

DANYLO HALYTSKY LVIV NATIONAL MEDICAL UNIVERSITY

Department of Urology FPGE

APPROVED

The first vice-rector

on scientific and pedagogical work

Corresponding Member NAMS of Ukraine,

prof. M.R. Gzhegotskyi

_____ 2020
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**STUDY PROGRAM OF THE DISCIPLINE
ELECTIVE COURSE
ANDROLOGY
(name of academic discipline)**

training of specialists of the second (master's) level of higher education
field of knowledge 22 "Health care"
specialty 222 "Medicine"

Discussed and approved
at a meeting of the Department of
Urology FPGE
Protocol №3
from "31" August 2020
Head of Department
_____ prof. Borzhievsky A.Ts.

Approved
profile methodical commission
of Medical Faculty 1
Protocol №8
from "24" September 2020
Chairman of the profile methodical
commission
_____ Prof. Andryushchenko V.P.

Working curriculum of the discipline elective course "Andrology" for students of the V course of the medical faculty, studying in the specialty 222 "Medicine"

Compiled by the staff of the Department of Urology FPGE Lviv National Medical University named after Danylo Halytsky: prof. Borzhievsky A.Ts., prof. Stroy OO, prof. Vorobets DZ, docent Mytsyk YO, docent Dmitrienko VV, docent Sheremeta RZ, docent Vitkovsky VF, docent Lychkovsky OE, docent Pasichnyk SM, as. Borzhievsky OA, as. Zagoruyko RR, as. Chaplia MM, as. Kobylnik YS, as. Nakonechnyy YA.

Based on the sample program of the discipline, the elective course "Andrology" and approved by the relevant methodological commission (" 24 "of September 2020)

Changes and additions to the curriculum for 2020 - 2021 academic year.

№	Contents of changes (additions)	Date and № minutes of the department meeting	Notes
1.			

Head of the Department of Urology FPDO Signature _____
Prof., MD Borzhievsky A.Ts.

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INTRODUCTION

Program of study of the discipline elective course "Andrology" according to the Standard of higher education of the second (master's) level areas of knowledge 22 "Health" specialty 222 "Medicine" educational program of master of medicine

Description of the discipline (annotation) elective course "Andrology"- one of the elective disciplines in the system of higher medical education, knowledge of which is necessary for quality training of specialists in the field of health care. the study of the discipline lays an array of knowledge of students of instrumental methods of diagnosis, involves the integration of teaching with endocrinology, neurology, nephrology, functional diagnostics, etc., forms the ability to apply acquired knowledge in professional activities at the level of general practitioner.

In recent decades, andrology has been supplemented by new approaches in the diagnosis and treatment of various pathologies. In this regard, the standards of higher medical education require the graduate of a higher medical educational institution to be able to use instrumental methods in the diagnosis of human diseases in a timely and sufficient manner.

Knowledge from the elective course "Andrology" allows the future specialist to develop skills and apply the acquired knowledge in the process of professional activity.

The structure of the discipline	Number of credits, hours, of them			CPC	Year of study semester	type of control
	Total	Classroom				
		Lectures (hours)	Practical classes (hours)			
Subjects: elective course "Andrology"	2.0 credit / 60 hours	-	20	40	5th year (9/10 semesters)	credit

The subject of study of the discipline are: knowledge of the pathology of orgasms of the male reproductive system and the ability to apply them in medical practice.

Interdisciplinary links:

The study of the elective course "Andrology" is based on knowledge of basic disciplines - medical biology, medical and biological physics, bioorganic and biological chemistry, morphological disciplines - histology, cytology and embryology, human anatomy, pathomorphology, physiology and pathophysiology; clinical disciplines - propaedeutics of internal medicine, propaedeutics of pediatrics, radiology, pharmacology and integrates with these disciplines; lays down an array of students' knowledge of instrumental methods of functional diagnostics, provides for the integration of teaching with gastroenterology, pulmonology, nephrology, functional diagnostics, etc .; forms the ability to apply the acquired knowledge in the process of professional activity.

1. The purpose and objectives of the discipline

1.1. The purpose of teaching the discipline elective course "Andrology" is the acquisition by students of medical faculty of knowledge on the anatomy and physiology of the male reproductive system, etiology and pathogenesis of major andrological diseases, their symptoms and diagnosis, acquaintance with modern methods of treatment and prevention in andrology.

1.2. The main tasks of studying the discipline elective course "Andrology" is to teach applied knowledge in the context of diagnosis, analysis and interpretation of research results, as well

as treatment of patients with andrological diseases.

1.3 Competences and learning outcomes, the formation of which is facilitated by the discipline (relationship with the normative content of training of higher education seekers, formulated in terms of learning outcomes in the Standard of Higher Education).

