Information about the subject

Degree: Bachelor of Science Degree in Dentistry

Faculty: Faculty of Medicine and Health Sciences

Code: 481106 **Name:** Histology

Credits: 6,00 **ECTS Year:** 1 **Semester:** 2

Module: Module 1: Relevant Basic Biomedical Sciences in Dentistry

Subject Matter: Biology **Type:** Basic Formation

Field of knowledge: Health sciences

Department: -

Type of learning: Classroom-based learning

Languages in which it is taught: English, Spanish

Lecturer/-s:

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Module organization

Module 1: Relevant Basic Biomedical Sciences in Dentistry

Subject Matter	ECTS	Subject	ECTS	Year/semester
HUMAN ANATOMY	12,00	Embryology and General Anatomy I	6,00	1/1
		General Anatomy II and Oral Anatomy	6,00	1/2
Biology	18,00	Biology	6,00	1/1
		Histology	6,00	1/2
		Microbiology	6,00	1/2
Physiology	6,00	Human and Oral Physiology	6,00	1/2
Biochemistry	6,00	Biochemistry	6,00	1/1
MODERN LANGUAGE	12,00	Modern Language: English	6,00	2/2
		Modern language: Spanish	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 Distinguishes the different levels of organization of living beings.

R2 Knows how to distinguish the different types of tissues.

R3 Identifies cellular structures and organelles.

R4 Interprets results obtained in the practices.

R5 The student is able to prepare documents on cell and tissue biology and work in teams.

R6 Looks for information in bibliographic sources, and knows how to analyze them.

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):

GENERAL	Weighting			
	1	2	3	4
CG1 I aCapacity for analysis and synthesis				x
CG2 I bOrganizational and planning skills				x
CG12 FInterpersonal skills	x			
CG22 SInitiative and entrepreneurship	x			
CG3 I cOral and written communication in the native language		x		
CG23 SMotivation for quality		x		
CG4 I dKnowledge of a foreign language		x		
CG14 FCritical Reasoning				x
CG24 SSensitivity to environmental issues	x			
CG5 I eComputer skills related to the field of study				x
CG6 I f Information management capacity		x		
CG16 SAutonomous learning				x
CG7 I gProblem solving				x
CG17 SAdaptation to new situations			x	
CG8 I hDecision making			x	

CG9 P iTeamwork		x		
CG19 SLeadership		x		

SPECIFIC	Weighting			
	1	2	3	4
CE A 1 Know the essential elements of the dental profession, including ethical principles and legal responsibilities.				x
CE A 2 Understand the importance of such principles for the benefit of the patient, society and the profession, with special attention to professional secrecy.	x			
CE A 3 Identify the patient's concerns and expectations, as well as to communicate effectively and clearly, both orally and in writing, with patients, relatives, the media and other professionals.	x			
CE A 4 Understand and recognize the social and psychological aspects relevant to the treatment of patients.	x			
CE A 5 Know how to apply the principles of anxiety and stress management to oneself, to patients and to other members of the dental team.	x			
CE A 6 Understand the importance of developing a professional practice with respect to patient autonomy, beliefs and culture.	x			
CE A 7 Promote autonomous learning of new knowledge and techniques, as well as motivation for quality.				x
CE A 8 Know how to share information with other health professionals and to work as a team.				x
CE A 9 Understand the importance of maintaining and using records with patient information for subsequent analysis, preserving the confidentiality of the data.		x		
CE A 10 Know and identify the psychological and physical problems derived from gender violence in order to train students in the prevention, early detection, assistance, and rehabilitation of the victims of this form of violence.	x			
CE B 1 Understand the basic biomedical sciences on which dentistry is based to ensure proper oral care.				x

CE B 12	Understand and recognize the normal structure and function of the stomatognathic system, at the molecular, cellular, tissue and organic level, in the different stages of life.				x
CE B 13	Understand and recognize the science of biomaterials essential for dental practice as well as the immediate management of possible allergies to them.			x	
CE B 14	Know about general disease processes, including infection, inflammation, immune system disorders, degeneration, neoplasm, metabolic disorders and genetic disorders.		x		
CE B 15	Be familiar with the general pathological features of diseases and disorders affecting organ systems, specifically those with oral impact.		x		
CE B 16	Understand the fundamentals of action, indications and efficacy of drugs and other therapeutic interventions, knowing their contraindications, interactions, systemic effects and interactions on other organs, based on available scientific evidence.	x			
CE B 17	Understand and recognize the principles of ergonomics and safety at work (including control of cross-infection, radiation protection and occupational and biological diseases).	x			
CE B 18	Know, critically evaluate and know how to use clinical and biomedical information sources to obtain, organize, interpret and communicate scientific and health information.		x		
CE B 19	Know the scientific method and have the critical capacity to value the established knowledge and the new information. Be able to formulate hypotheses, collect and critically evaluate information for the resolution of problems, following the scientific method.			x	

TRANSVERSAL		Weighting			
		1	2	3	4
1. a.	Analysis and synthesis skills				x
1. b.	Organizational and planning capacity			x	
1. c.	Oral and written communication in the native language.		x		
1. d.	Knowledge of a foreign language		x		

