US

DISCIPLINE SYLLABUS

1. GENERAL INFORMATION

1.1. Institution of Higher Education	**UNIVERSITY OF MEDICINE AND PHARMACY OF CRAIOVA**
1.2. Faculty	**of Dentistry**
1.3. Department	**2**
1.4. Study Field	Dentistry
1.5. Study Cycle	Integrated Bachelor's and Master's Degree
1.6. Study Program	Dentistry (Romanian)
1.7. Qualification	Doctor of Dental Medicine
1.8. Qualification Level	Level 7 CNC / CEC (EQF) / ISCED
1.9. Study Form	Full-time

2. DISCIPLINE INFORMATION

2.1. Discipline Name					**FUNDAMENTALS OF ENDODONTIC ANATOMY OF TEETH**			
2.2. Holder of Lecture Activities					**DIACONU OANA ANDREEA**			
2.3. Holder of Laboratory Activities					Lelia Gheorghiță, Anca Gabriela Gheorghe/Carina Alexandra Bănică			
2.4. Year of Study	1	**2.5. Semester**	2	**2.6. Type of Evaluation**	EC ES (VP, E)	**2.7. Regime of Discipline**	**Formative Category**	DS – Specialized discipline
							Discipline Status	DOB – Compulsory
2.8. Discipline Code					**MD1212**			

3. ESTIMATED TOTAL TIME (teaching hours per semester)

3.1. Number of hours per week	1	**3.2. From which: lecture**	0.5	**3.3. Laboratory**	0.5
3.4. Total hours in curriculum	14	**3.5. From which: lecture**	7	**3.6. Laboratory**	7
3.7. Additional preparation hours through teaching activities (projects, research, and work visits, etc.)					-
3.8. Examinations					1
3.9. Total teaching hours					**15**
3.10. Individual study hours					
3.10.1 Study from manual, course support, references, and notes					3
3.10.2 Additional documentation in the library, specialized electronic platforms, and in the field					5
3.10.3. Seminars/Labs preparation					3
3.10.4. Preparation of homework, reports, projects, and portfolios					-
3.10.5. Preparation for presentations or assessments; preparation for final evaluation					3
3.10.6. Other activities: counselling, student scientific clubs					1
3.11. Total hours of individual study					**15**
3.12. Total hours per semester (teaching hours + individual study hours)					**30**
3.13. Number of credits (1 credit = 30 hours)					**1**

4. PREREQUISITES

4.1. curriculum	Attendance and/or successful completion of the following fundamental and specialized disciplines, providing the necessary theoretical and practical foundation: Anatomy, Oral Histology, Dental Morphology, Physiology, and Biochemistry.

4.2. competency	**At the beginning of the Endodontics course, the student must demonstrate the following minimum competencies:** • general knowledge of tooth structure; • basic knowledge of dental histology; • basic knowledge of anatomical and topographical orientation; • correct use of basic anatomical terminology; • working under supervision and following the teaching staff's instructions.

5. CONDITIONS

5.1. of lecture deployment	- In order to participate in lecture-type teaching activities, students must be familiar with and comply with the provisions set out in: the UMFCV Charter, the Teaching and Professional Activity Regulations for Students, the Discipline's Internal Regulations, the Student Examination Methodology, and the UMFCV Code of Ethics and Professional Conduct. - Amphitheatre equipped with a projection system. - Late arrival and access after the teaching activity has begun are not permitted, as they disrupt the flow of the lecture. - During the lecture, students are required to keep their mobile phones switched off. Taking photographs or making audio/video recordings during the lecture is prohibite d without the consent of the teacher.
5.2. of laboratory deployment / clinical training	- Clinical training takes place in appropriately equipped facilities: **rooms 402, 404, and 406 in Building B, 4th floor.** - Attendance at clinical training is mandatory and contingent upon wearing the required specific equipment. - Clinical training is organized in student groups according to the schedule. Students may not attend with a group other than the one in which they are registered. - Full compliance with the Teaching and Professional Activity Regulations for Students and the Discipline's Internal Regulations is required. - Strict adherence to hygiene, safety, and professional conduct standards is required - During clinical training, students must keep their mobile phones switched off. Taking photographs or making audio/video recordings during practical activities is prohibited without the consent of the teaching staff. - Late arrival and entry after the teaching activity has begun are not permitted, as they disrupt its conduct.

