1. BASIC INFORMATION

Course	Introduction to health clinics, instrumentation, equipment and ergonomics.
Degree program	Dentistry Degree
School	Faculty of Biomedical and Health Sciences
Year	First
ECTS	6 ECTS
Credit type	Compulsory
Language(s)	Spanish and English
Delivery mode	Campus base mode
Semester	2nd Semester
Academic year	2025-2026
Coordinating professor	María Jesús Escrivá Morant

2. PRESENTATION

Through the subject "Introduction to health clinics, instrumentation, equipment and ergonomics" the student will achieve to:

-Become familiar with the concepts of Instrumentation, Equipment and Ergonomics.

-Become familiar with the terminology used in the field of different areas of Dentistry, besides the area of dental biomaterials.

-Become familiar with the general behaviour of dental biomaterials, manual and rotary instruments for their manipulation.

-Know the risks in the dental office and the techniques for a proper disinfection and sterilization of the dental instruments.

-Know the specific dental equipment: basic dental unit, devices that are necessary for its operation, functional appliances and specific equipment.

-Know the different parts of a dental office and be able to design one.

-Know the general equipment that a dental office requires.

-Know and train in working positions, both instrumental manipulation, transfer and optimal working position for dental treatment.

-Know the diseases associated with the exercise of our profession and try to remedy them or know their treatment.

-Acquire knowledge related to research, literature research and structure of scientific papers.

Contextualizing competencies of the subject within the module and the degree.

Knowing the facilities required for the proper functioning of the profession, giving to the students enough information to know how to develop their work, both in relation to its development as a business where they can design their offices, distribute clinical and non-clinical areas, use dental equipment and the necessary equipment for diagnosis and dental treatment, as well as acquiring a degree of manual training both with manual and rotary instruments. The creation of a work habit around the dental equipment that, will allow the student avoiding future occupational diseases for themselves and also learn how not to harm the patient, creating barrier systems, disinfecting and sterilizing properly.

3. COMPETENCIES AND LEARNING OUTCOMES

Core competencies:

- BC1: Students should demonstrate to acquire knowledge and understanding in a field of study that comes from the basis of general secondary education, and is typically at a level which, although it is supported by advanced textbooks, includes some aspects involving knowledge of the forefront of their field of study.
- BC2: Students should apply their knowledge to their work or vocation in a professional manner and have competences typically demonstrated through devising and sustaining arguments and solving problems within their field of study.
- BC4: Students should communicate information, ideas, problems and solutions to both specialist and non-specialist audiences.
- BC5: Students should develop those skills needed to undertake further studies with a high degree of autonomy.
- GC1: Know the essential elements of the dentist profession, including ethical principles and legal responsabilities.
- GC13: Ability to understand and recognize the sciences of essential biomaterials for dental practice, as well as the immediate management of possible allergies to them.
- GC17: Ability to understand recognize the principles of ergonomics and safety at work (including cross-infection control, radiation protection and occupational and biological diseases).
- GC3: Ability to know how to identify the patient´s concerns and expectations, as well as

to communicate effectively and clearly, both orally and in writing, with patients, family members, the media and other professionals.

- GC7: Ability to promote autonomous learning of new knowledge and techniques as well as motivation for quality.
- GC8: Ability to know how to share information with other health professionals and work as a team.

Cross-curricular competencies:

- CC1: Responsibility: the student should be able to assume the consequences of the actions taken and accountable for their own actions.
- CC3: Awareness of ethical values: the student capacity should be able to feel, judge, argue and act according to moral values consistent, persistent and autonomously.
- CC7: Teamwork: students should be able to participate actively in achieving a common goal, listening, respecting and valuing the ideas and proposals of the other members of his team.
- CC9: Planning: the student should be able to effectively determine his goals and priorities defining the actions, deadlines, and optimal resources required to achieve these goals.
- CC10: Innovation-Creativity: the student should be able to devise new and different solutions to problems that add value to problems faced.

Specific competencies:

- CE11: To handle, discriminate and select the appropriate materials and instruments in dentistry.
- CE12: To know the dental biomaterials: their manipulation, properties, indications, allergies, bio-compatibility, toxicity, waste disposal and environmental impact.
- CE14: To know and use the basic equipment and instrumentation for dental practice.
- CE15: Apply the principles of ergonomics in dental work, both individually and within the work team when appropriate, as well as in the principles of prevention of occupational risks associated with dental practice.

Learning outcomes:

- LO1: Understand basic dental terminology.
- LO2: Apply most common dental nomenclature.

