




## DISCIPLINE SHEET

### 1.-Info about the program

<b>FOUNDATION FOR DEVELOPMENT AND MANAGEMENT</b>	
1.2-Faculty	<b>FACULTY OF MEDICINE</b>
1.3-Departament	Preclinical/Fundamental Disciplines
1.4-Study domain	Health
1.5-Study cycle	Bachelor
1.6-Study program/ Calification	Medicine-English



### 2.-Info about discipline

2.1- Name of the discipline				<b>PATHOPHYSIOLOGY_II</b>				
2.2-Course lecturer				Lect.Dr. <b>HUNEA Iuliana</b> , MD, PhD				
2.3-Seminary lecturer				Lect.Dr. <b>HUNEA Iuliana</b> , MD, PhD				
2.4-Year of study	III	2.5 Semester	II	2.6 Evaluation type	Exam	2.7. Discipline regime	Content	DF
							Mandatory	DOB

### 3. -Total time (hours of didactic activity per semester)

3.1-Number of hours per week	3	3.2 -course	1	3.3- laboratory	2
3.4-Total hours of the curriculum	42	3.5 -course	14	3.6 -laboratory	28
Distribution of time					Hours
Study after manual, course support, bibliography and notes					30
Additional documentatin in the library, on the specialized electronic platforms and on the field					20
Training seminars/laboratories/projects, themes, papers,portofolios and essays					4
Tutoring					-
Examination					2
Other activities					2
3.7-Individual study hours	58				
3.8-Total hours per semester	100				
3.9-Credit number	4				

### 4.-Preconditions (if applicable)

4.1.-Curriculum	Physiology, Anatomy and Embriology, Cellular and Molecular Biology, Biochemistry, Biophysics
4.2.-Learning Outcomes	This is not the case



5.-Conditions (where applicable)

5.1. -Course Conduct	Amphitheatre
5.2.-conducting the seminar/laboratory	In the wards, near the patient's bed

6. Learning outcomes

<b>Knowledge</b>	Identifies, describes, explains and classifies the mechanisms of disease production, risk factors, pathogens (bacteria, viruses, parasites) and types of immunological response, as well as the development of pharmacological and genetic approaches.
<b>Skills</b>	Correctly interpret and apply fundamental concepts regarding disease mechanisms and methods for investigating biological functions.
<b>Responsibilities and autonomy</b>	Integrates fundamental notions and methods of investigating biological functions, formulates and assumes reasoned conclusions regarding the general mechanisms of disease production and the general principles of treatment.

7.-Objectives of the discipline (resulting from the grid of specific skills accumulated)

7.1 -General objective of the discipline	To gather basic knowledge about the pathophysiology of the disease that allows the analytical medical thinking necessary for the formulation of the positive and differential diagnosis in medical practice.
7.2- Specific objectives	<ul style="list-style-type: none"> <li>▪-Understand the pathophysiological mechanisms responsible for the onset and evolution of a disease.</li> <li>▪-To explain functional abnormalities, laboratory changes and compensatory mechanisms according to the pathophysiology of the disease.</li> <li>▪-To differentiate the functional changes underlying the disease from those that occur as consequences of the disease and/or as compensatory changes specific to the disease.</li> </ul>



	<p>•-Understand the principles of diagnosis (including the use of diagnostic algorithms) and the rationale for disease therapy according to the underlying pathophysiology.</p>
--	---

