UNIVERSITY OF WARMIA AND MAZURY IN OLSZTYN
Faculty of Medicine

Course sylabus – part A
Pathophysiology

48SJ-PATH
ECTS: 5.00
CYCLE: 2024Z

SUBJECT MATTER CONTENT

LECTURE

1. Pathophysiology of shock. 2. Pathophysiology of diseases of the central nervous system. 3. Pathophysiology of neoplastic diseases. 4. Autoimmunity and autoimmune diseases. 5. Basics pathophysiology of the cardiovascular system - atherosclerosis. 6. Pathophysiology of cardiovascular diseases. 7. Pathophysiology of respiratory diseases. 8. Pathophysiology of gastrointestinal diseases. 9. Disturbances in the volume-pressure balance of the intracranial space. 10. Pathophysiology of pain. 11. Pathophysiology of kidney diseases. 12. Pathophysiology of the aging process. 13. Diseases of the endocrine system. 14. Metabolic disorders - disorders in metabolism of carbohydrate, obesity, metabolic syndrome.

SEMINAR

1. General pathophysiology part. 1: 1. Pathophysiology. 2. Health and disease. 3. Pathophysiology of cell. 4. Inflammation. 2. General pathophysiology part 2: 1. Effects of environmental factors. 2. Pathophysiology of edema. 3. Disorders of thermoregulation. 4. Pathophysiology of burns. 3. The role of cytokines in the development of inflammation. Pathophysiology of bone diseases.: 1. Pro-and anti-inflammatory cytokines. 2. Receptors cytokines. 3. Cytokine storm in the course of macrophage activation syndrome. 5. Bone metabolism. 6. The role and importance of vitamin D. 7. Osteopenia and osteoporosis. 8. Osteomalasia. 4. Pathophysiology of the endocrine system: 1. Pathophysiology of the reproductive system. 2. Types of diabetes. 3. Nutrition and nutritional disorders - psychosomatic nutritional disorders, malnutrition and cachexia. 4. Vitamins. 5. Pathophysiology of the cardiovascular system: 1. Arterial hypertension 2. Pulmonary hypertension. 3. The formation of murmurs. 6. Pathophysiology of the cardiovascular system - ECG: 1. Pathophysiology changes in the ECG recording. 7. Pathophysiology of the respiratory system: 1. Pathophysiology of the obstructive diseases in the respiratory system. 2. Pathophysiology of the restrictive diseases in the respiratory system. 3. Pathophysiology of interstitial diseases. 4. Respiratory failure. 8. Pathophysiology of the digestive system - liver: 1. Acute liver failure. 2. Fatty liver. 3. Cirrhosis of the liver. 4. Cholestasis. Jaundice. 5. Viral hepatitis. 6. Autoimmune diseases of the liver. 9. Pathophysiology of the digestive system - digestive tract and pancreas: 1. Diarrhea. 2. Celiac disease. 3. Inflammatory bowel diseases. 4. Malnutritional disorders. 5. Chronic pancreatitis. 10. Pathophysiology of renal and bladder function: 1. Urinary tract infections, urinary system disorders. 2. Tumors and kidney cysts. 3. Chronic kidney disease. 4. Urolithiasis. 11. Pathophysiology of the hematopoietic system: 1. Diseases of the red blood cells. 2 Diseases of the white blood cells. 3. Hemostasis disorders.

CLASSES

1. Pathophysiology of the nervous system. 2. Pathophysiology of the endocrine system. 3. Pathophysiology of the cardiovascular system. 4. Pathophysiology of the cardiovascular system - ECG. 5. Pathophysiology of the system respiratory system. 6. Pathophysiology digestive system - liver. 7. Pathophysiology of the digestive system - digestive tract and pancreas. 8. Fluid and electrolyte homeostasis and imbalances. 9. Pathophysiology of renal and bladder function. 10. Pathophysiology of the hematopoietic system.

Legal acts specifying learning outcomes:
467/2024
Disciplines: medical sciences
Status of the course: Obligatoryjny
Group of courses:A - przedmioty podstawowe
Code: ISCED 0912
Field of study: Medicine
Scope of education:
Profile of education: General academic
Form of studies: full-time
Level of studies: uniform master's studies
Year/semester: 3/5

Types of classes: Lecture, Seminar, Classes
Number of hours in semester: Lecture: 28.00, Seminar: 27.00, Classes: 20.00
Language of instruction: English
Introductory subject: anatomy, physiology, histology with cytophysiology and embryology, biochemistry, immunology
Prerequisites: Implementation of learning outcomes in the field of knowledge, skills and competences from previous years of study.

Name of the organisational unit conducting the course: Katedra Fizjologii i Patofizjologii Człowieka
Person responsible for the realization of the course:dr Łukasz Jaśkiewicz
e-mail:
lukasz.jaskiewicz@uwm.edu.pl

Additional remarks: Classes are carried out in groups of 10 students.

TEACHING OBJECTIVE

Explanation and discussion of functional changes in the disease state, mechanisms of disease development and systemic consequences resulting from the disease. Students should learn and use the basic terms used in the field of pathophysiology, know the basics of etiopathogenesis of diseases of individual systems; know the pathomechanism of the consequences of impaired function of organs and systems, and be able to use the acquired knowledge in practice.

