



## Information about the subject

**Degree:** Bachelor of Science Degree in Speech and Language Therapy

**Faculty:** Faculty of Psychology

**Code:** 1171101 **Name:** Functional anatomy of the organs of speech and hearing I

**Credits:** 6,00 **ECTS Year:** 1 **Semester:** 1

**Module:** Basic Training

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

**Field of knowledge:** Ciencias de la Salud

**Department:** Speech Therapy

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

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

**Lecturer/-s:**

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## Module organization

### Basic Training

Subject Matter	ECTS	Subject	ECTS	Year/semester
Physiology	12,00	Functional anatomy of the organs of speech and hearing II	6,00	1/2
		Fundamentals of Neuroscience	6,00	1/1
Anatomy	6,00	Functional anatomy of the organs of speech and hearing I	6,00	1/1
Psychology	36,00	Developmental psychology	6,00	1/1
		Language development	6,00	1/2
		Psycholinguistics	6,00	2/1
		Psychology of attention and perception.	6,00	1/2
		Psychology of Learning and Memory	6,00	2/1
		Research Methodology	6,00	2/1
Clinical linguistics	6,00	Linguistics applied to speech and language therapy	6,00	1/1

## Recommended knowledge

None



## 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 To know the anatomical terminology and to be able to use it in scientific communication.
- R2 To recognize the general anatomical structures and relate them to each other
- R3 To describe the anatomical and functional organization of the skeleton (spine and skull) and understand its mission of protecting the central nervous system, maintaining body posture and contributing to resonance cavities.
- R4 To describe the anatomy of the sense of vision and to know its function as a peripheral organ of language.



## 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
CB3	Students have the ability to gather and interpret relevant data usually within their field of study to inform judgments that include reflection on relevant social, scientific or ethical			X	
CB4	Students can communicate information, ideas, problems and solutions to both specialist and non-specialist			X	
CB5	Capacity to develop those learning skills needed to undertake further studies with a high degree of autonomy			X	

  

GENERAL		Weighting			
		1	2	3	4
CG1	Analysis and synthesis			X	
CG2	Organize a work plan being able to carry it out within a specified period			X	
CG3	Find, evaluate, organize and manage information systems			X	
CG4	Speaking and writing fluently, appropriately and with the necessary consistency to meet the academic standards of correctness in the language of instruction				X
CG5	Make decisions and being responsible for them				X

  

SPECIFIC		Weighting			
		1	2	3	4
CE1	Understand and integrate the biological foundations of Speech: Anatomy and Physiology				X



CE29	To acquire practical training in individual, group, cooperative and mediation facilitator contexts				X
CE32	Using information technology and communication				X
CE33	Final project involving transversally applicable material; to be carried out in association with different subjects	X			
CE37	Master the terminology that allows one to interact effectively with other professionals				X
CE38	To design and carry out speech therapy treatments, both individual and collective, establishing objectives and stages, with the most effective and appropriate methods, techniques and resources, and taking into account the different evolutionary stages of the human being.			X	
CE47	Know and be able to integrate the biological (anatomical and physiological), psychological (and evolutionary development processes), linguistic and pedagogical foundations of speech therapy intervention in communication, language, speech, hearing, speech and non-verbal oral functions				X
CE48	Being familiar with communication disorders, language, speech, hearing, speech and nonverbal oral functions			X	
CE51	Communicate orally and in writing one's observations and conclusions to the patient, their families and other professionals involved in treatment, adapting to the sociolinguistic characteristics of the environment			X	
CE54	Manage communication technologies and information			X	

## TRANSVERSAL

## Weighting

		1	2	3	4
CT1	Use the techniques of verbal and nonverbal communication in order to optimize relevant communicative situations			X	
CT2	Critically evaluate own job performance and that of other professionals to improve results				X
CT7	Having an open and flexible attitude to lifelong learning				X
CT8	Know and use of technical advances in the exercise of their profession				X





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

Assessed learning outcomes	Granted percentage	Assessment method
R1, R2, R3, R4	75,00%	Oral and/or written tests: exams, reports, resolution of internships.
R1, R2, R3, R4	5,00%	Attendance, participation, continued work.
R1, R2	10,00%	Performance and/or presentation of individual theoretical and practical activities.
R1, R2, R3, R4	10,00%	Performance and/or presentation of theoretical and practical group activities.

### Observations

#### Evaluation methods:

#### 1. ORAL AND WRITTEN TESTS: EXAMS, MEMOIRS, RESOLUTION OF PRACTICES

##### 1.1. WRITTEN TEST

**1.1.1. Multiple choice tests** with one of the five possible correct answers. They provide a deeper understanding of the contents learned by the student and prepare him/her to deal with this evaluation model for the entrance exam for the specialty.

##### 1.2. EVALUATION OF PRACTICES

**1.2.1. Anatomical imaging tests:** exam in which the student must identify the anatomical structures previously observed in class.