In accordance with the requirements of the Standard of Higher Education, the discipline provides students with the acquisition of competencies:

- *general*:

- ability to abstract thinking, analysis and synthesis;
- ability to learn and master modern knowledge;
- ability to apply knowledge in practical situations;
- knowledge and understanding of the subject area and understanding of professional activity;
- ability to adapt and act in a new situation;
- ability to make informed decisions;
- ability to work in a team;
- interpersonal skills;
- ability to communicate in the state language both orally and in writing;
- ability to communicate in a foreign language;
- skills of using information and communication technologies.
- certainty and persistence in the tasks and responsibilities;
- ability to act socially responsibly and consciously;
- the desire to preserve the environment;
- ability to act on the basis of ethical considerations (motives).

- *special* (professional, subject):

- skills of interviewing and clinical examination of the patient;
- 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 disease treatment;
- ability to diagnose emergencies;
- ability to determine the tactics of emergency medical care;
- emergency medical skills;
- ability to carry out medical and evacuation measures;
- skills of performing medical manipulations;
- ability to carry out sanitary and hygienic and preventive measures;
- ability to determine the tactics of management of persons subject to dispensary supervision;
- ability to keep medical records;
- ability to assess the impact of the environment, socio-economic and biological determinants on the health of the individual, family, population.

Detailing of competencies according to NQF descriptors in the form of "Competence Matrix".

Competence matrix

№	Competence	Knowledge	Skills	Communication	Autonomy and responsibility
Integral competence					
Ability to solve typical and complex specialized problems and practical problems in professional activities in the field of health care, or in the learning process, which involves research and / or innovation and is characterized by complexity and uncertainty of conditions and requirements.					
General competencies					
1.	Ability to abstract thinking, analysis and synthesis	Have an abstract thinking, analysis and synthesis	Be able to abstract think, analyze and synthesize knowledge	The ability to effectively use the results of abstract thinking	Be responsible for the results of abstract thinking, analysis and synthesis
2.	Ability to learn and master modern knowledge	Have modern knowledge	Be able to learn and use modern knowledge	Ability to use modern knowledge	Be responsible for the results of the use of modern knowledge
3.	Ability to apply knowledge in practical situations	Have specialized conceptual knowledge acquired in the learning process.	Be able to solve complex problems and problems that arise in professional activities.	Clear and unambiguous communication of own conclusions, knowledge and explanations that substantiate them to specialists and non-specialists.	Responsible for making decisions in difficult conditions
4.	Knowledge and understanding of the subject area and understanding of the profession	Have deep knowledge of the structure of professional activity.	Be able to carry out professional activities that require updating and integration of knowledge.	Ability to effectively form a communication strategy in professional activities	To be responsible for professional development, ability to further professional training with a high level of autonomy.
5.	Ability to adapt and act in a new situation	Have deep knowledge of adaptation and action in a new situation	Be able to use the acquired knowledge to adapt and act in a new situation	Communicate effectively in a new situation	Take responsibility for acting in a new situation

Nº	Competence	Knowledge	Skills	Communication	Autonomy and responsibility
6.	Ability to make informed decisions	Have deep knowledge to justify the decision	Be able to make informed decisions based on knowledge	Use the acquired knowledge to justify the decision	Be responsible for informed decisions
7.	Ability to work in a team	Know the methods of teamwork	Be able to work in a team	Use the acquired knowledge in teamwork	Be responsible for teamwork
8.	Interpersonal skills	Have interpersonal skills	Be able to use the skills of interpersonal interaction	Use the acquired knowledge for interpersonal interaction	Be responsible for interpersonal interaction
9.	Ability to communicate in the state language both orally and in writing	Have the skills to communicate in the state language both orally and in writing	Be able to communicate in the state language both orally and in writing	Use knowledge of the state language	Be responsible for communicating in the state language both orally and in writing
10.	Ability to communicate in a foreign language	Have the skills to communicate in a foreign language	Be able to communicate in a foreign language	Use knowledge of a foreign language	Be responsible for communicating in a foreign language
11.	Skills in the use of information and communication technologies	Have deep knowledge in the field of information and communication technologies used in professional activities	Be able to use information and communication technologies in a professional field that requires updating and integration of knowledge.	Use information and communication technologies in professional activities	Be responsible for the development of professional knowledge and skills.
12.	Definiteness and persistence in terms of tasks and responsibilities	Have persistence in the tasks and responsibilities	Be able to persistently perform tasks and responsibilities	Communicate with others in the performance of tasks and responsibilities	Be responsible for the performance of their duties and tasks
13.	The ability to act socially responsibly and consciously	Have deep knowledge for social responsibility	Be able to act socially responsibly and consciously	Establish appropriate links for social and conscious responsibility	Be responsible for social actions
14.	The desire to preserve the environment	Have in-depth knowledge of environmental protection	Be able to analyze the preservation of the environment	Use the acquired knowledge to preserve the environment	Be responsible for preserving the environment

