"Carol Davila" University of Medicine and Pharmacy Bucharest

DISCIPLINE FILE PATHOPHISIOLOGY

1. **Data about the program**

1.1	**"CAROL DAVILA" UNIVERSITY OF MEDICINE AND PHARMACY**
1.2	**FACULTY OF MEDICINE**
1.3	**DEPARTMENT: 1 FUNCTIONAL SCIENCES**
1.4	**DISCIPLINE: PATHOPHISIOLOGY 1**
1.5	**DOMAIN OF STUDY: HEALTH- Sectorally regulated within the European Union**
1.6	**STUDY CYCLE: LICENCE**
1.7	**STUDY PROGRAME – MEDICINE- ENGLISH MODULE**

2. Data about the discipline

2.1	**Name of the discipline in the educational plan: PATHOPHISIOLOGY**				
2.2	**Discipline cod: M004_3/Fiziopatologie si Imunologie**				
2.3	**Discipline type: FUNDAMENTAL DISCIPLINE**				
2.4	**Discipline regimen: MANDATORY DISCIPLINE**				
2.5	**The holder of the course actities**: Lecturer MD, PhD Stoia Djeska Carmen Elisabeta				
2.6	**The holder of the seminar activities:** Assistant professor: Cherciu Marius Cherciu Laura Cornitescu Marius				
2.7 **Year of stud**	III	2.8 **Semester**	V and VI	2.9 **Type of evaluation**	E:Practical examination oral and final examination written

3. Total estimated time (hours/semester of didactic activity an self preparation/study)

I. Academic training (teaching, practical application, assessment)

3.1 Nr. hours / week 16	**From which**	**3.2 lecture**	8	**3.3 seminary / laboratory**	8
3.4 Total hours of educational plan 112	**From which**	**3.5 lecture**	56	**3.6 seminary / laboratory**	56
Evaluation (nr. of hours)	7				

II. Self preparation /study	
Time allocation	**hours**
Study of course material, textbooks, books, study of the recommended minimal bibliography	80
Additional research in the library, research through the internet	10
Performing specific activities for preparing projects, laboratories, elaborating reviews or other tasks	10
Specific preparation activities for projects, laboratory work, assignments, and reports	10
Tutoring	10
Other activities	8
3.7. Total individual study hours	128
3.9. Total hours per semester (3.4.+3.7.):	**240**
3.10 Number of credits	**8**

4. Preconditions (where applicable)

4.1. of curriculum	Basic knowledge of general Physiology

5. Conditions (where applicable) not required

6. Learning outcomes

Knowledge	Skills	Responsibility and autonomy
Level CNC 6 The content of the discipline and the working methods with the students ensure the development of the knowledge, understanding and use of diagnostic methods, explanation and interpretation of the results and their integration into clinical practice through specific applications. This gives you an important professional skills: Establishing a diagnosis based on investigations, on stages, and finally on reflection on possible differential diagnosis	Professional skills: establishing a diagnosis based on investigations, in stages and finally, reflection on the possible differential diagnosis. Transversal skills: through the way of evaluating a patient's medical problems, moral and social education for the medical field, related personal and professional development.	Development of preclinical medical thinking in how to assess a patient's medical problem, moral and social education for the medical field, personal and professional development. Teamwork abilities, flexibility, adaptability in different circumstances. Management/implementation of complex medical activities by assuming responsibilities for making and implementing correct decisions. Coordination and involvement in medical activities involved in resolving emergency situations.

7. Course objectives (aligned with the learning outcomes)

7.1 General objective	Course and practical laboratory of Pathophysiology in Romanian and English are teach during two semesters. This scientific discipline objectives are: the detailed knowledge of the main mechanisms involved in the body's defense reactions (inflammatory reaction, haemostasis - as post-aggressive local reactions and post-aggressive systemic reaction) and their pathologies; detailed knowledge of the specific pathological mechanisms for each human body apparatus (heart, lung, kidney, liver, pancreas etc.) and of the para-clinical investigation methodology in order to establish positive and differential functional diagnosis, of the evolutionary stage (where applicable).
7.2 Specific objectives	We aim to provide students knowledge of the para-clinical investigation methodology in order to establish the functional diagnosis in pathology and to follow the evolutionary diseases.

8. Contents

8.1. Lecture	Teaching methods	Observations
1.Introduction. Concept of adaptation, defense and disease	Oral presentation in the lecture hall supported by numerous schemes; interactive contact	2 h
2-3. Mechanisms of defense. Acute Inflammation. Pathology of inflammation		4 h
4-5 Hemostasis - physiology and pathology of vessel wall (endothelium), platelets, clotting factors, and regulatory mechanisms. Hypo- and hyper coagulability syndroms.		4 h
6-7 Shock status - post-aggression phases, compensatory mechanisms and decompensation pathways		
8-9 Pathophysiology of acid-base balance		4 h
10. Pathophysiology of hydro-electrolites balance		4 h
		2 h
11. Pathophysiology of phosphocalcic metabolism		2 h
12. Pathophysiology of thermoregulation.Thermal homeostasis disorders		2 h
13-14. Pathophysiology of carbohydrates metabolism. Diabetes melitus - mechanisms of disease and complication		4 h
15. Pathophysiology of lipids metabolism. Mechanisms of their complications.		2 h
16. Atherosclerosis. Pathophysiology of atheromatic plaque complications. Pathophysiology of digestive system diseases		2 h
17-18 Pathophysiology of cardiac failure - ethiology, mechanisms, compensatory mechanisms, decompensation pathways		4 h
19-20. Pathophysiology of respiratory/pulmonary failure - classification, mechanisms		4 h
21-22. Pathophysiology of renal failure - phases, mechanisms		4 h
23-24. Pathophysiology of hepatic failure - metabolisms disorders, and toxicity theories.		4 h
25-26 . Pathophysiology of digestive system diseases		4 h
27-28. Pathophysiology of blood pressure variations. Mechanisms of occurrence and pathophysiological consequences.		4 h