6. COMPETENCIES

By completing this course, the student will develop the following professional and transversal competencies, in accord ance with the list of competencies specified by the CNC/CEC (EQF), aligned with the European ESCO framework and the ARACIS 2025 standards.

6.1. Professional Competencies	C1 – Identification of the disease status and establishment of the correct diagnosis of dental conditions. C2 – Conservative therapy of dento-periodontal structures.
6.2. Transversal Competencies	CT1 – Identification of objectives to be achieved, available resources, conditions for their completion, work stages, working times, corresponding deadlines, and associated risks. CT2 – Identification of roles and responsibilities within a multidisciplinary team, and application of interpersonal and teamwork techniques both within the team and in interactions with the patient. CT3 – Efficient use of information sources and professional development and communication resources (Internet portals, specialized software applications, databases, online courses, etc.) in both Romanian and an internationally used language.

7. DISCIPLINE OBJECTIVES

7.1. The General Objective of the Discipline:	Acquisition of fundamental knowledge of the anatomy of the endodontic system, necessary for understanding the internal structure of teeth and its importance in dental practice.
7.2. The Specific Objectives of the Discipline (OS):	OS1: Define the concept of the endodontic system; OS2: Describe the internal structure of the tooth and the pulp–dentine complex; OS3: Identify the components of the endodontic system on models, sections, and images; OS4: Recognize the main anatomical variations of root canals; OS5: Correctly use basic endodontic terminology.

8. LEARNING OUTCOMES

8.1. Knowledge (CU)	The student/graduate appropriately identifies, describes, differentiates, and evaluates the structure and functions of the dento-maxillary system (teeth, jaws, muscles, and associated structures and tissues), in both health and disease, and their relationship with the patient's general health and physical well-being. **By completing the course Fundamentals of Endodontic Anatomy, the student will be able to:** **CU1**: Describe the internal structure of the tooth and the components of the endodontic system; **CU2**: Explain the role and importance of endodontic morphology in dental practice; **CU3**: Recognize the main anatomical variations of root canals; **CU4**: Correlate tooth structure with basic clinical applications.
8.2. Skills (AP)	The student/graduate develops and applies acquired professional knowledge to evaluate the structures of the dento-maxillary system, diagnose pathological changes, and treat them in order to restore the anatomical and physiological functions of the oro-maxillo-facial system. **By completing the course Fundamentals of Endodontic Anatomy, the student will demonstrate the ability to:** **AP1:** Identify the internal structures of teeth on models, sections, and radiographic images; **AP2:** Correctly use endodontic terminology; **AP3:** Interpret images and models to guide endodontic access (introductory concepts); **AP4**: Apply basic principles of laboratory safety and conduct.
8.3. Responsibility and Autonomy (RA)	The student/graduate identifies, locates, differentiates, and describes pathological changes in the structures of the dento-maxillary system and establishes the appropriate therapeutic approach and treatment stages. **By completing the course Fundamentals of Endodontic Anatomy, the student will demonstrate that they:** **RA1:** Show an interest in the study of dental and endodontic morphology; **RA2:** Comply with ethical and safety rules during teaching activities; **RA3:** Adopt a rigorous and responsible approach to teaching materials and laboratory activities; **RA4:** Develop a willingness to engage in progressive learning and self-assessment**;** **RA5:** Use information and communication technology appropriately.

9. CONTENTS AND ORGANIZATION OF TEACHING AND LEARNING ACTIVITIES

The teaching and learning process includes explanatory methods (lectures), demonstrative methods (demonstration and modelling), interactive methods (guided questions and debates), and practical applications through exercises, clinical activities, or simulations. Active student participation, teamwork, use of digital platforms, and problem-based learning are encouraged. Methods are adapted to the discipline and support the development of critical thinking, professional autonomy, and technical competencies.

9.1. LECTURE	Allocated Time (hours)	Teaching Methods	Observations
1. Introduction to endodontic anatomy The role of endodontic anatomy in clinical practice.	*1 hour*	Interactive lectures supported by PowerPoint presentations / discussion / problem-based learning / short clinical case	*Oral presentations supported by PowerPoint, supplemented with images relevant to the discipline and/or educational videos.*