N^o	Competence	Knowledge	Skills	Communication	Autonomy and responsibility
15	Ability to act on the basis of ethical considerations (motives)	Have in-depth knowledge of ethical relations	Be able to use knowledge of ethical relations	Communicate effectively on the basis of ethical considerations (motives)	Be responsible for the actions of ethical considerations (motives)
Special (professional, subject) competencies					
1.	Skills of interviewing and clinical examination of the patient	Have in-depth knowledge of interviewing and clinical examination of the patient	Be able to use knowledge for interviewing and clinical examination of the patient	Use the acquired knowledge for interviewing and clinical examination of the patient	Responsible for interviewing and clinical examination of the patient
2.	Ability to determine the required list of laboratory and instrumental studies and evaluate their results	Have in-depth knowledge of laboratory and instrumental research and evaluation of their results	Be able to use laboratory and instrumental research	Use the acquired knowledge to evaluate laboratory and instrumental research	Be responsible for the evaluation of laboratory and instrumental research
3.	Ability to establish a preliminary and clinical diagnosis of the disease	Have special knowledge before establishing a preliminary and clinical diagnosis of the disease	Be able to establish a preliminary and clinical diagnosis of the disease	Justify the establishment of preliminary and clinical diagnosis of the disease	Be responsible for establishing a preliminary and clinical diagnosis of the disease
4.	Ability to determine the required mode of work and rest in the treatment of diseases	Have the knowledge to determine the necessary mode of work and rest in the treatment of diseases	Be able to prescribe the necessary mode of work and rest in the treatment of diseases	Justify the necessary mode of work and rest in the treatment of diseases	Be responsible for prescribing the necessary mode of work and rest in the treatment of diseases
5.	Ability to determine the nature of nutrition in the treatment of diseases	Have the knowledge to determine the nature of nutrition in the treatment of diseases	Be able to prescribe the necessary diet in the treatment of diseases	Justify the necessary diet in the treatment of diseases	Be responsible for the prescribed diet in the treatment of diseases
6.	Ability to determine the principles and nature of disease treatment	Have the knowledge to determine the principles and nature of disease treatment	Be able to prescribe appropriate treatment of diseases	Justify appropriate treatment of diseases	Be responsible for the prescribed treatment

N	Competence	Knowledge	Skills	Communication	Autonomy and responsibility
7.	Ability to diagnose emergencies	Have special knowledge for diagnosing emergencies	Be able to diagnose emergencies	Justify the diagnosis of emergencies	Be responsible for diagnosing emergencies
8.	Ability to determine the tactics of emergency medical care	Have specialized knowledge to determine the tactics of emergency medical care	Be able to determine the tactics of emergency medical care	Justify the tactics of emergency medical care	Be responsible for determining the tactics of emergency medical care
9.	Emergency care skills	Have knowledge of emergency medical care	Be able to provide emergency medical care	Justify the provision of emergency medical care	Be responsible for providing emergency medical care
10	Skills to perform medical manipulations	Have the knowledge to perform medical manipulations	Be able to perform medical manipulations	Use the acquired knowledge to perform medical manipulations	Be responsible for performing medical manipulations
11	ability to determine the tactics of management of persons subject to dispensary supervision	Have knowledge of determining the tactics of management of persons subject to dispensary supervision	Be able to identify groups of persons of dispensary supervision	Justify the definition of persons subject to dispensary supervision	To be responsible for the tactics of conducting persons subject to dispensary supervision
12	Ability to keep medical records	Have knowledge of medical records	Be able to keep medical records	Use the acquired knowledge in maintaining medical records	Be responsible for keeping medical records

Learning outcomes:

Integrative final program learning outcomes, the formation of which is facilitated by the discipline of the elective course "Andrology":

- mastering the algorithms of examination of patients with andrological profile
- practical use of instrumental methods of functional diagnostics;
- solving clinical situational problems and test tasks;
- mastering the elements of research on patients and models;
- mastering the skills of applying instrumental methods of functional diagnostics.

Learning outcomes for the discipline course of choice "Andrology":

know:

- supervision of patients;
- study of symptoms of patients with andrological pathology of the genitourinary system;
- study of practical use of diagnostic methods in andrology;
- mastering modern methods of surgical treatment of andrological patients.
- acquaintance with the basics of maliovasive and laparoscopic surgery in andrology.