- LO3: Understand the importance of dental decay, as the dental disease which causes more dental loss.
- LO4: Understand the importance of periodontal desease, as the surrounding dental disease which causes more dental loss.
- LO5: Distinguish different types of treatment that aim to preserve teeth in their dental arches.
- LO6: Differentiate the most common dental equipments.
- LO7: Distinguish the most common dental instruments, both clinical and laboratory ones.
- LO8: Identify and prevent physical, chemical, biological and physic risks derived from the actions in dentistry.
- LO9: Understand and apply measures and means to prevent risks in the dental office.
- LO10: Understand the main principles and values derived from ergonomics applied to dentistry.
- LO11: Understand and apply the B.H.O.P positions when working both preclinic and in the lab.
- LO12: Create ergonomic working habits and prevent working diseases and accidents.
- LO13: Know the best positions to work in different parts of the dental arch.
- LO14: Stimulate and ease the work with the health team.

The following table shows the relationship between the competencies developed during the course and the learning outcomes pursued:

Competencies	Learning outcomes
CB1,CB2,CB4,CB5	LO1,LO2,LO3,LO4,LO5,LO6,LO7,LO8, LO9,LO10,LO11,LO12,
CG1,CG3,CG7,CG8,CG13,CG17,,CT1,CT3,CT7,CT9,CT10,C11,C12,C14,C15,	LO13,LO14

CE11,CE12	LO5, LO6, LO7,LO8, LO9
CE14, CE15	LO10,LO11,LO12,LO13,LO14

4. CONTENT

1.- Introduction to the matter.

- 1.1. General operating norms
- 1.2. Terminology and general clinical concepts
- 1.3. Basic dental nomenclature
- 1.4. Basic communication norms in Dentistry

2.- General introduction to dental decay

- 2.1. Etiopathogenesis
- 2.2. Prevention, diagnosis

3.- General introduction to periodontal disease

- 3.1. Etiopathogenesis
- 3.2. Prevention, diagnosis

4.- Introduction to the main rehabilitation procedures in dentistry

- 4.1. Concept and definitions in conservative dentistry
- 4.2. Concept and definitions in treatments to replace teeth

5.- Basic clinical instruments

- 5.1. Types of dental instruments
- 5.2. Instruments for dental exploring
- 5.3. Instruments for dental fillings
- 5.4. Instruments for endodontics
- 5.5. Instruments for surgery
- 5.6. Instruments for periodontics
- 5.7. Instruments for dental impressions
- 5.8. Rotary instruments

6.- Clinical equipment

- 6.1. Dental chair
- 6.2. Instrument carrier units (instruments attached to energy sources
- 6.3. Classification and types
- 6.4. Other clinical equipment of interest

7.- Dental lab concept

- 7.1. Classification and types
- 7.2. Working place in the dental lab
- 7.3. Basic instruments
- 7.4. Basic equipment

8. Introduction to risks and their prevention in the dental office

- 8.1. Physical risks in the dental office
- 8.2. Chemical risks in the dental office
- 8.3. Biological risks in the dental office
- 8.4 Psychological risks in the dental office
- 8.5 Protection barriers

9.- Hygiene chain – disinfection and sterilization of the dental instruments in the dental office

9.1. Hygiene chain – disinfection of the equipment and furniture in the dental office

10. Introduction to risks and their prevention in the dental lab

- 10.1. Physical risks in the dental lab
- 10.2. Chemical risks in the dental lab
- 10.3. Biological risks in the dental lab
- 10.4 Protection barriers

11.- Treatment of the waste generated during the dental work

- 11.1 Treatment of the clinical waste
- 11.2. Treatment of the lab waste

12.- Introduction to ergonomics in dentistry

- 12.1. Concept and definitions
- 12.2. Historical evolution
- 12.3. Ergonomics applied onto dentistry

13.- Introduction to working positions in dentistry

- 13.1. Standing position for the clinician. Advantages and disadvantages
- 13.2. Sitting position for the clinician. Advantages and disadvantages
- 13.3 Position of the patients
- 13.4. Ergonomic working position (BHOP) for clinician and patient
- 13.5. Working areas in the dental office
- 13.6 Main working positions to work on a patient

14.- Introduction to the planning and standarization of dental procedures

- 14.1. Common characteristics to dental procedures
- 14.2. Direct procedures
- 14.3. Indirect procedures in the clinical office and in the dental lab

15.- Team work in the dental office I

- 15.1. Dental health team
- 15.2. Roles for: the clinician, the assistant, the dental hygienist, lab technician

16. Team work in the dental office II

- 16.1. Four hands work
- 16.2. Six hand work

5. TEACHING-LEARNING METHODOLOGIES

The types of teaching-learning methodologies used are indicated below:
The types of teaching-learning methodologies used are indicated below:

- Master class
- Cooperative learning
- Learning based on projects
- Simulation environments

6. LEARNING ACTIVITIES

Listed below are the types of learning activities and the number of hours the student will spend on each one:

Campus-based mode:

Learning activity	Number of hours
Master classes	20 h
Virtual master classes	10 h
Problems resolution	15 h
Practical exercises	15 h
Laboratory practices	25 h
Study and autonomous work	45 h
In campus-based mode tests	2 h
Tutorial	18 h
TOTAL	**150 h**

7. ASSESSMENT

Listed below are the assessment systems used and the weight each one carries towards the final course grade:

Campus-based mode:

Assessment system	Weight
Theoretical knowledge test	30%
Pre-clinical simulated practices	35%
Oral presentations	15%
Practical exercises	10%
Practical workbook	10%

7.1. Ordinary assessment period

To pass the course in the ordinary assessment period you must obtain a grade greater than or equal to 5.0 out of
10.0 in the final grade (weighted average) of the course.
In any case, it will be necessary to obtain a grade greater than or equal to 5.0, independently, in each of the evaluation systems that make up the course.

The Universidad Europea de Valencia establishes continuous assessment as a system of evaluation of knowledge, skills and core, general, cross-curricular and specific competences of the degree in Dentistry, in accordance with the provisions of the Regulations for the evaluation of undergraduate degrees. In this regard and for the purposes of the use of calls the student should be aware that, if any evaluation system provided in the Learning Guide, in the ordinary call (first exam period) the student will have an overall grade of the subject, thus using up one call.

According to the aforementioned Regulations, students taking face-to-face degree courses are required to justify at least 50% of class attendance, as a necessary part of the evaluation process and in the case oftheoretical or practical classes determined as mandatory by the teacher in the schedules of the subject, the student must register an attendance of 90%, whether the absence is justified or not. The lack of accreditation by the means proposed by the University will entitle the professor to grade the subject as failed in the ordinary call, according to the grading system.
Absences below the compulsory attendance in the theoretical or practical sessions imply that the student has not reached the necessary skills to pass the subject and will fail in the ordinary period.
Only 2 justified absences in practice and theory can be recovered during the ordinary period announced by the university. If the student does not attend the recover session in the ordinary period, the student will fail the whole subject in the ordinary period. In order to recover it, a dedication equal to the time spent in that theory or practice will be necessary. If the absence is not justified, it will not be possible to recover it in the ordinary period.

Punctuality will be required, 3 delays of more than 15 minutes or departures before class will be counted as a lack of attendance.

The student must consult in the schedule of the course in the Virtual Campus the sessions of compulsory attendance in the classroom.

The mention of "Matrícula de Honor" will be awarded to students who have obtained a grade equal to orhigher than 9.0. Their number may not exceed 5% of the students enrolled in each subject in the corresponding academic year, unless the number of students enrolled is less than 20, in which case only one honorary registration may be awarded.

Theoretical part

There will be two theoretical knowledge tests, one on the theoretical part and one on the practical part. To pass each one it is necessary to obtain a grade equal or higher than 5'0 points out of10'0points each.
In case that the student does not achieve the minimum required grade (or does not attend the exams) ineither the first or second term exam, the student will need to retake those parts in the extraordinary period. The theoretical knowledge test will be 20% of the grade and the practical knowledge test will be 10%.

Oral presentation (15%): there will be a group presentation at the end of the semester on a specific assigned topic and following the guidelines explained by the teacher.

Practical part

A continuous evaluation of simulated preclinical practices (35%) will be carried out. The practices have its own evaluation rubric. The final grade is obtained by making an average of the different grades obtained based on the contents that are evaluated at each moment. The student needs to have a minimum of 5'0 out of 10'0 points in the daily practice average so as to overcome the subject.

The student must bring his practice workbook to practice sessions everyday as well as the material required for everyday practice session. Otherwise the practice will be graded with a zero.

Practical activities (10%): Digital Block. Evaluable practical activities with the support of audiovisual material will be carried out in order to assess the knowledge and skills acquired.

Practice notebook (10%): the practice notebook will be evaluated according to the rubric provided at the beginning of the course.

7.2. Extraordinary assessment period

To pass the course in the extraordinary assessment period you must obtain a grade higher or equal to 5.0 out of 10.0in the final grade (weighted average) of the course.

In any case, it will be necessary to obtain a grade greater than or equal to 5.0 in the final test, so that it can be averaged with the rest of the activities.

The activities that were not handed in or passed in the first exam period must be submitted, after having received the corresponding corrections from the teacher.

The Universidad Europea de Valencia establishes the continuous evaluation as a system of assessment ofknowledge, skills and core, general, cross-curricular, and specific competences of the degree in Dentistry,in accordance with the provisions of the Regulations for the evaluation of undergraduate degrees. In thisregard and for the purposes of using calls, the student should be aware that in the extraordinary call the Objective Test of Knowledge (OTK) which determines whether or not the call was used. In the exceptional case that the student only needs to pass evaluation system /s that are not the OTK, it will be considered NP if not presented and will obtain a numerical grade if the student was examined of, at least, one of them.

Pursuant to the aforementioned Regulations, students taking face-to-face degree courses are required tojustify at least 50% of class attendance, as a necessary part of the evaluation process, and in the case of theoretical or practical classes determined as mandatory by the teacher in the schedules of the subject, the student must register an attendance of 90%, whether the absence is justified or not. Those students who, due to non-compliance with this requirement, must take the extraordinary call (second

exam period), need to perform as many activities or knowledge tests determined by the teacher to recover this part successful completion will be based on the specified rubric.

To pass in the extraordinary call, students will have to take a practical assessment where they must demonstrate that they have acquired the necessary theoretical knowledge and practical skills from the practical sessions conducted throughout the semester. This practical assessment will last a maximum of 2 hours.
Students who have not reached 90% attendance will have to be examined on all practical sessions, while students with sufficient attendance will only need to pass the practical sessions or blocks they failed.

8. SCHEDULE

This table shows the delivery deadline for each assessable activity in the course:

Assessable activities	Deadline
Theoretical assessment	See virtual campus
Simulated preclinical practice	Each group in its assigned schedule
Oral presentation	30/04/25 until 23:59
Practical exercises	From 1st April at 00:01h until 30th April at 23:59h
Practice workbook	10/05/2025 until 23:59

This schedule may be subject to changes for logistical reasons relating to the activities. The student will be notified of any change as and when appropriate.

9. BIBLIOGRAPHY

The main reference work for this subject is:

- Anusavice, Kenneth, J. (2013). Phillip´s. Cience of Dental Materials. Elsevier.12th ed

- Nelson Stanley J., (2020). Wheeler's dental anatomy, physiology, and occlusion Elsevier. 11th ed

The recommended Bibliography is:

- Cohen , S., Kenneth M. (2011). Cohen's pathways of the pulp. Elsevier.10th ed

- Jones , J., & García, L. (2009). Removable partial dentures: a clinician’s guide.

Ames,Iowa: Wiley-Blackwell.

- Lindhe , J., Lang, N., & Karring , T. (2015). Clinical periodontology and implant dentistry.Chichester, West Sussex; Ames, Iowa: John Wiley and Sons, Inc. 6th edition.

- Nowak Arthur J., (2019). Pediatric Dentistry. Sixth edition. Philadelphia, PA : Saunders.

- Shillingburg, H., & Sather , D. (2012). Fundamentals of fixed prosthodontics. Chicago:Quintessence Publishing. 4th edition.

- Zarb , G., & George , A. (2013). Prosthodontic treatment for edentulous patients: Complete dentures and implant-supported prostheses. St. Louis, Mo: Elsevier Mosby. 13th edition.

10. EDUCATIONAL GUIDANCE AND DIVERSITY UNIT

From the Educational Guidance and Diversity Unit we offer support to our students throughout their university life to help them reach their academic achievements. Other main actions are the students inclusions with specific educational needs, universal accessibility on the different campuses of the university and equal opportunities.
From this unit we offer to our students:

1. Accompaniment and follow-up by means of counselling and personalized plans for students who need to improve their academic performance.
2. In terms of attention to diversity, non-significant curricular adjustments are made in terms of methodology and assessment for those students with specific educational needs, pursuing an equal opportunities for all students.
3. We offer students different extracurricular resources to develop different competences that will encourage their personal and professional development.
4. Vocational guidance through the provision of tools and counselling to students with vocational doubts or who believe they have made a mistake in their choice of degree.

Students in need of educational support can write to us at:
orientacioneducativa.uev@universidadeuropea.es