1. e.	Computer skills			x	
1. f.	Information management capacity		x		
1. g.	Problem solving				x
1. h.	Decision making		x		
2. i.	Teamwork		x		
2. j.	Multidisciplinary teamwork		x		
2. k.	Work in an international context	x			
2. l.	Interpersonal skills		x		
2. m.	Recognition of diversity and multiculturalism	x			
2. n.	Critical Reasoning				x
2. o.	Ethical commitment		x		
3. p.	Autonomous learning				x
3. q.	Adaptation to new situations			x	
3. r.	Creativity		x		
3. s.	Leadership		x		
3. t.	Knowledge of other cultures and customs	x			
3. u.	Initiative and entrepreneurship	x			
3. v.	Motivation for quality			x	
3. w.	Sensitivity to environmental and socio-health issues	x			

Assessment system for the acquisition of competencies and grading system

Assessed learning outcomes	Granted percentage	Assessment method
	0,00%	OPEN QUESTIONS: Written exam in which basic theory knowledge and the ability to relate, integrate and coherently express it in writing is assessed.
	70,00%	MULTIPLE CHOICE TEST: Multiple choice test with one correct answer. This shows to greater extent the contents acquired by the student.
	0,00%	ORAL TEST: Oral exam in which the student answers the questions the teacher asks, verbally explaining the contents acquired, allowing for interaction with the teacher.
	5,00%	PRESENTATION: The student develops by means of an oral presentation, supported with audio-visual materials, a theme or topic given by the teacher. At the end of the presentation, the teacher or audience may ask questions.
	20,00%	PRACTICAL: Written test in which the student is asked to solve practical exercises, clinical cases or problems about the contents of different subjects.
	0,00%	ASSIGNMENTS: The student, ether individually or in a group, develops a theme which reviews or researches, and he/she presents it, in writing, for assessment by the teacher.
	5,00%	CLASS PARTICIPATION: The teacher assesses the participation, involvement and progress the student makes in acquiring knowledge and skills in theory and practical classes and seminars. This is never more than 5% of the final grade.

0,00%	PRACTICAL EXAM: The student carries out a test in which he/she must show by means of practical application the acquisition of certain knowledge. For example, histological or anatomopathological diagnoses, interpretation of images or diagnostic tests.

Observations

REQUIREMENTS TO PASS

The final average grade is only applied if a grade equal to or greater than 5.00 is obtained in each of the elements of the Assessment Method: to pass the subject it is essential that the **grade of each element of the Assessment Method is equal to or greater than 5.00**.

If one of the elements of the Assessment Method is failed (grade < 5.00), the final grade will be a maximum of 4.5, regardless of the weighted average that the student has.

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.

DEVELOPMENT OF THE SUBJECT IN SECOND AND SUBSEQUENT REGISTRATIONS

There will be a specific group for students who are not of first registration if they exceed the occupancy limit of the classroom and a teacher in charge of that group. The teacher in charge of this group held 6 sessions of monitoring and mentoring for 2 hours each. The powers to acquire the skills and abilities of the course will take place across all practices scheduled for the course. Each session will run the course so as to strengthen the job skills that every student needs to pass the course. The evaluation of content and skills in the examination will be held fixed in the official calendar for this subject.

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Learning activities

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

M1 Lecture.
Problem Solving.
Explanation of contents by the teacher.
Explanation of knowledge and skills.

M2 Practical basic sciences laboratory sessions, practical simulation laboratory sessions, virtual hospital and dissecting room.

M10 Carrying out bibliographic reviews and practical work experience dissertations.

M13 Personal preparation of written texts, essays, problem solving, seminars.

M15 Personalised Attention. Period of instruction and/or guidance carried out by a tutor with the aim of analysing with the student his/her work, activities and evolution in learning of subjects.

IN-CLASS LEARNING ACTIVITIES

	LEARNING OUTCOMES	HOURS	ECTS
THEORY CLASS M1	R1, R2, R3, R5, R6	42,50	1,70
SEMINAR M10, M13	R2, R3, R5, R6	3,00	0,12
TUTORING M15	R3, R4, R5, R6	1,00	0,04
EVALUATION M1, M2, M10, M13, M15	R1, R2, R3, R4	1,00	0,04
PRACTICAL CLASS M2	R1, R2, R3, R4	12,50	0,50
TOTAL		**60,00**	**2,40**

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
INDIVIDUAL WORK M1, M13, M15	R1, R2, R3, R6	75,00	3,00
GROUP WORK M2, M10	R1, R2, R3, R4, R5, R6	15,00	0,60
TOTAL		**90,00**	**3,60**