- study of methods of radiation and chemotherapeutic treatment of patients with andrological pathology of the genitourinary system.
- solving clinical situational problems and test tasks;
- mastering the skills of using instrumental diagnostic methods during research of andrological patients.

be able:

- 1) Collection of andrological anamnesis.
- 2) Assessment of the anatomical structure of the male reproductive system.
- 3) Assessment of the rate of sexual development in men.
- 4) Assessment of the functional state of the testicles, diagnosis of hypogonadism.
- 5) Assessment of age-related changes in hormonal and general metabolism in men.
- 6) Mastering the methods of clinical examination in men with inflammatory diseases of the genital organs.
- 7) Providing emergency medical care for inflammatory diseases of the male genital organs.
- 8) Mastering the methods of clinical examination of men with traumatic genital injuries.
- 9) Providing emergency medical care for genital injuries in men.
- 10) Mastering the methods of clinical examination of men with genital tumors.
- 11) Provision of emergency medical care for tumors of the male genital organs.
- 12) Evaluation of the results of clinical-laboratory and instrumental diagnosis of infertility in men.
- 13) The choice of methods of treatment of male infertility.
- 14) The choice of treatment methods for infertile couples.
- 15) The choice of assisted reproductive biotechnological techniques in the treatment of infertile marriage.
- 16) Mastering the methods of clinical examination in men with complaints of erectile dysfunction, decreased libido.
- 17) Choice of treatment methods for men with erectile dysfunction.
- 18) Mastering the methods of clinical examination in men with complaints of ejaculatory disorders.
- 17) Choice of treatment methods for men with premature ejaculation, retrograde ejaculation, anejaculation, dysorgasmia.

2. Information volume of the discipline

2.0 ECTS credits / 60 hours are allocated for the study of the discipline.

Topic 1. Andrology as a branch of medicine. Congenital anomalies of sex. The issue of sex correction.

Andrology as a branch of medicine. Subject and tasks. Andrological morbidity, ways to reduce it. Organizational structure and tasks of andrological techniques. Anomalies of genital development. Formation and differentiation of somatic sex. Formation of mental sex. Diagnosis of anomalies of sexual development. Congenital anomalies of sex with the female structure of the external genitalia: Agenesis of the gonads. Mixed agenesis of the gonads. Ovarian dysgenesis syndrome. Rokytansky-Kustner syndrome. The complete form of testicular feminization syndrome. Congenital anomalies of sex with a male structure: Cryptorchidism (classification, clinic, diagnosis, complications, treatment). Hypospadias (classification, diagnosis, treatment). Epispadias (classification, diagnosis, treatment). Congenital anomalies of sex with bisexual structure of external genitalia (hermaphroditism): True hermaphroditism (diagnosis, treatment). Testicular dysgenesis syndrome. Incomplete masculinization syndrome. Testicular feminization syndrome.

Topic 2. Disorders of sexual development in men. Periods of formation of sexual function. Hypogonadism.

Disorders of sexual development in men: Periods and the formation of sexual function. Delayed sexual development (STD). Constitutional SSR (etiology, pathogenesis, clinical options, diagnosis, treatment). Premature sexual development (PSR): True premature sexual development

(pathogenesis, clinical manifestations, diagnosis, treatment). False premature sexual development: At a hormone-producing tumor of a testicle. With congenital adrenogenital syndrome. With androsteroma (differential diagnosis). Hypogonadism (classification). Primary hypogonadism: Anarchism syndrome (etiology, pathogenesis, clinical manifestations, treatment); monarchism syndrome (diagnosis, treatment tactics); Klinefelter's syndrome (etiopathogenesis, clinical signs, treatment); Shereshevsky-Turner syndrome; incomplete masculinization syndrome; del Castillo syndrome. Primary acquired hypogonadism (etiopathogenesis, diagnosis, treatment). Secondary hypogonadotropic (cerebropituitary) hypogonadotropic hypogonadism: isolated (idiopathic) hypogonadism (diagnosis, treatment); Kalman syndrome; pituitary dwarfism; congenital pangipituitarism (craniopharyngioma); Maddock syndrome. Secondary acquired hypogonadism: adiposogenital dystrophy; Lawrence-Moon-Barde-Biedl syndrome and Prader-Willi syndrome; hypogonadism in hypothalamic syndrome; hyperprolactinemic hypogonadism (diagnosis, treatment). The issue of gender correction in men. Age (late) hypogonadism and partial androgen deficiency (pathogenesis, diagnosis, treatment).

Topic 3. Inflammatory diseases of the male genitalia.

Inflammatory diseases of the male genitalia: urethritis; prostatitis, vesiculitis, epididymitis, orchitis, orchoepididymitis, prostate stones. Etiology, pathogenesis, molecular genetics, histopathology, risk factors, prevention.

Topic 4. Modern methods of diagnosis and treatment of inflammatory diseases of the male genitalia.

Inflammatory diseases of the male genitalia: urethritis; prostatitis, vesiculitis, epididymitis, orchitis, orchoepididymitis, prostate stones. Laboratory, instrumental, immunological, histological, radiological methods of diagnosis. Principles of medical and surgical dictation. Complications and their treatment.

Topic 5. Traumatic injuries of the male genitalia. Priapism. Peyronie's disease.