8.-Contents

8.1-Course (homework, number of hours, bibliography)	hours /2 week	Teaching methods
<p>1.-Blood pathophysiology (I): Red blood cell disorders: definition and classification of anemias, general effects and compensatory mechanisms in anemias. Etiopathogenesis of anemias: anemias due to decreased erythropoiesis and hemolytic anemia. Definition, classification and pathogenesis of polycythemia.</p> <p>2.-Blood pathophysiology (II): White blood cell disorders: Pathogenesis of non-malignant abnormalities of number (quantitative alterations) and function (qualitative alterations). Etiopathogenesis of malignant disorders of leukocytes: classification of hematological neoplasms, myeloid neoplasms (acute and chronic myeloid leukemia), lymphoid neoplasms (acute lymphoblastic leukemia, chronic lymphoid leukemia, Hodgkin and non-Hodgkin lymphomas, multiple myelomas).</p>	2	<p>Oral takeover supported by a structured, interactive PPT, with a rich and suggestive iconography.</p> <p>PPTs are available on the e-learning platform. The informative material is updated annually with the latest information in the field of pathophysiology of the diseases studied.</p> <p>Each lecture begins with the educational objectives and ends with the summary of the material presented</p>
<p>3.-Blood pathophysiology (III): Changes in hemostasis: Etiopathogenesis of bleeding disorders: Vascular diseases (primary and secondary purpura) and platelets (quantitative and qualitative alterations). Coagulation disorders (hemophilia, vW disease, vitamin K deficiency, disseminated intravascular coagulation). Etiopathogenesis of primary and secondary hypercoagulability disorders.</p> <p>4.-Pathophysiology of the gastrointestinal system (I): Disorders of the esophagus (achalasia, gastroesophageal reflux, hiatal hernia). Disorders of the stomach and duodenum (acute and chronic gastritis, peptic ulcer).</p>	2	
<p>5.-Pathophysiology of the gastrointestinal system (II): Diseases of the small and large intestine: malabsorption syndrome, diarrhea, inflammatory bowel disease (ulcerative colitis, Crohn's disease), irritable bowel syndrome.</p> <p>6.-Pathophysiology of the gastrointestinal system (III): Liver diseases: etiopathogenesis of jaundice, portal hypertension and its complications (esophageal varices, portal systemic encephalopathy, ascites); cirrhosis. Disorders of the gallbladder: pathophysiology of</p>	2	



cholecystitis, formation of gallstones, cholelithiasis and exocrine pancreas: acute and chronic pancreatitis.		
7.-Pathophysiology of the renal system (I): Glomerular nephropathies: definition, classification, etiopathogenesis of glomerular lesions. Nephritic and nephrotic syndrome. 8.-Pathophysiology of the renal system (II): Tubulo-interstitial nephropathies: definition, classification, etiopathogenesis of acute tubular necrosis and chronic nephritis. Acute kidney injury (AKI): definition, etiology, pathogenesis of oligoanuria, evolutionary stages, abnormalities of homeostasis of the internal environment, complications.	2	
9.-Pathophysiology of the renal system (III): Chronic kidney disease (CKD): definition, etiopathogenesis, compensatory mechanisms, stages of evolution, abnormalities of homeostasis, complications. 10.-Pathophysiology of sodium and water imbalances: Body fluid imbalances (fluid deficit and excess; alteration of water movement: edema mechanisms). Alteration of sodium and water balance: isotonic, hypertonic and hypotonic alterations. Electrolyte imbalances: plasma potassium: hypo- and hyperkalaemia.	2	
11.-Pathophysiology of acid-base imbalances: Brief overview of acid-base homeostasis (buffers, respiratory and renal contribution). Acid-base imbalances (metabolic acidosis and alkalosis, respiratory acidosis and alkalosis). 12.-Pathophysiology of carbohydrate metabolism: Definition, classification and etiopathogenesis of diabetes mellitus. Pathogenesis of acute complications (ketoacidotic coma, hyperosmolar coma and hypoglycemia) and chronic complications (micro-, macrovascular and infectious). Hypoglycemia: etiopathogenesis of postprandial and fasting hypoglycemias.	2	
13.-Pathophysiology of lipoprotein metabolism Endogenous and exogenous lipid circuits. Abnormalities of lipoprotein metabolism: pathophysiology of primary and secondary hyperlipoproteinemias. 14.-Pathophysiology of protein metabolism: Quantitative and qualitative alterations (hypo-, hyper- and dysproteinemia). Alterations in nucleoprotein metabolism: pathophysiology of gout.	2	
Bibliography: 1.- Pathophysiology - The Biologic Basis for Disease in Adults and Children, 8E, 2019 2.-Pathophysiology of Blood Disorders - Aster & Bunn, 2E, 2017		



