

Program of Study : DENTISTRY

Course : PATHOLOGICAL PHYSIOLOGY 1

Abbreviation : PFY/ZAB11

Schedule : 30 hours of lectures
45 hours of exercises

Course distribution : 2rd year, 4th semester

Number of Credits : 0

Course Form : Lectures, exercises

Learning objectives

On the course of Pathological Physiology 1 students will

- acquire knowledge about role of genetic, aging and environmental factors in development of pathological states and diseases with emphasis on the disorders of orofacial area;
- study molecular, cellular, organ and systemic mechanisms of pathogenesis of major medical symptoms, syndromes, and diseases including:
 - o inflammation, fever, disorders of water, ion and acid-base balance
 - o typical disorders of the blood and haemostasis
 - o major disorders and diseases of respiratory and cardiovascular system
- learn basic clinical terminology and important connections between pathophysiology and clinical disciplines
- study relationships between local disorders of oral cavity and disorders of blood, cardiovascular and respiratory systems

Learning outcomes

After completing the course students must be able to

- demonstrate a basic understanding of the concepts and elements of disease
- discuss etiology, pathogenesis, major clinical and laboratory manifestations of typical pathological processes providing examples related to orofacial area
- learn to analyze role of different risk factors in pathogenesis of arterial hypertension, coronary heart disease, bronchial asthma, chronic obstructive pulmonary disease, circulatory, respiratory failure
- apply acquired knowledge for interpretation of basic clinical cases of patients with disorders of blood, coagulation, cardiovascular and respiratory systems, especially related to disorders of orofacial area
- understand the basis for major laboratory tests and other diagnostic procedures related to above mentioned disorders
- understand principles of treatment of disorders of blood, coagulation, cardiovascular and respiratory systems
- discuss principles of diagnostics and treatment of patients in sepsis, shock, coma

- make correlations between pathophysiology and clinical skills they are learning in their allied health science programs.

Lectures:

Teacher: Professor(s) of the dept., event. guest teachers

Study: Continuous

	Date	Subjects	Duration (hrs)
1	10. 2. 2020	Introduction. General mechanisms of disease.	2
2	17. 2. 2020	Pathogenetic principles at gene level.	2
3	24. 2. 2020	Pathophysiology of water and salt balance.	2
4	2. 3. 2020	Acid-base disturbances.	2
5	9. 3. 2020	Pathophysiology of aging.	2
6	16. 3. 2020	Pathophysiology of respiratory system I.	2
7	23. 3. 2020	Pathophysiology of respiratory system II.	2
8	30. 3. 2020	Pathophysiology of coronary heart disease.	2
9	6. 4. 2020	Pathophysiology of the heart failure.	2
10	13. 4. 2020	Holiday.	2
11	20. 4. 2020	Pathophysiology of critical states.	2
12	27. 4. 2020	Pathophysiology of blood and haemopoetic tissues.	2
13	4. 5. 2020	Pathophysiology of clotting.	2
14	11. 5. 2020	Pathophysiology of the immune system.	2
15	18. 5. 2020	Localized and generalized disease manifestations in the orofacial area.	2

The lectures are held on Mondays from 8.00 a.m. to 9.30 a.m., in the weeks 7. – 11. in the room No. 2.517, in the weeks 12. – 18. in the room No. 2.521 and in the weeks 19. – 21. in the room No. 2. 520 (Theoretical Institutes - New Building).

Exercises:

Teacher: Assistant Profs./Lecturers

Study : Continuous

	Week from-to	Subject	Duration (hrs)
1	10. 2. 2020	Introduction. General mechanisms of disease. Fever.	3
2	17. 2. 2020	Pathophysiology of reactivity I.	3
3	24. 2. 2020	Pathophysiology of reactivity II.	3
4	2. 3. 2020	Pathophysiology of water and salt balance.	3
5	9. 3. 2020	Acid-base disturbances. Examination of lactate, principles and applications in diagnostics.	3
6	16. 3. 2020	Hypoxia. Respiratory system disorders I. Midterm test No. 1 (content of exercises No. 1-5 and lectures No. 1-4). Principles of pulse oximetry.	3
7	23. 3. 2020	Respiratory system disorders II.	3
8	30. 3. 2020	ECG interpretation basics.	3
9	6. 4. 2020	Pathophysiology of coronary heart disease. Exercise	3

		tolerance bicycle ergometry test.	
10	13. 4. 2020	*Holiday. Pathophysiology of changes in blood pressure.	3
11	20. 4. 2020	Pathophysiology of heart failure. Cardiac overload. Midterm test No. 2 (content of exercises No. 6-9 and lectures No. 5-8).	3
12	27. 4. 2020	Pathophysiology of critical states. Shock, coma and seizures. Falls.	3
13	4. 5. 2020	Pathophysiology of blood and haemopoetic tissues.	3
14	11. 5. 2020	Pathophysiology of blood clotting. Midterm test No. 3 (content of exercises No. 10-13 and lecture No. 9-12).	3
15	18. 5. 2020	Credit. Credit test. Substitutions of absences confirmed by relevant document.	3

*** Materials for self-study will be supplied by the department. Students are encouraged to discuss the topic in consultation hours at the department.**

The exercises are held on Mondays from 9.45 a.m. to 12.00 a.m., in the weeks 7. – 11. in the seminar room of the Department of Pathophysiology, in the weeks 12. – 18. in the room No. 2.521 and in the weeks 19. – 21. in the room No. 2. 520 (Theoretical Institutes - New Building).

Completed by: Credit

Credit conditions are as follows:

- 1) In accordance with Directive of the dean of the faculty of medicine and dentistry LF-B-18/14, article 7. item 1, Department sets the following limit for absences: **4,5 teaching hours (10%) without apologies**. Substitutions are provided at the 15th week of the study.
- 2) Credit will be granted upon successful answering 2/3 of questions from the respective term topics in the final test on the computer in the 15th week of the term. To take (or re-take) the Credit final test students must register on STAG.
- 3) For students, who were active during the term and in each Midterm test achieved minimum 60% with average score over 2/3 of all tests*, final test will not be mandatory.
- 4) There are two possibilities for correction of unsuccessful credit test; after that, at the discretion of the department, opportunity for oral correction with at least two teachers will be considered.
- 5) Unpreparedness of the student, i.e. the basic deficit in knowledge of the material discussed in the previous Pathophysiology lessons or crucial deficits from previous subjects, especially Physiology, Biochemistry, Histology, Anatomy, etc., can be a reason for exclusion from the lesson.

** Students have possibility to retake 1 Midterm test during semester, extra bonus of up to 10% of average score can be earned by presenting a topic selected from department list.*

Literature:

1. Porth's Pathophysiology: Concepts of Altered Health States (9th Edition) by Sheila Grossman, Carol Mattson Porth. Wolters Kluwer Health | Lippincott Williams & Wilkins, 2014.
2. McCance K. L., Huether S. E.: Pathophysiology. 8th Edition. Mosby, 2018.
3. Silbernagl S, Lang F. Color Atlas of Pathophysiology, 3rd Ed. Thieme, 2016.
4. <http://pfyziol.upol.cz>