Teaching guide

IDENTIFICATION DETAILS

Degree:	Biomedicine
Scope	Biology and Genetics
Faculty/School:	Experimental Sciences
Course:	GENERAL PATHOLOGY
Type:	Compulsory
ECTS credits:	12
Year:	3
Code:	2158
Teaching period:	Fifth-Sixth semester
Subject:	General Principles of Disease
Module:	Foundations of Biomedicine
Teaching type:	Classroom-based
Language:	Spanish
Total number of student study hours:	300

SUBJECT DESCRIPTION

The area of knowledge of biomedicine is the point where basic scientific knowledge and the clinical approach to pathological processes intersect. Far from a purely clinical approach to the disease, today our society prepares future professionals to understand the molecular basis of the disease and, through this knowledge, to lower therapeutic decision-making, new lines of basic and clinical research and even the development of new therapeutic tools. This approach is what is known as evidence-based medicine.

General Pathology is the subject that studies common aspects of the disease. Starting from the concept of disease, it deals with its causes (Etiology), its mechanisms (Pathogenesis) and the main forms of the body's response to aggression.

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During the first 2 years of training in the Biomedicine Degree, students have acquired basic knowledge of biochemistry and molecular biology, anatomy, physiology, etc., solid bases for understanding the pathophysiological and molecular processes that govern the disease.
In this course, we will imbue the basic knowledge acquired with clinical training that allows a comprehensive understanding of the disease. Starting from the etiology or ultimate cause of a pathological process, the student will acquire knowledge about the pathogenesis or process that causes an alteration in the function of the various organs, tissues and systems of the human body. The functional significance of these changes will require knowledge of aspects of medicine related to clinical practice.
Finally, based on this knowledge, the student will be able to participate in the debate on the design of diagnostic approaches and therapeutic solutions for a given disease in a creative and rigorous way, opening up new avenues of analysis and research, capable of combining molecular and clinical knowledge.

GOAL

The objective of the course is the acquisition by the student of elementary knowledge related to the discipline of General Pathology, mainly the introduction of clinical medicine and the application of their knowledge of physiology and molecular biology to the understanding of the pathological process and its diagnostic and therapeutic approaches.
The specific purposes of the course are:
-Know the structure and function of the different functional systems of the human body, both in a situation of health and illness.
-Know the molecular mechanisms and histological changes that govern the development and maintenance of the disease.
-Know, identify, measure and interpret the different clinical manifestations of the main pathological processes.
-Know the different diagnostic tools available for the identification and characterization of the disease, as well as the different therapeutic tools available.

PRIOR KNOWLEDGE

The basic knowledge of the basic training of the Biomedicine Degree will be necessary, specifically: Cell Biology, Genetics, Pathological Anatomy, Biochemistry, Microbiology, Immunology, Physiology, etc.

COURSE SYLLABUS

SECTION 1: General Pathophysiology 1.1. Cell pathology. Injury, death and cellular adaptations. 1.2. Inflammation. 1.3. Tissue repair. Healing. 1.4. Aging. 1.5. Neoplasm. SECTION 2: Nervous System 2.1. Vascular pathologies 2.3. Pathology of the central nervous system (Dementias). 2.4. Peripheral Nervous System Pathology

(Motor Pathologies) 2.5. Pathology of the peripheral nervous system (Sensory pathologies). SECTION 3: Immune 3.1. Systemic autoimmune pathologies 3.2. Organ-specific pathologies 3.3. Primary immunodeficiencies 3.4. Secondary Immunodeficiencies SECTION 4: Endocrine and Metabolism 4.1. Obesity and metabolic syndrome 4.2. Diabetes mellitus. 4.3. Thyroid diseases 4.4. Pathologies bone and mineral metabolism 4.5. Adrenal pathologies 4.6. Endocrine-reproductive axis SECTION 5: Cardiovascular 5.1. Coronary Heart Disease and Atherosclerosis 5.2. Heart failure 5.3. Arrhythmias 5.4. Valve diseases 5.5. Systemic Vascular Disease SECTION 6: Digestive and Hepatic 6.1. Gastric pathology 6.2. Small intestine pathology (inflammatory bowel disease and celiac disease) 6.3. Hepatic and biliary pathology 6.4. Pancreatic pathologies SECTION 7: Renal System 7.1. Glomerulopathies 7.2. Tubulopathies and disorders of transport systems 7.3. Interstitial nephropathies 7.4. Hereditary diseases 7.5. Hypertension and renal vascular damage 7.6. Chronic Kidney Disease 3.4. Secondary immunodeficiencies SECTION 8: Respiratory 8.1. Obstructive diseases 8.2 Interstitial diseases and pulmonary fibrosis 8.3. Respiratory infections 8.4. Pulmonary vascular diseases

EDUCATION ACTIVITIES

FACE-TO-FACE TRAINING ACTIVITIES
AFP1. Theory classes. Interaction with students will be encouraged, through frequent inquiries and tasks related to other topics.
AFP2. Practical classes
AFP3. Proposal and resolution of practical cases.
AFP4. Seminars and/or exhibition of works: Students will carry out work that will deal with a topic included in the syllabus
NON-FACE-TO-FACE TRAINING ACTIVITIES
AFNP1. Study of theory, exercises and problems.
AFNP2. Preparation and study of practices.
AFNP3. Preparation of works.
AFNP4. Tutoring preparation.

