Information about the subject

Degree: Bachelor of Science Degree in Dentistry

Faculty: Faculty of Medicine and Health Sciences

Code: 480207 **Name:** Oral Radiology

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

Module: Module 2: Introduction to Dentistry

Subject Matter: INTRODUCTION TO DENTISTRY **Type:** Compulsory

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 2: Introduction to Dentistry

Subject Matter	ECTS	Subject	ECTS	Year/semester
PSYCHOLOGY	6,00	Psychology	6,00	2/2
STATISTICS	6,00	Epidemiology and Statistics	6,00	1/2
INTRODUCTION TO DENTISTRY	42,00	Communication skills	6,00	1/1
		Dental Equipment, Materials and Instrumentation	6,00	2/2
		Imaging techniques and dental photography	6,00	3/2
		Introduction to Dentistry	6,00	1/1
		Oral Radiology	6,00	2/1
		Planning and Management of the dental clinic	6,00	3/2
		Preventive and Community Dentistry	6,00	3/1

Recommended knowledge

An adequate knowledge of the normal anatomy of the head and neck is recommended, which allows the student to identify the normal radiology of these structures, as well as the radiology representation of oral pathologies, in order to be able to interpret the different images and suggest the ideal technique based on the suspected pathology.

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	Knows the anatomical oral-facial structures and their function.
R2	Knows basic fundamental concepts of dental pathology
R3	Knows how to complete a full dental history.
R4	Learns to recognize the different types of dental products on the market and their indications.
R5	Shows the necessary skills to take oral samples.
R6	Knows the anatomical structures of the mouth.
R7	Recognizes different types of dental treatment performed on a patient.
R8	The student is able to make an oral diagnosis on a patient under supervision.
R9	Knows the different types of radiological techniques applicable to dentistry , differentiating them from each other.
R10	Knows the origin of the different radiology techniques X-ray Ultrasound and MRI.
R11	Distinguishes the anatomy of the oral cavity in each of the radiological techniques used in dentistry (radiological anatomy).
R12	Knows the different projections and dental radiological techniques in conventional radiology, as well as their application according to age.
R13	Knows of the image of non-tumoral lesions in the different radiological techniques.
R14	Knows the image of tumoral lesions in the different radiological techniques.
R15	Knows the alterations produced by cavities in the teeth and their radiological evaluation.

R16	Familiarizes with the layout and characteristics of radiodiagnostic systems in the workplace, as well as their location according to the characteristics of the site.
R17	Learns how to use the different radiological diagnostic systems, as well as the choice of the most appropriate one according to the pathology to be assessed.
R18	Learns the placement of the plates in oral and extra oral projections according to the type of technique used, as well as the arrangement of the tube in the performance of each projection.
R19	Learns the use of digital image capture systems without the use of plates and how to store, reproduce and visualize the results.
R20	Shows manual and automatic plate development.
R21	Knows the methods of radiological protection of both the patient and the professional against ionising radiation in daily practice.
R22	Masters the basic and specific software of digital imaging.
R23	Knows the scientific principles of sterilization, disinfection and antisepsis necessary to prevent cross infection in dental practice.

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	

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 11	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	
CE E 29	Recognize the determinants of oral health in the population, both genetic and lifestyle-dependent, demographic, environmental, social, economic, psychological and cultural.			x	

CE E 3(	Recognise the role of the dentist in actions to prevent and protect against oral diseases, as well as in the maintenance and promotion of health, both at individual and community level.				x
CE E 3'	Know the National Health System, as well as the basic aspects of health legislation, clinical management and proper use of health resources, understanding the importance of the role of the dentist in the field of Primary Health Care.		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
	10,00%	OPEN QUESTIONS: Written exam in which basic theory knowledge and the ability to relate, integrate and coherently express it in writing is assessed.
R1, R9, R10, R12, R13, R14, R15, R17, R21, R22, R23	40,00%	MULTIPLE CHOICE TEST: Multiple choice test with one correct answer. This shows to greater extent the contents acquired by the student.
R3, R5, R6, R7, R8, R9, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23	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.
R8	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.
R5	0,00%	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.
R6, R8, R9, R10, R11, R12, R15	30,00%	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

The subject will consist of 12 hours of preclinical practice, which will be developed in the classroom, simulation laboratory or dental clinic as indicated by the responsible teaching staff and 12 hours of seminars. These 24 hours will be divided into 12 2-hour sessions that will take place from 8:00 a.m. to 10:00 a.m.:

·Attendance is required at 90% of the practices, with which a single absence is allowed and always justified. The justifications will be governed by the same reasons that are established in the Regulations and statutes of the UCV that justify a change of official exam date and provided that it is communicated 7 days in advance or within 15 days of the absence.

·In the event of having a justified absence, the student may attend the first and second exam session provided that they carry out the pertinent recovery work in the time and manner set by the responsible teacher.

·In case of having two justified absences, the student will lose the option to attend the first call*, leaving only the second call as the only option to pass the subject, as long as they carry out the make-up work ordered by the responsible teacher.

