

**COURSE DATA****Data Subject**

<b>Code</b>	34717
<b>Name</b>	Dental prosthesis II
<b>Cycle</b>	Grade
<b>ECTS Credits</b>	12.0
<b>Academic year</b>	2023 - 2024

**Study (s)**

<b>Degree</b>	<b>Center</b>	<b>Acad. year</b>	<b>Period</b>
1206 - Degree in Dentistry	Faculty of Medicine and Odontology	4	Annual

**Subject-matter**

<b>Degree</b>	<b>Subject-matter</b>	<b>Character</b>
1206 - Degree in Dentistry	19 - Dental prostheses	Obligatory

**Coordination**

<b>Name</b>	<b>Department</b>
AGUSTIN PANADERO, RUBEN	131 - Stomatology
FONS FONT, ANTONIO	131 - Stomatology

**SUMMARY**

Dental Prosthesis II deals with the art and science of dental restoration by means of artificial elements fabricated in the prosthetic laboratory. Partial edentulism can be rehabilitated with fixed, restorations, bonded to the patients remaining teeth. This restores the loss of dental tissue from individual teeth by means of cemented restorations. Due to the introduction of implant dentistry in recent times, the subject also covers different aspects of implant-supported fixed prostheses.

This is a subject in which theory and practical learning are closely linked so that the student will acquire skills that will enable him/her to apply the treatments learnt in clinical practice on patients.



## PREVIOUS KNOWLEDGE

### Relationship to other subjects of the same degree

**1206 - Degree in Dentistry :**

**1210 - Grado de Odontología 2012 :**

R4-OBLIGATION TO HAVE SUCCESSFULLY COMPLETED THE COURSE

34716 - Dental prosthesis I

34716 - Dental prosthesis I

### Other requirements

## OUTCOMES

### 1206 - Degree in Dentistry

- Adquirir experiencia clínica bajo la adecuada supervisión.
- Manejar, discriminar y seleccionar los materiales e instrumentos adecuados en odontología.
- Realizar modelos diagnósticos, montarlos y tomar registros inter-oclusales.
- Realizar procedimientos estéticos convencionales desde una perspectiva multidisciplinar.
- Tratar el edentulismo tanto parcial como total, incluidos el diseño biológico (características específicas de diseño), preparación dentaria, obtención de registros, pruebas clínicas y adaptación a los pacientes de prótesis removibles parciales y completas, puentes sencillos dento-soportados y prótesis sencillas sobre implantes, tanto removibles como fijas, incluyendo su «colocación» y «puesta en servicio»,
- Elaborar las prescripciones de los productos sanitarios a medida «prótesis dentales» y «aparatos de ortodoncia y ortopedia dento-facial».
- Realizar tratamiento no quirúrgico de los desórdenes témporo-mandibulares y dolor oro-facial.

## LEARNING OUTCOMES

**English version is not available**

## DESCRIPTION OF CONTENTS



## **1. DENTAL PROSTHESIS II THEORY PROGRAM**

T1: Basic principles of fixed prostheses: history and antecedents, concepts, advantages of fixed prostheses in cases of partial edentulism. Relation between fixed prostheses and osseointegrated implants.

T2: Dental preparation to receive fixed prostheses. General principles of tooth preparation/drilling. Mechanical and biological considerations. Retention and strength. Paths of insertion. Preparation borders and marginal fit.

T3: Application of drilling principles in dental preparation for: full coverage crowns (full metal crown, veneers, metal-ceramic crown, full ceramic crown) and partial coverage (onlays, and ceramic laminate veneer)

T4: Use of trunnions as reinforcement in fixed prostheses. Concepts. Fabrication techniques, root preparation. Registers and materials.

T5: Periodontal aspects of fixed prostheses. Acceptable and ideal margins. Periodontal margin position. Hygienic pontics, ovoid pontics.

T6: Biologically oriented dental preparations (BOPT)

T7: Diagnosis and fixed prostheses. Patients' general and oral medical history. Clinical patient assessment for fixed prostheses. TMJ and intraoral examination. Implications of TMJ disorders for prognosis. Auxiliary diagnostic methods. Study models. Diagnostic wax-up. Assessment of dental posts. Fixed prostheses and biomechanics. Special cases. The role of implant dentistry in fixed prosthesis diagnosis.

T8: Temporary protection of posts. Biological bases. Protection systems. Direct and indirect techniques. Clinical requirements.

T9: Gingival retraction and impression-taking. Gingival margin control. Retraction techniques Indications and contraindications. Essential materials. Objectives of impression-taking. Characteristics. The materials of choice. Direct and indirect impression techniques. Use of CAD systems in the present and the future.

## **2. DENTAL PROSTHESIS II THEORY PROGRAM**

T10: Working models in fixed prostheses. Aims and elaboration. Materials of choice. Using removable dies and models. CAD-CAM systems as alternative to conventional working models.

T11: Digital flow in fixed prosthesis. Types of intra and extraoral scanners. Clinical and laboratory protocols for the fabrication of CAD-CAM restorations.

T12: Waxing in fixed prosthesis. wax-up technique. Prosthetic metallurgy. Crystallography of metals and alloys. Metal alloys. Metallurgy concepts applied to prosthodontics. Metal alloy characteristics in fixed prosthetics. Alloys and biological risk.

T13: Metal casting. Veneers, cylinders, heat sources. Treatment of cast metal. Other systems for working metal for prosthodontic use: galvano-formation and CAD-CAM systems.

T14: Occlusion and fixed prostheses. Occlusion and oral health. Occlusal objectives. Choosing static and dynamic maxillary relations for fixed prostheses.

T15: Dental porcelain. History and antecedents. Concepts. Silica and its elements. Vitreous and crystalline phases. Handling ceramics. Classification. Clinical properties of porcelains. Production systems for use in dentistry. Biological characteristics.

T16: Aesthetics in prosthodontics. Analysis of dental/facial aesthetics and models of facial beauty.



Importance of shape, importance of color. Physical aspects of light and color in dentistry. The dimensions of color, registering color and communication with the prosthetic laboratory. Digital Smile Design.

T17: Cements and bonding. Characteristics of cements for fixed prostheses. Provisional and definitive cements. Bonding techniques. Special techniques. Checking fit and final outcomes.

T18: Adhesive fixed partial denture. Concept. Types Concepts. History and antecedents. Indications and contraindications. Advantages and disadvantages. Bonding and checking.

### **3. DENTAL PROSTHESIS II THEORY PROGRAM**

T19: Ceramic laminate veneer. Concepts. Indications and contraindications. Advantages and disadvantages. Clinical preparation techniques. Impression techniques. Bonding.

T20: Fixed prosthesis failure. Most common causes of error. Early detection of structural problems. Correction and repair systems.

T21: Temporomandibular dysfunction. Diagnosis of temporomandibular disorders. Systematic TMJ examination. Clinical and imaging methods.

T22: Use of occlusal splints in TMJ treatment. Concepts. History and antecedents. Clinical justification. Types of splints. Confection. Clinical handling and fit. Evaluation of outcomes and maintenance.

T23: The bruxist patient and its characteristics. Bruxism and prosthetics.

T24: Occlusal stability and TMJ dysfunction. Selective drilling. Importance of stabilizing occlusion in the normal and dysfunctional patient. Technique and development of occlusal adjustment.

T25: Mixed prostheses. Concepts. History and evolution. Advantages and disadvantages of attachments. Mixed prostheses and biomechanics. Criteria and need for a rational system of attachment classification.

T26: Implant-supported prostheses. Treatment indications for implant-supported prostheses in partial edentulism. Connection systems between implant and transepithelial abutment. Classification of abutments. Specific impression systems and intermaxillary registers in implant-supported prostheses. Clinical checks. Systems of prosthetic placement.

T27: Obstructive sleep apnea and its therapeutic possibilities using mandibular advancement devices.

### **4. PRECLINICAL PRACTICAL PROGRAM**

Tooth drilling practice will be performed on extracted, disinfected, wetted teeth, set in plaster with the cement-enamel junction exposed.

The information required to carry out the practices described above is supplied via a Guide to Practical Learning given to each student enrolled in the course at the start of the academic year.

Practical training will take place at the time and place scheduled at the start of each academic year; practical training will be uninterrupted sessions of 2.5 hours. Justified absence from five sessions, or unjustified absence from three will result in course failure.

Practice no 1: Introduction and revision of subject matter.

Practice no 2, 3: Elaboration of monolithic crown



Practice no 4: Elaboration of Veneers.

Practice no 5,6: Elaboration of metal-ceramic crown.

Practice no 7,8: Elaboration of Ceramic full coverage crown or jacket.

Practice no 9: Biologically oriented dental preparations (BOPT)

Practice no 10: Elaboration of Porcelain veneer front.

Practice no 11: Elaboration of ceramic onlays.

Practice no 12: Gingival retraction. Definitive impressions in fixed prostheses.

Practice no 13: Provisional restorations.

Practice no 14: Bonding.

Practice no 15: Implant-supported prostheses: managing prosthetic attachments.

Practice no 16: Implant-supported prostheses.

Practice no 17: Carving in Advanced Simulation Center

## 5. SEMINARS

Basic diagnosis for FP.

Diagnosis supported by study models and orthopantomography.

Advanced diagnosis.

Advanced prosthetic techniques

Implant-prosthetic temporomandibular dysfunction.

Biologically oriented dental preparations (BOPT).

## WORKLOAD

ACTIVITY	Hours	% To be attended
Laboratory practices	62,00	100
Theory classes	54,00	100
Odontology practices	50,00	100
Classroom practices	14,00	100
Attendance at events and external activities	10,00	0
Development of group work	10,00	0
Development of individual work	10,00	0
Study and independent work	50,00	0
Readings supplementary material	30,00	0
Preparation of practical classes and problem	5,00	0
Resolution of case studies	4,00	0
Resolution of online questionnaires	1,00	0
<b>TOTAL</b>	<b>300,00</b>	





## TEACHING METHODOLOGY

Starting with theory reading – which act as the basis for learning – selection of text-based material, and coordinating theory and practice, the student will carry out all course activities in the Faculty Dental Clinic's premises.

Theory classes and seminars will take place in Classroom N° 2 on the third floor as scheduled in the timetable.

Group work will consist of two parts: Presentation and resolution of a clinical case; presentation and discussion of an article of scientific interest.

Pre-clinical drilling practices, provisional restorations, laboratory work and patient treatment practice will take place following the course timetable on the second floor.

The student will be given a Guide to Practical Learning which will explain and provide information about the content and evolution of the practice sessions, detailing the best approach to each practice activity. The Guide also acts as a record of continuous assessment, available to the student at all times

## EVALUATION

For this course, evaluation of student learning will be assessed as follows:

**Mid-course exam:** will take place during the first term's exam period. This will consist of a theory exam with four questions requiring straightforward answers corresponding to the first term's teaching program. Providing the student has achieved a mark of at least seven out of ten, the mid-course exam content will not be repeated in the final exam.

**Preclinical practical exam:** will take place at the end of the preclinical practice period. It will consist of an overall assessment of the work completed and a practical test. Students who pass the test will go on to clinical practice as clinicians; those who do not pass will act as assistants.

### Final exam:

Theory evaluation: will consist of a theory exam made up of ten questions requiring straightforward answers corresponding to the full course teaching program. Each of the theoretical four-month examinations of the summons of June will have to overcome 5 to approve the subject

Practical evaluation: A practical exam will take place with clinical cases.

Students must pass each part – theory and practice – with a minimum mark of five out of ten.

The final mark will correspond to 50% of theory learning, assessed in mid-term and final exams, and 50% to skills and knowledge acquired in the practical program, evaluated as:

10% Final practical exam.



30% Preclinical and clinical practices; continual assessment.

10% Participation in theory classes and seminars.

Students are reminded of the great importance of carrying out evaluation surveys of all the teaching teachers of this subject

## REFERENCES

### Basic

- . Fons, Agustín, Solá. Prostodoncia Fija. Fundamentos y procedimientos clínicos. Ed Lisermed, 2021.
- . Shillingburg H T, Hobo S, Whitsett L, Jacobi R, Brackett S. Fundamentos e esenciales en Prótesis Fija. 3ª Ed. Quintessence books, 2000.
- . Shillingburg H T, Jacobi R, Brackett S. Principios básicos en las preparaciones dentarias para restauraciones de metal colado y cerámica. Quintessence books, 2000.
- . Abjean, J. Oclusión: aspectos clínicos, indicaciones terapéuticas. Ed. Panamericana, 1980

### Additional

- - Magne P y Belser U. Restauraciones de porcelana adherida en los dientes anteriores. Método Biomimético. Ed. Quintessence Int, Barcelona, 2004.
- - Adhesión en Odontología: fundamento y procedimientos. Universitat de València. 2018.
- - Agustín- Panadero R, Chust López C. Protocolo clínico-protésico de la técnica BOPT. Ed Especializadas Europeas. 2016.
- - Implantología contemporánea. Misch CE. Ed Elsevier Mosby, 2009.
- - Fradeani, M. "Rehabilitación estética en prostodoncia fija. Vol 1: Análisis Estético". Vol 2 Tratamiento Protésico Ed. Quintessence. Barcelona, 2006.