DESCRIPTION OF THE LEARNING OUTCOMES OF THE COURSE IN RELATION TO THE DESCRIPTION OF THE CHARACTERISTICS OF THE SECOND LEVEL LEARNING OUTCOMES FOR QUALIFICATIONS AT LEVELS 6-8 OF THE POLISH QUALIFICATION FRAMEWORK IN RELATION TO THE SCIENTIFIC DISCIPLINES AND THE EFFECTS FOR FIELDS OF STUDY:

Symbols for outcomes related to the discipline:	M/NMA_P7S_WG+++, M/NMA_P7S_ UW+, M/NMA_P7S_KO+++
Symbols for outcomes related to the field of study:	C.W38.+, C.W21.+, C.W26.+, B.W21.+, C.W20.+, C.W42.+, K.5+, C.W40.+, C.U7.+, C.W23.+, B.W17.+, C.W27.+, K.8.+, K.7.+, C.W39.+

LEARNING OUTCOMES:

Knowledge:

W1 – Graduate knows and understands: processes: Cell cycle, cell proliferation, differentiation and aging, apoptosis and necrosis and their importance for the functioning of the organism; processes occurring during aging and changes in organ function related to aging; types of hypersensitivity reactions, types of immunodeficiencies and basics of immunomodulation; issues in the immunology of cancer and immune-mediated diseases and the principles of immunotherapy; the clinical course of specific and non-specific inflammation and the processes of tissue and organ regeneration; the pathogenesis of diseases, including genetic and environmental conditions; the pathomechanism and clinical forms of the most common diseases of individual systems and organs, metabolic diseases and disorders of water-electrolyte, endocrine and acid-base metabolism; the effect of oxidative stress on cells and its importance in the pathogenesis of diseases and in the processes that occur during aging; the consequences of deficiency and excess of vitamins and minerals; the causes and consequences of inadequate nutrition, including prolonged insufficient and excessive food intake and the use of an imbalanced diet and digestion and absorption disorders; the molecular basis of cancer and issues in cancer immunology.

Skills:

U1 – Graduate is able to: relate images of tissue and organ damage to clinical signs of disease, history and results of laboratory determinations to establish a diagnosis in the most common diseases of adults and children.

Social competence:

K1 – Graduate is ready to: perceive and recognize their own limitations and make self-assessments of deficits and educational needs; use objective sources of information; formulate conclusions from their own measurements or observations.

TEACHING FORMS AND METHODS:

Lecture(W1;K1;):Lectures with presentations.

Seminar(W1;U1;K1;):A study of mechanisms in the field of general and clinical pathophysiology in groups of 20-30 people.

Classes(W1;U1;K1;):Analysis of pathophysiological mechanisms based on 5 clinical cases, which students will have to develop in teams of 2 based on the received symptoms, signs and additional tests and explain during the course the pathophysiological mechanisms leading to a given disease and deviations in the attached tests.

FORM AND CONDITIONS OF VERIFYING LEARNING OUTCOMES:

Lecture (Written exam) - The exam takes the form of a multiple choice test. The test consists of 120 questions with 4 answers, of which only 1 is correct. A minimum of 72 points (60%) is required to pass the exam. Students who pass lectures, seminars and exercises are admitted to the exam. -

Lecture (Esey) - Students who miss the lecture will write an additional essay from the lecture content. -

Seminar (Colloquium test) - The evaluation of the seminars will be based on the sum of points obtained from the tests. There are 3 tests during the semester in the form of a true-false test. The test consists of 16 questions with 5 answers , each of which must be assessed whether it is „true" or „false". To pass, it is necessary to obtain minimum 70% of the points (168 points). -

Seminar (Part in the discussion) - Participation in the discussion on issues in the field of general and clinical pathophysiology. -

Classes (Written test) - Completion of the exercises is based on the number of points obtained from the "short test" (5 test or descriptive questions), carried out during each class and assessed on a scale of 2-5, the grades from the "short tests" are converted into points. -

Classes (Report) - Preparation of a clinical case based on the Student's worksheet. -

Classes (Evaluation of the work and cooperation in the group) - Team work on discussing assigned clinical cases. -

BASIC LITERATURE:

1. J. L. Banasik, L.-E. C. Copstead, *„Pathophysiology. Seventh edition."*, Wyd. Elsevier, R. 2022

2. L. S. Lilly, *„Pathophysiology of Heart Disease: An Introduction to Cardiovascular Medicine. Seventh edition."*, Wyd. Wolters Kluwer, R. 2020, s. 79-117

3. S. Silbernagl, F. Lang, *„Color Atlas of Pathophysiology. Third edition."*, Wyd. Thieme, R. 2016

SUPPLEMENTARY LITERATURE:

1. L. Story, *"Pathophysiology a practical approach. Third ediotion."*, Wyd. Jones Bartlett Learning, R. 2018

2. G. D. Hammer, S. J. McPhee, *„Pathophysiology of Disease: An Introduction to Clinical Medicine. Eight Edition."*, Wyd. McGraw-Hill Education, R. 2019

Detailed description of ECTS credits awarded - part B

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ECTS: 5.00
CYCLE: 2024Z

Pathophysiology

The number of ECTS credits awarded consists of:

1. Contact hours with the academic teacher:

- participation in: Lecture	28.0 h
- participation in: Seminar	27.0 h
- participation in: Classes	20.0 h
- consultation	5.0
Total:	80.0 h.

2. Independent work of a student:

preparation for exam	20.00 h
preparation for tests	15.00 h
self-education	10.00 h

Total: 45.0 h

contact hours + independent work of a student Total: 125.0 h

1 ECTS credit = 25-30 h of an average student's work, number of ECTS credit = 125.0 h : 25.0 h/ECTS = 5.00 ECTS on average: 5.0 ECTS

- including the number of ECTS credits for contact hours with the direct participation of an academic teacher: 0,00 ECTS points,

- including the number of ECTS credits for hours of independent work of a student: