1. OVERVIEW

Subject Area	SEMIOLOGY AND GENERAL PATHOPHYSIOLOGY
Degree	Bachelor's Degree in Medicine
School/Faculty	BIOMEDICAL AND HEALTH SCIENCES
Ac. Year	THREE
ECTS	17 ECTS Clinical placements
Type	COMPULSORY
Language(s)	SPANISH
Delivery Mode	ON CAMPUS
Semester	YEARLY

2. INTRODUCTION

Semiology and General Pathophysiology falls under the Clinical Training module which is part of the 3rd year and is the gateway to a wide range of clinical training as it explains the mechanisms through which organic systems become ill and how these alterations lead to symptoms and the signs of disease (semiology). Understanding and analysing this process helps students gain knowledge which will serve them later in Medical Pathology.

3. SKILLS AND LEARNING OUTCOMES

Basic Skills (CB, by the acronym in Spanish):

- **CB1**: Students have shown their knowledge and understanding of a study area that builds on general secondary school education, and are usually at the level where, with the support of more advanced textbooks, they may also demonstrate awareness of the latest developments in their field of study.
- **CB2**: Students can apply their knowledge to their work professionally and possess the necessary skills, usually demonstrated by forming and defending opinions, as well as resolving problems within their study area.

General skills (CG, by the acronym in Spanish):

- **CG1 (A1):** Recognise the essential parts of being a medical professional, including ethical principles and legal responsibilities, together with how to provide a patient-centred service.
- **CG2 (A2)**: Understand the importance of such principles to benefit patients, society and the profession, with particular attention paid to professional secrecy.
- **CG9 (B9)**: Understand and recognise the effects, mechanisms and manifestations of a disease on the structure and functioning of the human body.
- **CG10 (B10):** Understand and recognise the causal agents and risk factors which determine health conditions and the development of a disease.
- **CG13 (C13)**: Obtain and elaborate a clinical history report with all relevant information.
- **CG14 (C14)**: Perform a physical examination and mental health assessment.
- **CG15 (C15):** Have the ability to carry out an initial diagnosis and establish a well-founded approach to making a diagnosis.

Cross-curricular skills (CT, by the acronym in Spanish):

- **CT1:** Communication: ability to engage in active listening, ask questions and respond in a clear and concise way, as well as to effectively express ideas and concepts. This includes concise and clear written communication.
- **CT3**: Teamwork

- **CT10**: Independent learning: the ability to govern your own development by choosing the most effective lines of action, strategies, tools and opportunities to independently learn and apply knowledge to practice.

Specific skills (CE, by the acronym in Spanish):

- **CE 3.1.7** Recognise, diagnose and direct treatment of the main cardiocirculatory pathologies.
- **CE 3.1.8** Recognise, diagnose and direct treatment of the main digestive system pathologies.
- **CE 3.1.9** Recognise, diagnose and direct treatment of the main nephron-urinary pathologies.
- **CE 3.1.10** Recognise, diagnose and direct treatment of the main locomotor system pathologies.
- **CE 3.1.11** Recognise, diagnose and direct treatment of the main respiratory system pathologies.
- **CE 3.1.12** Recognise, diagnose and direct treatment of the main endocrine system pathologies. Nutrition pathologies.
- **CE 3.1.13** Recognise, diagnose and direct treatment of the main central and peripheral nervous system pathologies.
- **CE 3.2.1** Know how to do a full anamnesis focused on the patient and with a view to diverse pathologies, interpreting its meaning.
- **CE 3.2.2** Know how to perform a physical examination of the systems and apparatus, as well as a psychopathological assessment, being able to interpret the results.
- **CE 5.1.1** Complete a student work placement, involving independent clinical rotation and a final skills assessment in health centres, hospitals and other care facilities, which allows students to incorporate professional values, healthcare communication skills, clinical reasoning, clinical management and critical judgement. This also requires students to familiarise themselves with the most common health problems in Medicine, Surgery, Obstetrics and Gynaecology, Paediatrics, Psychiatry and other clinical areas.

Learning outcomes (RA, by the acronym in Spanish):

- Understand the pathophysiology of the most common clinical syndromes.
- Know how to do a full anamnesis focused on the patient and with a view to diverse pathologies, interpreting its meaning.
- Know how to perform a physical examination of the systems and apparatus, as well as a psychopathological assessment, being able to interpret the results.
- Have the ability to carry out an initial diagnosis, evaluate the need for complementary tests and establish a well-founded approach to making a diagnosis.
- Know how evaluate adaptations to clinical parameters at different patient ages.
- Recognise the most common immune system pathologies: inflammatory reaction, immunodeficiency, hypersensitivity, autoimmune disorders and other relevant diseases associated with the immune system.
- Diagnose the most common pathologies of the immune system: clinical history and physical examination focusing on the immune system pathology, suitability and interpretation of the main complementary diagnostic tests (basic immunological analysis, cutaneous tests, histocompatibility tests, image tests, anatomical pathology tests, etc.).
- Direct the clinical handling of the most common pathologies of the immune system.

