1. BASIC INFORMATION

Course	Orthodontics I
Degree program	Dentistry
School	Biomedical and Health Sciences
Year	Third
ECTS	6 ECTS
Credit type	Compulsory
Language(s)	English/spanish
Delivery mode	On-site classroom course
Semester	First semester
Academic year	2024-2025
Coordinating professor	Eduardo Tapia Vidal

2. PRESENTATION

Orthodontics I is a subject acquired during the first semester of third grade of Bachelor's degree, with 6 ECTS. This compulsory subject provides basic and specific educational background about malocclusion and how to classify them, as well as knowledge about their etiologic factors, with particular focus in those with great impact in our environment, such as deleterious habits.
It also provides essential background about indispensable diagnostic methods which stand behind patient's malocclusion treatments. Throughout the subject, the student develops required academic knowledge and practical skills to correctly interpret basic diagnostic methods.
The subject's timeline combines classroom activities with lab practical to allow inclusive knowledge and skills acquisition. It follows a chronological order that enables to gain progressive academic knowledge and ability.

Orthodontics' syllabus planification defines clearly core and specific competencies to develop the different learning levels of the subject. Lessons are given in English and Spanish due to the strong international nature of Universidad Europea de Madrid, providing the student enough tools to achieve a level of understanding to be able to develop professional international workload.

ECTS comprise class hours with the professor in classroom (master classes, tutorials, resolution of practical exercises) and work hours in a laboratory conducting preclinical practical, seminars and skill tests in a traditional simulation environment.

All this will enable the future graduate to acquire all indispensable knowledge to achieve correct diagnosis and orthodontic treatment planning, as well as to undertake subsequent subjects like Orthodontics II, III & IV.

3. COMPETENCIES AND LEARNING OUTCOMES

Core competencies:

- CB1. Students must prove they have knowledge on a specific field, based on the secondary general education. This knowledge is at a level that, apart from being supported by advanced textbooks, includes aspects that imply knowledge coming from the forefront of its field of study.
- CB2. Students are able to apply their knowledge to their professional work or vocation and prove to have these competences by proposing and defending arguments and by having the ability to solve problems on their study area.
- CB4. Students are able to transmit information, ideas, problems and solutions to a specialised and non-specialised public.
- CB5. Students have developed the learning skills needed to carry out works with a high level of personal autonomy.

Cross-curricular competencies:

- CT1. Autonomous learning: Process that enables a person to be in charge of its own development, choosing his path, strategies, tools and the best moment to learn and apply what has been learnt. An autonomous student, at the end, chooses the best strategies to fulfil his learning goals.
- CT4. Analysis and synthesis ability: Analysis is the reasoning methods that allow us to split up complicated situations into their components; also assesses other alternatives and perspectives to find out optimal solutions. Synthesis aims to reduce the complexity in order to have a better understanding and problem-solving capacity.
- CT7. Ethical value awareness: Ability to think and act according to the universal principles based on the personal values aimed at his full development related to the commitment of determined social values.
- CT8. Information management: Ability to search, choose, analyse and integrate information from different sources.
- CT9. Personal relationship values: Positive relationship with others verbally and non-verbally by assertive communication, understanding by this, the ability to express or transmit what is wanted, thought or felt without causing discomfort, attacking or hurting someone's feelings.

General competencies:

- GC1 Know the essential elements of the dentist profession, including ethical principles and legal responsibilities.
- 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
- 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).
- GC20 Obtain and prepare a medical record that contains all the relevant information.
- GC21 Knowing how to perform a complete oral examination, including appropriate radiographic and complementary examination tests, as well as obtaining adequate clinical references.
- GC22 Have the ability to prepare an initial diagnostic judgment and establish a reasoned diagnostic strategy, being competent in recognizing situations that require urgent dental care.
- GC23 Establish the diagnosis, prognosis, and adequate therapeutic planning in all the clinical areas of Dentistry, being competent in the diagnosis, prognosis and preparation of the dental treatment plan for the patient that requires special care, including medically compromised patients (such as diabetics, hypertensive patients, immunosuppressed, anticoagulated, among others) and patients with disabilities. BOE no. 174 Saturday July 19, 2008, 31689.
- GC27 Raise and propose preventive measures appropriate to each clinical situation.
- GC30 Recognize the role of the dentist in the actions of prevention and protection against oral diseases, as well as in the maintenance and promotion of health, both individually and at the community level.

Specific competencies:

- 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.
- SC16.Know and use basic equipment and instruments for dental practice
- SC18. Provide a comprehensive approach to oral care and apply the principles of health promotion and prevention of oral diseases.
- SC19. Educate and motivate patients in the prevention of oral diseases, control pathogenic oral habits, instruct them on proper oral hygiene, dietary and nutritional measures and, in summary, on all methods of maintaining oral health.

Learning outcomes:

- LO1: To Know the Etiology and Classification of Malocclusions
- LO2: To Know the essentials for Orthodontic Diagnosis: Cephalometric analysis and facial analysis

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, CT1, CT4, CT7, CT8, CT9, GC1, GC3, GC12, GC13, GC14, GC15, GC16, GC17, GC19, GC20, GC21, GC22, GC23, GC25, GC26, GC27, GC30, SC9, SC10	LO1: To Know the Etiology abd Classification of Malocclusions
CB1, CB2, CB4, CB5, CT1, CT4, CT7, CT8, CT9, GC1, GC3, GC12, GC13, GC14, GC15, GC16, GC17, GC19, GC20, GC21, GC22, GC23, GC25, GC26, GC27, GC30, SC9, SC13	LO2: To Know the essentials for Orthodontic Diagnosis

4. CONTENT

THEORETICAL CONTENT OF THE SUBJECT:

LO I: INTRODUCTION TO NORMAL OCCLUSION AND MALOCCLUSION
• Topic 1: Ideal occlusion concept: Occlusion and dental articulation. Normocclusion and malocclusion. Angle's classes. Keys to normal occlusion. Ideal occlusion.
• Topic 2: Classification of malocclusion: Characteristics and aims of the classification of malocclusions. Main classifications of malocclusion.
• Topic 3: Etiology of malocclusion: Etiopathogenesis of malocclusion. Overview. Hereditary factors. Local factors. Environmental factors.
• Topic 4: Oral habits leading to malocclusion: Concept of deleterious habits. Pacifier and thumb sucking. Tongue thrust. Oral breathing. Labial interposition.

LO2: INTRODUCTION TO DIAGNOSTIC METHODS IN ORTHODONTICS
• Topic 5: Study cast analysis. Individual arch analysis. Individual dental malpositions. Analysis of models in occlusion.
• Topic 6: Space discrepancy (tooth size-arch length discrepancy). Measurement of arch length and estimation of tooth size
• Topic 7: Introduction to cephalometrics: Tracing of structures. Definition and localization of main cephalometric points.
• Topic 8. Cephalometrics II. Tracing of vertical and horizontal planes. Cephalometric analysis.
• Topic 9. Exploration of Facial Morphology and Symmetry: Concept of beauty and aesthetics. Golden proportions. Cranial shape assessment. Frontal analysis. Profile analysis. Smile and lips assessment. Nose analysis. Chin analysis.
• Topic 10. Facial biotypes and facial photography

An indicative outline of the lecture contents will be uploaded on the Virtual Campus. These outlines should be completed with the recommended bibliography.

PRACTICAL CONTENTS:

• Wire bending I.
• Wire bending II
• Wire bending III, impressions and cast pouring
• Study model I: Occlusion analysis, Individual arch analysis and individual dental analysis
• Study model II: Space analysis
• Cephalometrics I. Tracing structures and localising cephalometric points
• Cephalometrics II. Tracing of planes and angle measurement 1
• Cephalometrics III. Tracing of planes and angle measurement 2

5. TEACHING-LEARNING METHODOLOGIES

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

- Master class
- Collaborative learning
- Practical
- Tutorials
- Seminar
- Autonomous learning
- Knowledge and skills evaluation

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 class	13
Collaborative learning	2
Practical	28
Tutorial	12
Seminar	8
Autonomous learning	74
Knowledge evaluation	8
Asynchronous master class	5
TOTAL	**150**

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	38%
Practical evaluation	27%
Seminars	30%
Competencies	5%

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

Orthodontics I consists of 3 parts (theoretical evaluation, laboratory practicals and seminars) that have to be passed independently with at least a 5 (out of 10).

1. Theoretical evaluation (40% of the final grade)

Your learning activities of knowledge and procedures, as well as autonomous study will be evaluated by a Multiple Choice Question exam or by Short Written Questions at the end of Orthodontics I module.

A 5% of this grade can be obtained through a positive evaluation of cross-sectional competencies and 80% of class attendance.

Assistance to lectures is compulsory. Students failing to attend to 50% of all lectures will not be able to pass the subject during the first exam period.

2. Seminar evaluation (30 % of the final result)

A portfolio will be conformed with individual activities and group works. In order to pass this part of the subject, you need an average value of 5. Each seminar must be graded at least with value of “3” (out of 10) in order to calculate de final value.

If you fail to attend a class seminar, this will be evaluated as “0”, even if the absence is properly justified.

You will be able to sit a final seminar exam if your average grade is below 5 and you have a maximum of ONE absence to seminars.

If you have 2 or more absences to seminars you will “fail” this part of the subject and you are only going to be able to recover it during the follow up period of the second exam period (extraordinary call in July).

3. Practical evaluation (30% of the final result)

Practical will be assessed in relation with the specific accomplishment you obtain in each one of the practical, by means of objective tests at the end of each block and the acquisition of manual skill competencies described in each one of the assessment procedures. A 10% of this grade corresponds to cross-sectional competencies. In order to pass the practical, you need to get at least a 3 in each of the practical evaluations. If you do not attend a practical evaluation, this will be graded as “0”.

Continuous assessment

Students taking campus-based studies are required to demonstrate that they have attended at least 50% of their classes. Such attendance forms an essential part of the assessment process and is necessary to give the student the right to receive guidance, assistance and academic supervision from the professor. For such purposes, students must use the technological system put in place by the University to accredit their daily attendance at each of their classes. This system shall furthermore ensure that objective information is gathered regarding the active role of the student in the classroom. The failure to use the methods proposed by the University to demonstrate 50% attendance will give the professor the right to grade the course as a fail under the ordinary exam period. The foregoing does not affect other requirements of higher attendance percentages that each school may establish in their teaching guides or internal regulations.

Therefore, it is the authority of the professor that students who have not fulfilled the 50% of attendance in the ordinary call must pass all the evaluation tests in the extraordinary call, for which they must obtain a grade greater than or equal to 5.0 out of 10.0 in all of them (Faculty Board 11-07-23).

PLAGIARISM REGULATION

In accordance with article 6, point 12 of the REGULATION FOR THE EVALUATION OF OFFICIAL DEGREES OF THE EUROPEAN UNIVERSITY OF MADRID: Any student who disposes of or uses illegal means in carrying out an evaluation test, or who improperly attributes the authorship of academic work required for the evaluation, will have the grade of "fail" (0) in all the evaluation tests of the call in which the event occurred and may probably be subject to a sanction, prior to the opening of a disciplinary file.

7.2. Second exam period

To pass the subject during the second exam period you will have to recover the part failed in the first exam period.
• To pass the theoretical part, you have to pass a MCQ exam or written exam (short answers).

• To pass the practical part you must attend the follow up period (mandatory) and carry out the practical on-site. After which you must attend an objective practical evaluation.

• To pass the seminar part, you must pass an examination that encompasses the different seminars accomplished along the module, as well as handing in all the activities requested along the course.

8. SCHEDULE

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

Assessable activities	Deadline
Activity 1: Wire Bending test	October 8th-9th
Activity 2: Study models and occlusion seminar	October 21st-22nd-23rd
Activity 3: Space analysis seminar	October 21st-22nd-23rd
Activity 4: Space analysis objective test	November 5th-6th
Activity 5: Cephalometric Seminar	December 2nd-3rd-4th
Activity 6: Cephalometric objective test	December 3rd-4th
Activity 7: Cephalometric notebook delivery	December 10th-11th
Activity 8: Final theory exam	January 15th

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:

- J. A. Canut Brusola, “Ortodoncia Clínica y Terapéutica”, 2ªEdición. Barcelona. Massón. 2000.

The recommended Bibliography is:

- J. Fernández y cols., “Manual de Prácticas de Odontopediatría, Ortodoncia y Odontología Preventiva”, 1ª ed. Madrid, Editorial Ripano, 2006. ISBN: 84-609-7414-6.
- Fernández Sánchez J. & Da Silva Filho O. Atlas de cefalometría y análisis facial. 2009, 290 p. ISBN-13 978-84-936756-7-7 Editorial Ripano Madrid.
- W. R. Proffit, “Ortodoncia Contemporánea: Teoría y Práctica”. 5ª Edición. Barcelona. Elsevier. 2014.
- J. Gregoret, “Ortodoncia y Cirugía Ortognática. Diagnóstico y Planificación”. 2ª Edición. Amolca 2014

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@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.

SUBJECT'S WORKPLAN

HOW TO COMMUNICATE WITH YOUR PROFESSOR

Whenever you have a question about the content or activities, don't forget to post it to your course forum so that your classmates can read it.

You might not be the only one with the same question!

If you have a question that you only want to ask your professor, you can send him/her a private message from the Campus Virtual. And if you need to discuss something in more detail, you can arrange an advisory session with your professor.

It's a good idea to check the course forum on a regular basis and read the messages posted by your classmates and professors, as this can be another way to learn.

DESCRIPTION OF ASSESSABLE ACTIVITIES

Activity 1. Practical evaluation: Wire Bending

- Correct use of orthodontic pliers
- Follows the drawing accurately
- Maintains a flat plane
- No notches performed

Activity 2. Seminar: Malocclusion analysis using intraoral photographs

- Identify malocclusion
- Complete description of malocclusion: molar class, canine class, overbite, overjet and midlines
- Use adequate nomenclature

Activity 3. Seminar: Space analysis

- Identify dentition stage
- Use the adequate method for space analysis calculation
- Knows how to use the Moyer´s Tables
- Correct use of dental calliper to measure mesiodistal tooth diameters

Activity 4. Practical Test: Study models

- Study models in occlusion in sagittal, transverse and vertical relationship
- Individual arch analysis
- Identifies individual tooth malpositions
- Identifies dentition stage
- Correct use of dental calliper to measure mesiodistal tooth diameters
- Knows different methods to estimate space analysis discrepancy

Activity 5. Seminar: Cephalometric analysis

- Locates cephalometric points correctly
- Accurate cephalometric tracing of lines and planes
- Correct angular and linear cephalometric measurements

Activity 6. Practical test: Cephalometric analysis using lateral radiograph

- Identify anatomic and dental structures
- Locate cephalometric points
- Accurate cephalometric tracing of lines and planes

- Correct angular and linear cephalometric measurements

Activity 7. Cephalometric notebook
- Identify anatomic and dental structures using lateral radiograph.
- Identify soft tissues
- Locate cephalometric points
- Cephalometric tracing
- Intepret the cephalometric tracing

Activity 8. Final theory exam
- Identify malocclusion and use proper nomenclature
- Factors of etiology of the malocclusions
- Apply correct methods to diagnose malocclusions
- Perform correctly study cast analysis
- Interpret a cephalometry properly
- Identify malocclusions through facial analysis

RUBRICS OF ASSESSABLE ACTIVITIES

Orthodontics I consists of 3 parts that have to be passed independently with a 5.

1. Theoretical evaluation (40% of the final grade)

Your learning activities of knowledge and procedures, as well as autonomous study will be evaluated by MCQ. exam or by Short Written Questions at the end of Orthodontics I module.

A 5% of this grade can be obtained through a positive evaluation of cross-sectional competencies and 80% of class attendance (less than two absences to lectures).

Assistance to lectures is compulsory. Students failing to attend to 50% of all lectures will not be able to pass the subject during the first exam period.

Continuous assessment

Students taking campus-based studies are required to demonstrate that they have attended at least 50% of their classes. Such attendance forms an essential part of the assessment process and is necessary to give the student the right to receive guidance, assistance and academic supervision from the professor. For such purposes, students must use the technological system put in place by the University to accredit their daily attendance at each of their classes. This system shall furthermore ensure that objective information is gathered regarding the active role of the student in the classroom. The failure to use the methods proposed by the University to demonstrate 50% attendance will give the professor the right to grade the course as a fail under the ordinary exam period. The foregoing does not affect other requirements of higher attendance percentages that each school may establish in their teaching guides or internal regulations.

Therefore, it is the authority of the professor that students who have not fulfilled the 50% of attendance in the ordinary call must pass all the evaluation tests in the extraordinary call, for which they must obtain a grade greater than or equal to 5.0 out of 10.0 in all of them (Faculty Board 11-07-23).

If you are at your 5th call or further, you may take part of a special work group.

2. Seminars evaluation (30 % of the final result)

A portfolio will be conformed with individual activities and group works. In order to pass this part of the subject, you need a mean value of 5. Each seminar must be graded with a value of "3" or more in order to calculate de final value. If any of the grades is below a 3 or the average is below a 5, you'll have to sit a final global seminar exam.

If you fail to attend a class seminar, this will be evaluated as "0", even if the absence is properly justified.

You will be able to sit a final seminar exam if your average grade is below 5 and you have a maximum of ONE absence to seminars.

If you have 2 or more absences to seminars you will "fail" this part of the subject and you are only going to be able to recuperate it during the follow up period of the second exam period.

3. Practical evaluation (30% of the final result)

Practicals will be assessed in relation with the specific accomplishment you obtain in each one of the practical, by means of objective tests at the end of each block and the acquisition of manual skill competencies described in each one of the assessment procedures. A 10% of this grade corresponds to cross-sectional competencies.

In order to pass the practical, you need to get at least a 3 in each of the practical evaluations. If you do not attend a practical evaluation, this will be graded as "0" (zero).

The work done in the laboratory will be daily supervised. All practical work must be handed in at the beginning of the practical of the week after.

The final grade of the practical is the average value of all practical exams and cephalometric notebook. In order to do the average, it's mandatory to perform all objective evaluations and reach a grade of a 3 or above in each one of them.

For a positive evaluation of the competencies, the following will be considered:

- Daily achievement, as well as your attitude and behaviour
- If you bring all the material needed to accomplish the practical.
- If you have all the knowledge to develop the practical.
- If the practical is handed in on time

Professors may ascertain this competency objectively at the beginning of each practical.

In order to pass practical evaluation you must achieve all practicals on-site y present the following practicals:

- 10 wire figures
- 3 study models
- 3 cephalometric analysis
- 1 orthodontic cast models
- 1 cephalometric notebook

If you have ONE or TWO absences, you must recover the missed practical in the allocated time during the Schedule. These days are December 19th-20th and January 9th-10th, 2024. If you don´t retake the missing practices, you will fail and you will have to attend the follow up period (second exam period). If you have THREE OR MORE absences, you will FAIL this part of the subject and you will only be able to pass it during the follow-up period of the second exam period.

If you have a practical final grade below 5, or a grade below 3 in any objective evaluation, and have all your practicals completed, you will have to sit the final practical exam at the end of the semester.

If any of the objective tests is not carried out, it will be evaluated with a "0" (zero) and the final practical exam must be attended. The cephalometry booklet must be delivered on the scheduled date or it will be evaluated with a '0' and the final exam must be attended. In any case, a new delivery date will be agreed with the teacher since its completion is mandatory. If it is not delivered, this part of the subject will be failed and the follow-up period must be attended.

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