



## Information about the subject

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

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

**Code:** 341106 **Name:** Embryology and Anatomy I

**Credits:** 12,00 **ECTS Year:** 1 **Semester:** 1/2

**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:

341A	<u>Jorge Miguel Barcia Gonzalez</u> ( <b>Responsible Lecturer</b> )	jm.barcia@ucv.es
	<u>Amariel Enrique Barra Pla</u>	amariel.barra@ucv.es
	<u>Francisco Tomas Aguirre</u>	paco.tomas@ucv.es
	<u>Maria Ester Legidos García</u>	ester.legidos@ucv.es
341B	<u>Jorge Miguel Barcia Gonzalez</u> ( <b>Responsible Lecturer</b> )	jm.barcia@ucv.es
	<u>Amariel Enrique Barra Pla</u>	amariel.barra@ucv.es
	<u>Francisco Tomas Aguirre</u>	paco.tomas@ucv.es



Universidad  
Católica de  
Valencia  
San Vicente Mártir

# Course guide

Year 2023/2024  
341106 - Embryology and Anatomy I

341B

[Maria Ester Legidos García](#)

[ester.legidos@ucv.es](mailto:ester.legidos@ucv.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 Embryonic development and organogenesis.
- R2 Know the morphology, cellular structure of muscles and their components
- R3 Cellular and non cellular structures of bones. Organization and general structure.
- R4 Joint types. MENF of different type of joints
- R5 Morfology and function of the different muscles: trunk, head, neck and extremities.
- R6 Vascularization and inervation of locomotive system. NM axes
- R7 Morphology, function and biomechanics of the rachis, pelvic and scapular waist. Extremities. Skull and face
- R8 Know the main events of embryogenesis and fundamental events in the genesis of the various systems and structures to better understand the adult organization of the human body.
- R9 Know the main concepts that integrate anatomical terminology, its fundamentals and clinical and surgical utility
- R10 Distinguishing the different osteomuscular anatomical structures of the human body, its situation and its function
- R11 Search for bibliographic information from different sources and know how to use it in a critical and constructive way
- R12 Apply general knowledge of anatomy in cadaveric dissection and in working with bone remains
- R13 Use dissection instrumentation in practical work, acquiring the ability to handle surgical material
- R14 Know the main concepts that integrate anatomical terminology, its fundamentals and clinical and surgical utility



- R15 Know thoraco-abdominal topography and distinguish the different anatomical structures of the chest and abdomen by framing them in the different regions
- R16 Using dissection instrumentation in practical work
- R17 Apply general knowledge of Anatomy
- R18 Search for bibliographic information from different sources and know how to use it in a critical and constructive way
- R19 Argument with rational criteria from his work.
- R20 Applying general knowledge of neuroanatomy: case resolution
- R21 Seek bibliographic information from different sources and know how to analyze it in a critical and constructive spirit.
- R22 Be able to produce documents on anatomy and work as a team.



## 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
CG6	Developing professional practice with respect for other health professionals, acquiring teamwork skills			X	
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
CE6 Performing functional tests, determine vital parameters, and interpret them. Basic physical examination	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
CT32 Being able to establish and maintain relationships with other professionals and institutions			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%	Practices
	5,00%	Work
	0,00%	Participation in class
	20,00%	Practice exam

### Observations

There will be a mid-term written exam on February, this won't be mandatory but students getting scores of 5 out of 10 can skip this part on the final exam. This exam is optional without impact on the final degree (as far as indicated above)

Practices will be assessed by the end of each lab session. The task will consist on the identification (labeling) of the corresponding studied structures in paper. Attendance + all the lab exams will make 25% corresponding to the final score.