DISTRIBUTION OF WORK TIME

TEACHER-LED TRAINING ACTIVITIES	INDIVIDUAL WORK
120 Horas	180 Horas

LEARNING RESULTS

To know the possible alterations in the metabolic pathways that cause pathology in the human being and their symptomatology.

Know the biochemical, cytogenetic and molecular biology markers applied to clinical diagnosis.

To know the fundamentals of the response of cells and organs of the human body to injury, from a molecular, systemic and clinical perspective.

To know the general mechanisms of the disease and its associated molecular, structural and functional alterations,

its syndromic expression and the therapeutic tools to restore health.

To know the changes in cellular and systemic physiology that take place in the most prevalent diseases in our society.

To know the pathophysiological processes as well as their manifestations and risk factors affecting health and disease in the human body throughout the life cycle.

Know the different laboratory instruments and materials (biological and non-biological) and their obtaining and handling for different purposes, observing the necessary safety principles.

Understand how homeostasis is integrated with processes such as inflammation, fibrosis or neoplasia to explain the development of physiopathology based on physiological regulatory mechanisms.

SPECIFIC LEARNING RESULTS

Identify the structural and functional changes that govern the development and maintenance of the disease.

Know the molecular elements that participate in physiological and pathophysiological processes.

Interpret, interrelate the molecular processes that trigger pathological processes, as well as being able to make basic and translational research proposals related to each process.

Know and interpret the different diagnostic, prognostic and predictive markers most common in the most common pathologies in our society.

Explain compensation mechanisms for maintaining the function of a system in pathological situations.

Learn to select the different techniques of molecular and cellular biology in order to carry out the analysis of the molecular basis of each pathology.

LEARNING APPRAISAL SYSTEM

Plagiarism, as well as the use of illegitimate means in evaluation tests, will be sanctioned in accordance with the University's Evaluation Regulations and Coexistence Regulations. The evaluation will be carried out according to the following weighting:
SE1 Evaluation of the theoretical content of the subject through oral and/or written tests with test, short answer or development questions 45%
SE2 Video-associated tests or continuous evaluation 10%
SE3 Internship 25%
SE4 Activities, clinical cases, works and tasks 20%

ETHICAL AND RESPONSIBLE USE OF ARTIFICIAL INTELLIGENCE

1.- The use of any Artificial Intelligence (AI) system or service shall be determined by the lecturer, and may only be used in the manner and under the conditions indicated by them. In all cases, its use must comply with the following principles:
a) The use of AI systems or services must be accompanied by critical reflection on the part of the student regarding their impact and/or limitations in the development of the assigned task or project.
b) The selection of AI systems or services must be justified, explaining their advantages over other tools or methods of obtaining information. The chosen model and the version of AI used must be described in as much detail as possible.
c) The student must appropriately cite the use of AI systems or services, specifying the parts of the work where they were used and describing the creative process followed. The use of citation formats and usage examples may be consulted on the Library website(https://www.ufv.es/gestion-de-la-informacion_biblioteca/).
d) The results obtained through AI systems or services must always be verified. As the author, the student is responsible for their work and for the legitimacy of the sources used.
2.- In all cases, the use of AI systems or services must always respect the principles of responsible and ethical use upheld by the university, as outlined in the Guide for the Responsible Use of Artificial Intelligence in Studies at UFV. Additionally, the lecturer may request other types of individual commitments from the student when deemed necessary.
3.- Without prejudice to the above, in cases of doubt regarding the ethical and responsible use of any AI system or service, the lecturer may require an oral presentation of any assignment or partial submission. This oral evaluation shall take precedence over any other form of assessment outlined in the Teaching Guide. In this oral defense, the student must demonstrate knowledge of the subject, justify their decisions, and explain the development of their work.

BIBLIOGRAPHY AND OTHER RESOURCES

Basic

Robbins and Kumar Human Pathology 11

Robbins and Kumar Structural and Functional Pathology 10

Gonzalez-Hernandez Principles of Clinical Biochemistry and Molecular Pathology 3