Recent Bibliography:

1. Guyton – Human physiology and mechanism of diseases, editia 6-a *W.B.Sauders*
2. Kathryn L.McCance, Sue E. Heuther, Valentina L.Brashers, Neal S.Rote, Pathophysiology, The Biologic Basis for Disease in adults and Children, Mosby Elsevier, sixth edition, 2010
3. Rose DB, Post T Clinical physiology of acid-base and electrolyte disorders, ed 5, New York, 2001, McGrawHill,
4. I.Teodorescu Exarcu, Fiziologia și fiziopatologia respirației,Ed.Medicală, Bucuresti, 1979

5. I Teodorescu Exarcu, Excreția, Ed. Medicală, București, 1980,
6. Kaushansky, K. Lichtman M- Williams hematology, ed. 8, McGraw Hill, 2011
7. Goldman, L. Schaffer A, - Goldman's cecil medicine, ed. 24, Elsevier Saunders, 2012
8. Guyton, A. - Guyton and Hall textbook of medical physiology, ed. 12, 2011
9. Kumar, V. - Robbin's and Cotran pathologic basis of disease, ed. 8, 2010
10. Bonow, R. Libby Z - Braunwald's heart disease, ed. 9, Elsevier Saunders, 2012
11. Boyer, Th. Mann M, Sanyal A- Zakim and Boyer's hepathology: A textbook of liver disease, ed. 6, Elsevier Saunders, 2012
12. Eckman M, Labus D, Thomson G, Atlas of pathophysiology, ed. 3, Lippincott, Williams, Wilkins 2010
13. Longo, D. - Harrison's principles of internal medicine: Vol. I & II, ed. 18,Ed McGraw Hill 2012
14. Stephen J. McPhee, Gary D. Hammer , Pathophysiology of Disease An Introduction to Clinical Medicine, Publisher: McGraw-Hill Medical; 7th edition, Data publicarii – 2014)
15. Mason R, Broaddus V Courntnay, Martin T, King T, Schraufnagel D, Murray J and Nadel J; Muray and Nadel. Textbook of respiratory medicine, 5th ed, Elsevier Saunders 2010
16. De Fronzo, Ferrannini E. Keen H, Zimmet P - International Textbook of Diabetes Mellitus 3rd edition, John Wiley &Sons, 2005

8.2. Laboratory	**Teaching methods**	**Observations**
1-6 Clinical Electrocardiography	Oral / video presentation illustrated in Powerpoint, analysis bulletins, clinical case reviews	12 h
7-9 Hemostasis - laboratory investigation - clinical application		6 h
10-12. Erytrocytes - laboratory investigation - clinical application		6 h
13. Investigation in acid-base balance		2 h
14. Investigation in hydro-electrolites balance		2 h
15-16 Investigation in lipids metabolism		4 h
17-18 Investigation in proteins metabolism		4 h
19-21 Investigation in carbohidrates metabolism		6 h
22-23. Respiratory functional investigation		4 h
24-25. Renal function investigation methods		4 h
26-27.Hepatic function investigation methods		6 h

Recent bibliography

1. Alice Brînzea, Roxana Ioana Nedelcu, Marina Ruxandra Oțelea Fiziopatologie. Lucrări practice pentru studenți. Diagnosticul electrocardiografic., Editura Didactică și Pedagogică, 2016, ISBN 978-606-31-0342-1

2. West, J. - Pulmonary pathophysiology, 8th ed, Lippincott Williams & Wilkins, 2013
3. Kaushansky, K. Lichtman M - Williams hematology, 8th ed, McGrawHill, 2011
4. Klain, G.- Clinical electrophysiology review, 2nd ed, McGraw Hill, 2013
5. Ashfaq H: Handbook of blood gas / acid-base interpretation. 2nd ed, Springer-Verlag, 2009
6. Bâră Constantin, Electrocardiografie Clinică (Editura Medicală, 1993)
7. Berne & Levy Physiology, (8th Edition, Elsevier, 2024)
8. Brenner & Rector's the Kidney (11th Edition, Elsevier, 2020)
9. Fischbach, A Manual of Laboratory and Diagnostic Tests (9th Edition, Lippincott Williams & Wilkins, 2015)
10. Harrisons Principles of Internal Medicine (19th Edition, McGraw Hill, 2015)
11. Henry's Clinical Diagnostic and Management by Laboratory Methods (24th Edition, Elsevier, 2022)
12. Reddi, Acid-Base Disorders - Clinical Evaluation and Management (Springer, 2020)
13. Williams Hematology, (10th Edition, Mc Graw Hill, 2021)

9. Evaluation

Activity type	9.1 Evaluation criteria	9.2 Evaluation methods	9.3 Percentage in the final grade
9.4 Lecture	Knowledge of the theoretical notions of pathophysiology	During each semester a control paper from the theory delivered in the lecture is given. Single and multiple choise questionnare from a previously displayed theme, treatable in 1.30 / 2 h	50%
9.5 Seminary/practical activity	The ability to interpret an ECG route and medical analysis bulletins	Practical exam with oral examination in front of ASSISTANT PROFESSOR	50%
9.6 Minimum performance standard			
Students can take the exam only if they have obtained the pass mark (note 5) at the practical exam. Minimum grade is five at cours exam			

11.09.2025

Signature of the course holder:

Signature of the laboratory holder:

Department Director

Prof. Univ. Dr.IonFulga

Date of approval by

the Department Council: