DISCIPLINE GRID

1. Programme:

1.1.	**CAROL DAVILA UNIVERSITY OF MEDICINE AND PHARMACY BUCHAREST**
1.2.	**FACULTY OF DENTISTRY / 3rd DEPARTMENT**
1.3.	Division: **EMBRYOLOGY**
1.4.	Study domain: **Healthcare – regulated sector within the EU**
1.5.	Study level: **BACHELOR'S DEGREE**
1.6.	Study programme: **DENTAL MEDICINE IN ENGLISH**

2. Discipline:

2.1.	Discipline name: **EMBRYOLOGICAL DEVELOPMENT OF THE DENTO-MAXILLARY APPARATUS IN RELATION TO POSTNATAL DYNAMICS**						
2.2.	Location: **8 Blvd. Eroii Sanitari**						
2.3.	Lectures tenures: **Prof. dr. Andreea Didilescu, Senior Lecturer dr. Claudiu Călin**						
2.4.	Practical classes tenures: **Senior Lecturer dr. Claudiu Călin, Senior Lecturer dr. Anca Coricovac**						
2.5. Study year	**II**	**2.6.** Semester	**IV**	**2.7.** Evaluation	**Colloquium**	**2.8.** Type of discipline	**ED/SD**

3. Estimated total time (hours/semester)

No. hours/week	**2**	out of which	**Lectures: 1**	**Laboratory session: 1**
Total hours out of learning schedule	**28**	out of which	**Lectures: 14**	**Laboratory sessions: 14**

Time distribution	hours
Textbook study, lecture support, bibliography and notes	10
Supplementary documentation activity in the library, on online platforms	4
Practical activity support material, homework, portfolio and essays	2
Tutorial activity	2
Examinations	2
Other activities	2
Total hours of individual study	**22**
Total hours per semester	**56**
Credits	**2**

4. Preconditions

4.1. curriculum	Embryology – 1st year of study
4.2. proficiencies	-

5. Conditions

5.1. for lecture activity	Lecture hall; Video projector, laptop, Powerpoint/Keynote software, laser pointer; Internet access (Moodle platform).
5.2. for laboratory activity	Laboratory; Video projector, laptop, Powerpoint/Keynote software, laser pointer; Internet access (Moodle platform).

6. Accumulated skills

6.1. Proficiencies *(knowledge and abilities)*	**I. Knowledge (cognitive dimension)** – In-depth knowledge of the embryological development of the dento-maxillary complex in relation to postnatal dynamics. – In-depth knowledge of the factors involved in the development of the dento-maxillary complex. – In-depth knowledge of the main anomalies of the dento-maxillary complex. – In-depth knowledge of odontogenesis and the main anomalies of the teeth and the supporting complex of the teeth in relation to the dynamics of craniofacial development. – In-depth knowledge about the development of the temporomandibular joint in relation to the dynamics of craniofacial development. **II. Abilities (functional dimension)** – Understanding the postnatal dynamics of the dento-maxillary complex. – Learning techniques for preparing sections of dento-periodontal tissue for study and research. – Correct interpretation of microscopic images. – Understanding and identifying the main anomalies that appear in the dento-maxillary complex and their visualization from the perspective of CBCT and micro-CT.
6.2. Transversal skills *(role, professional and personal development)*	– Possibility of interrelationship and teamwork. – Effective use of information sources and communication resources. – Making a scientific documentation and review. – The possibility of using e-learning platforms.

7. Objectives (based on the grid of acquired specific skills)

7.1. General Objective	– Acquisition of advanced knowledge related to the embryological development of the dento-maxillary complex, in relation to the factors that can determine anatomical, structural and functional modifications, with echoes in the postnatal dynamics.
7.2. Specific Objectives	– Knowing the stages and peculiarities of the embryological development of the dento-maxillary complex. – Understanding the factors involved in the development of the dento-maxillary complex. – Understanding the postnatal dynamics of the dento-maxillary complex.

8. Content

8.1. Lectures	**No. hrs/topic**	**Teaching method**	**Obs.**
1. Advanced knowledge about the embryological development of the dento-maxillary complex.	2	Interactive presentations of the material according	
2. The factors involved in the pre- and postnatal development of the dento-maxillary complex.	2		

3. The main anomalies of craniofacial development. Etiology. Imaging aspects.	2	to the analytical program, using multimedia means, power point presentations.	
4. Odontogenesis in relation to the dynamics of craniofacial development.	2		
5. Tooth eruption and the factors involved in the occurrence of disturbances in the tooth eruption process.	2		
6. The main disturbances of tooth development in relation to functional factors. Etiology. Particular aspects.	2		
7. Development of the temporomandibular joint in relation to the dynamics of craniofacial development.	2		

8.2. Laboratory Sessions	**No. hrs/topic**	**Teaching method**	**Obs.**
1. Advanced knowledge about the embryological development of the dento-maxillary complex – imaging examples and microscopic images.	2	PowerPoint presentation; drawings, explanations; microscopic examination of histological sections, embryos and human fetuses; imaging study.	
2. Teratogenic factors affecting the development of the dento-maxillary complex - mechanisms of action and effects.	2		
3. Functional factors involved in the development of the dento-maxillary complex - mechanisms of action and effects.	2		
4. Methods of processing dental and periodontal tissues. Work techniques.	2		
5. Biology of teeth, the pulp-dentin complex and the supporting complex of the teeth. Microscopic images.	2		
6. Postnatal dynamics of teeth– imaging examples.	2		
7. Postnatal dynamics of the temporomandibular joint. Imaging and CBCT examples.	2		

8.3. Bibliography for lectures and laboratory/practical sessions

1. Didilescu A, Coricovac A, Andrei M, Calin C (2022). General embryology. Top Form Publishing House, Bucharest.
2. Podoleanu L, Didilescu A, Rusu M (2004). Embryology - course notes, Tehnoplast Company Publishing House, Bucharest.
3. Allan J, Kramer B (2010). The fundamentals of human embryology: student manual. Wits University Press; Second edition (optional).
4. Carlson BM (2013). Human embryology and developmental biology. Saunders; 5th edition (optional).
5. Moore KL, Persaud TVN, Torchia MG (2015). The Developing Human. Clinically Oriented Embryology. Tenth edition. Saunders Elsevier (optional).
6. Sadler TW, Langman J (2011). Langman's Medical Embryology. Philadelphia, Pa.; London: Lippincott Williams & Wilkins; 12th edition (optional).

Journals (optional):

7. Journal of Dental Research
8. Romanian Journal of Morphology and Embryology

9. Corroborating the contents of the discipline with the expectations of epistemic community representatives, professional associations and employers in the field's representative for the program

Preparing students to understand the postnatal dynamics of the structures of the dento-maxillary complex by learning the concepts of embryological development.

10. Evaluation

10.1. Evaluation			
Activity type	**Evaluation Criteria**	**Methods of evaluation**	**% out of final grade**
Lecture	**A. Knowledge for mark 5:** elementary notions of embryological development of the dento-maxillary complex in relation to postnatal dynamics. **B. Additional knowledge for mark 10:** in-depth notions of embryological development of the dento-maxillary complex in relation to postnatal dynamics; possibility of interrelationship.	**Colloquium:** 20 questions (single choice). Attendance and active participation in the course will be taken into account.	**90%**
Laboratory Sessions	**A. Knowledge for mark 5:** elementary notions of embryological development of the dento-maxillary complex in relation to postnatal dynamics; correct interpretation of microscopic images. **B. Additional knowledge for mark 10:** in-depth notions of embryological development of the dento-maxillary complex in relation to postnatal dynamics; possibility of interrelation; correct interpretation of microscopic images.	**Practical assessment:** the presentation of a topic from the scientific literature that reflects the notions learned in the course and the laboratory sessions. Attendance and active participation in the laboratory sessions will be taken into account.	**10%**
Minimum performance standards			
Knowledge of the basic concepts of embryological development of the dento-maxillary complex in relation to the teratogenic and functional factors involved in the postnatal dynamics and in the appearance of the main anomalies.			

Note: The discipline sheet will adapt according to the Covid-19 epidemiological situation.

Date:
23.05.2023

Chair of Embryology Division,
Prof. Dr. Andreea Didilescu

Date of the approval in Department Board:
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Department director,
Prof. Dr. Dana-Cristina Bodnar