1. BASIC INFORMATION

<table>
<thead>
<tr>
<th>Course</th>
<th>Orthodontics I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree program</td>
<td>Dentistry</td>
</tr>
<tr>
<td>School</td>
<td>Health Sciences</td>
</tr>
<tr>
<td>Year</td>
<td>3rd</td>
</tr>
<tr>
<td>ECTS</td>
<td>6 ECTS</td>
</tr>
<tr>
<td>Credit type</td>
<td>Compulsory</td>
</tr>
<tr>
<td>Language(s)</td>
<td>English, Spanish</td>
</tr>
<tr>
<td>Delivery mode</td>
<td>On-site classroom course</td>
</tr>
<tr>
<td>Semester</td>
<td>Semester</td>
</tr>
<tr>
<td>Academic year</td>
<td></td>
</tr>
<tr>
<td>Coordinating professor</td>
<td></td>
</tr>
</tbody>
</table>

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 malocclusions 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.

Specific competencies:

- CE1. Recognise the basic elements of the dental profession, including the ethical principles and legal responsibilities
- CE3. Identify the patient’s concerns and expectancies, as well as having the ability to have an efficient and clear oral and written communication with the patients, their family, the social media and other professionals.
- CE9. Understand the importance of maintaining and using records information of patient for later analysis, preserving the confidentiality of data.
- CE12. Understand and recognize the structure and normal function of the oral cavity at molecular, cellular, tissue and organ level in the different stages of life.
- CE13. Understand and recognize the essential biomaterials sciences for the dental practice and immediate management of possible allergies related to them.
- CE14. Recognise the general process of diseases, which include infections, inflammations, immune system alteration, degeneration, cancer, metabolic alterations and genetic disorders.
• CE15. Be familiar with the general pathological features of diseases and disorders affecting organ systems, specifically those with oral impact.
• CE16. Understand the action mechanisms, indications, drug efficiency and other therapeutic procedures, knowing the contraindications, interactions, systemic effects and interactions on other organs, based on the scientific evidence available.
• CE17. Understand and recognise the ergonomic and occupational safety principles (including cross-infection control, radiation protection, occupational and biological diseases).
• CE20. Obtain and complete a medical record which includes all the relevant information.
• CE21. Know how to fulfil a complete oral examination, including the radiological and complementary explorations, and to obtain the clinical references correctly.
• CE22. Be able to develop an initial diagnosis and establish a rational diagnostic strategy, be competent to recognize situations that require urgent dental care.
• CE23. To establish the diagnosis, prognosis and an appropriate treatment plan in all clinical areas of dentistry, being competent in the diagnosis, prognosis and treatment plan in patients requiring special care, including medically compromised patients (such as diabetic, hypertense, immunosuppressed, anticoagulated, among others) and disabled patients. BOE no. 174 Saturday 19 July 2008 31689.
• CE27. Raise and propose appropriate preventive actions for each clinical situation
• CE30. Acknowledge dentist’s role in preventive actions and protection against oral diseases, as well as preservation and promotion of health, at individual and community levels.

Learning outcomes:
• LO1: Knowledge of Etiology and Classification of Malocclusions
• LO2: Essential knowledge for Orthodontic Diagnosis: Cephalometric analysis and facial analysis

The table below shows the relation between the competencies developed during the course and the envisaged learning outcomes:

<table>
<thead>
<tr>
<th>Competencies</th>
<th>Learning outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB1, CB2, CB4, CB5, CT1, CT4, CT7, CT8, CT9, CE3, CE12, CE14, CE15, CE16, CE17, CE20, CE27, CE30</td>
<td>LO1</td>
</tr>
<tr>
<td>CB1, CB2, CB4, CB5, CT1, CT3, CT7, CT8, CT9, CE1, CE3, CE9, CE13, CE17, CE20, CE21, CE22, CE23</td>
<td>LO2</td>
</tr>
</tbody>
</table>
4. CONTENT

4.1 Theoretical content of the subject

LO I: INTRODUCTION TO NORMAL OCCLUSION AND MALOCCLUSION

- **Topic 2: Classification of malocclusion**: Characteristics and aims of the classification of malocclusions. Main classifications of malocclusion.