Traumatic injuries: penis (open injuries, closed injuries: bruises, fractures, dislocations, clinic, diagnosis, treatment); testes, testicles and their appendages. Priapism: (acute, chronic, etiopathogenesis, clinic, treatment). Peyronie's disease (diagnosis, treatment).

Topic 6. Tumors of the male genitalia.

Tumors of the male genitalia. Penile tumors: benign, viral papillomas, non-viral papillomas, penile leukoplakia, penile erythroplakia, skin horn, vascular tumors, penile sarcoma, penile pigment tumors, penile cancer (classification, clinic, diagnosis, treatment). Tumors of the scrotum. Tumors of the urethra: papilloma, polyp, condyloma, angioma, urethral cyst, urethral cancer (classification, clinic, diagnosis, treatment). Testicular tumors: seminoma, embryonic cancer, chorionepithelioma (classification, diagnosis, treatment). Testicular appendix tumors. Tumors of the spermatic cord. Tumors of the prostate. Benign prostatic hyperplasia (classification, clinic, diagnosis, treatment). Prostate cancer (pathological anatomy, classification, diagnosis, treatment); prostate sarcoma. Tumors of seminal vesicles.

Topic 7. Clinical and laboratory diagnosis of infertile married couple. Etiopathogenesis and treatment of male infertility. Immunoandrology.

Infertility of a married couple. Clinical and laboratory diagnosis of infertility in men: history, examination, ejaculate examination, determination of the phenomenon of crystallization of prostate secretion, hormonal mirror examination, biochemical assessment of the functional state of the gonads in men, .MAR test, basic metabolism study, genitography, testicular biopsy sex chromatin, karyotype determination, Y-chromosome microdeletions.

Pathogenesis of infertility in men: infertility with varicocele, infertility with cryptorchidism, infertility with epididymitis, infertility with prostatitis, infertility when exposed to radiation. Influence of ionizing radiation on generative function. General patterns of pathogenesis of

infertility in men. Infertility caused by impaired male fertility: secretory infertility, excretory infertility, combined infertility, rare forms of infertility (relative, immune, retrograde ejaculation). Infertility factors (hormonal, immunological, biochemical). Treatment of male infertility (conservative, surgical). Treatment of infertile couple. Auxiliary reproductive biotechnological methods in the treatment of infertile marriage: artificial insemination (indications, technique); in vitro fertilization and embryo transfer (stages); transport of gametes (zygotes) into the fallopian tubes (indications, conditions, technique). Family planning and contraception: female contraception, male contraception.

Topic 8. Immunoandrology.

Immunoandrology: Antigenic structure of sperm, hematotesticular barrier, immunological changes in infertility and chronic prostatitis, immunological diagnosis of infertility. Treatment of patients with immunocompromised infertility. Immunomodulatory treatment of chronic prostatitis. Acquired immunodeficiency syndrome.

Topic 9. Male sexual dysfunction, erectile and ejaculatory disorders.

Diagnosis and classification of sexual disorders with a predominance of erectile dysfunction. Three lines of treatment for erectile dysfunction.

Topic 10. Modern methods of treatment of erectile dysfunction, premature ejaculation, orgasm-associated pain.

Premature ejaculation (classification, differential diagnosis, treatment tactics). Ejaculatory delay (Ejaculatio tarda), retrograde ejaculation, anejaculation, orgasm-associated pain (etiopathogenesis, ways of correction).

The structure of the discipline

Topic	Lectures	Practical (seminar) classes	CPC	Individual work
Elective course "Andrology"				
Topic 1. Andrology as a branch of medicine. Congenital anomalies of sex. The issue of sex correction.		2	4	-
Topic 2. Disorders of sexual development in men. Periods of formation of sexual function. Hypogonadism.		2	4	
Topic 3. Inflammatory diseases of the male genitalia.		2	4	
Topic 4. Modern methods of diagnosis and treatment of inflammatory diseases of the male genitalia.		2	4	
Topic 5. Traumatic injuries of the male genitalia. Priapism. Peyronie's disease.		2	4	
Topic 6. Tumors of the male genitalia.		2	4	

Topic 7. Clinical and laboratory diagnosis of infertile married couple. Etiopathogenesis and treatment of male infertility. Immunoandrology.		2	4	
Topic 8. Immunoandrology.		2	4	
Topic 9. Male sexual dysfunction, erectile and ejaculatory disorders.		2	4	
Topic 10. Modern methods of treatment of erectile dysfunction, premature ejaculation, orgasm-associated pain.		2	4	
Total hours 60 / 2.0 ECTS credit	-	20	40	
Final control				Credit

Thematic plan of practical classes

№ z.p.	TOPIC	Number of hours
1.	Andrology as a branch of medicine. Congenital anomalies of sex. The issue of sex correction.	2
2.	Disorders of sexual development in men. Periods of formation of sexual function. Hypogonadism.	2
3.	Inflammatory diseases of the male genitalia.	2
4.	Modern methods of diagnosis and treatment of inflammatory diseases of the male genitalia.	2
5.	Traumatic injuries of the male genitalia. Priapism. Peyronie's disease.	2
6.	Tumors of the male genitalia.	2
7.	Clinical and laboratory diagnosis of infertile married couple. Etiopathogenesis and treatment of male infertility. Immunoandrology.	2
8.	Immunoandrology.	2
9.	Male sexual dysfunction, erectile and ejaculatory disorders.	2
10.	Modern methods of treatment of erectile dysfunction, premature ejaculation, orgasm-associated pain.	2
	Total	20

Thematic plan of independent work of students

№ z.p.	TOPIC	Number of hours	type of control
1.	Congenital anomalies accompanied by puberty disorders.	4	Current control in practical classes
2.	Male hypogonadism.	4	
3.	Basics of decoding spermograms.	4	
4.	Endocrinological disorders in sexology.	4	
5.	Minimally invasive reproductive technologies.	4	
6.	Malignant processes in andrology.	4	
7.	Sexual health of a married couple.	4	
8.	Priapism.	4	
9.	Sexually transmitted infections.	4	
10.	Pathophysiological aspects of premature ejaculation.	4	
	Total	40	

6. Individual tasks are not provided

7. Teaching methods

In the process of studying the discipline of the elective course "Andrology" the following methods of teaching students are used:

- by type of cognitive activity:
 - explanatory-illustrative;
 - reproductive;
 - problem statement;
 - logic of cognition:
 - analytical;
 - inductive;
 - deductive;
- according to the main stages of the process:
 - knowledge formation;
 - formation of skills and abilities;
 - application of knowledge;
 - generalization;
 - fixing;
 - audit;
- according to the system approach:
 - stimulation and motivation;
 - control and self-control;
- by sources of knowledge:
 - verbal - lecture, explanation;
 - visual - demonstration, illustration;
- by the level of independent mental activity:
 - problematic;
 - partial search;
 - research;
 - method of problem-based teaching.

8. Control methods

Current control carried out at each practical lesson in accordance with specific goals, during the individual work of the teacher with the student for those topics that the student develops independently and they are not part of the structure of the practical lesson. Objective (standardized) control of theoretical and practical training of students is applied.

The following means of diagnosing the level of preparation of students are used: testing, solving situational problems, control of practical skills.

At each practical lesson, the student answers 20 questions (tests on the topic of practical training, standardized questions, knowledge of which is necessary to understand the current topic of practical training and independent work related to the current lesson; demonstrates knowledge and skills of practical skills).

The form of final control when studying the elective course "Andrology" is a semester test, which consists in assessing the student's mastery of educational material solely on the basis of the results of his performance of certain types of work in practical classes. Semester credit in the discipline is conducted after the end of its study, before the examination session.

Methods and tools of standardized assessment when compiling the final control

Regulations for the semester test

The form of final control is standardized, includes control of theoretical and practical training and is conducted at the last lesson based on learning outcomes.

9. Current control is carried out during training sessions and aims to check the assimilation of educational material by students.

Forms of assessment of current educational activities are standardized and include control of theoretical and practical training.

9.1. Evaluation of current educational activities. During the assessment of mastering each topic for the current educational activity of the student, grades are given on the 4th point (national). This takes into account all types of work provided by the discipline program. The student must receive a grade from each topic for further conversion of grades into points on a multi-point (200-point) scale. are estimated at 2 points. The maximum sum of points for the whole test is 22 points, the minimum number of points that a student must score to enroll in the theoretical part of the practical lesson is 9 points (50% of correct answers).

In each practical lesson, the teacher evaluates the knowledge of each student on a four-point scale.

Excellent ("5")- The student correctly answered 90-100% of the tests of format A. Correctly, clearly and logically and fully answers all standardized questions of the current topic, including questions of the lecture course and independent work. Closely connects theory with practice and correctly demonstrates the performance (knowledge) of practical skills. Solves situational problems of increased complexity, is able to summarize the material. Performed the planned individual work.

Good ("4")-The student correctly answered 70-89% of the tests of format A. Correctly, and essentially answers the standardized questions of the current topic, lecture course and independent work. Demonstrates performance (knowledge) of practical skills. Correctly uses theoretical knowledge in solving practical problems. Is able to solve easy and medium situational problems. Has the necessary practical skills and techniques to perform them in excess of the required minimum.

Satisfactory ("3") -The student correctly answered 50-69% of the tests of format A. Incomplete, with the help of additional questions, answers the standardized questions of the current topic, lecture course and independent work. Cannot build a clear, logical answer on their own. During the answer and demonstration of practical skills the student makes mistakes. The student solves only the easiest problems.

