

1. BASIC INFORMATION

Course	Physiology of the Stomatognathic System
Degree program	Dentistry Degree
School	Biomedical and Health Sciences
Year	Second
ECTS	6 ECTS
Credit type	Basic
Language(s)	Spanish and English
Delivery mode	Campus-based
Semester	Second
Academic year	2024-2025
Coordinating professor	Cristina Albarrán
Professors	Javier Vicente Tejedor; Jesús Merchán Rubira, Elva Martín Batista

2. PRESENTATION

In line with one of the objectives of the university such as to train professionals in the field of dentistry, the future dentist, in addition to knowing the anatomy of the structures of the head and the neck, must understand in depth the basic functions of the Stomatognathic System. In the future, this knowledge will allow the student to understand the alterations and pathologies that develop in the oral area.

3. COMPETENCIES AND LEARNING OUTCOMES

Core competencies (CC):

- **CC1.** 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.
- **CC3.** That students have the ability to gather and interpret relevant data (usually within their area of study) to make judgments that include a reflection on relevant issues of social, scientific, or ethical nature.
- **CC5.** That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.

Cross-curricular competencies (C-CC):

- **C-CC1. 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.

- **C-CC6. Oral / Written Communications.** Communication is the process by which we transmit and receive data, ideas, opinions, and attitudes to achieve understanding and action. It can be oral, that is done through words and gestures, and / or written, through writing and / or graphic support.
- **C-CC12. Critical reasoning.** Ability to analyze an idea, phenomenon or situation from different perspectives and assume before him / her a personal approach, built from the rigor and objectivity argued, and not from intuition.

General Competencies (GC):

- **GC7.** Promote autonomous learning of new knowledge and techniques, as well as motivation for quality.
- **GC11.** Understand the basic biomedical sciences on which Dentistry is based to ensure correct oral care.
- **GC12:** Critical reasoning: Ability to analyze an idea, phenomenon or situation from different perspectives and assume before him / her a personal approach, built from the rigor and objectivity argued, and not from intuition.
- **GC18.** Know, critically assess, and know how to use the sources of clinical and biomedical information to obtain, organize, interpret, and communicate scientific and health information.
- **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.

Specific competencies (SC):

- **SC1.** Know the biomedical sciences on which Dentistry is based to ensure correct oral-dental care. Among these sciences, appropriate contents of Embryology, Anatomy, Histology, and Physiology of the human body have to be included.
- **SC4.** To know the morphology and function of the stomatognathic system, including appropriate contents of specific embryology, anatomy, histology, and physiology.

Learning outcomes (LO):

- **LO1:** To know the microscopic aspects of the different structures of the stomatognathic system.
- **LO2:** To understand and handle the general concepts of the neuroanatomy of the head and neck, with a clinical-therapeutic orientation.
- **LO3:** To understand the physiological mechanisms of the organs of the oral and dental area.
- **LO4:** To promote the ability to relate, synthesize, consult, and expose contents with practical situations of real work.

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

Competencies	Learning outcomes
GC11, GC12	LO1: To know the microscopic aspects of the different structures of the stomatognathic system.
CC1, CC3, C-CC1, C-CC12	LO2: To understand and handle the general concepts of the neuroanatomy of the head and neck, with a clinical-therapeutic orientation.
GC18, GC19, SC1, SC4	LO3: To understand the physiological mechanisms of the organs of the oral and dental area.
CC3, CC5, C-CC1, C-CC6, C-CC12, GC7	LO4: To promote the ability to relate, synthesize, consult, and expose contents with practical situations of real work.

4. CONTENT

The subject is organized into five Thematic Blocks/Sections, which, in turn, are divided into specific units:

Block 1. Introduction to the Stomatognathic system.

- Unit 1. Stomatognathic system. Organs of the Oral Cavity (Digital Block)

Block 2. Tissues and organs of the oral cavity.

- Unit 2. Dental tissues I: Enamel.
- Unit 3. Dental tissues II: Dentin and Pulp.
- Unit 4. Dental tissues III: Periodontium.
- Unit 5. Embryology and tooth eruption (Digital Block).

Block 3. Structure and function of the cranial nerves.

- Unit 6. Cranial nerves.
- Unit 7. Trigeminal nerve (CN V). Generalities.
- Unit 8. Trigeminal nerve (CN V). Branches.
- Unit 9. Trigeminal nerve (CN V). Somatosensory pathway.

Block 4. Sensory and motor function of the oral cavity.

- Unit 10. Introduction to the Somatosensory System (Digital Block).
- Unit 11. Mechanoreception and Proprioception (Digital Block).
- Unit 12. Sensations: Temperature, and Pain.
- Unit 13. Orofacial pain (Digital Block).
- Unit 14. Mastication control.

Block 5. Structure and function of the saliva. Taste and deglutition.

- Unit 15. Salivary glands I: Anatomy and Histology.
- Unit 16. Salivary glands II: Innervation.
- Unit 17. Salivary glands III: Physiology.
- Unit 18. Taste.
- Unit 19. Swallowing (Digital Block).

5. TEACHING-LEARNING METHODOLOGIES

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

- Master lectures.
- Study and autonomous work.
- Case analysis.
- Tutorials.
- Cooperative learning.

6. LEARNING ACTIVITIES

Listed below are the types of learning activities and the number of hours the student will spend on each one:

Learning activity	Number of hours
Master lectures	43
Virtual asynchronous master lectures	10
Lab practices	8
Cases analyses	7
Practical exercises	7.5
Tutorials	5
Study and autonomous work	67
Knowledge tests	2.5
TOTAL	150

7. ASSESSMENT

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

Assessment system	Weight
Quantifiable demonstration of theoretical knowledge and assimilation and integration of that learning	70 %
Demonstrate the knowledge and skills worked during the experiments conducted in the laboratory	30 %

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 subject in the Ordinary exam period **a grade greater than or equal to 5.0 out of 10.0 in the final theoretical total grade**, must be obtained, **contributing**, together with the grade obtained in the Digital Block Activities, **to 70 % of the final grade**. For its part, **a grade greater than or equal to 5.0 over 10.0 in the average of the practical classes** must be obtained, **contributing to the remaining 30 % of the final grade**.

- These general criteria (including the dates of practical classes or any other evaluable test) will be subject to modifications by the teaching staff (when appropriate) due to academic calendar, laboratory or classroom availability and the possible occurrence of incidents that affect the normal development of the subject.

7.2. Second exam period

In order to pass the subject in extraordinary session, the student **must take an exam on the whole subject**, whether theoretical and/or practical. The test of evaluation of theoretical knowledge at extraordinary period, as well as the practical part, will be **similar (but not necessarily equal)** to those made in the ordinary call. In relation to the practical part there will be a single evaluable test that encompasses the set of all the practices. This practical part may be recovered either during the follow-up period, or during the extraordinary session; said moment will be determined by the teachers.

8. SCHEDULE

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

Assessable activities	Deadline
Activity 1. Digital Block Activity 1	Week 3
Activity 2. Digital Block Activity 2	Week 4
Activity 3. Practical Class 1: Histology of the oral cavity	Week 5
Activity 4. Student's questions test	Week 7
Activity 5. Practical Class 2: Structure & function of the cranial nerves	Weeks 8
Activity 6. Digital Block Activity 3	Week 10
Activity 7. Digital Block Activity 4	Week 11
Activity 8. Digital Block Activity 5	Weeks 12
Activity 9. Practical Class 3: Structure & function of the trigeminal nerve	Week 13
Activity 10. In campus integrated activity and test	Weeks 14
Activity 11. Practical Class 4: Structure & function of the saliva	Week 15
Activity 12. Digital Block Activity 6	Week 16
Activity 13. Final theoretical assessment	Week 17-18

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 works for this subject are:

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The recommended bibliography is:

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Tratado de histología. FAWCET-BLOOM. Editorial Interamericana Mc Graw Hill

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Anatomía, Fisiología y Oclusión Dental. S.J. Nelson, M.M. Jr. Ash. Elsevier

Prometheus. Atlas de Anatomía de la Cabeza y el Cuello para Odontología. Eric W. Baker / Michael Schünke / Erik Schulte / Udo Schumacher. Panamericana

Sobotta. Cabeza, cuello y neuroanatomía. Paulsen y Waschke. Elsevier

Netter. Anatomía de cabeza y cuello para odontólogos. Neil. S. Norton, Ph.D. Elsevier Masson

Anatomía Humana. Latarjet, M. Ruiz Liard, R.C. Panamericana, S.A.

Anatomía Humana. Rouviere, H. Delmas, A. Masson Williams & Wikins.

Anatomía de la cabeza. Velayos Santana, J.L. Panamericana

Langman. Fundamentos de embriología médica. Sadler. Panamericana

Embriología clínica. Moore, L. Persaud. Elsevier

Gray Anatomía para estudiantes. Drake RI. Elsevier. 2010

Atlas en color y texto de anatomía oral, histología y embriología. BERKOVITZ BKB, HOLLAND GR, MOXHAM BJ. Revisión científica Antonio Bascones Martínez. Mosby/Doyma Libros, 1995

Oral Structural Biology. Hubert E. Schoreder. Thieme

Gray's Anatomy for Students. Richard L. Drake, Wayne Volg, Adam W.M. Mitchell. Elsevier. 2010

Principles of Anatomy and Physiology. Tortora G., Derrickson, B. Wiley

Anatomical Atlas of the Temporomandibular Joint. Ide Y, Kamimura K. Quintessence Publishing

Atlas of human anatomy. Mark Nielsen, Shawn D. Miller. John Wiley & Sons Incorporated

Nomenclatura anatómica ilustrada. Wolfgang Daubler, Heinz Feneis. Elsevier Masson

AUDIOVISUAL MEDIA:

- Human anatomy (Aclands). Lippincott, Williams & Wildins. 2003. Wolters Kluwer Company
- INTERESTING WEBSITES:
 - ✓ http://www.med.umich.edu/lrc/coursepages/m1/anatomy2010/html/courseinfo/labs_systemic.html
 - ✓ <http://dicciomed.eusal.es/>
 - ✓ <https://anatomylearning.com>
 - ✓ <http://biblioteca.uem.es/>

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 mean 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 opportunity 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 the **Satisfaction 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 “Satisfaction surveys” section in virtual campus or via e-mail.

Your assessment is necessary for us to improve.

Thank you very much for your participation!