

<b>Study program</b>	<b>:</b>	<b>DENTISTRY</b>
<b>Course name</b>	<b>:</b>	<b>PATHOLOGICAL PHYSIOLOGY 2</b>
<b>Abbreviation</b>	<b>:</b>	<b>PFY/ZAA12</b>
<b>Schedule</b>	<b>:</b>	<b>15 hours of lectures</b> <b>45 hours of exercises</b>
<b>Course distribution</b>	<b>:</b>	<b>3<sup>rd</sup> year, 5<sup>th</sup> semester</b>
<b>Number of Credits</b>	<b>:</b>	<b>8</b>
<b>Course Form</b>	<b>:</b>	<b>Lectures, exercises</b>

### **Learning objectives**

#### **On the course of Pathological Physiology 2 students will**

- learn basic molecular, cellular, organ and systemic mechanisms of etiology and pathogenesis of major medical symptoms, syndromes, and diseases of metabolism, gastrointestinal tract, endocrine, nervous systems and kidneys
- acquire knowledge about causes, risk factors and pathogenesis of disorders of teeth, tongue and other structures of oral cavity,
- learn principles of management of diseases of metabolism, gastrointestinal tract, endocrine, nervous systems and kidneys, seizures, coma and other critical medical states
- learn connections between pathophysiology and clinical sciences on the base of clinical cases relevant to dentistry specialists

### **Learning outcomes**

#### **After completing the course students must be able to**

- discuss etiology and pathogenesis of major human diseases
- apply acquired knowledge for interpretation of simple clinical cases of patients with dental disease and disorders of metabolism / gastrointestinal tract / endocrine / immune / nervous system and kidneys
- understand principles of interpretation of major laboratory tests and other diagnostic procedures related to above mentioned disorders
- understand principles of treatment of disorders of metabolism, gastrointestinal tract, endocrine, nervous systems and kidneys,
- discuss in detail etiology, pathogenesis and principles of treatment of major diseases of oral cavity
- understand how the oral cavity and various organ systems are interrelated, and use this understanding to promote an integrative approach towards the evaluation and treatment of dentistry patients
- read, understand, and critically evaluate articles from general medical journals (basic level) related to pathophysiology.

## Lectures:

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

Study: Continuous

	Date	Subjects	Duration (hrs)
1	21. 9. 2020	Hypoxia and pathophysiology of respiratory system.	2
2	5. 10. 2020	Pathophysiology of gastrointestinal tract.	2
3	19. 10. 2020	Pathophysiology of liver and bile ducts.	2
4	2. 11. 2020	Pathophysiologic aspects of diabetes mellitus.	2
5	16. 11. 2020	Pathophysiology of kidneys.	2
6	30. 11. 2020	Pathophysiology of nervous system disorders.	2
7	14. 12. 2020	Disturbances of calcium and phosphorus balance. Bone pathophysiology.	2
8	4. 1. 2021	Pathophysiology of selected problems of oral cavity.	1

The lectures are held in the Right Lecture Hall on Mondays, from 8.00 a.m. to 9.30 a.m. on even weeks of the year, starting from 39<sup>th</sup> week.

## Exercises:

Teacher: Assistant Profs./Lecturers

Study : Continuous

	Week from-to	Subject	Duration (hrs)
1	21. 9. 2020	Pathophysiology of the immune system.	2
2	28. 9. 2020	<b>Holiday.</b> Pathophysiology of blood and clotting.	4
3	5. 10. 2020	Pathophysiology of changes in blood pressure, atherosclerosis, coronary heart disease. <b>Midterm test No. 1. Content of exercises 1-2 and lecture 1.</b>	2
4	12. 10. 2020	Pathophysiology of heart failure and shock.	4
5	19. 10. 2020	Pathophysiology of gastrointestinal tract.	2
6	26. 10. 2020	Nutrition disturbances. Malassimilation syndromes. Pathophysiology of lipid and purine metabolism. Gout. Disturbances of vitamins uptake. Analysis of body composition by bioelectrical impedance. <b>Midterm test No. 2. Content of exercise 3-5, lecture 2.</b>	4
7	2. 11. 2020	Pathophysiology of liver functions and jaundice. Disturbances of exocrine pancreas.	2
8	9. 11. 2020	Pathophysiology of carbohydrate metabolism. Diabetes mellitus. <b>Midterm test No. 3. Content of exercise 6-7, lecture 3.</b>	4

9	16. 11. 2020	Pathophysiology of kidney functions.	2
10	23. 11. 2020	Pathophysiology of endocrine system.	4
11	30. 11. 2020	Stress and general adaptation syndrome. Pathophysiology of pain. Midterm test No 4. Content of exercises 8-10 and lectures 4-5.	2
12	7. 12. 2020	Central and peripheral nervous system disorders I and II.	4
13	14. 12. 2020	Pathophysiology of selected problems of oral cavity. Analysis of Heart Rate Variability.	2
14	21. 12. 2020	Pathophysiology of caries, gingivitis, periodontitis. Midterm test No 5. Content of exercises 11-13 and lectures 6-7.	4
15	4. 1. 2021	Credit. Credit test. Substitutions of absences confirmed by relevant document.	2

**\* 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 in the Right Lecture Hall on Mondays, from 9.45 a.m., to 11.15 a.m. on even weeks and from 8.00 to 11.15 on odd weeks of the year.

**Completed by: Credit, exam.**

**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%, this means 1 whole and 0.5 exercises) 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) 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.
- 4) 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.

*The conditions for granting the credit will be specified during the course of teaching, in connection with the development of the epidemiological situation. Similarly, the rules for the realization of the exam will be specified at the beginning of the respective semester and may be subject to partial changes.*

#### **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>