The importance of knowledge of anatomical variations.		presentations / guided questions / brainstorming to activate know ledge / debate.	*Formative evaluation through 5 multiple-choice questions adapted to the lecture topic.*
2. Internal structure of the tooth and the pulp–dentine complex Pulp chamber, dental pulp, and dentine. Anatomical changes rel ated to age and pathology.	*1 hour*	Interactive lectures supported by PowerPoint presentations / discussion / problem-based learning / short clinical case presentations / guided questions.	*Oral presentations supported by PowerPoint, supplemented with images relevant to the discipline and/or educational videos. Formative evaluation through 5 multiple-choice questions adapted to the lecture topic.*
3. The root canal system – classi fications and variations Anatomical configurations of root canals. Accessory, lateral, and apical canals.	*1 hour*	Interactive lectures supported by PowerPoint presentations / discu ssion / problem-based learning / short clinical case presentations / guided questions.	*Oral presentations supported by PowerPoint, supplemented with images relevant to the discipline and /or educational videos. Formative evaluation through 5 multiple-choice questions adapted to the lecture topic.*
4. Endodontic anatomy of perm anent anterior teeth. Incisors and canines: characteristics, variations, and clinical implications.	*1 hour*	Interactive lectures supported by PowerPoint presentations / discussion / problem-based learning / short clinical case presentations / guided questions.	*Oral presentations supported by PowerPoint, supplemented with images relevant to the discipline and /or educational videos. Formative evaluation through 5 multiple-choice questions adapted to the lecture topic.*
5. Endodontic anatomy of perm anent posterior teeth Premolars and molars: configura tion of the pulp chamber and ro ot canals.	*1 hour*	Interactive lectures supported by PowerPoint presentations / discussion / problem-based learning / short clinical case presentations / guided questions.	*Oral presentations supported by PowerPoint, supplemented with images relevant to the discipline and/or educational videos. Formative evaluation through 5 multiple-choice questions adapted to the lecture topic.*
6. Endodontic anatomy of prima ry teeth Anatomical features and differe nces compared with permanent teeth.	*1 hour*	Interactive lectures supported by PowerPoint presentations / discussion / problem-based learning / short clinical case presentations / evidence-based strategies.	*Oral presentations supported by PowerPoint, supplemented with images relevant to the discipline and/or educational videos. Formative evaluation through 5 multiple-choice questions adapted to the lecture topic.*
7. Clinical implications of endo dontic anatomy Applications in endodontic access, instrumentation, and obturation.	*1 hour*	Interactive lectures supported by PowerPoint presentations / discussion / problem-based learning / short clinical case presentations / evidence-based strategies.	*Oral presentations supported by PowerPoint, supplemented with images relevant to the discipline and/or educational videos. Formative evaluation through 5 multiple-choice questions adapted to the lecture topic.*
Total	**7 h/sem.**		

MANDATORY REFERENCES

1. Course materials available on the platform www.student.umfcv.ro
2. The Root Canal Anatomy in Permanent Dentition – Marco Versiani, Springer, August 2018.
3. Berman LH, Hargreaves KM. Cohen's Pathways of the Pulp, 12th Edition.Elsevier, 2020.
4. Castellucci A. Endodontics, Volume 1, 1st Edition. Edra, 2022.
5. Rotstein I, Ingle JI. Ingle's Endodontics, 7th Edition. Pmph USA Ltd, 2019.

OPTIONAL REFERENCES

1. Patel Sh.,Harvey S, Shemesh H.,Durack C., *Cone Beam Computed Tomography In Endodontics* . Quintessence Publishing, United Kingdom,2016

9.2. LABORATORY	Allocated Time (hours)	Teaching Methods and Continuous Evaluation	Practical Activities Performed by Students
1. Identification of the components of the endodontic system	*1 hour*	Supervised individual activity Interactive discussion with the group instructor Presentation of educational videos Continuous Evaluation through Assessment of Student Engagement during Labs	*Type of Activity:* Examination of sectioned extracted teeth or dental models to identify the main components of the endodontic system. *Level of Involvement:* Individual, in a team, assisted. *Instruments Used: E*xtracted teeth, dental models, laptop, monitor. *Objective of the Activ*ity: Through this activity, the student will develop the following competencies: C1, CT1, CT2, CT3.
2. Identification of root canal types and anatomical variations: Additional canals, anastomoses, and root curvature.	*1 hour*	Supervised individual activity Interactive discussion with the group instructor Presentation of educational videos Continuous Evaluation through Assessment of Student Engagement during Labs	***Type of Activity:*** Examination of longitudinal and cross sections of extracted teeth, transparent plastic teeth, and 3D images of canal types and their anatomical variations. Viewing of demonstration videos. ***Level of Involvement****:* Individual, in a team, assisted. ***Instruments Used:*** *S*ections of extracted teeth, images of sections and cleared teeth, laptop, monitor. ***Objective of the Activ***ity: Through this activity, the student will develop the following competencies: C1, C2, CT1, CT2, CT3.
3. Study of the endodontic anatomy of permanent anterior teeth	*1 hour*	Supervised individual activity Interactive discussion with the group instructor Presentation of educational videos Continuous Evaluation by assessing the student engagement during labs	***Type of Activity: E***xamination of the morphology of the endodontic space in maxillary and mandibular anterior teeth, anatomical variations, and comparison between the maxillary and mandibular groups, correlated with concepts of external morphology. Viewing of demonstration videos. ***Level of Involvement***: Individual, in a team, assisted. ***Instruments Used: Extrac***ted teeth / endodontic training blocks, 3D reconstruction images of the internal anatomy of anterior teeth, laptop, monitor. ***Objective of the Activit***y: Through this

			activity, the student will develop the followin g competencies: C1, C2, CT1, CT2.
4. Study of the endodontic anatomy of permanent posterior teeth	*1 hour*	Supervised individual activity Interactive discussion with the group instructor Presentation of educational videos ֍ Continuous Evaluation – Short oral an d/or written assessments o f the topic covered	***Type of Activity: E***xamination of the morphology of the endodontic space in maxillary and mandibular posterior teeth, anatomical variations, and comparison between the maxillary and mandibular groups, correlated with concepts of external morphology. Viewing of demonstration videos. ***Level of Involvemen****t*: Individual, in a team, assisted. ***Instruments Used: Extrac***ted teeth / endodontic training blocks, 3D reconstruction images of the internal anatomy of anterior teeth, laptop, monitor. ***Objective of the Activit****y*: Through this activity, the student will develop the followin g competencies: C1, C2, CT1, CT2.
5. Comparative analysis of the endodontic anatomy of primary and permanent teeth. Clinical relevance.	*1 hour*	Supervised individual activity Interactive discussion with the group teacher Presentation of educational videos ֍ Continuous Evaluation – Short oral and/or written assessments of the topic covered Continuous Evaluation by assessing the student engagement during labs	***Type of Activity***: Comparative examination o f the morphology of the endodontic space in primary and permanent teeth to understand th e different clinical approach to the endodonti c space of primary teeth. Viewing of demonst ration videos. ***Level of Involvemen****t*: Individual, in a team, assisted. ***Instruments Used: Extrac***ted teeth / endodontic training blocks, 3D reconstruction images of the internal anatomy of anterior teeth, laptop, monitor. ***Objective of the Activit****y*: Through this activity, the student will develop the following competencies: C1, C2, CT1, CT2.
6. Correlation of radiographic images with endodontic anatomy Interpretation of periapical radiographs and CBCT images (introductory concepts).	*1 hour*	Case presentation; brief presentation of clinic al observations; interactive activities; clinical reasoning exercises and formulation and justification of the clinical and differential diagnosis; interactive discussion with the group instructor. Presentation of educational videos Case-based learning Short oral and/or written a ssessments of the pathology taught ֍	*Type of Activity:* Viewing of demonstration videos. Radiographic and/or computed tomographic identification and interpretation of endodontic morphology. *Level of Involvemen*t: Individual, in a team, assisted. *Instruments Used: Peri*apical radiographs / CB CT images corresponding to clinical cases, lapt op, CS software, monitor. *Objective of the Activit*y: Through this activity, the student will develop the following competencies: C1, C2, CT1, CT2, C T3.

		Continuous Evaluation by assessing the student engagement during labs	
7. Orientation of the access cav ity according to endodontic ana tomy.	*1 h/week*	Clinical demonstrations in the laboratory / simulation Case studies  Continuous Evaluation – Short oral assessments of the topic covered Continuous Evaluation by assessing the student engagement during labs	*Type of Activity:* Practical demonstrations by the group instructor simulating the preparation of different types of access cavities, taking into account the external morphology of teeth. Viewing of demonstration videos of access cavity preparation for different anatomical and clinical situations. *Level of Involvement:* Individual, assisted. *Instruments Used: Extr*acted teeth / transparent plastic teeth with endodontic morphology, laptop, monitor. O*bjective of the Activity: T*hrough this activity, the student will develop the following competencies: C1, C2, CT1, CT2.
Total	**7 h/sem.**		

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1. Course materials available on the platform www.student.umfcv.ro
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10. CORRELATION OF THE DISCIPLINE'S OBJECTIVES AND EXPECTED LEARNING OUTCOMES W ITH THE EXPECTATIONS OF INTERESTED PARTIES

- The contents and objectives of the course Fundamentals of Endodontic Anatomy are aligned with the expectations of students, teaching staff, and employers, ensuring the acquisition of fundamental knowledge, the development of basic practical skills, and a responsible attitude necessary for future clinical practice and compliance with ethical standards.

11. RECOVERY PROGRAMS AND STIMULATION OF LEARNING MOTIVATION

11.1. Recovery Programs					
Activity Type	**Number of Recoverable Absences**	**Place of Conduct**	**Period**	**Responsible**	**Topic Schedu le**
Absences recoveries	2	Endodontics Clinic	The Last Two Weeks of the Se mester	Teachers who support the activity in the discipline of Endodontics	According to the Discipline Schedule
Consultation Schedule	1 hour/week	Endodontics Clinic	Weekly	Course Coordinator	According to the Discipline Schedule
Program for Students Requiring Additional Support	2 hours/ semester	Endodontics Clinic	The Last Two Weeks	Course Coordinator	According to the Students' Needs
11.2. Stimulation of Learning Motivation Programs					
	Name of Scientific Club / Scientific Topics		**Place of Conduct**	**Period**	**Responsible**

Student Scientific Club	Endo Club MorfoCem	Building B, 4th floor, room 404 Building A, 3rd floor	October–December / March–May	Assistant Professor Dr. Anca Gheorghe Lecturer Dr. Marina Amarascu
Scientific Projects / Reports				
Workshops	Held during the Denticity Student Congress and the Interdentis Program	Building B, 4th floor, room 404	November / April	Assistant Professor Dr. Anca Gheorghe Assistant Professor Dr. Carina Banica
Student Competitions				
Other Activities				

12. EVALUATION

Activity Type	**12.1. Evaluation Criteria**	**12.2. Evaluated Learning Outcomes**	**12.3. Evaluation Methods**	**12.4. Percentage of the Final Grade**
12.5. Lecture	Correctness of answers to multiple-choice questions; Ability to integrate knowledge from the topics taught.	The following codes apply: OS1, OS2, OS5, CU1–CU4, AP2, RA1, RA2, RA4.	***Multiple-choice*** *test – 20 questions*	50 %
12.6. Laboratory	Ability to justify theoretical concepts; Clarity of expression and logical organization of information; Ability to synthesize and integrate knowledge from the topics taught; Explanation of clinical reasoning.	The following codes apply: OS1–OS5, CU1–CU4, AP1–AP4, RA1–RA5.	***Oral Exam*** Identification of a tooth and description of its internal anatomy.	35 %
12.7. Activity During the Semester	Ability to justify theoretical concepts; clarity of expression and logical organization of information; ability to synthesize and integrate	The following codes apply: OS1–OS5, CU1–CU4, AP1–AP4, RA1–RA5.	*Ongoing practical assessment;* *Assessment of activity during*	15 %

	knowledge from the topics taught; Active attendance and participation in all practical activities; logical application of theoretical knowledge in practice; Compliance with hygiene, ethics, and professional safety standards.		*clinical training by the group instructor;* *Assessment of attend ance and level of engagement during labs.*	
12.8. Minimum Performance Standard	The minimum performance standard requires the achievement of a satisfactory level of the competencies specified in the learning outcomes, by obtaining at least 50% of the total score assigned to the assessed activities (lectures + laboratory sessions). The student demonstrates the ability to: • define the concept of the endodontic system; • identify the main components of the endodontic system on models, sections, and images; • recognize the main anatomical variations of root canals in permanent teeth.			
12.9. Promotion Criteria	To pass the course, the student must **cumulatively meet the follow**ing requirements: • have 100% attendance in clinical training or, if absences have been accumulated, make up all of them within the maximum permitted number; • obtain a minimum grade of 5 (five) in the theoretical evaluation; • obtain a minimum grade of 5 (five) in the practical evaluation; • comply with university regulations regarding academic conduct and not have been involved in assessment fraud.			

Date of Department Approval:

18.09.2026

Department Director,
Professor Dr. Mihaela Ţuculina Jana

Program Coordinator,
Professor Dr. Adrian CAMEN

Course Coordinator,
Associate Professor Dr. Oana Andreea Di aconu