

Program of Study	:	GENERAL MEDICINE
Course	:	PATHOLOGICAL PHYSIOLOGY
Abbreviation	:	PFY/VAA11
Schedule	:	30 hours of lectures 45 hours of exercises
Course Distribution	:	3rd year, 5th semester
Number of Credits	:	0
Course Form	:	Lectures, exercises

Learning objectives

On the 1st course of Pathological Physiology students will

- acquire knowledge about characteristics of disease / pathological states and the role of internal and external factors in their development;
- study molecular, cellular, organ and systemic mechanisms of pathogenesis of major symptoms, syndromes, and diseases including:
 - o inflammation, fever, disorders of nutrition, macro- and microelements' balance, water, ion and acid-base balance, lipid carbohydrate and protein metabolism
 - o typical disorders of the blood, haemostasis and of the immune system
 - o major disorders and diseases of digestive system
 - o major disorders and diseases of nervous system
- learn basic clinical terminology and important connections between pathophysiology and clinical sciences

Learning outcomes

After completing the course students should be able to

- demonstrate a basic understanding of the concepts and elements of disease
- discuss etiology, pathogenesis, major clinical and laboratory manifestations of typical diseases / pathological processes
- apply acquired knowledge for interpretation of uncomplicated clinical cases of patients with disorders of metabolism, coagulation, immunity, digestive and nervous system
- understand the basis of the major laboratory tests and other diagnostic procedures related to the above mentioned disorders
- understand principles of treatment of disorders of coagulation, immunity, digestive and nervous system
- be prepared to make correlations between pathophysiology and information they will be learning in their subsequent preclinical and namely clinical subjects.

Lectures:

Teacher: Professor(s) of the dept., event. guest teachers
 Study: Continuous
 Time: 11:45 – 13:15 (Mondays)
 Location: Left Lecture Hall

	Date	Title	Duration (hrs).
1	16. 9. 2019	Introduction. History and contents of the subject.	2
2	23. 9. 2019	General mechanisms of disease.	2
3	30. 9. 2019	Pathogenetic principles at gene level.	2
4	7. 10. 2019	Pathophysiology of nutrition.	2
5	14. 10. 2019	Pathophysiology of water and salt balance.	2
6	21. 10. 2019	Acid-base disturbances.	2
7	28. 10. 2019	Holiday. Pathophysiology of gastrointestinal tract.	2
8	4. 11. 2019	Pathophysiology of the liver.	2
9	11. 11. 2019	Pathophysiology of blood clotting.	2
10	18. 11. 2019	Pathophysiology of blood and haemopoietic tissues.	2
11	25. 11. 2019	Pathophysiology of the immune system.	2
12	2. 12. 2019	Pathophysiology of central nervous system I.	2
13	9. 12. 2019	Pathophysiology of central nervous system II.	2
14	16. 12. 2019	Aging of the organism.	2
15	23. 12. 2019	Summary from winter term.	2

Exercises:

Teacher: Assistant Profs. / Lecturers
 Study: Continuous

	Date	Title	Duration (hrs.)
1	19. 9. 2019	Introduction, organization of the course. Health and disease. Pathophysiology of fever.	3
2	26. 9. 2019	Pathophysiology of inflammation. Wound healing, reparation and restitution.	3
3	3. 10. 2019	Pathophysiology of external factors contributing to the development of disease.	3
4	10. 10. 2019	Pathophysiology of food intake and nutritional status. Midterm test No. 1 (content of exercises No. 1-3 and lectures No. 1-3). Analysis of body composition by bioelectrical impedance.	3

5	17. 10. 2019	Water and salt balance. Pathophysiology of edemas. Disorders of microcirculation and lymphatic circulation.	3
6	24. 10. 2019	Acid-base disturbances. Examination of lactate, principles and applications in diagnostics.	3
7	31. 10. 2019	Pathophysiology of the esophagus, stomach and intestines. Midterm test No.2 (contents of practical exercises No. 4-6 and lectures No. 4-6).	3
8	7. 11. 2019	Selected problems of the pathophysiology of the liver, biliary tract and exocrine pancreas.	3
9	14. 11. 2019	Disorders of hemostasis. Bleeding disorders.	3
10	21. 11. 2019	Pathophysiology of blood. Anemia. Leukopenia and leukocytosis. Midterm test No.3 (contents of practical exercises No. 7-9 and lectures No.7-9).	3
11	28. 11. 2019	Pathophysiology of the immune system.	3
12	5. 12. 2019	Disorders of the central and peripheral nervous system I.	3
13	12. 12. 2019	Disorders of the central and peripheral nervous system II.	3
14	19. 12. 2019	Pathophysiologic interpretation of clinical cases (content of practical exercise 1-13) Midterm test No.4 (contents of practical exercises No. 10-13 and lectures No. 10-13).	3
15	2. 1. 2010	Credit. Credit test. Substitutions of absences confirmed by relevant document.	3

The practical exercises are held in the seminar room of the Department of Pathophysiology on Thursdays, from 8. 00 a.m. to 10.15 a.m. - group C; from 10.30 a.m to 12.45 p.m. - group A and B.

Completed by: Credit

Credit conditions are as follows:

- 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.
- Credit will be granted upon:
 - successful answering 2/3 of questions from the respective term topics in the final test in the 15th week of the term, and
 - discussion of the practical issues of pathophysiology, related to respective term topics, with the lecturers of the department

To take (or retake) the Credit students must register on STAG.
- For students, who demonstrated continuous involvement during the term by actively participating in lessons and in addition, in the midterm tests achieved minimum 60% with average score over 2/3 of all tests*, final test (item 2.a) will not be mandatory, final discussion with the lecturers will be on the 15th week of the term.

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. <https://pfyziol.upol.cz/>

For revision e. g. S.Silbernagl, A.Despopoulos. Color Atlas of Physiology. 7th edition. Thieme 2015