Unsatisfactory ("2") -The student answered less than 50% of the tests of format A. Does not know the material of the current topic, can not build a logical answer, does not answer additional questions, does not understand the content of the material. Makes significant, gross mistakes when answering and demonstrating practical skills.

At each practical lesson, student knowledge is assessed on a four-point scale ("5".

Control of solving situational problems is carried out in a practical lesson by assessing the quality and completeness of their implementation, the ability to interpret the results. For the practical part of the lesson the student can type:

4 points, if the work is done in full and the student freely and correctly explains the situational task and gives an assessment;

2 points, if the work is done with some errors, the student can not fully explain the situational task and give an assessment;

0 points if the work is not completed or the student cannot explain the situational task and give an assessment.

The final grade for the lesson is determined by the sum of the results of test control and practical work as follows:

The sum of points	Score on a four-point scale
from 22 to 26	5
from 17 to 21	4
from 11 to 16	3
<9 points for test control or 0 points for the practical part	2

The material for independent work of students, which is provided in the topic of practical classes at the same time as classroom work, is evaluated during the current control of the topic in the relevant classroom. Assessment of topics that are submitted for self-study and are not included in the topics of classroom classes, are controlled during the final control.

10. The form of final control of academic performance in the study of the elective course "Andrology."

Semester test is a form of final control, which consists in assessing the student's mastery of educational material solely on the basis of the results of his performance of certain types of work in practical classes. Semester credit in disciplines is held after the end of its study, before the examination session.

11. Scheme of accrual and distribution of points received by students:

Maximum number of points, which a student can earn for current academic activities in the discipline, is 200 points.

Minimum number of points, which must be scored by the student for the current educational activity in the discipline is 120 points.

Calculation of the number of points is carried out on the basis of the marks received by the student on a traditional scale during studying of discipline, by calculation of the arithmetic average (CA) rounded to two signs after a comma. The resulting value is converted into points on a multi-point scale as follows:

$$X = (CA * 200) / 5$$

Below is a table of recalculation on a 200-point scale:

4-point scale	200-point scale		4-point scale	120-point scale		4-point scale	120-point scale		4-point scale	120-point scale
5	200		4.45	178		3.92	157		3.37	135
4.97	199		4.42	177		3.89	156		3.35	134
4.95	198		4.4	176		3.87	155		3.32	133
4.92	197		4.37	175		3.84	154		3.3	132
4.9	196		4.35	174		3.82	153		3.27	131
4.87	195		4.32	173		3.79	152		3.25	130
4.85	194		4.3	172		3.77	151		3.22	129
4.82	193		4.27	171		3.74	150		3.2	128
4.8	192		4.24	170		3.72	149		3.17	127
4.77	191		4.22	169		3.7	148		3.15	126
4.75	190		4.19	168		3.67	147		3.12	125
4.72	189		4.17	167		3.65	146		3.1	124
4.7	188		4.14	166		3.62	145		3.07	123
4.67	187		4.12	165		3.57	143		3.02	121
4.65	186		4.09	164		3.55	142		3	120
4.62	185		4.07	163		3.52	141			
4.6	184		4.04	162		3.5	140			
4.57	183		4.02	161		3.47	139			
4.52	181		3.99	160		3.45	138		Less than 3	Not enough
4.5	180		3.97	159		3.42	137			
4.47	179		3.94	158		3.4	136			

Independent work of students is assessed during the current control of the topic in the relevant

lesson. Assimilation of topics that are submitted only for independent work is controlled during the final control.

Points from the discipline are independently converted into both the ECTS scale and the 4-point (national) scale. ECTS scale scores are not converted to a 4-point scale and vice versa. Scores of students studying in one specialty, taking into account the number of points scored in the discipline are ranked on the ECTS scale so:

ECTS assessment	Statistical indicator
A	The best 10% of students
B	The next 25% of students
C	The next 30% of students
D	The next 25% of students
E	The last 10% of students

Ranking with the assignment of grades "A", "B", "C", "D", "E" is carried out for students of this course who study in one specialty and have successfully completed the study of the discipline. Students who receive grades FX, F ("2") are not included in the list of ranked students. Students with an FX grade automatically receive an E score after retaking.

Discipline scores for students who have successfully completed the program are converted into a traditional 4-point scale according to the absolute criteria listed below in the table:

Points in the discipline	Score on a 4-point scale
From 170 to 200 points	5
From 140 to 169 points	4
From 139 points to the minimum number of points that a student must score	3
Below the minimum number of points that a student must score	2

The ECTS score is not converted to the traditional scale, as the ECTS scale and the four-point scale are independent.

The objectivity of the assessment of students' learning activities is checked by statistical methods (correlation coefficient between ECTS assessment and assessment on a national scale).

12. Methodical support

The list and content of the initial methodological support for the study of the discipline elective course "Andrology" includes:

- thematic plans of practical classes, independent work of students;
- tasks for practical classes and independent work;
- questions, tasks, tasks for the current and final control of knowledge and skills of students.

