



## Information about the subject

**Degree:** Bachelor of Science Degree in Medicine

**Faculty:** Faculty of Medicine and Health Sciences

**Code:** 341202 **Name:** Anatomy III

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

**Module:** Morphology, structure and function of the human body

**Subject Matter:** Anatomy **Type:** Basic Formation

**Field of knowledge:** Health Science

**Department:** -

**Type of learning:** Classroom-based learning

**Languages in which it is taught:** Spanish

### Lecturer/-s:

342A	<u>Jorge Miguel Barcia Gonzalez</u> ( <b>Responsible Lecturer</b> )	jm.barcia@ucv.es
	<u>Francisco Tomas Aguirre</u>	paco.tomas@ucv.es
	<u>Jose Luis Llacer Ortega</u>	jl.llacer@ucv.es
	<u>Maria Oltra Sanchis</u>	maria.oltra@ucv.es
	Pedro Antonio Riesgo Suarez	riesgo_ped@gav.es
342B	<u>Jorge Miguel Barcia Gonzalez</u> ( <b>Responsible Lecturer</b> )	jm.barcia@ucv.es
	<u>Francisco Tomas Aguirre</u>	paco.tomas@ucv.es



Universidad  
**Católica de  
Valencia**  
San Vicente Mártir

## Course guide

Year 2023/2024  
341202 - Anatomy III

342B

Jose Luis Llacer Ortega

jl.llacer@ucv.es

Maria Oltra Sanchis

maria.oltra@ucv.es

Pedro Antonio Riesgo Suarez

riesgo\_ped@gav.es



## Module organization

### Morphology, structure and function of the human body

Subject Matter	ECTS	Subject	ECTS	Year/semester
Morphology and microscopic structure of the human body	6,00	Histology	6,00	2/1
Biology	6,00	Cell Biology	6,00	1/1
Anatomy	27,00	Anatomy II	9,00	2/1
		Anatomy III	6,00	2/2
		Embryology and Anatomy I	12,00	1/2
Biochemistry	9,00	Biochemistry and Molecular Biology	9,00	1/2
Physics	6,00	Biophysics	6,00	1/2
Physiology	12,00	Human Physiology I	6,00	2/1
		Human Physiology II	6,00	2/2



## Learning outcomes

At the end of the course, the student must be able to prove that he/she has acquired the following learning outcomes:

- R1 Know the main concepts that integrate anatomical terminology, its fundamentals and clinical and surgical utility
- R2 Use dissection instrumentation in practical work, acquiring the ability to handle surgical material
- R3 Know the main concepts that integrate anatomical terminology, its fundamentals and clinical and surgical utility
- R4 Know the external and internal morphology of each intrathoracic and abdomino-pelvic organ and the anatomical relationships between them
- R5 Know the cytoarchitecture and functional systems of the CNS
- R6 Distinguishing the different levels of CNS organization
- R7 Use different work techniques in the anatomy lab
- R8 Know and use basic CNS dissection techniques
- R9 Extract qualitative information morphology and function of CNS
- R10 Being able to write an understandable and organized text on various aspects of descriptive and functional neuroanatomy.



## Competencies

Depending on the learning outcomes, the competencies to which the subject contributes are (please score from 1 to 4, being 4 the highest score):

BASIC		Weighting			
		1	2	3	4
CB1	Students have demonstrated to possess and understand knowledge in a study area that starts from the base of the general secondary education, and is usually found at a level that, while supported by advanced textbooks, also includes some aspects that involve knowledge from the forefront of their field of study				X
CB2	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				X
CB3	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				X
CB4	Students can pass on information, ideas, problems and solutions to both a specialized and non-specialized audience				X
CB5	Students have developed the learning skills needed to undertake further studies with a high degree of autonomy				X

GENERAL		Weighting			
		1	2	3	4
CG7	Understanding and recognizing the normal structure and function of the human body, at the molecular, cellular, tissue, organic and systems levels, at the different stages of life and in both sexes			X	

SPECIFIC		Weighting			
		1	2	3	4



CE2	Knowing the basic principles of human nutrition. Cellular communication. Excitable membranes. Cell cycle. Cell differentiation and proliferation. Gene information, expression and regulation. Inheritance. Embryonic development and organogenesis			X	
CE3	Knowing the morphology, structure and function of the skin, blood, circulatory, digestive, locomotive, reproductive, excretor and respiratory systems; endocrine system, immune system and central and peripheral nervous system. Growth, maturation and aging of different devices and systems. Homeostasis. Adaptation to the environment				X
CE5	Recognizing with macroscopic, microscopic and imaging techniques the morphology and structure of tissue, organs and systems			X	

TRANSVERSAL		Weighting			
		1	2	3	4
CT1	Analytical and synthesis capacity			X	
CT3	Oral and written communication in mother language		X		
CT6	Manage information capacity		X		
CT8	Making decisions				X
CT9	Team work				X
CT14	Critical reasoning		X		
CT16	Individual learning			X	
CT18	Creativity		X		
CT19	Leadership		X		
CT25	Autocriticism capacity			X	



## Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
	25,00%	Open questions
	45,00%	Tests
	5,00%	Work
	25,00%	Practice exam

### Observations

#### MENTION OF DISTINCTION:

According to Article 22 of the Regulations governing the Evaluation and Qualification of UCV Courses, the mention of "Distinction of Honor" may be awarded by the professor responsible for the course to students who have obtained, at least, the qualification of 9 over 10 ("Sobresaliente"). The number of "Distinction of Honor" mentions that may be awarded may not exceed five percent of the number of students included in the same official record, unless this number is lower than 20, in which case only one "Distinction of Honor" may be awarded.

## Learning activities

The following methodologies will be used so that the students can achieve the learning outcomes of the subject:

- M1 Masterclass
- M3 Virtual simulations
- M4 Content presentations by teacher



- M5      Knowledges and skills explanation
- M8      Group activities supervised by professor
- M9      Knowledge acquirance through student interaction and activity
- M10     Anatomy dissection practices
- M11     Personalised attention by professor
- M12     Tests to understand the level of knowledge acquirance and skills
- M14     Online activity on e-learning
- M15     Personal study
- M19     Group work for searching, discussion and information research





## IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
Theory class M1, M4, M5	R1, R3, R4, R7	36,00	1,44
Practices in small groups M8, M9, M10, M11	R3, R4, R5, R6	10,00	0,40
Tutoring M5, M8, M14	R1, R2, R3, R4	2,00	0,08
Evaluation M9, M12, M14	R1, R2, R4, R6, R7	4,00	0,16
<b>TOTAL</b>		<b>52,00</b>	<b>2,08</b>

## LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
No attendance M9, M14, M15	R1, R2, R3, R4, R7	98,00	3,92
<b>TOTAL</b>		<b>98,00</b>	<b>3,92</b>



## Description of the contents

Description of the necessary contents to acquire the learning outcomes.

### Theoretical contents:

Content block	Contents
Chapter 1	Introduction to the study of the Nervous System. General organization and basic principles. Embryonic development CNS and SNP
Chapter 2	Meninges, ventricles and sinuses: CSF circuit, cisterns, spaces, arachnoid granulations
Chapter 3	Morphology of the Spinal Cord. Exterior configuration and relationships. Spinal meninges. Structure of the spinal cord: Cytoarchitecture and myeloarchitecture. Ascending and descending paths hierarchical organization.
Chapter 4	Brainstem morphology: External and internal configuration of the medulla oblongata, pons and midbrain. Nuclear organization of the cranial nerves.
Chapter 5	Trigeminal Nerve (NCV): Branches , pathways and divisions V1, V2 and V3. Nuclei and circuits associated with NC V: N. Principal, N. mesencephalic, N. spinal. N. trigeminal motor.
Chapter 6	Facial nerve (NCVII): Pathways , Branches and associated nuclei. Sphenopalatine, submandibular and sublingual ganglion. N. Lacrimo-nasal, N. Salivatorio superior, N. of the solitary tract. Motor nucleus of the facial. Nervous relationships between NCV and NC VII
Chapter7	Nerves IX, X, XI and XII: Associated nuclei, routes and destinations. N. salivatory inferior, N. ambiguo, N. of the solitary tract, Motor of X, Spinal portion of accessory Nerve, Hypoglossal motor XII,



Chapter 8	Cerebellum: Architectural organization, macroscopic anatomy, peduncles. Main divisions of the cerebellum: Vestibulocerebellum, Spinocerebellum, cerebrocerebellum. Cerebellar efferences,
Chapter 9	Diencephalon. Division of the diencephalon: epithalamus, thalamus, hypothalamus-pituitary hypothalamic pituitary portal system. Thalamus Systematization of its nuclei.
Chapter 10	Basal ganglia: Caudate putamen palidum, substantia nigra , Subthalamic Topography. Basic circuitry: Direct and indirect route.
Chapter 11	Cerebral cortex: Cortical organization, aggregates of white matter: Commissures, tracts ... Macroscopic anatomy, fissures, gyri and lobes, Main cortical areas.
Chapter 12	Limbic circuit: Hippocampus, amygdala, cingulate cortex.
Chapter 13	Arterial and venous vascularization of the Cortex, Diencephalon and brainstem. Vascularization of the spinal cord.
Chapter 14	Sense of vision Eyeball: sclero-corneal layer. Vascular tunic: Choroid, ciliary body and iris. Anatomy of the retina. Refractive media of the eyeball. Corneal curvature. Crystalline. Vitreous. Clinical anatomy of the aqueous humor. Anexa of the eye. Optical pathway (NC II) Cranial Pairs III, IV, VI Ocular motor column: Origin (nuclei), path and destinations
Chapter 15	Smell (NCI) and taste, Taste bud receptors.
Chapter 16	Ear (NCXIII). Anatomy of the external ear. Anatomy of the middle ear: tympanic cage and its contents, pharyngo-tympanic tuba and mastoid cells. Anatomy of the inner ear: bony labyrinth and membranous labyrinth.
Chapter 17	Anatomical and functional concept of the vegetative nervous system: Anatomy of the cervical, thoracic and abdomino-pelvic sympathetic systems. Anatomy of the parasympathetic system.



## Lab-practices

Meninges, sinuses and ventricles.  
Spinal cord and brain stem.  
Diencephalon and cortex.  
Limbic circuit  
Sense organs





## Temporary organization of learning:

Block of content	Number of sessions	Hours
Chapter 1	1,00	2,00
Chapter 2	1,00	2,00
Chapter 3	1,00	2,00
Chapter 4	1,00	2,00
Chapter 5	1,00	2,00
Chapter 6	1,00	2,00
Chapter 7	2,00	4,00
Chapter 8	1,00	2,00
Chapter 9	2,00	4,00
Chapter 10	1,00	2,00
Chapter 11	2,00	4,00
Chapter 12	1,00	2,00
Chapter 13	2,00	4,00
Chapter 14	1,00	2,00



Chapter 15	1,00	2,00
Chapter 16	1,00	2,00
Chapter 17	1,00	2,00
Lab-practices	5,00	10,00

## References

**Fitzgerald. Clinical neuroanatomy** FitzGerald, Gruener, Mtui, Mtui, Gruener & Dockery, Elsevier 7th edition 2017

**Young Pa, Young PH:** Basic Clinical neuroscience Wolters Klüwer Third edición 2015

**Snell.** Snell's Clinical Neuroanatomy 8th ( 2018)

**Netter:** Netter's Atlas of Neuroscience, 3ed.Elsevier, 2015

**Gray's anatomy e-book: the anatomical basis of clinical practice**, edition 41 Susan standingaugust 7, 2015 elsevier health sciences

**Anatomy: A Photographic Atlas (Color Atlas of Anatomy a Photographic Study of the Human Body)** 8ª Ed. 2015 de Johannes W. Rohen, Chihiro Yokochi, Elke Lütjen-Drecoll.

**Marian C. DIAMOND** The Human Brain Coloring Book (Coloring Concepts) Collins 2000

### BIBLIOGRAFÍA COMPLEMENTARIA

**Rhoton** Rhoton's Atlas of Head, Neck, and Brain, Thieme 2017

**WILSON-PAUWELS, L.; AKESSON, E. J.; STEWART, P. A.** Cranial Nerves: Function and Dysfunction PMPH USA, Ltd; N.º 3 edición



## Addendum to the Course Guide of the Subject

Due to the exceptional situation caused by the health crisis of the COVID-19 and taking into account the security measures related to the development of the educational activity in the Higher Education Institution teaching area, the following changes have been made in the guide of the subject to ensure that Students achieve their learning outcomes of the Subject.

**Situation 1: Teaching without limited capacity** (when the number of enrolled students is lower than the allowed capacity in classroom, according to the security measures taken).

In this case, no changes are made in the guide of the subject.

**Situation 2: Teaching with limited capacity** (when the number of enrolled students is higher than the allowed capacity in classroom, according to the security measures taken).

In this case, the following changes are made:

### 1. Educational Activities of Onsite Work:

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject will be made through a simultaneous teaching method combining onsite teaching in the classroom and synchronous online teaching. Students will be able to attend classes onsite or to attend them online through the telematic tools provided by the university (videoconferences). In any case, students who attend classes onsite and who attend them by videoconference will rotate periodically.

In the particular case of this subject, these videoconferences will be made through:

☒ Microsoft Teams

☐ Kaltura



## **Situation 3: Confinement due to a new State of Alarm.**

In this case, the following changes are made:

### **1. Educational Activities of Onsite Work:**

All the foreseen activities to be developed in the classroom as indicated in this field of the guide of the subject, as well as the group and personalized tutoring, will be done with the telematic tools provided by the University, through:

☒ Microsoft Teams

☐ Kaltura

Explanation about the practical sessions:





## 2. System for Assessing the Acquisition of the competences and Assessment System

### ONSITE WORK

#### Regarding the Assessment Tools:

☒ The Assessment Tools will not be modified. If onsite assessment is not possible, it will be done online through the UCVnet Campus.

☐ The following changes will be made to adapt the subject's assessment to the online teaching.

Course guide		Adaptation	
Assessment tool	Allocated percentage	Description of the suggested changes	Platform to be used

The other Assessment Tools will not be modified with regards to what is indicated in the Course Guide.

#### Comments to the Assessment System: