



Information about the subject

Degree: Bachelor of Science Degree in Dentistry

Faculty: Faculty of Medicine and Health Sciences

Code: 480203 **Name:** Dental Equipment, Materials and Instrumentation

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

Module: Module 2: Introduction to Dentistry

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

Field of knowledge: Health Sciences

Department: Dentistry

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

First year of grade in Dentistry



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 Adequately interprets both the verbal and non-verbal content of a message. Captures the signs provided by the patient's eyes, gestures and tone of voice and assess their emotional state and the coherence with the verbal message they convey.
- R2 Identifies the model of attention that the patient needs. Through the interview, the student is able to guide the case and offer the patient the most appropriate response to the perceived needs.
- R3 The student systematizes the different phases of a clinical interview . Knows how to distribute the time of the interview in the different phases: presentation, exploratory, resolution and social applying them to the interviews carried out in the practice.
- R4 Knows the ethical implications derived from the clinical interview. Demonstrates knowledge of the degree of commitment that professional secrecy entails
- R5 The student is able to cope with difficult situations and to communicate bad news. Demonstrates ability to handle interviews with aggressive patients. The student is able to resolve interviews with hyperdemanding patients.
- R6 Knows how to present oneself correctly introducing him/herself to the patient as an introduction to the interview.
- R7 Maintains proper eye contact during the interview.
- R8 Creates a suitable environment in the interview and offers the patient the most favourable environment so that they can communicate what they want: no interruptions, having the necessary time.
- R9 Allows the patient to express him/herself. Lets the patient speak (free narrative phase)
- R10 Knows how to use techniques to empty the information. Asks appropriate questions (targeted narrative phase) to obtain all relevant information. Clearly narrows down the reason for consultation.
- R11 Knows how to be empathetic and makes the patient feel that his/her problems are understood.
- R12 Knows how to be assertive and demonstrates a firm position based on knowledge, experience and beliefs, respecting the decisions and beliefs of the patient.



- R13 Knows how to explore resistance and also investigates the difficulties the patient feels and possible disagreements with the situation posed.
- R14 Knows how to develop the negotiation phase and is able to exchange opinions, redirect ideas and reach an agreement with the patient.
- R15 Knows how to motivate and to introduce the interview aimed at motivating change in its different phases.
- R16 Explores the patient's understanding and ensures that the patient has understood the agreed measures before leaving.
- R17 Establishes safety net. Also warns patients of possible unfavourable developments and makes him/herself available if necessary.
- R18 The student says goodbye properly and greets politely at the end of the interview.
- R19 Knows how to complete a full dental history.
- R20 Knows the evolution of dentistry along history.
- R21 Learns to recognize the different types of dental products on the market and their indications.
- R22 Shows the necessary skills to take oral samples.
- R23 Recognizes different types of dental treatment performed on a patient.
- R24 Works in an ergonomic position in the dental chair.
- R25 The student is able to make an oral diagnosis on a patient under supervision.
- R26 Familiarizes with the material used, as well as in the its use during treatment.
- R27 The student is able to work as a team.
- R28 The student is able to transmit knowledge orally, clearly and accurately.
- R29 Applies the appropriate photographic technique to each of the different dental photographic modalities (intraoral, first visit, instrumental).



- R30 Knows the scientific principles of sterilization, disinfection and antisepsis necessary to prevent cross infection in dental practice.
- R31 Identifies the etiological and risk factors of oral diseases.
- R32 Knows the procedures to diagnose oral health in the community and knows how to interpret the results.
- R33 Applies the principles of ergonomics in dental work, both at an individual level and within the work team when appropriate, as well as the principles of prevention of occupational risks associated with dental practice.
- R34 Proves knowledge about ergonomics in dentistry.
- R35 Knows the instruments and dental equipment, their maintenance and handling.
- R36 Studies the different dental materials and learns how to handle them.
- R37 Proves knowledge about ergonomics in Dentistry.
- R38 Knows the odontological instruments and equipment, their maintenance and handling.
- R39 Studies the different odontological materials and learns how to handle 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 aCapacity for analysis and synthesis			X	
CG2 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 20 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
R34, R35, R36, R37, R38, R39	60,00%	MULTIPLE CHOICE TEST: Multiple choice test with one correct answer. This shows to greater extent the contents acquired by the student.
R20, R21	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.
	0,00%	PRACTICAL: Written test in which the student is asked to solve practical exercises, clinical cases or problems about the contents of different subjects.
R27, R28	10,00%	ASSIGNMENTS: The student, either 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.
R21, R22, R24	20,00%	SIMULATIONS, OSCES: Through simulations, real-life situations are reproduced in standardised conditions, which enable the teacher to analyse the clinical skills of the student in specific situations. Computer simulations or standardised simulated illnesses are used. The test known as OSCE (Objective Structured Clinical Examination) may also be used. The OSCE consists of students going around a circuit of sequential stops where they are asked to carry out a variety of different skills and techniques.



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

Its mandatory to follow UCV Rules in the lab practices as in the UCV clinics. Its mandatory to follow the correct dress code (UCV scrubs, sanitary shoes, and clinical cap). If any of these rules are not followed, the student may be asked to leave that practical.

To pass the assignament, the student must have a passing grade in the final exam. The student must have at least 4 points in each of the exams in order to have a passing average grade. If this is not obtained, the student will suspend.

The final exam consists of 60 multiple choice questions with 1 correct answer out of 5. Every 4 incorrect or not responded answers will subtract 1 correct answer.

The practica exam consists of 10 multiple choice questions. 1 correct answer out of 4. Not negatively marked.

Practical labs will take place every friday morning. There will be a total of 14 lab practices.

Practical lab attendance is 100% mandatory. The maximum number of justified lab attendance that the student can miss will be 2. Failures can only be justified, with the same reasons as the UCV statutes for changing the exam date. If they exceed the maximum number of justified absences allowed, they must take the exam directly in 2nd call up to a maximum of 3.

If they exceed the limit of the 2nd call or are not justified, they will have to present the entire subject again next year. In case of repeting the theory, the pactice grade may be saved, if the lab grade is at least 6 points.

MENTION OF DISTINCTION:

According to article 22 of the Regulations for Evaluation and Qualification of UCV Majors, the "Distinction of Honor" mention may be awarded by the professor responsible for the major to students who have obtained, at least, a grade of 9 out of 10 ("Outstanding"). 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 less than 20, in which case only one may be awarded. Distinction of Honor". award-winning.



MENTION OF DISTINCTION:

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 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	R3, R4, R5, R6, R10, R14, R15, R16, R17, R18, R19, R20, R21, R22, R23, R24, R25, R26, R27, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38	100,00	4,00
TUTORING M1	R3	10,00	0,40
EVALUATION M15	R24, R26, R28, R33	10,00	0,40
PRACTICAL CLASS M15	R21, R22, R23, R24, R26	20,00	0,80
TOTAL		140,00	5,60

LEARNING ACTIVITIES OF AUTONOMOUS WORK

	LEARNING OUTCOMES	HOURS	ECTS
INDIVIDUAL WORK M2	R2	5,00	0,20
GROUP WORK M5, M8	R20	5,00	0,20
TOTAL		10,00	0,40



Description of the contents

Description of the necessary contents to acquire the learning outcomes.

Theoretical contents:

Content block	Contents
INTRODUCTION	Material generalities
ERGONOMICS	Ergonomics in dental surgery
DENTAL IMPRESSION MATERIALS	Generalities. Hidrocolloids. Elastomers.
PLASTERS AND CAST MODELS	Classification and uses in dentistry. Properties.
ADHERENCE	General principles of adherence. Sealing materials
METAL RESTORATIVE MATERIALS	Restorative materials. Retention principles.
RESTORATIVE DENTISTRY	Temporary restorations
Dental Ceramics	Classification
DENTAL CEMENTS	Generalities. Dental cements and adhesives. Temporary and fixed cements.
Principles of adhesion	Material generalities. Uses
Dental Bonding Glass Ionomers	Material generalities and uses
Instrumentation	Manual instrumentation. Rotary instruments. Instrumentation in conservative dentistry.
Direct restorations	Resins. Types of composites. Indications.
Indirect restorations	Composites for indirect restorations and other materials.



Universidad
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San Vicente Mártir

Course guide

Year 2024/2025

480203 - Dental Equipment, Materials and Instrumentation





Temporary organization of learning:

Block of content	Number of sessions	Hours
INTRODUCTION	7,00	14,00
ERGONOMICS	7,00	14,00
DENTAL IMPRESSION MATERIALS	3,00	6,00
PLASTERS AND CAST MODELS	10,00	20,00
ADHERENCE	7,00	14,00
METAL RESTORATIVE MATERIALS	1,00	2,00
RESTORATIVE DENTISTRY	10,00	20,00
Dental Ceramics	10,00	20,00
DENTAL CEMENTS	1,00	2,00
Principles of adhesion	10,00	20,00
Dental Bonding Glass Ionomers	1,00	2,00
Instrumentation	1,00	2,00
Direct restorations	1,00	2,00
Indirect restorations	1,00	2,00



References

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