·In case of having an UNjustified absence, the student will lose the option to attend the first call, leaving only the second call as the only option to pass the subject, as long as they carry out the recovery work ordered by the responsible teacher.

It is required to obtain a 6 in the practices to be able to do average with the rest of the evaluation systems.In order to evaluate the practices and seminars, a task will be opened on the platform that the student must deliver in a timely manner and fill in the practice notebook. Not adjusting to the format and/or times will mean a 0 in said practice.The theoretical exam will consist of open questions and a test type: it is required to obtain a 5 in the theoretical exam as a whole to be able to mediate with the rest of the evaluation systems.

The practical exam will take place the same day as the theoretical exam and it is required to obtain a 5 in the practical exam as a whole to be able to mediate with the rest of the evaluation systems.

In case of failing one of the parts of the exam in the 1st call (practical or theoretical), the note will be saved for the second call, of the same academic year, provided that a 5 has been obtained in the approved part and more than a 3.5 in the suspended part.

Group S:

The marks of the approved exams are not saved for the calls of other academic courses.The mark of the set of practices will be saved for future courses provided that the 12 hours of practices and 12 hours of seminars have been completed and have been approved with more than a 6.*Not appearing for a call refers to both theoretical and practical exams.

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 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.

M3 Problem and case solving.
Social action activities.

M5 Problem and case solving. Written tasks.
Online activity on the e-learning platform.
Personal study.
Compiling information and documentation.

M8 Oral presentations by students.

M9 Group work: group work sessions supervised by the teacher.
Knowledge building through interaction and activity of students.

M10 Carrying out bibliographic reviews and practical work experience dissertations.

M12 Seminars, supervised monographic classes with shared participation.

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, R6, R9, R10, R11, R12, R13, R14, R15	22,00	0,88
SEMINAR M5	R6, R7, R9, R10, R11, R12, R13, R14, R15, R19, R22, R23	12,00	0,48
TUTORING M3	R1, R9	2,00	0,08
EVALUATION M3	R1, R2, R4, R5, R6, R7, R8, R9, R10, R11, R12, R13, R14, R15, R17, R22, R23	2,00	0,08
PRACTICAL CLASS M1, M2, M5, M9, M15	R1, R5, R6, R10, R11, R12, R13, R14, R15, R16, R17, R18, R19, R20, R21, R22	12,00	0,48
TOTAL		**50,00**	**2,00**

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
INDIVIDUAL WORK M5	R1, R5, R7, R9, R10, R11, R17, R18	70,00	2,80
GROUP WORK M3	R2, R8, R9, R10, R12	30,00	1,20
TOTAL		**100,00**	**4,00**

Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
BLOCK I: Physics for radiology.	1.Presentation of the subject 2.Ionizing radiation and basic principles of X-ray generation
BLOCK II: Image	1.dental X-ray device 2.Image receptors 3.Biological effects of ionizing radiation 4.Safety and protection in radiology: patient and operator 5.Film processing 6.Intraoral technique: parallelism method 7.Accessory radiographic techniques: bisector technique and projections 8.Panoramic x-ray 9.Extraoral techniques 10.3D image 11.Quality assurance and control
BLOCK III: Interpretation of the image	1.Principles of interpretation 2.Dental caries 3.Pulp and periapical lesions 4.Periodontal disease 5.Tooth development disorders 6.cysts 7.Benign tumors and neoplasms 8.Trauma 9.Craniofacial anamlias 10.TMJ abnormalities 11.Soft tissue calcifications and ossifications 12.Salivary gland diseases

Temporary organization of learning:

Block of content	Number of sessions	Hours
BLOCK I: Physics for radiology.	1,00	2,00
BLOCK II: Image	12,00	24,00
BLOCK III: Interpretation of the image	12,00	24,00

References

·Emanuele Ambu, Roberto Ghiretti y Riccardo Loziosi. 2014. 3D dariology in dentistry: diagnosis, planification and follow up. Amolca Editorial.

·Eric Whaites and Nicholas Drage. 2021. Fundaments of dental radiology. 6th edition. Elselvier Editorial.

·Herbert H. Frommer y Jeanine J Stabulas-Savage. 2011. Radiología dental. El Manual Moderno Editorial.

·Graber TM, Vanarsdall RL, Vig KWL. 2006. Orthodontics: current principles and techniques. 4th edition. Elsevier Mosby Editorial.

·Joen Iannucci and Laura Jansen Howerton. 2011. Dental Radiography. 4th edition. Saunders Editorial.

·Sanjay M. Mallya y Ernest W.N. Lam. 2019. Oral radiology: principles and interpretation. 8th edition. Editorial Elselvier.

·William Herring. 2020. Basic radiology. 4th edition. Elselvier Editorial.

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:

[X] Microsoft Teams

[X] 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:

X	Microsoft Teams
X	Kaltura

Explanation about the practical sessions:

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

ONSITE WORK

Regarding the Assessment Tools:

[X] 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: