clinical protocols guidelines for providing medical care developed on the basis of evidence-based medicine;</p> <p>participate in the development of local health care protocols ;</p> <p>conduct quality control of medical services based on the following criteria: statistical data, expert evaluation, and sociological research data using indicators of the structure, process, and performance of activities;</p> <p>identify barriers to improving the quality and safety of medical care.</p>

### **3. Academic discipline program**

The educational process is organized according to the European Credit Transfer and Accumulation System (ECTS).

The curriculum of the discipline consists of **4 blocks**:

**Block 1. CLINICAL ANATOMY, PHYSIOLOGY, METHODS OF STUDYING THE ORGANS OF THE URINARY AND MALE REPRODUCTIVE SYSTEMS, MALFORMATIONS OF THE GENITOURINARY SYSTEM.**

1. Anatomy and physiology of the urinary and male reproductive system.

Abnormalities in the development of the urinary and male reproductive systems.  
Semiotics of urological diseases.

2. X-ray radionuclide, thermographic, ultrasound and instrumental methods of examination of urological patients.

**Block 2. NON-SPECIFIC AND SPECIFIC INFLAMMATORY DISEASES OF THE URINARY AND MALE REPRODUCTIVE SYSTEMS. UROLITHIASIS HYDRONEPHROSIS**

1. Acute pyelonephritis. Chronic pyelonephritis.

2. Cystitis, prostatitis, urethritis, cavernitis, epididymitis. Pionephrosis, retroperitoneal fibrosis, acute paranephritis. Tuberculosis of the urinary tract and organs of the male reproductive system.

3. Urolithiasis, hydronephrosis. Acute and chronic renal failure

**Block 3. TRAUMATIC INJURIES OF THE INTERNAL ORGANS OF THE URINARY AND MALE REPRODUCTIVE SYSTEMS. ACUTE AND CHRONIC RENAL FAILURE**

1. Traumatic injuries of the urinary and male reproductive systems.

2. Neoplasms of the urinary and male reproductive systems. Adenoma and prostate cancer

**Block 4. EMERGENCY CARE FOR UROLOGICAL DISEASES**

1. Renal colic, acute urinary retention, anuria, injuries to the kidney, bladder, urethra and testicles.

Block 1. CLINICAL ANATOMY, PHYSIOLOGY, METHODS OF STUDYING THE ORGANS OF THE URINARY AND MALE REPRODUCTIVE SYSTEMS, MALFORMATIONS OF THE GENITOURINARY SYSTEM.

Topic 1. Anatomy and physiology of the urinary and male reproductive system.

1. Anatomical structure of the kidney, ureter, bladder, urethra, prostate, testicle, penis.
2. Kidneys. Examination of the kidney area. Palpation of the kidneys. Differential diagnostic value of changes in the contours of the lumbar region. The main pathological processes of palpation-simulating kidney disease. Diagnostic significance of the "tapping" symptom in the lumbar region.
3. The bladder. The main pathological processes that lead to an enlarged bladder. Diagnostic value of examination, palpation and percussion of the bladder.
4. Prostate gland, seminal vesicles. Method of rectal finger examination. Hyperplasia and prostate cancer. Changes in the prostate gland during its inflammation. Diagnostic value of prostate secretion analysis.
5. The urethra. Methods of examination and palpation and their diagnostic value.
6. The penis. Diagnostic value of palpation.
7. Testicle. Methods of examination and palpation and their diagnostic significance.  
Дифференціально-діагностическе значення діафаноскопії.

Abnormalities in the development of the urinary and male reproductive systems.

1. Frequency of abnormalities in the development of the urinary and male reproductive systems. Modern classification of developmental anomalies. Anomalies of the renal vessels, kidneys, ureters, urachus, bladder, urethra, and male genitalia.
2. Clinical significance of developmental anomalies, methods of their diagnosis. Violation of uro- and hemodynamics in renal anomalies. Possible diagnostic and tactical errors in kidney abnormalities.

Semiotics of urological diseases.

1. Pain in the lumbar region. their general characteristics, etiology, localization, and radiation. Renal colic. Etiology and pathogenesis of pain in diseases of the bladder, prostate and external genitalia.
2. Urinary disorders. Definition, etiology, and pathogenesis. Странгурія, поллакиурія, ноктурія. Urinary incontinence, its types. Nevtrimannya urination. Acute and chronic urinary retention. Residual urine and methods of its determination. Paradoxical ischuria.
3. Quantitative changes in urine: physiological and pathological polyuria. Oliguria. Anuria. Types of anuria: donirkova, renal, pislyanirkova, their causes.

4. Qualitative changes in urine: hematuria, its types, causes. Piuria. Bacteriuria and its types. Пневматурія. Hiluria, its types. The urine reaction is normal and abnormal. Methods of quantitative assessment of leukocyturia for Addis-Kakovsky, Amburzhe, Nechiporenko. Provocative auditions. Identification of atypical cells in the urine and their diagnostic significance.

5. Assessment of renal function. Samples for dissolution and concentration. Проба Зимницького. Determination of the content of nitrogenous slags in the blood.

Topic 2. X-ray radionuclide, thermographic, ultrasound and instrumental methods of examination of urological patients.

1. Overview image. Image interpretation: shadows of the musculoskeletal

2. apparatus, skeletotomy of kidneys, images of kidney shadows and pathological formations.

3. Excretory urography, its types. Types of contrast agents. Execution method. Interpretation of excretory urograms. Contraindications to performing excretory urography. Possible complications and their prevention.

4. Ретроградная уретеропієлографія. Types of contrast agents for retrograde ureteropyelography, the amount of drug that must be administered in a bowl. Інтерпретація в ретеропієлограм. Advantages and disadvantages of retrograde ureteropyelography.

5. Computed tomography and magnetic resonance imaging, indications for their use, diagnostic capabilities.

6. Renal angiography, its types. Angiogram phases. The value of renal angiography as a functional and morphological method. Indications and contraindications for performing 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 dilation of renal artery stenosis, embolization therapy. Indications for them and methods of implementation.

7. Cystography. The essence of the method, indications and methods of execution. Модифікації цистографії: осадочная, мікційна, поліцистографія, перицистографія.

8. Prevention of inflammatory complications during cystography.

9. Urethrography, its types: ascending and descending micrography, method of implementation, diagnostic value. Complications of urethrography and their prevention.

10. Isotope renography, nephroscintigraphy, scanning, method of implementation. Diagnostic value.

11. Methods of studying urodynamics: uroflowmetry, cystomanometry.

12. Ultrasound examination: definition, types: percutaneous

13. endovesical, transrectal and transvaginal studies, indications for them. Punctate examination of the kidney, renal pelvis and prostate under ultrasound control.

14. Types of catheters. Elastic catheters of Nelaton, Timan, Foley, Petzer, indications for their use. Shar'er scale for determining the diameter of the 26th catheter. Catheterization of the bladder of men and women. Possible complications of bladder catheterization, their prevention and treatment. Method of conducting a metal catheter in men.

15. Urethroscopy. Cysto-and chromocystoscopy. Instruments for endoscopic examination. Technique of performing urethroscopy, cystoscopy, chromocystoscopy. Complications of cystoscopy, their prevention and treatment. Technique of ureteral catheterization. Ureteroscopy, pyeloscopy.

## Block 2. NON-SPECIFIC AND SPECIFIC INFLAMMATORY DISEASES OF THE URINARY AND MALE REPRODUCTIVE SYSTEMS. UROLITHIASIS HYDRONEPHROSIS

### Topic 1. Acute and chronic pyelonephritis.

Acute pyelonephritis. Classification. Etiology, pathogenesis, ways of infection spread. The significance of pelvic-renal reflux, the general state of the body, its immunobiological reactivity in the occurrence of pyelonephritis. Local factors that contribute to the development of pyelonephritis. Various pathomorphological forms of acute pyelonephritis: serous, apostematous, kidney carbuncle, kidney abscess, necrotic papillitis. Clinic, diagnostics. Treatment: conservative and operative. Urgent methods of restoring the passage of urine from the kidney: catheterization, stent placement, percutaneous puncture nephrostomy. Bacterial shock, stages, clinic, diagnosis, treatment.

Chronic pyelonephritis. Etiology. Phases of the clinical course. Clinic. Diagnostics. Treatment. Pionephrosis: clinic, diagnosis, treatment. The most common antibacterial drugs. The value of determining the sensitivity of urine microflora. Acute and chronic paranephritis. Paranephritis: definition, ways of infection penetration. Clinic. Ways to break through pus. Diagnostics. Treatment.

### Topic 2. Cystitis, prostatitis, urethritis, cavernitis, epididymitis. Pionephrosis, retroperitoneal fibrosis, acute paranephritis.

Cystitis: classification and routes of infection. Factors contributing to the occurrence of cystitis: local, general. Symptoms. Diagnostics. Treatment. Prostatitis: definition, classification, etiology, clinic. Diagnostics. Ways to break through a prostate abscess. Treatment of prostatitis.

Urethritis: etiology and pathogenesis, classification. Types of pathogens. Clinic, diagnostics. Treatment of urethritis and its complications.

Epididymitis: definition, etiology, pathogenesis. Clinic, diagnosis and treatment.

Cavernitis: definition, etiology, clinic, diagnosis, treatment.

### Tuberculosis of the urinary tract and organs of the male reproductive system

Ways of penetration of the pathogen of the disease. Stages of development of the disease. Pathoanatomical picture. Symptomatology. Diagnostic methods. Provocative tests with tuberculin. Modern methods of treatment. Dispensary observation. Indications for urgent surgical treatment. Tuberculosis of the male genital organs: etiology, pathogenesis, clinic. Diagnosis and treatment methods

### Topic 3. Urolithiasis, hydronephrosis.

The spread of urolithiasis. Recurrent nature of the disease. Etiology and pathogenesis. Characteristics of stones by shape, location, and chemical composition. X-ray optical properties of stones. Kidney stones: clinical picture, diagnosis, treatment. Koralopodibny nephrolithiasis, classification, clinic, diagnosis, treatment. Complications of kidney stones. Modern methods of treatment of urolithiasis. Indications for surgical treatment. Bladder stones: etiology, clinical picture, diagnosis, treatment. Prostate stones: clinic, diagnosis, treatment.

Acute and chronic renal failure

Acute renal failure: etiology, pathogenesis, stages of the disease.

Symptoms and diagnostics. Principles of conservative therapy. Intestinal dialysis, peritoneal dialysis and hemodialysis in the treatment of acute renal failure.

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

### Block 3. TRAUMATIC INJURIES OF THE INTERNAL ORGANS OF THE URINARY AND MALE REPRODUCTIVE SYSTEMS. ACUTE AND CHRONIC RENAL FAILURE.

#### Topic 1. Traumatic injuries of the urinary and male reproductive system.

1. Kidney damage: open and closed. Kidney damage combined with injury to other organs. Classification. Clinic. Diagnostics. Conservative and operative treatment.

2. Iatrogenic damage to the kidneys and ureters: clinic, diagnosis, treatment.

3. Bladder injuries: open and closed, intra - and extraperitoneal. Urinary congestion as a characteristic consequence of bladder damage.

4. Separation of the bladder neck. Symptoms and diagnostics. Zeldovich test with bladder filling. Cystography is the main method of diagnosing bladder damage. Execution technique.

5. Damage to the bladder during surgical interventions on the abdominal cavity, pelvic organs, gynecological surgical interventions, childbirth, during endoscopic manipulations and operations. Diagnostics. Treatment.

6. Damage to the urethra. Causes of damage and mechanism of injury. Clinic, diagnosis, and treatment. Ascending urethrocytography and its diagnostic value. Epicystostomy and drainage of urohematomas. Possibility of primary plastic surgery of the urethra.

7. Scrotal injuries: types of injuries, symptoms, diagnosis, treatment.

#### Topic 2. Neoplasms of the urinary and male reproductive system. Adenoma and prostate cancer

1. Kidney parenchymal cancer: etiology, pathological anatomy, symptoms, diagnosis, metastasis pathways, treatment.

2. Wilms tumor-adenomyosarcoma: symptoms, diagnosis, treatment.

3. Renal pelvis cancer: symptoms, diagnosis, treatment.
4. Ureteral tumors: symptoms, diagnosis, treatment.
5. Bladder tumors: etiology and pathogenesis. Classification.
6. Symptoms and diagnostics. Methods of treatment: surgery, chemotherapy, radiation therapy. The role of endoscopic surgery in the treatment of bladder cancer.
7. Prostatic hyperplasia. Etiology and pathogenesis. Clinical manifestations. Diagnostics. Treatment: conservative and operative. One - and two-stage prostatectomy. Modern minimally invasive methods of hyperplasia treatment, indications for their implementation.
8. Prostate cancer. Etiology. Stages of the disease. Clinical picture, diagnosis, and treatment. The significance of PSA in the diagnosis of prostate cancer. Hormone therapy for prostate cancer.
9. Testicular tumors. Pathogenetic significance of testicular injury and cryptorchidism in the development of testicular tumors. Pathways of metastasis. Clinical picture. Diagnosis and treatment.
10. Penile cancer. Etiology. The role of phimosis and balanoposthitis in the development of penile cancer. Clinic, diagnostics. Principles of treatment.

#### Content block 4. EMERGENCY CARE FOR UROLOGICAL DISEASES .

Topic 1. Renal colic, acute urinary retention, anuria, injuries of the kidney, bladder, urethra and testicles

1. The mechanism of occurrence of renal colic. The main signs of renal colic. Differential diagnosis with other diseases. Methods of stopping renal colic.
2. Acute urinary retention. Reasons. Diagnostics. First aid.
3. Testicular torsion: etiology, symptoms, diagnosis, treatment.
4. Paraphimosis. Causes and diagnostics. First aid.
5. Anuria. Types of anuria. Causes of anuria. Symptoms. Diagnostics. Treatment.

## Structure of the academic discipline

Naming of blocks and topics	Number of hours					
	in total	L	P	lab	ind	i.w.s.
1	2	3	4	5	6	7
<b>Block1. CLINICAL ANATOMY, PHYSIOLOGY, METHODS OF RESEARCH OF THE URINARY AND MALE REPRODUCTIVE SYSTEMS, MALFORMATIONS OF THE GENITOURINARY SYSTEM.</b>						
Topic 1. Anatomy and physiology of the urinary and male reproductive system.	10					10
Abnormalities in the development of the urinary and male reproductive systems. Semiotics of urological diseases.	5	1	4.0			
Topic 2. X-ray radionuclide, thermographic, ultrasound and instrumental methods of examination of urological patients.	15	1	4.0			10
<b>Total for block 1</b>	<b>30</b>	<b>2</b>	<b>8.0</b>			<b>20</b>
<b>Block 2. NON-SPECIFIC AND SPECIFIC INFLAMMATORY DISEASES OF THE URINARY AND MALE REPRODUCTIVE SYSTEMS. UROLITHIASIS HYDRONEPHROSIS</b>						
Topic 1. Acute pyelonephritis. Chronic pyelonephritis.	5.0	1	4.0			
Topic 2. Cystitis, prostatitis, urethritis, cavernitis, epididymitis. Pionephrosis, retroperitoneal fibrosis, acute paranephritis. Tuberculosis of the urinary tract and organs of the male reproductive system	5.0	1	4.0			
	10					10
Topic 3. Urolithiasis, hydronephrosis.						



Acute and chronic renal failure	4.0		4.0			10
	10					
Total for block 2	34	2	12			20
<b>Block 3. TRAUMATIC INJURIES OF THE INTERNAL ORGANS OF THE URINARY AND MALE REPRODUCTIVE SYSTEMS. ACUTE AND CHRONIC RENAL FAILURE.</b>						
Topic 1. Traumatic injuries of the urinary and male reproductive system.	8	1	4.0			3
Topic 2. Neoplasms of the urinary and male reproductive system. Adenoma and prostate cancer	8	1	4.0			3
Total for block 3	16	2	8.0			6
<b>Block 4. EMERGENCY CARE FOR UROLOGICAL DISEASES .</b>						
Topic 1. Renal colic, acute urinary retention, anuria, injuries of the kidney, bladder, urethra and testicles	8		4.0			4
<b>Final control</b>	<b>2</b>		<b>2</b>			
<b>The amount</b>	<b>90</b>	<b>6</b>	<b>34.0</b>			<b>50</b>

## 4. Content of the academic discipline

### 4.1. Lecture plan

No	Lesson topic / plan
1	<p>Topic 1. Anatomy and physiology of the urinary and male reproductive system. Abnormalities in the development of the urinary and male reproductive systems. Semiotics of urological diseases.</p> <p>1. Anatomical structure of the kidney, ureter, bladder, urethra, prostate, testicle, penis.</p> <p>2. Kidneys. Examination of the kidney area. Palpation of the kidneys. Differential diagnostic value of changes in the contours of the lumbar region. The main pathological processes of palpation-simulating kidney disease. Diagnostic significance of the "tapping" symptom in the lumbar region.</p> <p>3. The bladder. The main pathological processes that lead to an enlarged bladder. Diagnostic value of examination, palpation and percussion of the bladder.</p>

	<p>4. Prostate gland, seminal vesicles. Method of rectal finger examination. Hyperplasia and prostate cancer. Changes in the prostate gland during its inflammation. Diagnostic value of prostate secretion analysis.</p> <p>5. Pain in the lumbar region. their general characteristics, etiology, localization, and radiation. Renal colic. Etiology and pathogenesis of pain in diseases of the bladder, prostate and external genitalia.</p> <p>6. Urinary disorders. Definition, etiology, and pathogenesis. Strangury, pollakiuria, nocturia. Urinary incontinence, its types. Nevtrimannya urination. Acute and chronic urinary retention. Residual urine and methods of its determination. Paradoxical ischuria.</p> <p>7. Quantitative changes in urine: physiological and pathological polyuria. Oliguria. Anuria. Types of anuria: donirkova, renal, pislyanirkova, their causes.</p> <p>8. Qualitative changes in urine: hematuria, its types, causes. Piuria. Bacteriuria and its types. Пневматурія. Hiluria, its types. The urine reaction is normal and abnormal. Methods of quantitative assessment of leukocyturia for Addis-Kakovsky, Amburzhe, Nechiporenko. Provocative auditions. Identification of atypical cells in the urine and their diagnostic significance.</p>
2	<p>Topic 2. Acute pyelonephritis. Chronic pyelonephritis. Cystitis, prostatitis, urethritis, cavernitis, epididymitis. Pionephrosis, retroperitoneal fibrosis, acute paranephritis.</p> <p>1. Classification. Etiology, pathogenesis, ways of infection spread.</p> <p>2. The significance of pelvic-renal reflux, the general state of the body, its immunobiological reactivity in the occurrence of pyelonephritis. Local factors that contribute to the development of pyelonephritis.</p> <p>3. Various pathomorphological forms of acute pyelonephritis: serous, apostematous, kidney carbuncle, kidney abscess, necrotic papillitis.</p> <p>4. Clinic, diagnostics. Treatment: conservative and operative.</p> <p>5. Chronic pyelonephritis.</p> <p>6. Etiology. Phases of the clinical course. Clinic. Diagnostics. Treatment.</p> <p>7. Pionephrosis: clinic, diagnosis, treatment.</p> <p>8. The most common antibacterial drugs. The value of determining the sensitivity of urine microflora.</p>
3	<p>Topic 3. Traumatic injuries of the urinary and male reproductive system. Neoplasms of the urinary and male reproductive systems. Adenoma and prostate cancer</p> <p>1. Kidney damage: open and closed. Kidney damage combined with injury to other organs. Classification. Clinic. Diagnostics. Conservative and operative treatment.</p> <p>2. Iatrogenic damage to the kidneys and ureters: clinic, diagnosis, treatment.</p>

<p>3. Bladder injuries: open and closed, intra - and extraperitoneal. Urinary congestion as a characteristic consequence of bladder damage.</p> <p>4. Kidney parenchymal cancer: etiology, pathological anatomy, symptoms, diagnosis, metastasis pathways, treatment.</p> <p>5. Wilms tumor-adenomyosarcoma: symptoms, diagnosis, treatment.</p> <p>6. Renal pelvis cancer: symptoms, diagnosis, treatment.</p> <p>7. Ureteral tumors: symptoms, diagnosis, treatment.</p> <p>8. Bladder tumors: etiology and pathogenesis. Classification.</p>
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#### 4.2. Practical training plan

n/a number	Lesson topic	Quantity hours
	Block # 1	
1.	Topic #1 Anatomy and physiology of the urinary and male reproductive system.  Abnormalities in the development of the urinary and male reproductive systems. Semiotics of urological diseases.	4
2.	Topic 2. X-ray radionuclide, thermographic, ultrasound and instrumental methods of examination of urological patients.	4
	Block #2	
3.	Topic 1. Acute pyelonephritis. Chronic pyelonephritis.	4
4.	Topic 2. Cystitis, prostatitis, urethritis, cavernitis, epididymitis. Pionephrosis, retroperitoneal fibrosis, acute paranephritis. Tuberculosis of the urinary tract and organs of the male reproductive system	4
5.	Topic 3. Urolithiasis, hydronephrosis.  Acute and chronic renal failure	4
	Block #3	
6.	Topic 1. Traumatic injuries of the urinary and male reproductive system.	4
7.	Topic 2. Neoplasms of the urinary and male reproductive system. Adenoma and prostate cancer	4
	Block #4	
8.	Topic 1. Renal colic, acute urinary retention, anuria, injuries of the kidney, bladder, urethra and testicles	4
9.	Final control	2

	<b>Total:</b>	<b>34</b>
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Note. \* - Plan of each practical lesson:

- 1) Written solution of test tasks "Step-2" for the topic.
- 2) Group work on errors, at the same time an oral survey on the entire material of the topic.
- 3) Development of practical skills.
- 4) Knowledge assessment.

#### 4.3. Create a task for independent work

	TOPIC	Number of hours
<b>BLOCK 1</b>		
	Preparation for practical classes (theoretical training, practical skills development)	5
	Taking on-line courses and on-line testing	5
	Self-study of topics that are not included in the classroom plan Block 1 (list attached)	5
	Individual work	3
	Preparing for the final test paper	2
Together		20
<b>BLOCK 2</b>		
	Preparation for practical classes (theoretical training, practical skills development)	5
	Taking on-line courses and on-line testing	5
	Self-study of topics that are not included in the classroom plan Block 2 (list attached)	5
	Individual work	3
	Preparing for the final test paper	2
Together		20
<b>BLOCK 3</b>		
	Preparation for practical classes (theoretical training, practical skills development)	3

	Taking on-line courses and on-line testing	-
	Self-study of topics that are not included in the classroom plan Block 2 (list attached)	-
	Individual work	3
	Preparing for the final test paper	-
Together		6
<b>BLOCK 4</b>		
	Preparation for practical classes (theoretical training, practical skills development)	2
	Taking on-line courses and on-line testing	-
	Self-study of topics that are not included in the classroom plan Block 2 (list attached)	2
	Individual work	4
Together		50

### **Individual tasks**

#### **Block # 1**

Anatomy and physiology of the urinary and male reproductive systems.

1. Anatomical structure of the kidney, ureter, bladder, urethra, prostate, testicle, penis. Kidneys. Examination of the kidney area. Palpation of the kidneys.
2. Differential diagnostic value of changes in the contours of the lumbar region. The main pathological processes of palpation-simulating kidney disease. Diagnostic significance of the "tapping" symptom in the lumbar region.
3. The bladder. The main pathological processes that lead to an enlarged bladder. Diagnostic value of examination, palpation and percussion of the bladder.
4. Prostate gland, seminal vesicles. Method of rectal finger examination. Hyperplasia and prostate cancer. Changes in the prostate gland during its inflammation. Diagnostic value of prostate secretion analysis.
5. The urethra. Methods of examination and palpation and their diagnostic value.
6. The penis. Diagnostic value of palpation.
7. Pain in the lumbar region. their general characteristics, etiology, localization, and radiation. Renal colic. Etiology and pathogenesis of pain in diseases of the bladder, prostate and external genitalia.

8. Urinary disorders. Definition, etiology, and pathogenesis. Странгурия, поллакиурия, ноктурия. Urinary incontinence, its types. Nevtrimannya urination. Acute and chronic urinary retention. Residual urine and methods of its determination. Paradoxical ischuria.

9. Quantitative changes in urine: physiological and pathological polyuria. Oliguria. Anuria. Types of anuria: donirkova, renal, pislyanirkova, their causes.

10. Qualitative changes in urine: hematuria, its types, causes. Piuria. Bacteriuria and its types. Пневматурія. Hiluria, its types. The urine reaction is normal and abnormal. Methods of quantitative assessment of leukocyturia for Addis-Kakovsky, Amburzhe, Nechiporenko. Provocative auditions.

## **Block #2**

1. Acute pyelonephritis. Classification. Etiology, pathogenesis, ways of infection spread.

2. The significance of pelvic-renal reflux, the general state of the body, its immunobiological reactivity in the occurrence of pyelonephritis. Local factors that contribute to the development of pyelonephritis.

3. Various pathomorphological forms of acute pyelonephritis: serous, apostematous, kidney carbuncle, kidney abscess, necrotic papillitis. Clinic, diagnostics.

4. Treatment: conservative and operative.

5. Urgent methods of restoring the passage of urine from the kidney: catheterization, stent placement, percutaneous puncture nephrostomy.

6. Bacterial shock, stages, clinic, diagnosis, treatment.

7. Chronic pyelonephritis. Etiology. Phases of the clinical course. Clinic. Diagnostics.

8. Treatment. Pionephrosis: clinic, diagnosis, treatment. The most common antibacterial drugs. The value of determining the sensitivity of urine microflora.

9. Acute and chronic paranephritis. Paranephritis: definition, ways of infection penetration. Clinic. Ways to break through pus. Diagnostics. Treatment.

10. Urolithiasis, hydronephrosis. The spread of urolithiasis. Recurrent nature of the disease. Etiology and pathogenesis.

11. Characteristics of stones by shape, localization and chemical composition. X-ray optical properties of stones. Kidney stones: clinical picture, diagnosis, treatment. Korolopodibny nephrolithiasis, classification, clinic, diagnosis, treatment.

12. Complications of kidney stones. Modern methods of treatment of urolithiasis. Indications for surgical treatment. Bladder stones: etiology, clinical picture, diagnosis, treatment. Prostate stones: clinic, diagnosis, treatment. Acute and chronic renal failure.

### **Block #3**

1. Kidney damage: open and closed. Kidney damage combined with injury to other organs. Classification. Clinic. Diagnostics. Conservative and operative treatment.
2. Iatrogenic damage to the kidneys and ureters: clinic, diagnosis, treatment.
3. Bladder injuries: open and closed, intra - and extraperitoneal. Urinary congestion as a characteristic consequence of bladder damage.
4. Separation of the bladder neck. Symptoms and diagnostics. Zeldovich test with bladder filling. Cystography is the main method of diagnosing bladder damage. Execution technique.
5. Damage to the bladder during surgical interventions on the abdominal cavity, pelvic organs, gynecological surgical interventions, childbirth, during endoscopic manipulations and operations. Diagnostics. Treatment.
6. Kidney parenchymal cancer: etiology, pathological anatomy, symptoms, diagnosis, metastasis pathways, treatment.
7. Wilms tumor-adenomyosarcoma: symptoms, diagnosis, treatment.
8. Renal pelvis cancer: symptoms, diagnosis, treatment.
9. Ureteral tumors: symptoms, diagnosis, treatment.
10. Bladder tumors: etiology and pathogenesis. Classification.
11. Symptoms and diagnostics. Methods of treatment: surgery, chemotherapy, radiation therapy. The role of endoscopic surgery in the treatment of bladder cancer.
12. Prostatic hyperplasia. Etiology and pathogenesis. Clinical manifestations. Diagnostics. Treatment: conservative and operative. One - and two-stage prostatectomy. Modern minimally invasive methods of hyperplasia treatment, indications for their implementation.

### **Block #4**

1. Pain in the lumbar region. their general characteristics, etiology, localization, and radiation.

2. Renal colic. Etiology and pathogenesis of pain in diseases of the bladder, prostate and external genitalia.
3. Urinary disorders. Definition, etiology, and pathogenesis. Странгурія, поллакиурія, ноктурія.
4. Urinary incontinence, its types. Nevtrimannya urination. Acute and chronic urinary retention.
5. Residual urine and methods of its determination. Paradoxical ischuria.
6. Quantitative changes in urine: physiological and pathological polyuria. Oliguria. Anuria. Types of anuria: donirkova, renal, postrenal, their causes.

### **Individual tasks**

Selection and review of scientific literature on the subject of the urology program of the student's choice with the writing of an abstract and its public defense.

Selection and review of scientific literature on the subject of research work of the department with the preparation of a scientific report at a meeting of the SSS or at student conferences.

Scientific research on the subject of research work of the department with the publication of the results in scientific publications.

### **Typical test problems to solve in practical classes**

#### **Task # 0.**

In a 30-year-old patient, about 10 days after suffering a paratonsillar abscess, her body temperature increased to 39 with fever, heavy sweating, and dull pains in the right kidney appeared. On palpation, the kidney is not palpated, the area of the right kidney is painful, here is a positive Pasternatsky symptom. In the urine, protein 0.066 g / l of bacteria, white blood cells for the entire field of view. On the survey radiograph, there is no m psoas contour, scoliosis is to the right, and the contour of the right kidney is enlarged. What disease caused this condition of the patient?

- a) acute purulent pyelonephritis.
- b) intercostal neuralgia
- c) acute paranephritis
- d) right-sided renal colic
- e) cystitis



Explain your decision.

### **Task # 0.**

A 50-year-old patient was admitted with complaints of dull pain in the right lumbar region, intermittent increase in body temperature to 39 with fever and aspic, the presence of clear urine during this period. During the period of normalization of body temperature and subsiding of pain, the urine is cloudy, purulent. Objectively, the tongue is dry. Palpation reveals a bumpy right kidney. Moderately painful, sedentary. In the urine, white blood cells for the entire visual field, protein 0.099 g/l. During cystoscopy, pus is released from the right pupil in the form of a "paste from a tube". What pathological process leads to this condition?

a) paranephritis

b) pionephrosis

c) glomerulonephritis

d) cystitis

e) urethritis

Explain your decision.

### **4.4. Ensuring the educational process**

Tools / Hardware / Software

Practical training is provided by technical support:

a computer

projection screen

multimedia projector

presentation programs in urology and anatomy

mannequins-urology simulators

Overview of typical patients

### **5. Final control**

## **List of questions of final control (differential test)**

1. The main stages of development of urology as an independent medical discipline.
2. History of urology development in Ukraine.
3. History of the Urology Department of the university.
4. Main directions of development and achievements of modern urology.
5. Organs of the urinary and male reproductive systems, their functional significance.
6. Clinical anatomy of the urinary and male reproductive system.
7. Pain in kidney disease.
8. Pain in diseases of the ureters and bladder.
9. Pain in diseases of the urethra and male genital organs.
10. Differential diagnosis of renal colic and acute surgical diseases of the abdominal cavity.
11. Nocturia, its diagnostic significance.
12. Lorin-Epstein method of blocking the elements of the spermatic cord and round ligament of the uterus.
13. Polyuria and pollakiuria. What diseases do they occur in?
14. Urinary incontinence, its types.
15. Acute urinary retention.
16. Chronic urinary retention.
17. Symptom of residual urine.
18. Anuria, its types.
19. Causes of prerenal anuria.
20. Causes of renal anuria.
21. Causes of postrenal anuria.
22. What is "latent leukocyturia" and methods of its detection?

23. Hematuria: types, causes, methods of determination.
24. Bacteriuria, its types.
25. Hiluria, its types.
26. Piuria.
27. Pneumaturia.
28. Urethrorathia.
29. Overview of urography and its interpretation.
30. Excretory urography, its types, methods of implementation.
31. Types of X-ray contrast agents.
32. Contraindications to performing excretory urography.
33. Retrograde ureteropielography, method of implementation.
34. Retropneumoperitoneum, indications for implementation, method of implementation.
35. Renal angiography, its types. Diagnostic value.
36. Cystography, types: sedimentary, mixed, polycystography, indications for implementation, diagnostic value.
37. Urethrography, types, methods of performing.
38. Radioisotope renography, method of implementation, diagnostic significance.
39. Kidney scan.
40. Scintigraphy, types, diagnostic significance.
41. Computed tomography, nuclear magnetic tomography.
42. Ultrasound sonography.
43. Thermographic studies, their types, diagnostic significance.
44. Uroflowmetry, cystomanometry.
45. Anomalies of the renal vessels.
46. Kidney abnormalities.

47. Abnormalities of the ureters.
48. Anomalies of urachus.
49. Abnormalities of the bladder.
50. Abnormalities of the urethra.
51. Testicular abnormalities.
52. Phimosis and paraphimosis.
53. Acute pyelonephritis, definition, classification.
54. Ways of infection penetration into the kidney.
55. Symptoms of acute serous pyelonephritis.
56. Diagnosis and treatment of acute pyelonephritis.
57. Apostematous nephritis: symptoms, diagnosis, treatment.
58. Kidney carbuncle: symptoms, diagnosis, treatment.
59. Kidney abscess: symptoms, diagnosis, treatment.
60. Pyelonephritis of pregnant women: causes, clinic, diagnosis, treatment.
61. Bacterial shock: stages, symptoms, diagnosis, treatment.
62. Etiology of chronic pyelonephritis, symptoms, diagnosis, treatment.
63. Pionephrosis: symptoms, diagnosis, treatment.
64. Methods for detecting latent leukocyturia.
65. Nephrogenic hypertension: types, causes, diagnosis, treatment.
66. Acute paranephritis: definition, pathways of infection, symptoms, diagnosis, treatment.
67. Ways of pus breakthrough in paranephritis.
68. Retroperitoneal fibrosis: definition, etiology, symptoms, diagnosis, treatment.
69. Cystitis: classification, symptoms, diagnosis, treatment.
70. Cystalgia: symptoms, diagnosis, treatment.