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
GENERAL HISTOLOGY: BASIC TISSUES	- DIDACTIC UNIT I: INTRODUCTION. CONCEPT OF HISTOLOGY. HISTORICAL EVOLUTION. STUDY ON HISTOLOGY TECHNIQUES. - DIDACTIC UNIT II: EPITHELIAL TISSUE. SPECIALIZATIONS OF EPITHELIAL CELLS. LINING EPITHELIA. GLANDULAR EPITHELIA. EXOCRINE AND ENDOCRINE GLANDS. - DIDACTIC UNIT III: CONNECTIVE TISSUE. CELLS. FIBERS. EXTRACELLULAR MATRIX. BASEMENT MEMBRANE. VARIETIES OF CONNECTIVE TISSUE. - DIDACTIC UNIT IV: SKELETAL TISSUES. CARTILAGINOUS TISSUE: CELLS, EXTRACELLULAR MATRIX AND TYPES. BONE TISSUE: CELLS AND MATRIX. OSSIFICATION. REMODELING. - DIDACTIC UNIT V: DIDACTICS : BLOOD. HEMATOPOIESIS. ERYTHROCYTES, LEUKOCYTES, LYMPHOCYTES. - DIDACTIC UNIT VI: NERVOUS TISSUE: NEURON SYNAPSES. GLIA. NERVE FIBER. - DIDACTIC UNIT VII: PERIPHERAL NERVOUS TISSUE. - DIDACTIC UNIT VIII: STRIATED MUSCLE TISSUE. CARDIAC TISSUE. SMOOTH TISSUE MUSCLE.

GENERAL HISTOLOGY: ORGANS AND SYSTEMS	- DIDACTIC UNIT IX: DIGESTIVE SYSTEM. ESOPHAGUS, STOMACH, SMALL AND LARGE INTESTINE, LIVER AND PANCREAS. - DIDACTIC UNIT X: RESPIRATORY SYSTEM. NASAL FOSSAE, LARYNX, TRACHEA, LUNG. - DIDACTIC UNIT XI: GENITOURINARY SYSTEM. KIDNEY AND PATHWAYS. REPRODUCTIVE SYSTEM: MASCULINE AND FEMININE - DIDACTIC UNIT XII: CIRCULATORY SYSTEM. - DIDACTIC UNIT XIII: LYMPHATIC SYSTEM. MUCOSA-ASSOCIATED LYMPHOID TISSUE. BONE MARROW, SPLEEN, LYMPHATIC GANGLION. - DIDACTIC UNIT XIV: INTEGUMENTARY SYSTEM. SKIN AND MAMARY GLAND.
ORAL HISTOLOGY	- DIDACTIC UNIT XV: ODONTOGENESIS. PHASES DIDACTIC. - UNIT XVI: ENAMEL. PHYSICAL PROPERTIES. HISTOLOGICAL STRUCTURE. - DIDACTIC UNIT XVII: DENTIN. PHYSICAL PROPERTIES. HISTOLOGICAL STRUCTURE. TYPES OF DENTIN. - DIDACTIC UNIT XVIII: DENTAL PULP AND CEMENTUM. FORMATION OF THE DENTINO-PULP COMPLEX AND CEMENTOGENESIS. - DIDACTIC UNIT XIX: PERIODONTUM. PERIODONTAL LIGAMENT. GROUPS. REMODELING. VASCULARIZATION AND INNERVATION. - DIDACTIC UNIT XX: ALVEOLAR BONE AND OSTEOGENESIS TEMPOROMANDIBULAR JOINT. - DIDACTIC UNIT XXI: EXTERNAL TEETH STRUCTURE. - DIDACTIC UNIT XXII: DENTAL ERUPTION. ATTRITION AND DENTAL REPLACEMENT. - DIDACTIC UNIT XXIII: DIFFERENCES BETWEEN PERMANENT AND DECIDUOUS TEETH. - DIDACTIC UNIT XXIV: ORAL MUCOSA, TONSILS AND PARANASAL SINUSES. - DIDACTIC UNIT XXV: SALIVARY GLANDS.

Temporary organization of learning:

Block of content	Number of sessions	Hours
GENERAL HISTOLOGY: BASIC TISSUES	8,00	16,00
GENERAL HISTOLOGY: ORGANS AND SYSTEMS	10,00	20,00
ORAL HISTOLOGY	12,00	24,00

References

GENERAL HISTOLOGY

Gartner LP, Basic Histology. Editorial Elsevier Stevens A, Histología humana (6ª ed). Editorial Mosby. Young B, Weather´s histología (4ª ed). Editorial Elsevier. Kierszenbaumy tres. Histología y biología celular . 4 edición. Elsevier saunder, 2016.

WebPath® 2019 (The Internet Pathology Laboratory for Medical Education Hosted By The University of Utah Eccles Health Sciences Library) hpps://webpath.med.utah.edu/HISTHTML/NORMAL/NORMAL.html

Ross, Wojciech Pawlina, and Todd. Atlas of Descriptive Histology. Michael H. Ross, Wojciech Pawlina, and Todd A. Barnash. 2009.

Junqueira's Basic Histology: Text and Atlas. Anthony Mescher. Thirteenth Edition. 2013.

ORAL HISTOLOGY

Avery JK, Histología y embriología bucal (3ª ed). Editorial Mosby.

Ten Cate's Oral Histology, Development, structure and function. Nanci, Elsevier. Illustrated Dental Embryology, Histology, and Anatomy, Bath-Balogh, Fehrenbach, Elsevier, 2011