

## 1. BASIC INFORMATION

Course	PROSTHODONTICS IV
Degree program	DENTISTRY
School	BIOMEDICAL SCIENCE
Year	FOURTH GRADE
ECTS	6 ECTS
Credit type	COMPULSORY
Language(s)	SPANISH / ENGLISH
Delivery mode	PRESENCE-BASED
Semester	SECOND TERM
Academic year	2024/ 2025
Coordinating professor	JOSÉ IGNACIO ORTIZ COLLADO

## 2. PRESENTATION

This subject concerns the diagnosis and treatment of the partially edentulous patient with fixed partial dentures and any other kind of fixed dental prostheses. It describes the physiopathology of those patients, as well as the treatment techniques, procedures and the materials used for treatment.

## 3. COMPETENCIES AND LEARNING OUTCOMES

### Core competencies:

- CB1: That students have demonstrated to possess and understand knowledge in an area of study that starts from the base of general secondary education, and is usually found at a level that, although supported by advanced textbooks, also includes some aspects that imply knowledge coming from the vanguard of his field of study.
- CB2: That students know how to apply their knowledge to their work or vocation in a professional manner and possess the skills that are usually demonstrated through the elaboration and defense of arguments and the resolution of problems within their area of study.

**Cross-curricular competencies:**

CT1: Autonomous learning: Process that allows the person to be the author of their own development, choosing the paths, the strategies, the tools and the moments that they consider most effective to learn and independently implement what they have learned. The autonomous student, in short, selects the best strategies to achieve their learning objectives.

- CT2: Self-confidence: Ability to assess our own results, performance and capabilities with the internal conviction that we are capable of doing things and the challenges that we face.
- CT4: Capacity for analysis and synthesis: Analysis is the method of reasoning that allows the decomposition of complex situations in their constituent parts; also evaluate other alternatives and perspectives to find optimal solutions. The synthesis seeks to reduce complexity in order to understand it better and / or solve problems
- CT5: Ability to apply knowledge to practice: Ability to use the knowledge acquired in the academic field in situations as similar as possible to the reality of the profession for which they are being trained, for example, by relating theoretical foundations with their application to real problems of everyday life, address problems and situations close to professional activity or solve real issues and / or problems.
- CT7: Awareness of ethical values: Ability to think and act according to universal principles based on the value of the person that are directed to their full development and that entails the commitment with certain social values.
- CT8: Information management: Ability to search, select, analyze and integrate information from various sources.
- CT9: Skills in interpersonal relationships: Interacting positively with other people verbally and nonverbally through assertive communication, understood by this, the ability to express or convey what you want, what you think or feel without bothering, assault or hurt the feelings of the other person.
- CT10: Initiative and entrepreneurial spirit: Preference for assuming and carrying out activities. Ability to undertake difficult or hazardous actions with resolution.

## **General Competences**

GC1 Know the essential elements of the dentist profession, including ethical principles and legal responsibilities.

GC2 Understand the importance of such principles for the benefit of the patient, society, and profession, with special attention to professional secret.

GC3 Know how to identify the patient's concerns and expectations, as well as communicate effectively and clearly, both orally and in writing, with patients, family members, the media, and other professionals.

GC9 Understand the importance of maintaining and using records with patient information for subsequent analysis, preserving the confidentiality of the data oral care.

GC12 Understand and recognize the normal structure and function of the stomatognathic apparatus, at the molecular, cellular, tissue and organic levels, at different stages of life.

GC13 Understand and recognize the biomaterial sciences essential for dental practice as well as the immediate management of possible allergies to them

GC14 Know about the general processes of the disease, among which are infection, inflammation, alterations of the immune system, degeneration, neoplasia, metabolic alterations, and genetic disorders.

GC15 Be familiar with the general pathological characteristics of diseases and disorders that affect the organic systems, specifically those that have oral repercussions

GC16 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 the available scientific evidence

GC17 Understand and recognize the principles of ergonomics and safety at work (including control of cross infection, radiation protection and occupational and biological diseases).

GC19 To understand the scientific method and have the critical capacity to assess established knowledge and novel information. To be able to formulate hypotheses, collect and critically evaluate information to solve problems, following the scientific method.

GC21 Knowing how to perform a complete oral examination, including appropriate radiographic and complementary examination tests, as well as obtaining adequate clinical references.

GC25 Know and apply the basic treatment of the most common oral and dental diseases in patients of all ages. Therapeutic procedures must be based on the concept of minimally invasive dentistry and in a comprehensive and integrated approach to the dental treatment.

GC26 Know how to plan and perform multidisciplinary, sequential, and integrated dental treatments of limited complexity in patients of all ages and conditions and patients requiring special care.

GC27 Raise and propose preventive measures appropriate to each clinical situation.

**Specific competencies:**

A. Professional values, attitudes and ethical behavior:

SC9. Know the clinical and laboratory diagnostic procedures and tests, know their reliability and diagnostic validity, and be competent in the interpretation of their results.

SC10. Recognise oral normality and pathology, as well as the evaluation of semiological data.

SC13. Handle, discriminate and select appropriate materials and instruments in Dentistry.

SC14. Know dental biomaterials: their handling, properties, indications, allergies, biocompatibility, toxicity, waste disposal and environmental impact.

SC37. Make diagnostic models, mount them, and take inter-occlusal recordings.

SC38. Determine and identify the aesthetic requirements of the patient and the possibilities of satisfying their concerns.

**Learning outcomes:**

- LO1: Set the acquired knowledge to realize a correct diagnosis.
- LO2: Determine the possible therapeutic options for each diagnosis in fixed prosthetics.
- LO3: Develop the ability of criticism for the election for the ideal treatment plan.
- LO4: Knowing the anatomy of the totally and partially edentulous patient.
- LO5: Knowing the physiology of the totally and partially edentulous patient.
- LO6: Muscular and TMJ exploration.
- LO7: Deepen in the physiopathology of the totally and partially edentulous patient.
- LO8: Analyze the different esthetic patterns and it's treatment.
- LO9: Deepen in the election criteria of the different porcelains depending on the case.
- LO10: Analyze the prognosis of the different cases and its therapeutic repercussion.
- LO11: Set the clinical sequences for the treatment for the dysfunctional and edentulous patient, as well as for the patient in need for an esthetic treatment rehabilitation.
- LO12: Study and deepen in the different laboratory steps of fixed prosthodontics treatments.

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-CT4-CT5-CT7-CE1-CE2-CE3-CE9-CE12-CE13-CE14-CE15-CE21-CE25-CE27	LO1
CB1-CB2-CB4-CB5-CT4-CT5-CT7-CE1-CE2-CE3-CE9-CE12-CE13-CE14-CE15-CE21-CE25-CE26-CE27	LO2
CB1-CB2-CB4-CB5-CT4-CT5-CT7-CE1-CE2-CE3-CE9-CE12-CE13-CE14-CE15-CE16-CE19CE21-CE25-CE26-CE27	LO3
CB1-CB2-CB4-CB5-CT4-CT8- CE13-CE14 -CE16-CG21-CG25	LO4
CB1-CB2-CB4-CB5-CT4-CT8- CE13-CE14 -CE16-CG21-CG25-CG26-CG27	LO5
CB1-CB2-CB4-CB5-CT5-CE12-CE14-CE16-CE21-CE25-CE26-CE27	LO6
CB1-CB2-CB4-CB5-CT4-CT8- CE13-CE14 -CE16-CG16-CG21-CG25-CG26-CG27	LO7
CB1-CB2-CB4-CB5-CT4-CT5-CT7-CE1-CE2-CE3-CE9-CE13-CE14-CG3-CG26	LO8
CB1-CB2-CB4-CB5-CT4-CT5-CT7- CE9- CE13-CE14-CG13	LO9
CB1-CB2-CB4-CB5-CT4-CT5-CT7 -CE9-CE13-CE14-CG25-CG26-CG27	LO10
CB1-CB2-CB4-CB5-CT5-CE14-CE16-CE25-CE26-CE27	LO11
CB1-CB2-CB4-CB5-CT4-CT5-CT9 -CE9-CE13-CG9-CG12-CG13	LO12

## 4. CONTENT

### THEORY CONTENT:

Subject
Presentation.
<b>Lesson 01:</b> Conventional impressions
<b>Lesson 02/03:</b> Digital impressions
<b>Lesson 04:</b> Working casts
<b>Lesson 05:</b> Temporary restorations
<b>Lesson 06:</b> Try-in's in fixed prosthesis
<b>Lesson 07 pt1:</b> Cementation
<b>Lesson 07 pt2:</b> Cementation
<b>Lesson 08:</b> Implant supported prosthesis
<b>Lesson 09:</b> Impressions in implant supported prosthesis
<b>Clinical case I</b>
<b>Clinical case II</b>
<b>Clinical case III</b>

### PRACTICAL CONTENT:

	Practice	GRADE
0	SUBJECT PRESENTATION.	
1	PREPARATION FIXED PARTIAL DENTURE 34 (35) 36 PFM.	<b>FEED-BACK</b>
2	PREPARATION FPD 24(25)26 FULL PORCELAIN. MAKE TWO SILICONE KEYS, SO ONE IS KEPT TO PREPARE THE PROVISIONAL.	<b>GRADED 5%</b>
3	PREPARATION FPD 44(45)46 FULL PORCELAIN. MAKE TWO SILICONE KEYS, SO ONE IS KEPT TO PREPARE THE PROVISIONAL.	<b>GRADED 15%</b>
4	PREPARATION FPD 33(32,31,41,42)43 PFM. MAKE TWO SILICONE KEYS, SO ONE IS KEPT TO PREPARE THE PROVISIONAL	<b>FEED-BACK</b>
5	PREPARATION FPD 33(32,31,41,42)43 PFM. MAKE TWO SILICONE KEYS, SO ONE IS KEPT TO PREPARE THE PROVISIONAL	<b>GRADED 5%</b>
6	PREPARATION FPD 13 (14) 15 (16) 17 PFM	<b>GRADED 15%</b>
7	PREPARATION FPD 13-12 (11,21) 22-23 FULL PORCELAIN	<b>FEED-BACK</b>
8	PREPARATION FPD 13-12 (11,21) 22-23 FULL PORCELAIN	<b>GRADED 10%</b>
9	TEMPORARY CROWNS 44(45)46	<b>FEEDBACK</b>

10	TEMPORARY CROWNS 33(32,31,41,42)43	<b>GRADED 5%</b>
11	TEMPORARY CROWNS 24(25)26	<b>GRADED 15%</b>
12	SILICONE IMPRESSIONS ON PREPARED TEETH (ONE STEP AND TWO-STEP TECHNIQUE)	<b>GRADED 15%</b>
13	SILICONE IMPRESSIONS ON IMPLANTS AND POURING THE IMPRESSION	<b>GRADED 10%</b>
14	SIMODONT and DIGITAL IMPRESSIONS	<b>GRADED5%</b>
15	PRACTICE RETAKE.	<b>GRADED</b>

## 5. TEACHING-LEARNING METHODOLOGIES

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

- Master class.
- Case method.
- Problem-based learning.
- Simulation Environment.

## 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	26 h
Laboratory practice	32 h
Clinical case learning	4 h
Knowledge test	4 h
Autonomous study and learning	72 h
Tutorial	6h
Asynchronous digital master classes	6 h
<b>TOTAL</b>	<b>215 h</b>

## 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
Perform the preparation of the abutment teeth in fixed prosthodontics, in the laboratory and in the simulation laboratory according to the rubric. <ul style="list-style-type: none"> <li>- Path of insertion</li> <li>- Conicity</li> <li>- Finish line</li> <li>- Prosthetic space</li> <li>- Tooth preparation errors</li> <li>- Provisionals</li> <li>- Impressions</li> </ul>	50%
Show the theoretical knowledge you have acquired through the resolution of a knowledge test.	40%
Show the theoretical knowledge you have acquired through the resolution of a clinical case.	10%

**Online mode:**

Assessment system	Weight
Attendance	0%

When you access the course on the *Campus Virtual*, you'll find a description of the assessment activities you have to complete, as well as the delivery deadline and assessment procedure for each one.

**7.1. First exam period**

To pass the course in the first exam period the student must pass each of the three parts of the course with a grade of 5 or more, one grade will not compensate another.

1. Theory: 40% of the course.
2. Practice: 40% of the course.
3. Clinical case evaluation: 20% of the course.

Within the continuous evaluation other methods might be used to evaluate procedures, skills and abilities.

In accordance with article 6, point 12 of the UNIVERSIDAD EUROPEA DE MADRID's REGULATIONS FOR THE EVALUATION OF OFFICIAL DEGREE DEGREES:



Any student who uses illicit means in the holding of an assessment test, or who improperly claims authorship of academic work required for the assessment, will be graded "fail" (0) in all the assessment tests of the session in which the event occurred and may also be subject to sanction, after the opening of disciplinary proceedings.

The evaluation systems that will be used and of obligatory fulfillment are the following:

### **THEORY EVALUATION REGULATIONS**

The theory conforms a 40% of the final grade of the course. The evaluation will be a writing exam.

The exam will correspond to the totality (100%) of the final theory grade. It will consist on 40 questions multiple-choice, with one correct answer.

It is mandatory to answer to 80% of the questions, 32 of the 40 questions, answering to less than that, every unanswered question as well as every incorrect answer will subtract 33% (0.33point) to a correct answer. To pass the exam, a grade of 5 is required.

### **PRACTICE EVALUATION REGULATIONS**

All practices will have to be attended physically at the laboratory practices and are MANDATORY.

The final practice grade (40%) will be the average of the graded corresponding practices.

Each one must be passed independently.

#### - Practical activities.

The practices will be graded at the end of the scheduled dates in the calendar. Every finished practice will have a grade (an average of the different criteria evaluation) and the final grade will be an average of all them, as long as every practice is passed independently.

If one of the practices remain unfinished or has been failed, it will be mandatory to recover it with a grade of 5 or more, during the assigned days or attending the follow-up period in July. During the follow-up period no feed-back grades will be given. In July all the practices must be passed independently.

No final average will be made with a grade inferior to 5 in one of the practices.

The practices must be realized and completed during the class hours, they cannot be completed outside those hours. NO LATE ENTRY TO THE LABORATORY AFTER THE START OF THE PRACTICE WILL BE ALLOWED.

For the realization of some practices, it will be necessary to carry out the previous week an obligatory online activity, which will consist of the visualization of a video and the resolution of a test. Without carrying out this online activity it will not be possible to carry out the corresponding practice. We will notify you of these activities the week before they take place.

The possible grade of each practice will be: Failed practice: 4, pass: 5, Notable: 7 and Sobresaliente: 9.

The absence or not having the necessary material for such practice will be scored with a 0.

During the retake period the student will not receive feedback, having to independently pass each practice with a grade of 5 or more.

No average will be given with a grade lower than 5 in any of the practices.

The whole practice must be done at the time arranged for it, and it is not possible to continue outside the laboratory.

Up to **two failed or missed** (with or without justification) practices may be recovered in the recovery weeks at the end of the semester, with **three or more practices** (failed or missed) it will be necessary to go directly to the July follow-up period.

The practices, material and evaluation rubrics are attached in the annex.

#### **EVALUATION CRITERIAS OF THE CLINICAL CASE.**

A clinical case will be presented based on the knowledge acquired during the course.

The clinical case exam will be evaluated through a 20 questions multiple-choice test where it will be mandatory to answer at least 80% of the questions, each question will have four options and one correct answer. An incorrect answer will subtract 0.33 points.

To pass the exam a grade of 5 or more will be required.

#### **7.2. Second exam period**

To pass the course in the second exam period the student will have to retake and pass the failed parts during the first exam period. The evaluation criterias will be the same.

- To pass the course in the second period exam it will be mandatory to obtain a grade equal or superior to 5 over 10 in the final grade (weighted average), as long as all the different parts are passed to realize the average.
- The failed or unrepresented practices will have to be retaken during the follow-up period of July. It will consist on a practical exam where the student will have to bring a full arch

dentate typodont. The retake will consist on teeth preparation that will be indicated by the professors. The evaluation criteria will be the same as during the year.

- The theoretical exam will have to be passed in the second exam period, the format and criteria evaluation being the same as is in the first period exam.
- The clinical case examination will have to be passed in the second period exam, the format and criteria evaluation being the same as in the first period exam.

## 8. SCHEDULE

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

<b>Subject</b>		
Presentation.		
<b>Lesson 01:</b> Conventional impressions		
<b>Lesson 02/03:</b> Digital impressions		
<b>Lesson 04:</b> Working casts		
<b>Lesson 05:</b> Temporary restorations		
<b>Lesson 06:</b> Try-in's in fixed prosthesis		
<b>Lesson 07 pt1:</b> Cementation		
<b>Lesson 07 pt2:</b> Cementation		
<b>Lesson 08:</b> Implant supported prosthesis		
<b>Lesson 09:</b> Impressions in implant supported prosthesis		
<b>Clinical case I</b>		
<b>Clinical case II</b>		
<b>Clinical case III</b>		
	<b>Practice</b>	<b>GRADE</b>
0	SUBJECT PRESENTATION.	
1	PREPARATION FIXED PARTIAL DENTURE 34 (35) 36 PFM.	<b>FEED-BACK</b>
2	PREPARATION FPD 24(25)26 FULL PORCELAIN. MAKE TWO SILICONE KEYS, SO ONE IS KEPT TO PREPARE THE PROVISIONAL.	<b>GRADED 5%</b>
3	PREPARATION FPD 44(45)46 FULL PORCELAIN. MAKE TWO SILICONE KEYS, SO ONE IS KEPT TO PREPARE THE PROVISIONAL.	<b>GRADED 15%</b>
4	PREPARATION FPD 33(32,31,41,42)43 PFM. MAKE TWO SILICONE KEYS, SO ONE IS KEPT TO PREPARE THE PROVISIONAL	<b>FEED-BACK</b>

5	PREPARATION FPD 33(32,31,41,42)43 PFM. MAKE TWO SILICONE KEYS, SO ONE IS KEPT TO PREPARE THE PROVISIONAL	<b>GRADED 5%</b>
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15	PRACTICE RETAKE.	<b>GRADED</b>

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

Recommended bibliography:

- Shillingburg, H.T. et al: Fundamentals of fixed prosthodontics, 4<sup>th</sup> ed. Quintessence Books.
- Rosenstiel, Land, Fujimoto. PROTESIS FIJA CONTEMPORANEA. Elsevier mosby.
- Jeffrey P Okesson. Management of temporomandibular disorders and occlusion. Mosby Elsevier.
- Gracis S et al. A new classification system for all-ceramic and ceramic like restorative materials. The international journal of prosthodontics. 2015. 28(3).227-235.
- Martínez Rus et al: Cerámicas dentales: clasificación y criterios de selección. RCOE, 2007, Vol. 12, Nº4.
- Ralph Riquier: Comparación de la técnica de fresado y la sinterización por láser. Quintessence técnica (ed. esp.). Volumen 18, Núm. 2. Febrero 2007

- The ideal restoration of endodontically treated teeth- structural and esthetic considerations: a review of the literature and clinical guidelines for the restorative clinician. Konrad meyenberg
- La Tecnología CAD/CAM en la Consulta dental. The CAD / CAM Technology in Dental Consultation. Macías, F. Volumen IV. Número 1. Enero - Abril 2015.  
<http://www.rodyb.com/la-tecnologia-cadcam>

## 10. DIVERSITY MANAGEMENT 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@universidadeuropea.es](mailto:orientacioneducativa@universidadeuropea.es)

## 11. ONLINE SURVEYS

Your opinion matters!

The Universidad Europea encourages you to participate in several surveys which help identify the strengths and areas we need to improve regarding professors, degree programs and the teaching-learning process.

The surveys will be made available in the “surveys” section in virtual campus or via e-mail.

Your assessment is necessary for us to improve.

Thank you very much for your participation.