71. Urethritis: classification, symptoms, diagnosis, treatment.
72. Prostatitis: classification, symptoms, diagnosis, treatment.
73. Ways of pus breakthrough in prostate abscess.
74. Acute epididymitis: etiology, symptoms, diagnosis, treatment.
75. Cavernitis: symptoms, diagnosis, treatment.
76. Etiology and pathogenesis of kidney tuberculosis.
77. Clinical and radiological classification of kidney tuberculosis.
78. Symptoms and diagnosis of kidney tuberculosis. Diagnostic value of provocative tests with tuberculin.
79. Modern methods of treatment of kidney tuberculosis.
80. Symptoms, diagnosis and treatment of tuberculous epididymitis.
81. Etiology and pathogenesis of urolithiasis.
82. Clinical picture of kidney stones.
83. Complications of kidney stones.
84. Methods for the diagnosis of kidney stones.
85. Modern methods of treatment of urolithiasis.
86. Coralloid stones, their classification.
87. Ureteral stones: symptoms, diagnosis, treatment.
88. Bladder stones: clinic, diagnosis, treatment.
89. Hydronephrosis: stages, symptoms, diagnosis, treatment.
90. Classification of closed kidney injuries.
91. Symptoms, diagnosis and treatment of closed kidney injuries.
92. Classification of open kidney injuries, symptoms, diagnosis and treatment.
93. Damage to the ureters. Symptoms, diagnosis, and treatment.
94. Bladder damage, types, clinical manifestations.

95. Diagnosis and treatment of bladder injuries.
96. Damage to the urethra, symptoms, diagnosis, treatment.
97. Indications for applying a primary urethral suture.
98. Types of plastic surgery for post-traumatic complications of urethral injuries.
99. Modern minimally invasive methods of treatment of narrowing of the urethra.
100. Testicular injuries, types, symptoms, diagnosis, treatment.
101. Classification of kidney tumors.
102. Local and extrarenal signs of kidney parenchyma tumor.
103. Diagnosis and treatment of kidney parenchymal tumors.
104. Renal pelvis cancer, symptoms, diagnosis, treatment.
105. Wilms tumor-adenomyosarcoma, symptoms, diagnosis, treatment.
106. Ureteral tumors, clinic, diagnosis, treatment.
107. Etiology of bladder tumors.
108. Classification of bladder tumors.
109. Clinic, diagnosis and treatment of bladder tumors.
110. Modern minimally invasive methods of treatment of bladder tumors.
111. Prostatic hyperplasia, stages of the disease.
112. Symptoms, diagnosis and treatment of prostatic hyperplasia.
113. Types of surgical interventions in the treatment of prostatic hyperplasia.
114. Conservative treatment of prostatic hyperplasia.
115. Early and late complications of surgical treatment of prostatic hyperplasia.
116. Stages of prostate cancer.
117. Symptoms, diagnosis and treatment of prostate cancer.
118. Operative treatment of prostate cancer.
119. Modern minimally invasive methods of prostate cancer treatment.

120. What medications are used to treat prostate cancer?
121. Clinic, diagnosis and treatment of testicular tumors.
122. Clinic, diagnosis and treatment of penile cancer.
123. Symptoms, diagnosis and treatment of nephroptosis.
124. Etiology, clinic, diagnosis and treatment of vesico-pichenic fistulas.
125. Etiology, clinic, diagnosis and treatment of sechovidno-pichenic fistulas.
126. Echinococcosis of the urinary system.
127. Filariatosis of the organs of the sechostatic system.
128. Urogenital schistosomiasis (bilharziosis): etiology, clinic, diagnosis and treatment.
129. Neurogenic disorders of urination, causes, symptoms, diagnosis and treatment.
130. Foreign bodies of the kidneys and urinary tract: clinic, diagnosis, treatment.
131. Etiology, pathogenesis and classification of acute renal failure.
132. Symptoms, diagnosis and treatment of acute renal failure.
133. Etiology and pathogenesis of chronic renal failure.
134. Stages and forms of the clinical course of chronic renal failure.
135. Diagnosis and treatment of chronic renal failure.
136. Indications for peritoneal dialysis.
137. Indications for hemodialysis.
138. Fibroplastic penile induration, clinic, diagnosis, treatment.
139. Priapism: clinic, diagnosis, treatment.
140. The importance of hemofiltration and plasmapheresis in the treatment of chronic renal failure.
141. Kidney transplantation. Preparation of the patient for surgery, selection of a donor.
142. Management of the postoperative period after kidney transplantation.

143. Causes and symptomatology of renal colic.
144. Methods of stopping renal colic.
145. Method of blocking the elements of the vas deferens in men and the round ligament of the uterus in women.
146. Causes of acute urinary retention.
147. Methods of urinary bladder catheterization in men and women.
148. Hematuria, its types, causes.
149. Medical care for hematuria.
150. Anuria, its types.
151. Medical care for various types of anuria.
152. Emergency care for kidney injuries.
153. Emergency care for injuries of the bladder, urethra, and scrotum organs.

**Indicative list of practical skills for the final control in urology**

1. Perform palpation of the kidney.
2. Perform percussion and palpation of the bladder.
3. Perform palpation of the urethra and scrotal organs.
4. Perform palpation of the prostate gland.
5. Evaluate the indicators of the general urinalysis.
6. Evaluate the indicators of a biochemical blood test.
7. Perform bladder catheterization with an elastic and metal catheter.
8. Install and fix a permanent catheter in the bladder.
9. Interpret the results:
10. a) review and excretory urography;
11. b) isotope renography;
12. c) ultrasound sonography.



13. Perform differential diagnosis of renal colic with acute surgical diseases of the abdominal cavity.

14. Draw up a scheme of examination and treatment for patients with urological pathology. 15. Provide assistance with paraphimosis.

