



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	Dental Equipment, Materials and Instrumentation	6,00	2/2
		Imaging techniques and dental photography	6,00	3/2
		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 dentistry completed.



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 Works in an ergonomic position in the dental chair.
- R24 The student is able to make an oral diagnosis on a patient under supervision.
- R25 Familiarizes with the material used, as well as in the its use during treatment.
- R26 Transmits information about what is to be done to the patient, relieving the patient from anxiety when tests are made.
- R27 The student is able to work as a team.
- R28 The student is able to transmit knowledge orally, clearly and accurately.
- R29 The student is able to develop a public presentation of a research work.



- 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 methods of prevention and control of oral diseases.
- R33 Knows the procedures to diagnose oral health in the community and knows how to interpret the results.
- R34 Knows and is capable of transmitting the importance of oral health for the maintenance of general health.
- R35 The student is trained in the design and management of individual and community health education techniques.
- R36 Knows how to use infection control procedures in dentistry.
- R37 Knows how to use procedures and tests necessary to identify the risk of the most prevalent oral diseases.
- R38 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.
- R39 Knows how to educate and motivate patients in the prevention of oral and dental diseases, controls pathogenic oral habits, instructs them on proper oral hygiene, on dietary and nutritional measures and, in short, on all methods of maintaining oral health.
- R40 Proves knowledge about ergonomics in dentistry.
- R41 Knows the instruments and dental equipment, their maintenance and handling.
- R42 Studies the different dental materials and learns how to handle them.
- R43 Proves knowledge about ergonomics in Dentistry.
- R44 Knows the odontological instruments and equipment, their maintenance and handling.
- R45 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 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



Year 2025/2026

480203 - Dental Equipment, Materials and Instrumentation

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



Course guide

Year 2025/2026**480203 - Dental Equipment, Materials and Instrumentation**

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
	60,00%	MULTIPLE CHOICE TEST: Multiple choice test with one correct answer. This shows to greater extent the contents acquired by the student.
	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.
	10,00%	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.
	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

Students are required to comply with the regulations of the UCV clinics regarding: clothing (UCV scrubs, medical footwear, and surgical cap), maintenance of the facilities, and behavior. Failure to comply will result in a penalty or expulsion from the lab practical.

To pass the subject with the final grade, students must obtain a score of 5 on the exam.

IMPORTANT: STUDENTS MUST OBTAIN A 5 IN EACH SECTION OF THE FINAL GRADE BREAKDOWN TO FORM AN AVERAGE. THEREFORE, IF THE STUDENT OBTAINS LESS THAN THAT SCORE IN ONE OF THESE SECTIONS, THEY WILL NOT OBTAIN AN AVERAGE WITH THE REST OF THE TESTS AND WILL BE FAILED. THE EXAM CONSISTS OF: 50 MULTIPLE-CHOICE QUESTIONS WITH 1 CORRECT ANSWER OUT OF 5. FOR EVERY 4 UNANSWERED OR INCORRECT QUESTIONS, 1 CORRECT QUESTION WILL BE DEDUCTED.

PRACTICAL ASSISTANCE IN THE LABORATORY: PRACTICAL WORK WILL BE HELD EVERY FRIDAY MORNING. THE NUMBER OF PRACTICAL LABS WILL BE 14. PRACTICAL LAB ATTENDANCE IS 100% MANDATORY. THE MAXIMUM NUMBER OF JUSTIFIED PRACTICAL LABS THAT A STUDENT MAY MISS IS 2. ABSENCES CAN ONLY BE JUSTIFIED, WITH THE SAME REASONS AS SET OUT IN THE UCV STATUTES FOR CHANGE OF EXAM DATE. If they exceed the maximum number of justified absences allowed, they must sit directly for the exam in the second sitting, up to a maximum of 3. If they exceed the limit for the second sitting or are not justified, they will have to retake the entire subject next year. If they repeat the subject, the grade for the practical exercises will be kept (without the need to retake them), as long as the grade is higher than 6.

Evaluation of the laboratory practical exercises: Each student will receive a grade for each of the 14 practical exercises through the UCV platform. THIS NOTE WILL BE THE EVALUATION OF WHAT WAS DONE IN THE LABORATORY PRACTICE. IN ADDITION, IT WILL BE REQUIRED TO UPLOAD A TASK TO THE PLATFORM, DESCRIBING AND ATTACHING PHOTOS OF EACH PRACTICE. FAILURE TO DELIVER THE TASK IN THE ESTABLISHED 24H TIME WILL RESULT IN 1 POINT BEING SUBTRACTED FROM THE LABORATORY PRACTICE GRADE FOR THAT DAY.

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, R28, R29, R30, R31, R32, R33, R34, R35, R36, R37, R38, R39	100,00	4,00
TUTORING M1	R3	10,00	0,40
EVALUATION M3, M5	R3, R4, R10, R24, R25, R26, R28, R30	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	R21	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
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.



Temporary organization of learning:

Block of content	Number of sessions	Hours
INTRODUCTION	7,00	14,00
DENTAL IMPRESSION MATERIALS	7,00	14,00
PLASTERS AND CAST MODELS	3,00	6,00
ADHERENCE	10,00	20,00
METAL RESTORATIVE MATERIALS	7,00	14,00
RESTORATIVE DENTISTRY	1,00	2,00
Dental Ceramics	10,00	20,00
DENTAL CEMENTS	10,00	20,00
Principles of adhesion	1,00	2,00
Dental Bonding Glass Ionomers	10,00	20,00
Instrumentation	2,00	4,00
Direct restorations	1,00	2,00
Indirect restorations	1,00	2,00



References

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- Llena MC. Instrumental e instrumentación en odontología conservadora y en endodoncia (cuadernos de clínica dental 2). Ediciones especializadas europeas 2009. II Cuadernos de Biomateriales Odontológicos.
- Isabel Camps Alemany. www.pasionporloslibros.es/biomateriales-odontologicos-2 Cova, JL. Biomateriales dentales. 2a ed. AMOLCA. 2010. Venezuela.
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- Powers J., Wataha J. Dental materials: foundations and applications. Ed Elsevier. 2017. Missouri.