1. BASIC INFORMATION

Course	ANOMALIES AND MALFORMATIONS OF BUCOFACIAL DEVELOPMENT
Degree program	Dentistry
School	Health Sciences
Year	5
ECTS	3 ECTS / 36 h
Credit type	Compulsory
Language(s)	English, Spanish
Delivery mode	On-site classroom course
Semester	Semester
Academic year	2025/2026
Coordinating professor	Jesús Fernández Sánchez

2. PRESENTATION

The subject aims to be a practical guide for the study of the alterations in the formation and growth of the stomatognathic system and to arouse the interest for an exchange of ideas, doubts and consultations on those patients who, with dentofacial commitment, present difficulties for their attendance, diagnosis And treatment. It seeks to encourage the interest of the student by promoting critical inquiry and participation in the classroom, thus establishing a logical basis for learning.
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 I, II, III & IV.

3. COMPETENCIES AND LEARNING OUTCOMES

General competences:

• In this subject the following competences will be developed and evaluated especially:

• Autonomous learning: it allows the authorship of their own development, choosing the paths, the best strategies, the tools and the moments that they consider more effective to learn and to put into practice independently what they have learned Ability of analysis and synthesis: it allows to decompose complex situations in their constituent parts as well as to evaluate other alternatives and perspectives to find optimal solutions.

• Ability to apply knowledge to practice: relate theoretical foundations with their application to real problems of daily life, address problems and situations close to the professional activity or solve real issues and / or problems. Oral communication / written communication: transmit and receive data, ideas, opinions and attitudes to achieve understanding and action, being oral that is done by words and gestures, and written by writing and / or graphic supports. Problem solving: ability to find a solution to a confusing issue or a complicated situation without a predefined solution, which makes it difficult to achieve an end

Specific competencies:

- Identify the different types of malformations, syndromes and abnormalities of the stomatognathic system.
- To become familiar with the principles of classification of syndromes in relation to their etiology, prognosis and reaction to treatment
- To deepen in the simple genetic disorders and complex embryological syndromes. Types of teratogens with identification of differences and causes that favor malformative disorders
- Knowledge of the medical treatment, surgical and orthodontic approach of the various syndromes, as well as the prognosis once diagnosed.
- To understand the limitations and the competences on the prevention and the diagnosis being familiarized in the methods of differentiation of each anomaly, syndrome or malformation.
- Training of the student in the management of the most relevant bibliographic sources in both direct and indirect facial malformations (bibliographic databases), with emphasis on access through telematic means (Internet / Intranet)

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

Competencies	Learning outcomes
CB1, CB3, CB4, CE4,CE18,CE29	RA1
CB1, CB5,CE4,CE8,CE18,CE29	RA2
CB5,CT10,CE7,CE10,CE29	RA3
CB5,CT3,CT10,CE2,CE8,CE10,CE30	RA4

4. CONTENT

4.1 Theoretical content of the subject

Theme 1: Introduction, terminology and concepts.

1.1. Introduction.
1.2. Basic concepts about embryogenesis.
1.3. The code of life in the structure of DNA.
1.4. Human inheritance
1.4.1. Genetic code
1.4.2. Transmission of genes.

Theme 2: Congenital anomalies and malformations.
2.1. Introduction: Frequency. Environmental factors.
2.2. Periods of susceptibility of organic systems to teratogenesis
2.3. Teratogens associated with human malformations.
2.2.1. Infectious agents.

2.2.2. Radiation.
2.2.3. Chemical agents
2.2.4. Hormones
2.2.5. Others: nutritional deficiencies, hypoxia, environmental substances

Theme 3: Microsomies and fissures.

3.1. Introduction to alterations in facial mass formation. 3.1. Hemifacial Microsomy
3.1.1. Etiology, clinical forms, classification.
3.1.2. Multidisciplinary treatment (surgical-orthodontic) 3.2. Labiopalatine clefts
3.2.1. Etiology, clinical forms, classification.
3.2.2. Multidisciplinary treatment (surgical-orthodontic)

Theme4: Structural and numerical chromosoma abnormalities. 4.1. Introduction.
4.2. Structural and numerical anomalies.
4.3. More frequent syndromes of the human species.

4.3.1 Update on Down Syndrome.
- Etiological diagnosis, signs and symptoms.

- Orofacial disorders characteristic of the Syndrome - Work of the dentist in the treatment.

4.3.2 Oculo-auricular dysplasia Goldenhar-Gorlin syndrome - Clinical and diagnostic characteristics
- Physiological aspects of the affected patient of Goldenhar

4.3.3. Treacher Collins Syndrome
- Causes of Treacher Collins Syndrome
- Characteristics of Treacher Collins Syndrome
- Diagnosis and treatment of Syndrome Case. • Master class. • Problem-based learning (PBL)
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4.3.4. Williams syndrome
- Cognitive Profile of Williams Syndrome Patient

- General characteristics of the patient.