**1.2.2. Oral test:** oral exam in which the student answers the questions asked by the teacher, explaining verbally the knowledge acquired and allowing interaction with the teacher.

#### 2. ATTENDANCE, PARTICIPATION AND CONTINUED WORK

#### 3. COMPLETION AND EXPOSITION OF INDIVIDUAL THEORETICAL-PRACTICAL ACTIVITIES

**3.1. On-campus activities:** the professor evaluates the participation and progress in the acquisition of knowledge and skills by the students during the lectures and practical classes.

#### 4. REALIZATION AND EXPOSITION OF GROUP THEORETICAL-PRACTICAL ACTIVITIES

**4.1. Final portfolio of the course:** in groups, students design a document presenting it to be evaluated by the professor.

**CRITERIA FOR THE GRANTING OF HONORARY REGISTRATION:** In order to obtain it, it will be necessary a grade equal or higher than 9, participation in all class activities and final work of the course with the highest grade of the class. Likewise, and in accordance with the general



regulations, only one honorary matriculation can be given for every 20 students, not per fraction of 20, with the exception of groups of less than 20 students in total, in which one matriculation can be given.

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.

## Learning activities

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

- M1 Participative lectures: strategies focused on the transmission of information from teachers to students. Student participation is promoted with hybrid methodologies, in order to consolidate knowledge and encourage critical thinking.
- M2 Practical Class. Classroom practice, laboratory practice and/or simulations: methodologies based on student interaction with problems, technologies, samples or analysis equipment, in order to incorporate experimentation to knowledge.





## IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
<p>THEORETICAL CLASSES. Lectures, expository and participative classes. They focus on the approach, analysis and development of competences: explanation and orientation towards the acquisition of the necessary knowledge, instruction in the derived skills and acquisition of professional aptitudes.</p> <p>M1</p>	R1, R2, R3, R4	30,00	1,20
<p>PRACTICAL CLASSES. Individual or group work sessions supervised by the teacher. Analysis of materials related to the subjects: reports, statistics, scientific literature, tests and evaluation tests, problem solving, visualization of clinical histories, simulation of cases, etc.</p> <p>M2</p>	R1, R2, R3, R4	10,00	0,40
<p>LABORATORY PRACTICES: Laboratory activities for obtaining, analyzing and interpreting samples. Learning of measurement techniques by means of instruments. Learning of safety measures.</p> <p>M2</p>	R1, R2, R3, R4	14,00	0,56
<p>TUTORIALS: Individual or small group meetings to personalize any aspect of the teaching-learning process</p> <p>M1</p>	R1, R3	2,00	0,08
<p>EVALUATION: Set of tests in oral, written, or other audiovisual media. It includes the final exams (exams and presentation of work) and all the elements of continuous evaluation that contribute in a weighted way to the final grade (presentation of work, scheduled activities, questionnaires, etc.) The public presentation of the Final Degree Project is included.</p> <p>M1, M2</p>	R1, R2, R3, R4	4,00	0,16
<b>TOTAL</b>		<b>60,00</b>	<b>2,40</b>



## LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
GROUP WORK: Group preparation of readings, essays, problem solving, seminars, papers, reports, etc. to be presented or delivered in theory classes, practical classes or small group tutorials. M2	R1, R2, R3, R4	30,00	1,20
AUTONOMOUS WORK: Personal study of the student. Individual preparation of readings, essays, problem solving, seminar material, papers, reports, etc. to present or deliver in class, complete their training activity and prepare their evaluation tests. M2	R1, R2, R3, R4	60,00	2,40
<b>TOTAL</b>		<b>90,00</b>	<b>3,60</b>



## Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
1.- GENERALITIES OF HUMAN ANATOMY. THE LANGUAGE OF THE ANATOMY	<ul style="list-style-type: none"><li>·<b>Topic 1: Definition of Anatomy and Physiology.</b> Levels of organization of the living beings: cells, tissues, organs, systems and organism. Features of the living human body. Basic life processes. Homeostasis and homeostatic imbalances. Basic concepts on some corporal systems. Introduction to the anatomy and function of the language: general concepts on central and peripheral organs of the language. General concepts on the voice: the three parts of the vocal system</li><li>·<b>Topic 2: Terminology of Anatomy.</b> Anatomical position. Axes and anatomical planes. Terms of position. Terms of orientation. Regional terms. Body cavities. Medical images</li><li>·<b>Topic 3: General embryology.</b> First week of development: fertilization, cleavage, blastulation, implantation. Second week: bilaminar embryonic disc development. Third week: gastrulation, trilaminar disc. Basis of heredity.</li></ul>
2.- PRINCIPLES OF SUPPORT AND MOVEMENT	<ul style="list-style-type: none"><li>·<b>Topic 4: Basics of musculoskeletal system.</b> Osteology: bony tissue. Anatomical features of the bones and their types. Terms relating to the bones.</li><li>·<b>Topic 5: Arthrology:</b> cartilage. Anatomical features of the joints and their types. Joints kinematics. <b>Myology:</b> Muscle tissue. Anatomical features of muscles and their types</li></ul>



### 3.- THE SKELETAL SYSTEM: THE AXIAL SKELETON. THE APPENDICULAR SKELETON

·**Topic 6: The support structure of respiration.**

Vertebral column. Rib cage: sternum, costal cartilages and ribs. Joints of the spine. Movements of the vertebral column and its participation in the speech.

·**Topic 7: Pectoral girdle:** scapula, clavicle and humerus.

**Pelvic girdle.** Pelvis major and minor. Anatomical differences between male and female pelvis.

·**Topic 8: Cranial skeleton:** neurocranium and viscerocranium. Base of the skull, nasal and intracranial cavities. Braincase sutures and fontanelles. Facial skeleton, craniofacial mass.

### 4.- GENERAL CONCEPT OF SENSES

·**Topic 9: General concept of the senses.** Functional and structural scheme of the senses: receptors. Brain stem and cranial nerves. Joint study of cranial nerves.

### 5.- ORGAN OF VISION

·**Topic 10: Anatomy of the orbit and the organ of vision:** layers of the eyeball, means of refraction and eye cameras. Ocular reflexes. Physiology of vision. Annexes to the eyeball. Visual information system

### Temporary organization of learning:

Block of content	Number of sessions	Hours
1.- GENERALITIES OF HUMAN ANATOMY. THE LANGUAGE OF THE ANATOMY	8,00	16,00
2.- PRINCIPLES OF SUPPORT AND MOVEMENT	6,00	12,00
3.- THE SKELETAL SYSTEM: THE AXIAL SKELETON. THE APPENDICULAR SKELETON	10,00	20,00
4.- GENERAL CONCEPT OF SENSES	3,00	6,00
5.- ORGAN OF VISION	3,00	6,00



## References

### BASIC BIBLIOGRAPHY:

- Tortora, G.; Reynolds Grabowski, S. (2008). **Introducción al Cuerpo Humano. Fundamentos de Anatomía y Fisiología.** Editorial Médica Panamericana
- Tortora, G.; Reynolds Grabowski, S. (2007). **Principios de Anatomía y Fisiología.** Editorial Médica Panamericana.

### RECOMMENDED BIBLIOGRAPHY:

- Hoit, JD; Weismer, G; Story, B. (2021) **Foundations of Speech and Hearing: Anatomy and Physiology.** Plural Publishing Inc.
- McFarland (2008). **Atlas de Anatomía en Ortofonía. Lenguaje y deglución.** Edit. Elsevier-Masson. Barcelona
- Netter, FH. (2019) **Atlas de Anatomía humana.** Elsevier.
- Rodríguez, S; Smith Agreda, J.M. (2004) **Anatomía de los órganos del lenguaje, visión y audición.** Editorial Panamericana.
- Rousseau, B; Branski, R (2018). **Anatomy and Physiology of Speech and Hearing.** Thieme Medical Publishers Inc.
- Rouviere H. Delmás A. (2001). **Anatomía Humana. Descriptiva, topográfica y funcional. Tomo I Cabeza y cuello.** Ed Masson
- Seikel, A. J.; King, D. W., Drumright, D.G. (2010) **Anatomy and Physiology for Speech, Language, and Hearing.** Singular Publishing.
- Thibodeau G.A., Patton K. T. (2007) **Anatomía y Fisiología. Estructura y función del cuerpo humano.** Editorial Mosby.

### ON-LINE RESOURCES

- <https://www.free-anatomy-quiz.com/es/>
- <http://www.innerbody.com/htm/body.html>
- <https://webanatomy.umn.edu/>
- <http://www.getbodysmart.com/index.htm>
- <https://bcs.wiley.com/he-bcs/Books?action=index&bcsId=1026&itemId=0471366927>
- <http://www.bartleby.com/107/>
- <http://www.meddean.luc.edu/lumen/meded/grossanatomy/dissector/mml/index.htm> MUSCLES
- [http://www.meddean.luc.edu/lumen/MedEd/GrossAnatomy/learnem/bones/main\\_bone.htm](http://www.meddean.luc.edu/lumen/MedEd/GrossAnatomy/learnem/bones/main_bone.htm)

### BONES

- <http://www.iqb.es/cbasicas/anatomia/musculos/musculos1.htm> BONES IN SPANISH
- <http://www.ugr.es/~dlcruz/index.htm> IN SPANISH
- <http://www9.biostr.washington.edu/da.html>
- <http://www.youtube.com/user/leonardocoscarelli>: PROFESOR LEONARDO COSCARELLI