LO2: INTRODUCTION TO DIAGNOSTIC METHODS IN ORTHODONTICS

- **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 10. Facial biotypes and facial photography**

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

- **Study model I**: Impressions and cast pouring
- **Study model II**: Basing and trimming
- **Study model III**: Finishing and polish
- **Study cast analysis I**: Models in occlusion, individual arch assessment, individual dental malposition analysis.
- **Study cast analysis II**: Space discrepancy
- **Wire bending I**
- **Wire bending II**
- **Wire bending III**
- **Cephalometrics I**: Tracing structures and localizing cephalometric points
- **Cephalometrics II**: Tracing of planes and angle measurement

5. TEACHING-LEARNING METHODOLOGIES

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

- Master class
- Lab practicals
- Tutorials
- Seminars
- Autonomous work and learning
- Knowledge and skill tests

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:**

<table>
<thead>
<tr>
<th>Learning activity</th>
<th>Number of hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master class</td>
<td>20 h</td>
</tr>
<tr>
<td>Lab Practical</td>
<td>28 h</td>
</tr>
<tr>
<td>Tutorials</td>
<td>12 h</td>
</tr>
<tr>
<td>Seminars</td>
<td>8 h</td>
</tr>
<tr>
<td>Autonomous work and learning</td>
<td>75 h</td>
</tr>
<tr>
<td>Knowledge and skill tests</td>
<td>8 h</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>150 h</strong></td>
</tr>
</tbody>
</table>
7. ASSESSMENT

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

<table>
<thead>
<tr>
<th>Assessment system</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Theoretical evaluation</td>
<td>40%</td>
</tr>
<tr>
<td>Seminar evaluation</td>
<td>30%</td>
</tr>
<tr>
<td>Practical evaluation</td>
<td>30%</td>
</tr>
</tbody>
</table>

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, you must obtain a final course grade of at least 5 out of 10 in each of the three parts of the subject: Theory, seminars and practical.

- Theoretical evaluation accounts for 40% of the final grade. It will be assessed with a MCQ examination or written questions exam at the end of the semester.
- Laboratory practical accounts for 30% of your final grade. They will be assessed in relation with the specific accomplishment you obtain in each one of the practicals, by means of objective tests at the end of each block and the acquisition of manual skill competencies described above. A 10% of this grade corresponds to cross-sectional competencies.
- Seminars accounts for 30% of your final grade. It’s the average of the seminars carried out individually or in group.

7.2. Second exam period

To pass the course in the second exam period, you must obtain a final grade of at least 5 out of 10, in each of the three parts of the subject: Theory, seminars and practical.

- To pass the theoretical part, you will have to pass the theory multiple choice question or short answer exam
- To pass the practical part, it will be compulsory to attend the follow up period and perform the failed practicals
- To pass the seminar part, you will have to pass the seminar final test, which includes all seminars from the course
The student must deliver the activities not successfully completed in the first exam period after having received the corresponding corrections from the professor, or those that were not delivered in the first place.

### 8. SCHEDULE

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

<table>
<thead>
<tr>
<th>Assessable activities</th>
<th>Deadline</th>
</tr>
</thead>
<tbody>
<tr>
<td>Occlusion Seminar Test</td>
<td>Week 4-5</td>
</tr>
<tr>
<td>Study models practical</td>
<td>Week 6-7</td>
</tr>
<tr>
<td>Space analysis Seminar test</td>
<td>Week 8-9</td>
</tr>
<tr>
<td>Wire bending practical</td>
<td>Week 9-10</td>
</tr>
<tr>
<td>Cephalometrics Seminar test</td>
<td>Week 14-15</td>
</tr>
<tr>
<td>Cephalometrics practical</td>
<td>Week 15-16</td>
</tr>
<tr>
<td>Facial Analysis presentation</td>
<td>Week 17-18</td>
</tr>
<tr>
<td>Theory exam</td>
<td>Week 18-19</td>
</tr>
</tbody>
</table>

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

Here is the recommended bibliography:

10. DIVERSITY MANAGEMENT UNIT

Students with specific learning support needs:

Curricular adaptations and adjustments for students with specific learning support needs, in order to guarantee equal opportunities, will be overseen by the Diversity Management Unit (UAD: Unidad de Atención a la Diversidad).

It is compulsory for this Unit to issue a curricular adaptation/adjustment report, and therefore students with specific learning support needs should contact the Unit at unidad.diversidad@universidadeuropea.es at the beginning of each semester.