General and specific treatment in consultation of patients affected with the Syndrome. 4.3.5. Prader Willi Syndrome

- General clinical features and the orofacial area
- Physiological and behavioral aspects of the patient with Prader Willi

4.3.6. Crouzon Syndrome

- Description and etiology of the syndrome.
- General characteristics, craniofacial and oral.
- Etiopathogenesis and associations with other symptoms.
- Diagnosis: clinical history, exploration and complementary tests.
- Differential diagnosis.
- Treatment and oral needs.

4.3.7. Lymphangiomas

- Clinical and morphological aspects of childhood lymphangiomas
- Symptoms and Causes of Lymphangiomas

4.4. Syndromes without chromosomal aberrations.

4.5. Speech therapy and speech therapy in the multidisciplinary treatment of the patient Syndromic.

Theme 5: Syndromes with dental anomalies. Genes involved.

5.1. Cleft lip and palate

- Morphological characteristics and classification of different types of cracks - Dental aspects of each type of fissure
- Secondary bone graft; Dentist's work in the treatment
- Surgical treatment of the fissured patient; multidisciplinary team

5.2. Pierre Robin syndrome

- Clinical Manifestations of the Syndrome
- Etiopathogenesis, diagnosis and treatment
- Management of the patient with Pierre Robin sequence

5.3. Hipodontia, Oligodontia, Familial dental agenesia ....

5.4. Genes involved.

5.5. Three-dimensional diagnosis in patients with craniofacial anomalies

Theme 6: Multidisciplinary treatment and differences with patients with balanced or normal growth

6.1. Stereolithography

6.2. Dental prototyping

6.3. Orthognathic Positioning System: Intraoperative System to Transfer Virtual Surgical Plan to Operating Field During Orthognathic Surgery

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Theme 7: Cleft lip and palate in the newborn: objectives of dental therapy. What can the dentist contribute to the craniofacial team?

Theme 8: Essential moments where the dentist is needed by the craniofacial surgery team. What the dentist needs to know

Theme 9: Dental alterations compared to dentoskeletal deformities, how are they approached?

Theme 10: nterrelation of the patient with other specialties, speech therapists, otolaryngologists, surgeons, geneticists, social worker...

5. TEACHING-LEARNING METHODOLOGIES

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

- Case.
- Master class.
- Problem-based learning (PBL)

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	15 h
Case solving	7,5 h
Tutorials	2,5 h
Practical activities	12,5 h
Autonomous work and learning	35 h
Exams	2,5 h
TOTAL	**75h**

Online mode:

Learning activity	Number of hours

TOTAL	

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
Exams	40%-60%
Bibliographic presentation	20% - 30%
Case solving	10% - 20%

- **Online mode:**

Assessment system	Weight

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

Date: Last week of Jun
Type of evaluation: Autonumus work
The exam must be approved with a mark above 5

7.2. Second exam period

If the ordinary assessment in June is failed, the student will attend the extraordinary July assessment:
Date_ Previously communicated
Evaluation type: Autonumus work

8. SCHEDULE

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

Assessable activities	Deadline
Activity 1. Seminar	February, Week 2
Activity 2. Send Work	May, Week 1
Activity 3. Clinical cases and final test	June, Week 3
Activity 4. Activity Seminar	June, Week 3

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 recommended Bibliography is:

T. W. SADLER, Langman, Embriología Médica, México, Edit. Panamericana,1994. NEIL O˘DOHERTY, Atlas de Recien Nacido, MTP Press Limited, 1982 MOORE-PERSAUD, Embriología clinica, Interamericana. Mc Graw-Hill, 1995 WATSON A.C. & SELL. Management of cleft lip and palate. Whurr Publishers, 2001 MUELLER, R.F, YOUNG, I. Genética Médica, Marban Madrid, 2001

CAMARGO R.C. Odontopediatria en las fisuras palatinas. Ed Santos, 2005

COMPLEMENTARY BIBLIOGRAPHY
www.iqb.es/Diccio/S/SindromeV.htm
www.iqb.es/Diccio/E/EnfermedadP.htm
http://www.nlm.nih.gov/medlineplus/spanish/ency/article/001607.ht
m http://www.alfinal.com/Salud/pierrerobin.shtml

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http://www.nlm.nih.gov/medlineplus/spanish/print/ency/article/000456.htm
http://www.shands.org/health/spanish/esp_ency/article/000456.htm http://www.orpha.net

http://iier.isciii.es/

www.papaizassociados.com.br/Papaiz%20News/Goldenhar.

http://www.treachercollins.net/syndrome.html www.williams-syndrome.org.

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.