



Information about the course

Degree: Bachelor of Science Degree in Medicine

Faculty: Faculty of Medicine and Health Sciences

Code: 340302 **Name:** Pathological Anatomy

Credits: 6,00 ECTS **Year:** 2 **Semester:** 2

Module: Diagnostic and therapeutical procedures.

Subject Matter: Procedimientos diagnósticos **Type:** Obligatoria

Branch of knowledge:

Department: Pathology

Type of learning: Classroom-based learning

Language/-s in which it is given: Spanish

Teachers:

342A	<u>Jose Angel Garcia Garcia</u> (Profesor responsable)	joseangel.garcia@ucv.es
	<u>Atilio Javier Navarro Gonzales</u>	atilio.navarro@ucv.es
	<u>Enrique García Gómez</u>	enrique.ggomez@ucv.es
342B	<u>Jose Angel Garcia Garcia</u> (Profesor responsable)	joseangel.garcia@ucv.es
	<u>Atilio Javier Navarro Gonzales</u>	atilio.navarro@ucv.es
	<u>Enrique García Gómez</u>	enrique.ggomez@ucv.es
342C	<u>Jose Angel Garcia Garcia</u> (Profesor responsable)	joseangel.garcia@ucv.es
	<u>Atilio Javier Navarro Gonzales</u>	atilio.navarro@ucv.es



Universidad
**Católica de
Valencia**
San Vicente Mártir

Guía Docente

340302 - Pathological Anatomy - Year 2025/2026

342C

Enrique García Gómez

enrique.ggomez@ucv.es



Module organization

Diagnostic and therapeutical procedures.

Subject Matter	ECTS	Subject	ECTS	Year/semester
Procedimientos diagnósticos	39	Basic Immunology	3	1/2
		Functional Assessment	6	1/2
		Genetics	3	1/1
		Introduction to Medicine	3	1/2
		Laboratory of Diagnostic Tests	3	5/1
		Medical Microbiology and Parasitology	6	3/1
		Pathological Anatomy	6	2/2
		Physiological Records and Functional Tests	3	2/2
		Radiodiagnostic and Imaging Techniques	6	3/1
Procedimientos terapéuticos	27	Anaesthesia and Resuscitation	3	5/1
		Biotechnology	6	1/2
		General and Special Pharmacology	9	3/2
		General Procedures of Intervention	6	1/2
		Rehabilitation and Physical Therapy	3	4/2



Recommended knowledge

GENERAL OBJECTIVES

Knowledge of the basic pathological processes and relate them to the etiopathogenesis, clinic, prognosis and treatment of organic diseases in order to acquire a clinicopathological vision. Teach the role that Pathology plays in medical practice for the clinical and therapeutic management of patients (Diagnostic Pathology). Knowledge of a Pathological Anatomy Unit, its possibilities and limitations in relation to the fundamental objective, diagnosis in daily medical practice.



Learning outcomes

At the end of the course, the student must demonstrate having acquired the following learning outcomes:

R1 - Know the techniques used in Molecular Genetics.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures

Type of AR: Conocimientos o contenidos

- Knowing the characteristics of tissues in different situations of injury, adaptation and cell death. Inflammation. Cell growth disturbances. Pathological anatomy of the different devices and systems. Biochemical, cytogenetic and molecular biology markers applied to clinical diagnosis

Type of AR: Competencias

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics
- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

R10 - Be able to use clinical information to make reasoned differential diagnoses and diagnoses.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures



Type of AR: Conocimientos o contenidos

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Type of AR: Competencias

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R11 - Know the role of Pathological Anatomy in the clinical and therapeutic management of patients, in the quality of care and in scientific research

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures

Type of AR: Conocimientos o contenidos

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R12 - Knowing how to access medical-scientific means of information to support and document diagnostics and scientific and research work

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures

Type of AR: Conocimientos o contenidos

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Type of AR: Competencias

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics
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R13 - Know organizational structure and operation of the Pathological Anatomy Service.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures

Type of AR: Conocimientos o contenidos



- Knowing the characteristics of tissues in different situations of injury , adaptation and cell death. Inflammation. Cell growth disturbances. Pathological anatomy of the different devices and systems. Biochemical, cytogenetic and molecular biology markers applied to clinical diagnosis

Type of AR: Competencias

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics
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R14 - Know the types of biopsies and cytologies as well as the basic methods of processing them.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures

Type of AR: Conocimientos o contenidos

- Knowing the characteristics of tissues in different situations of injury , adaptation and cell death. Inflammation. Cell growth disturbances. Pathological anatomy of the different devices and systems. Biochemical, cytogenetic and molecular biology markers applied to clinical diagnosis

Type of AR: Competencias

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R15 - Know the procedure, objectives and necessary requirements of clinical autopsy.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures

Type of AR: Conocimientos o contenidos

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Type of AR: Competencias

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics
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R16 - How it is and should include a procedural request and an Anatomo-Pathological report.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures

Type of AR: Conocimientos o contenidos



- Knowing the characteristics of tissues in different situations of injury, adaptation and cell death. Inflammation. Cell growth disturbances. Pathological anatomy of the different devices and systems. Biochemical, cytogenetic and molecular biology markers applied to clinical diagnosis

Type of AR: Competencias

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics
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R17 - Knowledge of the technical difficulties and limitations of the Pathological Anatomy Service.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures

Type of AR: Conocimientos o contenidos

- Knowing the characteristics of tissues in different situations of injury, adaptation and cell death. Inflammation. Cell growth disturbances. Pathological anatomy of the different devices and systems. Biochemical, cytogenetic and molecular biology markers applied to clinical diagnosis

Type of AR: Competencias

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R18 - Know the microscopic observation technique.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures

Type of AR: Conocimientos o contenidos

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Type of AR: Competencias

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics
- Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study

R24 - Know the main pathological alterations related to the immune system: immunodeficiencies, autoimmune pathologies, hypersensitivity reactions, rejection in organ and cell transplants, and tumor processes.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures

Type of AR: Conocimientos o contenidos



- Knowing the characteristics of tissues in different situations of injury , adaptation and cell death. Inflammation. Cell growth disturbances. Pathological anatomy of the different devices and systems. Biochemical, cytogenetic and molecular biology markers applied to clinical diagnosis

Type of AR: Competencias

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics
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R25 - Know the basic practical operation of some of the main techniques of the clinical diagnostic laboratory in immunology (ELISA, immunoblotting, flow cytometry, immunohistochemistry)

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures

Type of AR: Conocimientos o contenidos

- Knowing the characteristics of tissues in different situations of injury , adaptation and cell death. Inflammation. Cell growth disturbances. Pathological anatomy of the different devices and systems. Biochemical, cytogenetic and molecular biology markers applied to clinical diagnosis

Type of AR: Competencias

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics
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R5 - Differentiate the different types of genetic alterations that cause disease.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures

Type of AR: Conocimientos o contenidos

- Knowing the characteristics of tissues in different situations of injury, adaptation and cell death. Inflammation. Cell growth disturbances. Pathological anatomy of the different devices and systems. Biochemical, cytogenetic and molecular biology markers applied to clinical diagnosis

Type of AR: Competencias

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics
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R7 - To understand the ultimate goal of pathological anatomy, the basic diagnostic processes, as well as when and how to use them in the diagnosis of diseases.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures

Type of AR: Conocimientos o contenidos

- Knowing the characteristics of tissues in different situations of injury, adaptation and cell death. Inflammation. Cell growth disturbances. Pathological anatomy of the different devices and systems. Biochemical, cytogenetic and molecular biology markers applied to clinical diagnosis



Type of AR: Competencias

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics
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R8 - To understand the basic pathological processes and know how to apply them to differentiate between tissues or cells.

Learning outcomes of the specified title

Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures
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Type of AR: Conocimientos o contenidos

- Knowing the characteristics of tissues in different situations of injury, adaptation and cell death. Inflammation. Cell growth disturbances. Pathological anatomy of the different devices and systems. Biochemical, cytogenetic and molecular biology markers applied to clinical diagnosis
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Type of AR: Competencias

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics
 - Students know how to apply their knowledge to their job or vocation in a professional way and possess the competences that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study
-

R9 - Identify general inflammatory and neoplastic lesions on injured tissues.

Learning outcomes of the specified title



Type of AR: Habilidades o Destrezas

- Assessing the risk-benefit ratio of diagnostic and therapeutic procedures

Type of AR: Conocimientos o contenidos

- Knowing the characteristics of tissues in different situations of injury, adaptation and cell death. Inflammation. Cell growth disturbances. Pathological anatomy of the different devices and systems. Biochemical, cytogenetic and molecular biology markers applied to clinical diagnosis

Type of AR: Competencias

- Students have the ability to collect and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant social, scientific or ethical topics
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Assessment system

In-person modality

Assessed learning outcomes	Granted percentage	Assessment tool
	0,00%	Open questions
R1, R5, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18	70,00%	Tests
R8, R9, R10, R12, R13, R18	10,00%	Practices
R1, R5, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18	5,00%	Participation in class
R8, R9, R10, R12, R13, R18	15,00%	Practice exam

Observations

Assessment systems:

To pass, students must achieve a minimum score of 5 out of 10 in both the Theory Exam (multiple-choice questions; UCV-TEST application) and the Practical Exam. Attendance at practical sessions is compulsory in order to sit the practical exam. The "Practical Training" section is related to the SEMINARS content block.

This course does not allow for a single assessment, as it requires the mandatory completion of



practical activities with the active participation of students.

MENTION OF DISTINCTION:

In accordance with the regulations governing the assessment and grading of subjects in force at UCV, the distinction of "Matrícula de Honor" (Honours with Distinction) may be awarded to students who have achieved a grade of 9.0 or higher. The number of "Matrículas de Honor" (Honours with Distinction) may not exceed five percent of the students enrolled in the group for the corresponding academic year, unless the number of enrolled students is fewer than 20, in which case a single "Matrícula de Honor" (Honours with Distinction) may be awarded. Exceptionally, these distinctions may be assigned globally across different groups of the same subject. Nevertheless, the total number of distinctions awarded will be the same as if they were assigned by group, but they may be distributed among all students based on a common criterion, regardless of the group to which they belong. The criteria for awarding "Matrícula de Honor" (Honours with Distinction) will be determined according to the guidelines stipulated by the professor responsible for the course, as detailed in the "Observations" section of the evaluation system in the course guide.

Training activities

The methodologies to be used so that the students reach the expected learning outcomes will be the following:

- M1 Masterclass
- M2 Problems resolution and practical cases
- M4 Content presentations by teacher
- M5 Knowledges and skills explanation

IN-CLASS TRAINING ACTIVITIES

ACTIVITY	RELATIONSHIP WITH THE COURSE LEARNING OUTCOMES	METHODOLOGY	HOURS	ECTS
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Theory class	R5, R7, R8, R9, R10, R11, R12, R13, R14, R15, R17, R18	Masterclass Problems resolution and practical cases Content presentations by teacher Knowledges and skills explanation	36,00	1,44
Seminar and group practices	R7, R12, R13, R14	Problems resolution and practical cases Content presentations by teacher Knowledges and skills explanation	9,00	0,36
Practices in small groups	R5, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R24, R25	Problems resolution and practical cases Content presentations by teacher Knowledges and skills explanation	4,50	0,18
Tutoring	R5, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R24, R25	Problems resolution and practical cases	1,50	0,06
Evaluation	R5, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R24, R25	Problems resolution and practical cases	1,50	0,06
TOTAL			52,50	2,10



TRAINING ACTIVITIES OF AUTONOMOUS WORK

ACTIVITY	RELATIONSHIP WITH THE COURSE LEARNING OUTCOMES	METHODOLOGY	HOURS	ECTS
No attendance	R1, R5, R7, R8, R9, R10, R11, R12, R13, R14, R15, R16, R17, R18, R24, R25	Masterclass Problems resolution and practical cases Knowledges and skills explanation	97,50	3,90
TOTAL			97,50	3,90



Description of contents

Description of content necessary for the acquisition of learning outcomes.

Theoretical content:

Block of content

Contents



BLOCK 1. GENERAL PATHOLOGICAL ANATOMY

Topic 1. Pathological Anatomy: Concept and historical evolution. Pathology as the morphological substrate of disease. Diagnostic procedures and Hospital Committees. Map of processes in the activity of the Pathological Anatomy Service.

Topic 2. Cellular injury, adaptation, and death. Mechanisms and evolution of cellular injury. Types of injury. Necrosis and apoptosis. Cellular response to aggression; Cellular adaptation: hypertrophy, hyperplasia, atrophy, and metaplasia. Structural models of atrophy and glandular hyperplasia.

Topic 3. Inflammation and repair. Acute and chronic inflammation. Acute inflammation. Inflammation mediators. Cytokines. Natural evolution of inflammation. Morphological patterns of inflammation. Chronic inflammation. Repair, regeneration, and healing. Stem cells. The cell cycle and its regulation. Growth and transcription factors. Intercellular matrix. Wound healing and repair. Pathology of healing.

Topic 4. Hemodynamic disorders, thromboembolic disease, and shock. Etiopathogenesis of arteriosclerosis.

Aneurysms, vasculitis, diabetic vasculopathy.

Thromboembolic disease, ischemia, and infarction.

Structural models. Hemorrhagic disorders. Shock, pathogenesis of septic shock. Phases of shock.

Topic 5. Immune disorders and genetic diseases.

Hypersensitivity reactions. Autoimmune diseases.

Transplant rejection. Immunodeficiency syndromes.

Topic 6. Genetic diseases and congenital anomalies.

Mendelian disorders; disorders associated with defects in structural proteins. Receptor proteins, enzyme defects, and cell growth regulatory proteins. Chromosomal disorders of the autosomes and sex chromosomes. Molecular diagnosis. Perinatal infections. Congenital errors of metabolism.

Sudden infant death syndrome. Tumors and pseudotumoral lesions in infants and children.

Topic 7. Neoplasms. General nomenclature. Concept of benignity and malignancy. Indifferentiation and anaplasia. Concept of dysplasia. General classification of neoplasms. Molecular basis and etiopathogenesis of cancer. Activator and inhibitor genes. Natural history of cancer. Cancer and immunity. Carcinogenic agents. Clinical aspects of cancer. Paraneoplastic syndromes. Cancer staging.



BLOCK 2. SPECIAL PATHOLOGICAL ANATOMY.

1. SPECIAL DIAGNOSTIC TECHNIQUES IN SURGICAL PATHOLOGY. CLINICAL AUTOPSY.

Immunohistochemistry methods. Molecular pathology methods. Clinical autopsy.

2. HEAD AND NECK PATHOLOGY:

Salivary glands. Paranasal sinuses and nasopharynx. Oral cavity. Ear. Larynx and trachea.

3. DERMATOPATHOLOGY.

Inflammatory conditions. Cysts, proliferations, and neoplasms.

4. CARDIOVASCULAR PATHOLOGY.

Heart. Pericardium. Blood vessels.

5. MAMMARY PATHOLOGY.

Inflammatory conditions and neoplasms.

6. THORACIC PATHOLOGY: Lung and pleura:

Obstructive pulmonary diseases. Restrictive and interstitial diseases. Infectious diseases. Neoplastic conditions.

7. THORACIC PATHOLOGY: Thymus and mediastinum:

Benign and malignant diseases of the thymus and mediastinum.

8. GASTROINTESTINAL PATHOLOGY.

Esophagus. Stomach. Small intestine. Vermiform appendix. Large intestine.

9. HEPATOBILIOPANCREATIC PATHOLOGY.

Liver. Gallbladder. Pancreas.

10. URINARY PATHOLOGY.

Bladder, urethra, and ureter. Kidney.

11. MALE GENITOURINARY PATHOLOGY.

Prostate and seminal vesicles; testicle and testicular appendages; penis and scrotum.

12. FEMALE REPRODUCTIVE SYSTEM PATHOLOGY.

Vulva. Vagina. Uterus: cervix and body. Ovary and fallopian tubes.

13. SOFT TISSUE AND BONE PATHOLOGY.

Soft tissue. Bone and joints.

14. HEMATOPATHOLOGY.

Lymph nodes. Spleen. Bone marrow.

15. ENDOCRINE PATHOLOGY.

Thyroid gland. Parathyroid glands. Pituitary gland. Adrenal glands.

16. CENTRAL NERVOUS SYSTEM PATHOLOGY.

Central nervous system. Eye and ocular adnexa.



BLOCK 3. SEMINAR

CLINICAL CASES

Temporary organization of learning:

Block of content	Sessions	Hours
BLOCK 1. GENERAL PATHOLOGICAL ANATOMY	7	14,00
BLOCK 2. SPECIAL PATHOLOGICAL ANATOMY.	16	32,50
BLOCK 3. SEMINAR	3	6,00

References

Robbins Basic Pathology, 10th Ed; 2018.
ISBN: 9780323353175.

Rosai and Ackerman's Surgical Pathology; 11th Ed; 2018.
ISBN: 9780323442084.

Differential Diagnosis in Surgical Pathology; 3th Ed; 2015.
ISBN: 9781455770137.

EXAMENES MIR.

CASOS CLINICOS:

The New England journal of
medicine: <https://www.nejm.org/multimedia/images-in-clinical-medicine>.
JAMA: <https://jamanetwork.com/collections/44038/clinical-challenge>
Department of Pathology at the University of Pittsburgh School of
Medicine: <https://path.upmc.edu/cases/>.