16. Collection of smears from the urethra cavity.

### **Test examples**

1. Is it possible to help accelerate the death of a hopeless patient?

1 impossible, forbidden

2 possibly at the request of the patient

3 possible

4 possibly at the request of relatives and neighbors of the patient

2. Is it worth helping an enemy or a criminal?

1. with the permission of the Prosecutor's Office

2 so, you need to

3. with the permission of the managers of medical institutions

3. Medication responsibilities:

1 current issues of the doctor's activity

2 responsibilities that correspond to the position

3 component of deontology, its category

4 proper treatment of the patient, providing assistance

4. Drug collegiality:

1 professional relations of doctors

2 professional relations of doctors

3 courteous professional relationships

4 official subordination of doctors

5. Medical confidentiality:

1 hiding from the patient the nature of his treatment

2 hiding the truth for personal gain

3 hiding the truth with a charitable purpose for the patient

6. Medical indications for surgical intervention:

1 organ dysfunction, threat to the patient's life

2 at the request of parents

3 at the request of relatives

4 patient's request

7. Are medical experiments on patients possible?

1 not possible

2 are possible without notifying the patient

3 available at the request of the patient

4 possible with the permission of the Ministry of Health of Ukraine in order to improve the methods of diagnosis and treatment and with the consent of the patient

8. Deontology - the science of the duties of a doctor and nursing staff, is to::

1 establish a trusting relationship: patient-doctor

2 commercial relations with the patient

3 proper treatment of the patient, providing him with assistance

4 organize a pleasant stay in the hospital

9. The doctor's ethical standards are determined by:

1 skills and abilities

2 by laws and orders

3 ethnic characteristics of the region

4 moral responsibility to society

10. Changes in urine in the first 48 hours in primary acute pyelonephritis of pregnant women:

1 tsilindruria

2 piuria

3 bacteriuria, proteinuria

4 eritocitemi

11. Therapeutic tactics of acute pyelonephritis in pregnant women:

1 heat, antibiotics, antispasmodics

2 ureter catheterization or stenting, antibiotics, antispasmodics

3 analgesics, antispasmodics, antibiotics

12. Can I perform excretory urography for pyelonephritis in pregnant women?

One

2 none

13. Acute pyelonephritis of pregnant women is treated with positional therapy:

1 knee-elbow position and on a healthy side

Sitting 2

3 lying on your good side

4 lying on your back

5 lying on the side of the diseased kidney

14. The main method of treatment of acute purulent pyelonephritis of pregnant women:

1 ureteral catheterization, antibacterial therapy

2 surgical treatment

3 anti-bacterial therapy, antispasmodics

15. Is it advisable to terminate a pregnancy during acute pyelonephritis?

One

2 none

16. Acceptable methods for determining urodynamic disorders in chronic pyelonephritis of pregnant women:

1 excretory urography

2 Ultrasound

3 radionuclide methods

4 chromocystoscopy

17. Conservative treatment of urgent urinary incontinence in women:

1 bubbling of the urethra

2 hormone therapy

3 instillation of 2% collargol solution into the bladder

4 oksabutinin

18. Treatment of urinary incontinence in women in the menopausal period:

1 aloe

2 ascending shower

3 sit-down baths

4 fibs

5 estrogen therapy under the supervision of a gynecologist

19. The most common cause of urinary incontinence in women:

1 birth trauma

2 functional insufficiency of the vesicosecond segment

3 after pelvic surgery

20. True urinary incontinence occurs when:

1 prostatic hyperplasia

2 heavy operations

3 cervical cystitis, bladder stones

## **6. Evaluation criteria and diagnostic tools for learning outcomes**

### **Control methods**

- Survey (testing of theoretical knowledge and practical skills).
- Test control.
- Writing a review of scientific literature (essays), performing individual tasks, and defending them.

**Current control.** Testing in practical classes of theoretical knowledge and development of practical skills, as well as the results of independent work of students. They are supervised by teachers according to the specific purpose of the curriculum. Assessment of the level of students' training is carried out by interviewing students, solving and analyzing situational problems and

test tasks, interpreting the results of clinical-instrumental and clinical-laboratory studies, and monitoring the assimilation of practical skills. It is held at every practical lesson.

**Intermediate control.** Checking the possibility of using students' theoretical knowledge and practical skills on all the topics studied, as well as the results of independent work of students for clinical and diagnostic analysis. It is carried out at the last lesson on the topic by passing practical skills, solving situational problems and testing.

**Final control** it is held after completing the study of all topics in the last, control, lesson.

In order to establish the results of training in the discipline, **final control is also carried out in the form of a differentiated credit.** Students who have attended all the lectures and classroom classes provided for in the curriculum, who have completed their independent work in full, and who have scored no less than the minimum score of **70 points in the course of training are allowed to take the test.**

#### **Distribution of points awarded to students**

The maximum number of points that a student can receive for their current academic activity is 120. Accordingly, the maximum number of points for each practical lesson is:  $120 \text{ points} : 17 \text{ lessons} = \mathbf{7 \text{ points}}$ . The minimum number of points is  $70 \text{ points} : 17 \text{ classes} = \mathbf{4.1 \text{ points}}$ . A score below 4.1 points means "unsatisfactory" the topic is not credited and is subject to testing in accordance with the established procedure.

On a differentiated test, a student can get the maximum amount of **80 points**. The credit is considered credited if the student has scored at least **50 points**.

#### Assessment of student performance

<b>Block (current training activity)</b>	<b>Maximum number of points</b>
Practical classes from 1st to 17th	7 points for each practical lesson
<b>Total for 17 practical classes</b>	<b>120</b>
<b>Differential payment</b>	<b>80</b>
<b>Together for the block and diff. credit</b>	<b>200</b>

#### **Criteria for evaluating knowledge**

**With a score of 6.1-7 points in the practical lesson and 71-80 points in the dif. test (A on the ECTS scale and 5 on the national scale)** the student's answer is evaluated if it demonstrates a deep knowledge of all theoretical provisions and the ability to apply theoretical material for practical analysis and does not have any inaccuracies.

**With a score of 5.1-6 points in the practical lesson and 61-70 points in the dif. test (B and C on the ECTS scale and 4 on the national scale) the answer is evaluated if it shows knowledge of all theoretical propositions and the ability to apply them practically, but some fundamental inaccuracies are allowed.**

**By rating 4.1-5 points in the practical lesson and 50-60 points in the dif. test (D and E on the ECTS scale and 3 on the national scale) the student's answer is evaluated on the condition that he knows the basic theoretical provisions and can use them in practice.**

## **7. Recommended sources of information**

### **7.1. Main features**

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