

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

Learning objectives

In 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 the 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 disorders mentioned above
- 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 the 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) of the dept., event. guest teachers

Study: Continuous

	Date	Subjects	Duration (hrs)
1	19. 9. 2022	Pathophysiology of the digestive system.	2
2	3. 10. 2022	Pathophysiology of liver and bile ducts.	2
3	17. 10. 2022	Pathophysiologic aspects of diabetes mellitus.	2
4	31. 10. 2022	Pathophysiology of kidneys.	2
5	14. 11. 2022	Pathophysiology of the endocrine system.	2
6	28. 11. 2022	Pathophysiology of nervous system disorders.	2
7	12. 12. 2022	Disturbances of calcium and phosphorus balance. Bone pathophysiology.	2
8	2. 1. 2023	Pathophysiology of selected problems of the oral cavity.	1

The lectures are scheduled 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 the 38th week.

Exercises:

Teacher: Assistant Profs./Lecturers

Study: Continuous

	Date	Subject	Duration (hrs)
1	19. 9. 2022	Pathophysiology of the immune system.	2
2	26. 9. 2022	Pathophysiology of gingivitis, periodontitis, tongue and salivary glands.	4
3	3. 10. 2022	Pathophysiology of the gastrointestinal tract.	2
4	10. 10. 2022	Nutrition disturbances. Malassimilation syndromes. Analysis of body composition by bioelectrical impedance.	4
5	17. 10. 2022	Pathophysiology of lipid and purine metabolism. Gout. Disturbances of vitamin uptake. Midterm test No. 1 (content of weeks 13-14 SS and 1-4 WS).	2
6	24. 10. 2022	Pathophysiology of liver functions and jaundice. Disturbances of the exocrine pancreas.	4
7	31. 10. 2022	Pathophysiology of carbohydrate metabolism. Diabetes mellitus.	2
8	7. 11. 2022	Pathophysiology of kidney functions.	4
9	14. 11. 2022	Pathophysiology of the endocrine system. Midterm test No. 2 (the content of weeks 5-8).	2
10	21. 11. 2022	Stress and general adaptation syndrome. Pathophysiology of pain.	4
11	28. 11. 2022	Central and peripheral nervous system disorders I.	2
12	5. 12. 2022	Central and peripheral nervous system disorders II. Analysis of Heart Rate Variability.	4

13	12. 12. 2022	Pathophysiology of selected rheumatic diseases and systemic connective tissue diseases. Midterm test No. 3 (the content of weeks 9-12). Credit.	2
14	19. 12. 2022	Pathophysiology of selected problems of the oral cavity. Credit. Credit test.	4
15	2. 1. 2023	Credit. Credit test. Substitutions of absences confirmed by a relevant document.	2

The exercises are scheduled in the Right Lecture Hall on Mondays, from 9.45 a.m. to 11.15 a.m. on even weeks and from 8.00 a.m. to 11.15 a.m. on odd weeks of the year.

Control Midterm tests in the 5th, 9th and 13th teaching week are mandatory. The way of their implementation will be specified at the beginning of the semester.

Completed by: Credit, exam.

Credit conditions are as follows:

- 1) 100% participation in practical exercises. The 15th teaching week is reserved for the substitution of justified absences (health or other serious reasons).
- 2) The readiness of students for the study course, which is continuously monitored. The unpreparedness of the student, i.e. basic ignorance from the material covered in previous lessons and also inadequate knowledge of basic of physiology, biochemistry, etc., may be a reason for exclusion from the lesson and the need to substitute it after the student adequately prepares.
- 3) Compulsory completion of all three control Midterm tests in terms specified in the syllabi (in case of duly excused absence due to health or other serious reasons, the test will be substituted in term by agreement with the assistant professor) with a total average success rate of at least 2/3 (i.e. a total average of at least 66.7%).
- 4) Passing a credit test with the possibility of two retakes in the form of an oral discussion.

Midterm tests and credit test contain questions from the theoretical and practical part of the study course.

Note: It cannot be ruled out that the form of practical teaching and the implementation at the end of the semester may be subject to partial changes, e.g. in connection with the epidemiological situation.

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, 2014.
3. Silbernagl S, Lang F. Color Atlas of Pathophysiology, 3rd Ed. Thieme, 2016.
4. <http://pfyziol.upol.cz>