1. BASIC INFORMATION

<table>
<thead>
<tr>
<th>Course</th>
<th>Physiology of the Stomatognathic system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree program</td>
<td>Odontology</td>
</tr>
<tr>
<td>School</td>
<td>Biomedical science</td>
</tr>
<tr>
<td>Year</td>
<td>2nd</td>
</tr>
<tr>
<td>ECTS</td>
<td>6</td>
</tr>
<tr>
<td>Credit type</td>
<td>Mandatory</td>
</tr>
<tr>
<td>Language(s)</td>
<td>English</td>
</tr>
<tr>
<td>Delivery mode</td>
<td>Presential</td>
</tr>
<tr>
<td>Semester</td>
<td>First</td>
</tr>
<tr>
<td>Academic year</td>
<td>2019-2020</td>
</tr>
<tr>
<td>Coordinating professor</td>
<td>David Vega Avelaira</td>
</tr>
</tbody>
</table>

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 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:

- CB1: 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.
- CB3: 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
- CB5: That students have developed those learning skills necessary to undertake further studies with a high degree of autonomy.

Cross-curricular competencies:
• CT1: 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.

• CT6: Oral Communication / Written Communication: Communication is the process by which we transmit and receive data, ideas, opinions and attitudes to achieve understanding and action, being oral that is done through words and gestures and, written, through writing and / or graphic support.

• CT12: 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.

Specific competencies:

• CE7: To promote autonomous learning of new knowledge and techniques, as well as motivation for quality.

• CE11: To understand the basic biomedical sciences on which dentistry is based to ensure proper dental care assistance.

• CT12: 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.

• CE18: To 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.

• CE19: To understand the scientific method and have 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.

Learning outcomes:

• LO1: To understand and manage the general concepts of neuroanatomy of the head and neck, with clinical-therapeutic orientation

• LO2: Knowledge of the microscopic aspects of the different structures of the stomatognathic system.

• LO3: To understand the physiological mechanisms of the organs of the oral 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:

<table>
<thead>
<tr>
<th>Competencies</th>
<th>Learning outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>CB1, CB3, CT1, CT12, CE7, CE12, CE18, CE19</td>
<td>LO1: To understand and manage the general concepts of neuroanatomy of the head and neck, with clinical-therapeutic orientation</td>
</tr>
<tr>
<td></td>
<td>LO2: Knowledge of the microscopic aspects of the different structures of the stomatognathic system.</td>
</tr>
<tr>
<td></td>
<td>LO3: To understand the physiological mechanisms of the organs of the oral area.</td>
</tr>
<tr>
<td>CB3, CB5, CT1, CT6, CT12</td>
<td>LO4: To promote the ability to relate, synthesize, consult and expose contents with practical situations of real work</td>
</tr>
</tbody>
</table>

4. CONTENT

The subject is organized into 5 thematic blocks, which, in turn, are divided into units:

**Block 1. Introduction to the Stomatognathic system.**
- Unit 1. Stomatognathic system.

**Block 2. Structure and function of the cranial nerves.**
- Unit 2. Cranial nerves.
- Unit 3. Trigeminal nerve (pair V).
- Unit 4. Branches of the trigeminal nerve.
- Unit 5. Somatosensory pathway of the trigeminal nerve.

**Block 3. Sensory and motor function of the oral cavity.**
- Unit 6. Somatosensory receptors.
- Unit 7. Dental pain.
- Unit 8. Mastication control.

**Block 4. Tissues and organs of the oral cavity.**
- Unit 9. Organs of the oral cavity.
- Unit 10. Dental tissues I.
- Unit 11. Dental tissues II.
- Unit 12. Dental tissues III.
- Unit 13. Embryology and tooth eruption.

**Block 5. Structure and function of the saliva and deglutition.**
- Unit 14. Salivary glands I.
- Unit 15. Salivary glands II.
- Unit 16. Salivary glands III.
- Unit 17. Salivary glands IV.
- Unit 18. Swallowing.
- Unit 19. Taste receptors.
5. TEACHING-LEARNING METHODOLOGIES

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

- Master classes
- Study and autonomous work
- Case analysis
- Tutorial

6. LEARNING ACTIVITIES

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

<table>
<thead>
<tr>
<th>Learning activity</th>
<th>Number of hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Master class</td>
<td>54 h</td>
</tr>
<tr>
<td>Lab practices</td>
<td>7 h</td>
</tr>
<tr>
<td>Cases analyses</td>
<td>7 h</td>
</tr>
<tr>
<td>Practical exercises</td>
<td>7 h</td>
</tr>
<tr>
<td>Knowledge tests</td>
<td>2 h</td>
</tr>
<tr>
<td>Tutorials</td>
<td>5 h</td>
</tr>
<tr>
<td>Study and autonomous work</td>
<td>68 h</td>
</tr>
<tr>
<td>TOTAL</td>
<td>150 h</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>Quantifiable demonstration of theoretical knowledge and assimilation and integration of that learning</td>
<td>70%</td>
</tr>
<tr>
<td>Demonstrate the knowledge and skills worked during the experiments carried out in the laboratory</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 subject in the first exam period you must obtain a grade greater than or equal to 5.0 out of 10.0 in both theoretical assessments that will contribute 70% to the final grade and a grade greater than or equal to 5.0 over 10 in the average of the practical classes that will contribute 30% to 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 examine all pending subjects that have not been passed, whether theoretical or practical. The tests of evaluation of theoretical knowledge, as well as the practical part, will be similar (but not necessarily equal) to those made in ordinary call. In relation to the practical part there will be a single evaluable test that encompasses the set of all the practices. The practical part may be recovered either during the follow-up period, or during the extraordinary session; said moment will be determined by the teacher.

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>Activity 1. Practical class: Structure and function of the cranial nerves.</td>
<td>Week 5-6</td>
</tr>
<tr>
<td>Activity 2. Practical class: Structure and function of the trigeminal nerve.</td>
<td>Week 7-8</td>
</tr>
<tr>
<td>Activity 3. Midterm theoretical assessment</td>
<td>Week 9-10</td>
</tr>
<tr>
<td>Activity 4. Practical class: Histology of the oral dental tissues</td>
<td>Week 13-14</td>
</tr>
<tr>
<td>Activity 5. Practical class: Structure and function of the saliva</td>
<td>Week 16-17</td>
</tr>
<tr>
<td>Activity 6. Final theoretical assessment</td>
<td>Week 18</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:

- Histología, Embriología e Ingeniería Tisular Bucodental. 3ª Ed. Gómez de Ferraris, Campos Muñoz Panamericana.
- Tratado de histología. FAWCET-BLOOM. Editorial Interamericana Mc Graw Hill
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- Langman Embriología médica. Sadler. Panamericana
- Fisiología 4ª ed. 2012. Constanzo LS. Lippincott Williams & Wilkins
- Sobotta. Cabeza, cuello y neuroanatomía. Paulsen y Waschke. Elsevier
- Anatomía Humana. Latarjet, M. Ruiz Liard, R.C. Panamericana, S.A.
- 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 Rl. 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
- Principles of Anatomy and Physiology. Tortora G., Derrickson, B. Wiley
- Nomenclatura anatómica ilustrada. Wolfgang Daubler, Heinz Feneis. Elsevier Masson
• MEDIOS AUDIVISUALES:
• DIRECCIONES WEB DE INTERÉS:
  • http://www.med.umich.edu/lrc/coursepages/m1/anatomy2010/html/courseinfo/labs_systemic.html
  • http://dicciomed.eusal.es/
  • http://biblioteca.uem.es/

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.