Questions for the final control of knowledge with elective course "Andrology" for 5th year medical students

1. Collection of andrological anamnesis.
2. Assessment of the anatomical structure of the male reproductive system.
3. Assessment of the rate of sexual development in men.
4. Assessment of the functional state of the testicles, diagnosis of hypogonadism.
5. Assessment of age-related changes in hormonal and general metabolism in men.

6. Mastering the methods of clinical examination in men with inflammatory diseases of the genital organs.
7. Providing emergency medical care for inflammatory diseases of the male genitalia.
8. Mastering the methods of clinical examination of men with traumatic genital injuries.
9. Providing emergency medical care for genital injuries in men.
10. Mastering the methods of clinical examination of men with genital tumors.
11. Providing emergency medical care for male genital tumors.
12. Evaluation of the results of clinical-laboratory and instrumental diagnosis of infertility in men.
13. Choice of methods of treatment of male infertility.
14. The choice of treatment methods for infertile couples.
15. Selection of auxiliary reproductive biotechnological techniques in the treatment of infertile marriage.
16. Mastering the methods of clinical examination in men with complaints of erectile dysfunction, decreased libido.
17. Choice of treatment methods for men with erectile dysfunction.
18. Mastering the methods of clinical examination in men with complaints of ejaculatory disorders.
19. Choice of treatment methods for men with premature ejaculation, retrograde ejaculation, anejaculation, dysorgasmia.

13. Recommended literature

Basic

1. Vorobets DZ Infertility and erectile dysfunction of men: biochemical and clinical aspects: monograph / DZ Vorobets. Sparrow, NS Кочешкова. - Ternopil: Ukrmedknyha, 2008. –204 p.
2. Gorpichenko II Erectile dysfunction / II Горпинченко, Я.О. Мирошников. - Lviv: Kwart, 2003. - P. 7-23.
3. Dedov II Age androgen deficiency in men / II Dedov. Dedov, S.Yu. Kalinchenko. - М .: Практ. honey, 2006. - 240 p.
4. Domoratsky VA Sexual disorders and their correction: a brief practical guide to the diagnosis and treatment of psychogenic sexual dysfunctions / VA Domoratsky. Доморацкий. - RND: Phoenix, 2003. - 216 p.
5. Imelinsky KI Sexology and sexopathology / K.I. Imelinsky. - М.: Медицина, 1986. - 267 с.
6. Kocharyan GS Syndrome of anxious expectation of sexual failure in men and its treatment / GS Kocharyan. Kocharyan. - Н.: Osnova, 1995. - 279 s.
7. Criteria for the diagnosis and treatment of mental disorders and behavioral disorders in adults: A clinical guide. - Н., 2000. - 256 p.
8. Kryshthal VV Sexology: textbook: in 4 parts / VV Kryshthal, EV Crystal, TV Crystal. - Н.: Folio, 2008. - 990 p.
9. Kryshthal VV Sexology. Учебное пособие / В.В. Crystal, S.R. Grigoryan. - М.: ПЕР СЭ, 2002. - 879 с.

Auxiliary

1. Lyulko A., Minkov N., Tsvetkov D. Fundamentals of surgical andrology. - К .: Здоров'я, 1993. - 328 с.
2. Mavrov II Sexual diseases / II Mavrov Mavrov. - М .: АСТ-Пресс книга, 2002. - 752 с.
3. Mazo EB Erectile dysfunction / EB Mazo, S.I. Hamidov. - М.: МИА, 2008. - 240 с.
4. Disorders of sexual development / Ed. MA Zhukovsky. - М .: Медицина, 1989. - 225 с.
5. Guide to andrology / Ed. OL Tikinsky. - L .: Medicine, 1990. - 416 p.
6. Guide to urology. ed. Н.А.Лопаткина. - М .: Medicine, 1998. - 672p.
7. Sexology and andrology / N.I. Voyko, Yu.A. Borisenko, A.A. Bystrov [et al.]; under common ed. I.I. Gorpichenko. - К .: Абрис. - 1997. - 873 p.
8. Male sexual disorders: a manual / I.I. Gorpichenko, Ю.М. Gurzhenko, SV Vozianova, DZ Sparrow, OV Shulyak - Lviv: Kwart, 2011. - 221 p.

with.

14. Information resources

When studying the discipline, through the use of local and global computer networks, students use the following information resources and knowledge bases:

- Wikipedia (<http://uk.wikipedia.org>)

Electronic versions of educational and methodical support:

1. Methodical recommendations for practical classes and independent work on the elective course "Andrology" for students of the V course of the medical faculty in the specialty: 222 - "medicine", field of knowledge "Health care".

Access method: <https://new.meduniv.lviv.ua/kafedry/kafedra-urologiyi-fpdo/>