The following table shows how the skills developed in the subject area match up with the intended learning outcomes:

Skills	Learning outcomes
CB1, B9, B10, CT10, CE27	Understand the pathophysiology of the most common clinical syndromes.
CB2, B10, C13, CT1, CE35, CE67	Know how to do a full anamnesis focused on the patient and with a view to diverse pathologies, interpreting its meaning.
CB2, C14, CT1, CE27, CE36, CE67	Know how to perform a physical examination of the systems and apparatus, as well as a psychopathological assessment, being able to interpret the results.
CB1, CB2, A1, A2, C15, CT3, CT1, CE27, CE67	Have the ability to carry out an initial diagnosis, evaluate the need for complementary tests and establish a well-founded approach to making a diagnosis.
CB2, B9, B10, C14, CE27, CE36, CE67	Know how evaluate adaptations to clinical parameters at different patient ages.
CB2, B9, B10, CT10, CE35, CE36, CE67	Recognise the most common immune system pathologies: inflammatory reaction, immunodeficiency, hypersensitivity, autoimmune disorders and other relevant diseases associated with the immune system.
CB1, CB2, A1, A2, C15, CT3, CT1, CE67	Diagnose the most common pathologies of the immune system: clinical history and physical examination focusing on the immune system pathology, suitability and interpretation of the main complementary diagnostic tests (basic immunological analysis, cutaneous tests, histocompatibility tests, image tests, anatomical pathology tests, etc.).
CB1, CB2, A1, A2, C15, CE67	Direct the clinical handling of the most common pathologies of the immune system.

4. CONTENTS

This subject area is divided into eight learning units, which are then divided into various topics.

Topic	
	Learning Unit 1. General aspects (12%):
Unit 1.	Aetiopathogenesis. Pathophysiology and semiology.
Unit 2.	Ways of getting ill I: Molecular basis of a disease. Genetic disorders. Diseases caused by living agents. Neoplastic diseases.
Unit 3.	Ways of getting ill II: Congenital and acquired diseases. Systemic and iatrogenic diseases. Diseases caused by external agents.
Unit 4.	Inflammation. Local and systemic inflammatory response syndrome.
Topic 5	Pathophysiology of thermal regulation. Fever.
Topic 6	Ways of getting ill III: Immunologically mediated diseases. Allergy diseases. Autoimmune diseases.
Topic 7	Ageing.
	Learning Unit 2. Cardiovascular system (16%):
Topic 8	Heart failure: Aetiopathogenesis, pathophysiology and clinical manifestations.
Topic 9	Pathophysiology of blood pressure. Hypertension.
Topic 10	Atheramatosis and coronary disease. Pathogenesis and clinical syndromes.
Topic 11	Pathophysiology of shock.
Topic 12	Pathophysiology of valve diseases.
Topic 13	Pathophysiology of the pericardium.
Topic 14	Pathophysiology of syncope.
Topic 15	Pathophysiology of pulmonary thromboembolism (PTE). PH (Pulmonary Hypertension).
Topic 16	Peripheral arterial and venous vascular pathology.
	Learning Unit 3. Respiratory system (9%):
Topic 17	Semiology of respiratory system diseases.
Topic 18	Respiratory insufficiency. Pathophysiological mechanisms of hypoxaemia and hypercapnia.
Topic 19	Pathophysiology of obstructive syndromes.
Topic 20	Pathophysiology of restrictive syndromes.
Topic 21	Pathophysiology of pleura and mediastinum.
Topic 22	Pneumonitis - pneumonia. Haemotypsis.
	Learning Unit 4. Digestive system (13%):
Topic 23	Pathophysiology of the oesophagus.
Topic 24	Gastric pathophysiology.
Topic 25	Intestinal motility disorders. Diarrhoea. Constipation.
Topic 26	Malabsorption and maldigestion syndromes.
Topic 27	Jaundice. Liver failure. Hepatic coma.
Topic 28	Portal hypertension and ascites.
Topic 29	Pathophysiology of the bile duct and exocrine pancreas.
	Learning Unit 5. Haematology (8%):
Topic 30	Semiology and complimentary studies on patients with blood disorders. Adenopathies. Splenomegaly.
Topic 31	Pathology of leukocytes.
Topic 32	Pathology of erythrocytes.

Topic 33	Mother cells. Myeloaplastic, myelodysplastic and myeloproliferative syndromes.
Topic 34	Pathophysiology of haemostasis. Thrombotic diathesis. Bleeding diathesis.
	Learning Unit 6. Nervous system (13%):
Unit 35.	Semiology of the nervous system and neurological examination.
Topic 36	Pathophysiology of the brain stem.
Topic 37	Pathophysiology of the cerebellum.
Topic 38	Pathophysiology of the spinal cord and the nerve roots.
Topic 39	Pathophysiology of the peripheral nerve, the neuromuscular junction and muscle.
Topic 40	Pathophysiology of the non-specific cortical and sub-cortical systems: Sleep and its alterations. Epilepsy. Level of consciousness.
Topic 41	Pathophysiology of the extrapyramidal system. Trembling and abnormal movements.
Topic 42	Pathophysiology of cerebrovascular disease.
Topic 43	Pathophysiology of CSF. Meningeal syndrome.
	Learning Unit 7. Urinary system (13%):
Topic 44	Pathophysiology of acute kidney failure.
Topic 45	Pathophysiology of chronic kidney failure.
Topic 46	Glomerular diseases.
Topic 47	Pathophysiology of oedema.
Topic 48	Tubulointerstitial nephritis and nephropathologies of vascular origin.
Topic 49	General pathology of the urinary tract and renal lithiasis.
Topic 50	Electrolyte alterations (sodium and potassium).
	Learning Unit 8. Endocrine system and metabolism (16%):
Topic 51	The endocrine system and hormones. Hypothalamus and pituitary gland.
Topic 52	Pathophysiology of the thyroid. Glandular hyper- and hipo-function.
Topic 53	Pathophysiology of the adrenal gland.
Topic 54	Pathophysiology of the parathyroids and metabolism of calcium.
Topic 55	Pathophysiology of the metabolism of carbohydrates.
Topic 56	Dyslipidaemia.
Topic 57	Pathophysiology of nutritional disorders. Obesity. Fasting. Malnutrition. Vitamin deficits.
Topic 58	Iron, copper and uric acid metabolism disorders.

5. TEACHING/LEARNING METHODS

The types of teaching/learning methods are as follows:

1. Problem-based learning: Presentation of problems, reorganising into small groups, literature analysis, analysis of scientific texts and documents, symposiums and presentations, directed debates, specialised individual and collective tutorials, and reaching a consensus.

2. Problem-based learning geared towards clinical reasoning: Presentation of problems, reorganising into small groups, literature analysis, analysis of scientific texts and documents, symposiums and presentations, directed debates, specialised individual and collective tutorials, and reaching a consensus.

3. Case studies and problem solving: approach and solving cases and problems either as an individual or in small groups.

4. Specialised seminars: literature research and debate on scientific data in small groups.

5. Lectures: Classroom presentations by the professor on basic theory, encouraging debate and student participation.

6. Case study method: presentation and discussion of clinical cases in small groups.

6. LEARNING ACTIVITIES

The types of learning activities, plus the amount of time spent on each activity, and the percentage of participation in each of them are as follows:

Learning activity	Number of hours	Attendance (%)
Theory/practical learning activities on-campus	170h	100
Directed learning activities	50 h	10
Independent working	120 h	0
Clinical placements	50 h	100
Tutorials	30h	100
Knowledge tests	5h	100
TOTAL	**425 h**	

7. ASSESSMENT

The assessment methods, plus their weighting in the final grade for the subject area, are as follows:

On campus:

		Assessment system	Weighting
THEORY (75%)	Cognitive objectives assessment	Exam test – clinical cases and short questions	15%
		Final assessment exam	60%
PRACTICAL PART (25%)	Assessment of attitude and participation	Attitude (rubric)	1%
	Skills objectives assessment	Clinical practice (rubrics)	4%
	Final exam of clinical skills	ECOE	20%

In the Subject Syllabus (ANNEX 4) and on the Virtual Campus, when you open the subject area, you can see all the details of your assessment activities and the deadlines and assessment procedures for each activity.

8. BIBLIOGRAPHY

The reference work for monitoring the subject is:

- Manual de Patología General. Castro del Pozo, Sisinio de; Pérez Arellano, J.L. Ed. Elsevier. 2019. 8ª edición.

Other books of interest:

- Introducción a la Medicina Clínica: Fisiopatología y Semiología. Laso Guzmán, F.J. Ed. Elsevier. 2020. 4ª edición.
- Patología General: semiología clínica y fisiopatología. J. García-Conde, Ed. McGraw Hill, 2004. 2ª edición.
- Dubin, interpretación de ECG. Dubin, Dale; De La Vega, E.L. COVER. 2013, 4ª edición.
- Guía Seidel de exploración física. W. Ball & Col. Ed. Elsevier. 2014. 8ª edición.