2- Seminar (themes, number of hours, bibliography)	hours /week	Teaching methods	
1.-Investigation of blood pathology (I): Erythrocyte disorders: abnormalities of peripheral blood tests, examination of blood smear, evaluation of bone marrow, special laboratory tests in various types of anemia.	2	Presentation of typical examples of laboratory reports and interactive discussions of clinical cases in small groups of students.  At the end of each laboratory, a recapitulative MCQs test is taken.	
2.-Investigation of Blood Pathology (II): White Blood Cell Disorders: Laboratory Diagnosis in Non-Malignant and Malignant White Blood Cell Disorders.	2		
3.-Investigation of blood pathology (III): Abnormal hemostasis: Laboratory investigation of hemostasis (primary and secondary) and fibrinolysis, coagulation disorders. Monitoring of anticoagulant therapy. Serum markers of pulmonary embolism.	2		
4.-Investigation of digestive pathology (I): Functional investigation in diseases of the esophagus, stomach, small and large intestine. Diagnostic algorithm in diarrhea and malabsorption syndromes.	2		
5.-Investigation of digestive pathology (II): Liver function tests; investigation in gallbladder and pancreatic diseases. Positive and differential diagnosis in jaundice.	2		
6.-Investigation of renal pathology (I): Evaluation of glomerular dysfunction: blood parameters. Renal function assessment tests: renal clearance, non-invasive and invasive imaging techniques. Nitrogen retention tests (prerenal, renal and postrenal azotemia).	2		
7.-Investigation of renal pathology (II): Evaluation of acute and chronic tubular dysfunction: Urinalysis (normal and pathological urine components, microscopic examination), urine culture test. Laboratory diagnosis of acute kidney injury and chronic kidney disease.	2		
8.-LABORATORY ASSESSMENT 2 (Units 1-7) Thematic presentations by students	2		Test consisting of 30 MCQs (lab reports and case studies).
9.-Investigation of acid-base disorders: Evaluation of acid-base metabolism parameters (pH, excess bases, anion gap). Positive and differential diagnosis in primary/secondary and compensated/uncompensated metabolic and respiratory acidosis and alkalosis.	2		Presentation of typical examples of laboratory reports and interactive discussions of clinical cases in small groups of students.  At the end of each laboratory, a recapitulative MCQs test is taken.
10.-Investigation of sodium, potassium and water imbalances: Investigation of body fluid compartments (principles and methods), dehydration and hyperhydration. Laboratory tests in fluid and electrolyte imbalances (iso-, hypo- and hypertonic). Algorithms for	2		



diagnosing hypo/hyponatremia and hypo/hyperkalemia.		
11.-Investigation of diabetes: Diagnostic criteria for diabetes, decreased glucose tolerance and altered fasting blood glucose; Laboratory diagnosis of acute diabetic complications (diabetic ketoacidosis, non-ketotic hyperosmolar syndrome); long-term monitoring of diabetes mellitus (HbA1c, microalbuminuria); special investigations.	2	
12.-Investigation of plasma lipid abnormalities: Laboratory investigations in lipid disorders: primary and secondary hypercholesterolemia and hypertriglyceridemia) and metabolic syndrome. Interpretation of the lipid profile and assessment of coronary risk.	2	
13.-Investigation of protein metabolism abnormalities: Laboratory diagnosis in hypo-, hyper-, dysproteinemia; Paraclinical diagnosis in gout. Compensation for absences.	2	
14.-Recap: case studies/analysis of laboratory tests and functional investigations, interpretation of ECG traces. PRACTICAL EXAM	2	
Bibliography: 1.-Pathophysiology - The Biologic Basis for Disease in Adults and Children, 8E, 2019 2.-Pathophysiology of Blood Disorders - Aster & Bunn, 2E, 2017		

9.-Corroborating/validating the contents of the discipline with the expectations of the representatives of the epistemic community, professional associations and employers representative of the field related to the program

The contents of the discipline are in accordance with the RNCIS standards.

10.-Evaluation

Activity Type	10.1-Evaluation criteria	10.2-Evaluation methods	10.3-Weight of the final grade
10.4-Course	<ul style="list-style-type: none"> <li>▪Knowledge for 5: <i>Define, classify and list the causes responsible for the occurrence of a disorder/dysfunction</i></li> <li>▪Knowledge for 10: <i>Description of the pathophysiological mechanisms responsible for the occurrence of a disorder, the</i></li> </ul>	<ul style="list-style-type: none"> <li>- 30 MCQs from the subjects taught in the lecture until the seminar date</li> <li>- 100 MCQ (for those who did not pass the partial exam) or 50 MCQ (for those who passed the partial exam)</li> </ul>	<p>10% (5+5%)</p> <p>50%</p>