## 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	R1, R2, R3, R4, R5, R6, R7, R8, R9, R10, R14	46,00	1,84
Seminar and group practices M1, M3, M8, M9, M10	R1, R3, R4, R5, R6, R7, R8, R9, R10, R14, R15, R17	34,00	1,36
Practices in small groups M5, M8, M9, M10	R1, R4, R5, R6, R7, R9, R10, R13, R15, R16, R17, R21	12,00	0,48
Tutoring M9, M11	R1, R4, R5, R6, R7, R8, R10, R15	6,20	0,25
Evaluation M12, M14	R1, R4, R5, R6, R7, R8, R10, R15	6,80	0,27
<b>TOTAL</b>		<b>105,00</b>	<b>4,20</b>

## LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
No attendance M9, M14, M15		195,00	7,80
<b>TOTAL</b>		<b>195,00</b>	<b>7,80</b>



## Description of the contents

Description of the necessary contents to acquire the learning outcomes.

### Theoretical contents:

Content block	Contents
General considerations in human anatomy	Anatomical position and planes, anatomical terminology
Development and embryogenesis	Gametogenesis, fertilization, cleavage, Gastrulation, germinal layers and fates, Neurulation, Somatic and craniofacial morphogenesis, Organogenesis.
Musculoskeletal I	Joint types, generalities (tendons, ligaments y aponeurosis, neuromuscular spindle and Golgi tendon organ.
Locomotor II: Anatomy of the trunk. Axial skeleton	Spine Osteoarthrology, Curves, Vertebral types, Back and neck: myology, Chest wall and abdomen, Skull and related muscles, Neurovascular supply.
Locomotor III: Anatomy of the upper limb (Appendicular skeleton 1)	Osteoarthrology and myology of the upper limb, innervation, function and irrigation / drainage. Shoulder girdle, arm, forearm and hand.
Practice spine	Morphology, curvatures, vertebral types, joints
Practice Skull	Study through models and real pieces the different elements that make up the skull, sutures and foramina.
Anatomy of the back, head and neck	Study of the topographic anatomy, myology, innervation and irrigation of the back, thorax, neck and face
Practice upper limb osteoarthrology	Study with models and real pieces of the different bone aspects
Practice Upper limb (myology)	Study of topographic anatomy, myology, innervation and irrigation



Practice Lower Limb (ostearthrology)

Study with models and real pieces of the different bone aspects

Practice Lower Limb (myology)

Study of topographic anatomy, myology, innervation and irrigation

Practice lower limb II

Study of topographic anatomy, myology, innervation and irrigation





## Temporary organization of learning:

Block of content	Number of sessions	Hours
General considerations in human anatomy	3,50	7,00
Development and embyogenesis	14,00	28,00
Musculoskeletal I	5,00	10,00
Locomotor II: Anatomy of the trunk. Axial skeleton	8,00	16,00
Locomotor III: Anatomy of the upper limb (Appendicular skeleton 1)	8,00	16,00
Practice spine	8,00	16,00
Practice Skull	0,50	1,00
Anatomy of the back, head and neck	0,50	1,00
Practice upper limb osthearthrology	1,00	2,00
Practice Upper limb (myology)	1,00	2,00
Practice Lower Limb (ostearthrology)	1,00	2,00
Practice Lower Limb (myology)	1,00	2,00
Practice lower limb II	1,00	2,00



## References

**Langman's Medical Embryology**, T.W. Sadler, 8th edition, Lippincott, Williams & Wilkins, 2019.

Carlson B. Human Embryology and Developmental Biology 6th Edition Elsevier 2018

**Gray's Anatomy for Students**. 4th Edition. Authors: Richard **Drake** A. Wayne **Vogl** Adam **Mitchell** (2020)

Clinically Oriented Anatomy Keith L. Moore, Arthur F. Dalley, A. M. R. Agur. Lippincott Williams & Wilkins (2018).

Llusá M., Merí A., Ruano D. Manual y atlas fotográfico de anatomía del aparato locomotor. Ed. Médica Panamericana. 2004

Anatomy: A Photographic Atlas (Color Atlas of Anatomy a Photographic Study of the Human Body, Johannes W. Rohen, Chihiro Yokochi, Elke Lutjen-Drecoll 2015

Sobotta – R. Putz, R. Pabst. Atlas of Human Anatomy Lippincott Williams and Wilkins 2018

Schünke, Schulte, Schumacher, Voll, Wesker. Prometheus. Texto y Atlas de Anatomía. Ed. Médica Panamericana. 2013.



## 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:

Practices will be followed on-line



## 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: