

SYLLABUS

INTERNATIONAL EUROPEAN
UNIVERSITY



SCHOOL OF
MEDICINE



SYLLABUS



Course Name				
		PATHOPHYSIOLOGY		
Lecturer (s)				
		Associate Professor Mykhailo Mykhailiuk Associate Professor Maslyukov Anatolii		
Lecturer's profile				
		https://medicine.ieu.edu.ua/pro-yemsh/kafedry/kafedra-fundamentalnykh-dystsyplin		
Consultations				
online consulting		Third Thursday of the month from 15:00 to 16:00		
offline consulting		Second Wednesday of the month from 15:00 to 16:00		
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Discipline page				
		https://medicine.ieu.edu.ua/pro-yemsh/kafedry/kafedra-fundamentalnykh-dystsyplin		
Form of final control		test	def. test	exam
		☐	☐	☒



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1 Brief discipline annotation

The study of pathological physiology forms the ability of students to interpret the basic concepts of general nosology, interpret the causes, mechanisms of development and manifestations of typical pathological processes and the most common diseases, analyze, draw conclusions about the causes and mechanisms of functional, metabolic, structural disorders of organs and body systems in diseases; provides fundamental training and acquisition of practical skills for the subsequent professional activity of a doctor.

2 Background for studying discipline

It is based on the basic concepts and knowledge of anatomy, histology, medical and biological physics, inorganic, bioorganic and biological chemistry, biology (general, molecular and medical), normal physiology, microbiology, and integrates with these disciplines, as well as with pathomorphology and pharmacology.

3 Purpose and goals of the discipline

PURPOSE of the discipline "Pathophysiology" follows from the objectives of the educational and professional program of training of graduates of a higher medical education institution and is determined by the content of the systemic knowledge and skills that a specialist doctor must master. The knowledge that students receive from the discipline is basic for the block of disciplines that provide natural science (block NS) and professional and practical (block PP) training.

4 Results of the study

PLR 1

Have a thorough knowledge of the structure of professional activity. Be able to carry out professional activities that require updating and integrating knowledge. To be responsible for professional development, the ability to further professional training with a high level of autonomy.

PLR 2

Understanding and knowledge of basic and clinical biomedical sciences, at a level sufficient to solve professional problems in the field of health care.

PLR 3

Specialized conceptual knowledge that includes scientific achievements in the field of health care and is the basis for research, critical thinking in the field of medicine and related interdisciplinary issues.

PLR 21

Find the necessary information in professional literature and databases of other sources, analyze, evaluate and apply this information.

PLR 25

Clearly and unambiguously communicate your own knowledge, conclusions and arguments on health care and related issues to specialists and non-specialists.

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ECTS credits

6 ECTS credits / 180 academic hours, of which lectures - 24, practical classes - 72, independent work - 84.

6

Course Content

No. by /order	No. of the topic pract.	Topic title	Lectures	Practical training	In. work
1.	1.	Subject, tasks and methods of pathophysiology. The general doctrine of disease, etiology and pathogenesis. Effect of altered atmospheric pressure on the body.	2	2,5	-
2.	2.	Pathogenic effects of ionizing radiation on the body.	-	2,5	-
3.	3.	The role of heredity and constitution in pathology.	-	2,5	-
4.	4.	Reactivity and its role in pathology	-	2,5	-
5.	5.	Protective mechanisms of reactivity. The role of the mononuclear phagocyte system (MPS) in pathology. Disorders of phagocytosis.	-	2,5	-
6.	6.	Pathology of the immune system. Immunodeficiency states.	-	2,5	-
	7.	Immunopathogenesis of HIV infections		2,5	
7.	8.	Allergies.	2	2,5	-
8.	9.	Pathophysiology of the cell		2,5	-
9.	10.	Disorders of peripheral circulation and microcirculation.	-	2,5	-
10.	11.	Violation of heat exchange.	-	2,5	-
	12.	Fever.		2,5	
11.	13.	Inflammation.	-	2,5	-
12.	14.	Tumors.	-	2,5	-
13.	15.	Hunger strike.	-	2,5	-
14.		Disorders of carbohydrate metabolism. Diabetes mellitus: definition, classification, clinical manifestations and complications.	-	-	1
15.		Pathology of water and salt metabolism. States of hyper- and hypohydria. Edema: types, etiology, pathogenesis.	2	-	-
16.		Disorders of acid-base state. Acidosis, alkalosis: classification, etiology, pathogenesis. Mechanisms of compensation and correction.	2	-	-
17.		Pathogenic effect of the thermal factor on the body			3
18.		Pathogenic effect of electric current	-	-	3
19.		Pathogenic effect of chemical factors	-	-	3
20.		Pathogenic effect of biological factors	-	-	3
21.		Mechanisms of non-specific resistance of the organism	-	-	4
22.		Immunological basis of transplantation	-	-	4
23.		Cytotoxic allergic reactions	-	-	4
24.		Immunocomplex allergic reactions	-	-	3

33.	19.	Disorders of the hemostatic system	-	3	2
34.	20.	Leukocytosis, leukopenia. Leukemia	-	3	2
35.	21.	Pathophysiology of systemic circulation. Insufficiency of blood circulation.	-	3	2
36.	22.	Pathophysiology of blood vessels. Atherosclerosis.	2	3	3
37.	23.	Pathophysiology of the heart. Ischemic heart disease. Heart failure. Arrhythmias	2	3	2
38.	24.	Pathophysiology of external respiration. Respiratory failure. Hypoxia		3	3
39.	25.	Pathophysiology of the digestive system. Insufficiency of digestion.	2	3	-
40.	26.	Pathophysiology of the kidneys. Renal insufficiency. Violation of acid-base balance.	1	3	-
41.	27.	Pathophysiology of the endocrine system. Pathology of the pituitary gland and thyroid gland	1	2	-
42.	28.	Pathology of carbohydrate metabolism	2		3
43.	29.	Diabetes mellitus. Pathology of the adrenal glands. Stress	1		3
44.	30.	Pathophysiology of the nervous system.	1		3
45.	31.	Extra-pulmonary disorders of alveolar ventilation	2		3
46.		Arterial hypotension	-	-	3
47.		Disorders of non-respiratory lung functions	-	-	3
48.		Disorders of the secretory function of the pancreas	-	-	3
49.		Impaired intestinal function	-	-	3
50.		Portal hypertension syndrome	-	-	2
51.		General disorders of hormonal regulation	-	-	2
52.		Pathology of the hypothalamic-pituitary system	-	-	2
53.		Stress. Stress damage to organs and diseases of adaptation	-	-	2
54.		Pathology of the gonads	-	-	2
55.		General patterns of disorders of hormonal regulation of functions and metabolism	-	-	2
56.		Disorders of the autonomic nervous system	-	-	2
57.		Disorders of the nociceptive function of the nervous system. Pain	-	-	2
58.		Disorders of the trophic function of the nervous system	-	-	2
Total (Section II):			16	32	42
Total for sections I and II			24	72	84

7 List of obligatory tasks

1. Pathogenic effect of the thermal factor on the body
2. Pathogenic effect of electric current
3. Pathogenic effect of chemical factors
4. Pathogenic effect of biological factors
5. Mechanisms of nonspecific resistance of the organism
6. Immunological basis of transplantation
7. Cytotoxic allergic reactions
8. Immunocomplex allergic reactions
9. Autoallergic reactions
10. Aging and pathology
11. Disorders of mineral metabolism
12. Vitamin metabolism disorders
13. Typical disorders of lymphatic dynamics
14. Arterial hypotension
15. Extra-pulmonary disorders of alveolar ventilation.
16. Violation of non-respiratory functions of the lungs
17. Disorders of the secretory function of the pancreas
18. Disorders of the intestinal function
19. Portal hypertension syndrome
20. General disorders of hormonal regulation
21. Pathology of the hypothalamic-pituitary system
22. Stress. Stress damage to organs and adaptation diseases
23. Pathology of the gonads
24. General patterns of disorders of hormonal regulation of functions and metabolism
25. Disorders of the autonomic nervous system
26. Disorders of the nociceptive function of the nervous system. Pain
27. Violation of the trophic function of the nervous system
28. Arterial hypotension
29. Extra-pulmonary disorders of alveolar ventilation.

8 List of selective tasks

1. Create situational test tasks
2. Creating multimedia presentations on the topics of practical classes
3. Creating biological crosswords on the topics of practical classes
4. Making posters with contours of physiological regulation of functions
5. Participation in the work of the student scientific club
6. Participation in student scientific and practical conferences
7. Organization and visiting of thematic museums
8. Publication of abstracts of scientific conference reports in co-authorship with a teacher

9 Discipline features

Period of teaching	Semester	International disciplinary integration	Year of study	Courses: general training/ professional training/elective
1 semester	12	yes	6	General training



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10 Assessment system and requirements. General system of discipline assessment

The current performance of students is assessed on a 4-point scale (2; 3; 4; 5) at each practical, taking into account the approved evaluation criteria for the relevant discipline. The student must receive a grade for each topic for further conversion of grades into points on a multi-point (200-point) scale.

Criteria for assessing current academic performance:

Excellent ("5") - a student has correctly answered 90-100% of the A-format tests (from the "Krok-2). The student solves situational problems of increased complexity, is able to summarize the material.

Good ("4") - the student correctly answered 70-89% of the tests of format A. Possesses the necessary practical skills and techniques for their implementation to an extent exceeding the required minimum.

Satisfactory ("3") - the student correctly answered 50-69% of the tests of format A. Has only the mandatory minimum of research methods.

Unsatisfactory ("2") - the student correctly answered 50% of the tests of format A. When answering and demonstrating practical skills, he/she makes significant, gross mistakes.

Evaluation of students' independent work in preparation for classroom practical classes is carried out during the current control of the topic at the relevant classroom.

The semester credit is evaluated on a two-point scale (passed/not passed) and a 200-point scale by determining the arithmetic mean of current grades for each practical lesson on a 4-point scale, and its subsequent conversion to points on a 200-point scale. The minimum number of points that a student must score is 120.

QR Code: <https://ie.u.edu.ua/docs/rate-of-study.pdf>

11 Assessment system and requirements. General system of discipline assessment

Students who have completed all types of work, tasks provided for in the curriculum for the semester in accordance with the discipline, attended all classes provided for in the curriculum, written and submitted a medical history and have an average score for current academic activities of at least "3" (72 points on a 120-point scale) are allowed to take part in the semester final control

<https://ie.u.edu.ua/docs/rate-of-study.pdf>

12 Admission to final control

The study of the discipline "Hygiene and Ecology" requires compliance with the rules that ensure effective mastery of the subject, both in theory and in practice, namely

- regular, without absences, attendance at lectures and practical classes
- the presence of the teacher and students in the classroom in accordance with the schedule and the established time regulations of classes
- the presence of the teacher and students in the classroom neatly dressed in appropriate clothing, namely in a white coat
- full presentation of the course by the teacher in accordance with the program of the discipline
- student's keeping lecture notes and notes on practical classes
- the study of the discipline is based on collegiality, cooperation and solidarity of the teacher and students
- discussion of educational issues takes place in the form of a discussion between the teacher and students, and students among themselves
- lectures and practical classes, except for the final control of knowledge, involve independent work of students using information technology and means of processing, storing and transmitting information, including computers, personal gadgets and other electronic devices, as well as textbooks, manuals, methodological developments, etc.
- scientific search and research work of students is welcome
- writing essays on the topics defined in the list of compulsory assignments is a part of the training
- writing essays on the list of topics of optional assignments is desirable and mandatory if a student wants to improve his or her grade

12 Admission to final control

- the topics of the discipline are considered in terms of their practical application and bioethical capacity
- the mutual behavior of the teacher and students, and students among themselves in the classroom and out of class time complies with generally accepted norms and role models of behavior that provide for mutual respect and collegiality of relationships, and exclude religious, racial, ethnic, cultural, age, gender, social, political, and other prejudices and prejudices, as well as bullying, sexual harassment, and other manifestations and forms of intolerance and humiliation of human dignity
- any manifestations of corruption in the educational process, both on the part of the teacher and students, are unacceptable.

13 Discipline policy

A student who, for valid reasons, confirmed by documentary evidence, was not subject to current control has the right to undergo current control within two weeks after returning to study.

A student who was absent from classes without valid reasons, did not participate in current control activities, did not eliminate academic debt, is not allowed to take the final semester control of knowledge in this discipline, and on the day of the exam, the academic staff member gives a grade of "not admitted" in the examination record.

Retaking the differentiated test in the discipline is assigned subject to the completion of all types of educational, independent (individual) work provided for by the working curriculum of the discipline and is carried out in accordance with the schedule of liquidation of academic debt approved by the directorate.
<https://ieu.edu.ua/docs/050.pdf>

14 Policy of absence and late task performance

Participants in the educational process are guided by the principles of academic integrity
<https://ieu.edu.ua/docs/011.pdf>

15 Recommended sources of information

Primary literature:

1. "General and clinical pathophysiology" (I. Savytskyi; A. Gozenko; L. Szarpak; A. Kubyshekin). New book, 2021.
2. Pathophysiology: [textbook] / [Y.V. Byts, G.M. Butenko, A.I. Gozhenko and others]; edited by Prof. M.N. Zayko, Prof. Y.V. Byts, Prof. M.V. Kryshchal - [4th ed.
3. Pathophysiology: [textbook] / [M.N. Zayko, Y.V. Byts, M.V. Kryshchal et al. eds.
4. Ataman O.V. Pathophysiology: [textbook]: in 2 vols: Nova Knyha, 2012-2015.
- Vol. 1: General pathology, 2012. 579 p.; Vol. 2: Pathophysiology of organs and systems, 2015. 528 p.

Supporting:

1. Bodnar Ya.Y., Fayfura V.V., Danilchuk R.B. Pathological anatomy and pathological physiology of man: Electronic textbook. - Ternopil: Ukrmedkniga, 2000. 640 MB.
2. Collection of tests on pathological physiology. / Y.I. Bondarenko, O.V. Denefil et al. (compilers). - Ternopil, 2012. - 282 p.
3. Ganong V.F. Physiology of man : [handbook] / William F. Ganong ; translated from English - Lviv : BAK, 2002. - 784 c.
4. Pathologic physiology: Textbook / Edited by A.D. Ado et al. - M.: TriadaX, 2000.
5. Pathophysiology : in 3 vol. : [textbook] / Edited by A.I. Volozhin, G.V. Poryadin. - Moscow: Academy. - 2007. - T. 1. - 271 p., T.2. - 255 p., T.3. - 301 p.
6. Ataman A.V. Pathophysiology in questions and answers: Textbook. - K: Vishcha Shkola, 2000. - 608 c.



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Recommended sources of information

7. Pathophysiology: in 3 vols.: Vol. 1: General pathophysiology with the basics of immunopathology: [textbook for medical universities] - [ed. 3rd, supplement, revision] / A.S. Zaichik, L.P. Churilov. - SPb. ELBI-SPb, 2005. - 656 c.
8. Henderson D.M. Pathophysiology of the digestive organs : [scientific edition] / Joseph M. Henderson ; translated from English, ed. by V. Yu. Y. Golofeevskiy; ed. by Y. V. Nitochkin. - 3rd edition, revised. - M. : BINOM, 2010. - 272 c.
9. Pathophysiology : [textbook] : in 2 vol. - [4th ed., revision and supplement] / edited by V.V. Novitsky, E.D. Gold. Novitsky, E.D. Goldberg, O.I. Urazova. - GEOTAR-Media, 2009. - T. 1. - 848 p., T. 2. - 640 p.
10. Pathophysiology : in 3 vols. : Vol. 2 : Pathochemistry (endocrine-metabolic disorders) : [textbook for students of med. higher educational institutions] - [3rd ed., suppl. and isp] / A.Sh. Zaichik, L.P. Churilov. - SPb. ELBI-SPb, 2007. - 768 c.
11. Schiffman F. J. Pathophysiology of blood / F. J. Schiffman ; trans. from English under the ed. of prof. E.B. E. Zhiburt, prof. J. Tokarev. - M. BINOM ; SPb. Nev. dialect, 2009. - 448 p.
12. Robbins and Cotran Pathologic Basis of Disease. - [9th ed.] / eds. V. Kumar, A.K. Kumar. Abbas, J.C. Aster. - Philadelphia : Elsevier/Saunders, 2015. - 1408 p.

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Tips on successful study during the course

Attendance at classes!

Dialogue with the teacher on all issues of the curriculum Completion of assignments in accordance with the program!

Writing essays on the topics of the program!

Discussion of topics and assignments in groups outside of class time Use of Internet resources!