Sveučilište u Rijeci
University of Rijeka

Sveučilište u Rijeci • Fakultet dentalne medicine
University of Rijeka • Faculty of Dental Medicine
Krešimirova 40/42 • 51000 Rijeka • CROATIA
Phone : + 385 51 559 200; 559 202, 559 203

Course: Endodontics
Course Coordinator: Prof. Ivana Brekalo Pršo phD DMD
Course Collaborators: Prof. Alen Braut phD DMD, Asst Prof. Romana Peršić Bukmir phD DMD, Asst Prof. Damir Šnjarić phD DMD, Ivana Vidović Zdrilić phD DMD, Elvis Božac DMD
Department: Endodontics and restorative dentistry
Study program: University Integrated Undergraduate and Graduate Study of Dental Medicine (in English)
Study year: 4th
Academic year: 2024./25.

SYLLABUS

Course description (a brief description of the course, general instructions, where and in what form the lessons are organized, necessary equipment, instructions for attendance and preparation for classes, student obligations, etc.):

Endodontics is a fundamental and specialized area of dental medicine that includes the etiology, diagnostics, and therapy of endodontic, periradicular, and periapical tissue diseases. The course Endodontics is a mandatory course that extends from 4th to 6th year of Integrated Undergraduate and Graduate Study of Dental Medicine. Teaching is conducted through lectures, seminars, and preclinical and clinical practical work. In 4th year of study, the course is taught through 30 lectures, 10 seminars, and 45 hours of preclinical work (a total of 85 hours or 5.5 ECTS points). The aim of this course is to acquaint students with the morphology of the root anatomy including developmental and morphological anomalies, and pulp and periapical pathology. Root canal instrumentation together with obturating materials, various obturation techniques, and postendodontic management will be introduced. This course comprehensively includes the diagnosis and therapy of pulp and periapical diseases and endodontic surgery.
Students are obligated to attend all forms of classes. For seminars, preclinical and clinical practice, students must be theoretically prepared according to the topics of the lectures. Without theoretical knowledge, the students are not allowed to work on preclinical models or patients.

Assigned reading:

1. Walton RE, Torabinejad M, Bakland LK. Endodontics. Principles and Practice (10th ed). St. Louis, Missouri: Elsevier. 2009.

Optional/additional reading:

1. Cohen S, Burns RC. Pathways of the Pulp. X th., Mosby Inc. St. Louis, 2011.
2. Rotstein I, Ingle JI. Ingle's Endodontics 7. PMPH USA, Ltd. Raleight, North Carolina, 2019.
3. Bergenholtz G, Horsted-Bindslev P, Reit C. Textbook of Endodontology, Wiley Blackwell, 2010.

4. Beer R, Baumann MA, Kim S. Color Atlas of Dental Medicine: Endodontology, Thieme, New York, 2000.
5. PhD thesis in field of endodontics
6. Scientific journals: Journal of Endodontics, International Endodontic Journal

COURSE TEACHING PLAN:

The list of lectures (with topics and descriptions):

L1 Introduction to endodontics
Learning outcomes: Acquaint with the aim of the endodontics course. Connect previous knowledge of tooth anatomy and histology with the endodontic and periapical space and emphasize their mutual connection.

L2 Basic functions of the dental pulp. Mechanism of formation and perception of dentinal and pulpal pain
Learning outcomes: Explain the basic functions of the dental pulp in a physiological state and the importance of maintaining these functions. Explain the types of nerve fibers in the pulp and their role in receiving and transmitting stimuli. Acquire knowledge that changes in the performance of basic functions lead to pathological conditions of the pulp and periapical periodontium. Acquire basic knowledge about pain transmission from the pulp to the cortex

L3 Etiology of pulp diseases and the reaction of the pulp to caries and dental procedures
Learning outcomes: Define all the etiological factors that cause pathological changes in the pulp and periapical tissue. To learn to clinically recognize changes in the pulp as a reaction to an external stimulus.

L4 Diagnostics in endodontics
Learning outcomes: Adopt all diagnostic procedures to prove the pathological state of the pulp and periapex. Learn how to perform all diagnostic tests in endodontics. Explain the differences and reliability of individual tests.

L5 Radiology in endodontics
Learning outcomes: Explain and be able to describe the techniques of X-ray imaging of teeth and the entire jaw. State the advantages and disadvantages of individual methods. Analyze the basic differences between x-ray and rvg techniques.

L6 Indications and contraindications for endodontic treatment. Regressive and degenerative changes of the pulp
Learning outcomes: List the correct indications, relative and absolute contraindications for endodontic procedures. Recognize the importance of the decision on the need for endodontic treatment. List all non-inflammatory changes in the pulp tissue and how to treat them. To determine what changes occur within the pulp tissue during inflammatory and non-inflammatory changes.

L7 Division of pulp diseases and acute pulpitis
Learning outcomes: Adopt the basic clinical and histological division of pulp diseases. Be able to state the basic terms related to a certain pathology. Be able to describe the pathohistological picture of acute inflammation, its symptomatology, and therapy.

L8 Chronic pulpitis
Learning outcomes: Define the term chronic inflammation of the pulp tissue. Be able to describe the pathohistological picture of chronic inflammation, its symptomatology, and therapy.

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L9 Pulp necrosis
Learning outcomes: Explain the concept of pulp necrosis. Be able to state the pathohistological findings, symptoms, and clinical picture of pulp necrosis.

L10 Periodontitis apicalis acute
Learning outcomes: Describe the histological and clinical picture of acute pathological changes of the periapical periodontium. Explain how to carry out diagnostic and therapeutic procedures for these conditions.

L11 Periodontitis apicalis chronica. Immunological events in the periapex
Learning outcomes: Know the histological and clinical picture of chronic pathological changes of the periapical periodontium. To become familiar with the immunological events in the periapex during chronic inflammation. Explain how to carry out diagnostic and therapeutic procedures for these conditions.

L12 Sterilization and working field isolation. Preparing the patient for endodontic treatment.
Learning outcomes: Acquire knowledge about all types of sterilization procedures in endodontics and the methods of their implementation. Learn how to establish a dry working field during endodontic treatment and know all the parts and methods for placing rubber dams.

L13 Morphology of the endodontic space, part I
Learning outcomes: Acquaint the morphology of the endodontic space of all teeth. Explain the basic differences in the morphology of individual groups of teeth.

L14 Morphology of the endodontic space, part II
Learning outcomes: Acquaint the morphology of the endodontic space of all teeth. Explain the basic differences in the morphology of individual groups of teeth.

L15 Endodontic access cavity preparation
Learning outcomes: Learn how to create an access cavity for entering the endodontic space of each tooth and the instruments needed for this.

L16, L17 Endodontic instruments (hand, machine, ultrasound)
Learning outcomes: Acquaint the type, method of construction, and use of endodontic instruments. Recognize the difference in their clinical use and indications for their use. Acquire knowledge for clinical work with the mentioned instruments.

L18 Determination of root canal length; Pulpotomy, pulpectomy
Learning outcomes: Acquaint the methods of measuring the length of root canal instrumentation. Acquire knowledge about electroodontometry and the basic principles of work, as well as its advantages and disadvantages. Get to know the radiological methods of determining the length of the root canal.
Explain the technique of performing partial and complete extirpation of the pulp. Be able to state indications for performance and performance technique.

L19 Instrumentation of the endodontic space, part I
Learning outcomes: Become familiar with root canal instrumentation techniques. To acquire knowledge about the way of conducting instrumentation using the ascending or descending technique.

L20 Instrumentation of the endodontic space, part II
Learning outcomes: Acquire knowledge about the way of conducting instrumentation by ascendant or descendent. Explain the basic advantages and disadvantages of both.

L21 Chemical root canal treatment
Learning outcomes: Get to know all chemical agents for root canal irrigation, their properties, and method of application. To adopt contemporary views on their application.

L22 Materials for temporary and permanent root canal obturation
Learning outcomes: Analyze the types and properties of root canal obturation materials. Explain the method of application and differences in clinical properties. List the latest materials on the market and their advantages.

L23 Root canal obturation techniques
Learning outcomes: Learn all root canal obturation techniques. State the indications for their use. Know how to explain the advantages and disadvantages of a particular technique.

L24 Failures and complications of endodontic treatment
Learning outcomes: Get an insight into the possibility of failure and the emergence of complications and how to solve them.

L25 Medicine in endodontics
Learning outcomes: Acquaint with the use of different drugs for preventive and therapeutic purposes and as premedication. Explain their pharmacokinetic properties and indications for their use.

L26 Endodontic treatment of medically compromised patients
Learning outcomes: State which patients belong to the risk group and how to prepare them for therapy. To acquire knowledge about indications and contraindications for work in such a group of patients.

L27 Post-endodontic restoration of teeth
Learning outcomes: To learn how to reconstruct a tooth after completion of endodontic treatment. Be able to list all materials and application techniques.

L28 Emergencies in endodontics
Learning outcomes: Recognize emergencies and how to take care of them.

L29 Endodontic treatment of teeth injured by trauma
Learning outcomes: State the divisions of dental trauma. Explain how to diagnose and determine the type of dental trauma and how to treat it.

L30 Teeth whitening
Learning outcomes: Familiarize yourself with the chemistry of bleaching agents. State the indications and procedures for teeth whitening.

The list of seminars with descriptions:

S1 Anamnesis, patient's consent, preparation for endodontic treatment
Learning outcomes: To learn to take a patient's medical and dental-medical history in detail and to become familiar with the ethical and medical parameters that are important for filling out the form with the patient's consent to the dental procedure. Familiarize yourself with the actions necessary to prepare a patient for endodontic treatment with special emphasis on sterilization and establishment of a dry working field.

S2 Pain transmission, local anesthesia and pain control
Learning outcomes: Become familiar with the pathways of pain transmission from the pulp to the cortex. Explain the techniques of applying local anesthesia in dental medicine. Analyze the pharmacokinetic properties of local anesthetics and indications for their use, as well as possible complications during clinical use.

S3 Endodontic radiography
Learning outcomes: Familiarize yourself with the techniques of X-ray imaging of teeth and the entire jaw. State the advantages and disadvantages of individual methods. Learn how to read X-rays and rvg images with the recognition of all anatomical and pathological structures.

S4 Vital pulp therapy and complicated tooth fractures

Learning outcomes: Describe all etiological factors that cause pathological changes in the pulp and become familiar with the latest materials for pulp protection, their properties, effects on pulp cells and clinical application. Adopt all diagnostic procedures to prove the fracture of the tooth crown with open pulp. To acquire knowledge about therapeutic procedures and materials for taking care of these conditions.

S5 Diagnostics and differential diagnosis of pulp diseases

Learning outcomes: Explain the diagnosis of pulpitis and the assessment of possible pathological conditions of other tissues that may influence the final decision on the diagnosis.

S6 Diagnostics and differential diagnosis of periapical diseases

Learning outcomes: Analyze and compare the types, histological and clinical division, and clinical picture of all forms of periodontitis. Analyze radiologically and clinically recognize these pathological conditions.

S7 Root canal instrumentation techniques

Learning outcomes: Analyze and compare root canal instrumentation techniques. Explain the method of conducting instrumentation using the ascending or descending technique. Define the basic advantages and disadvantages of the same.

S8 Techniques and agents for root canal irrigation

Learning outcomes: Compare chemical agents for root canal irrigation, their properties and method of application. Adopt modern views on their application and application techniques.

S9 Root canal filling techniques

Learning outcomes: Research and compare all root canal filling techniques. Investigate the indications for their application, as well as the advantages and disadvantages of each technique.

S10 Postendodontic care of teeth

Learning outcomes: Explain how to reconstruct a tooth after endodontic treatment. List all materials and application technique.

The list of practicals with descriptions:

Exercises in the subject of Endodontics are conducted at the Clinic for Dental Medicine of the Rijeka Clinical Hospital Center. The exercises are pre-clinical and are performed on phantoms with acrylic teeth, on which students practice basic skills in creating an access cavity, instrumentation, irrigation, and root canal filling:

P1 - P2 - Establishment of a dry working field

Learning outcomes: demonstrate the establishment of a dry working field, evaluate the type of establishment of a dry working field concerning the therapeutic procedure.

P3 - P6 - Coronary phase of endodontic therapy

Learning outcomes: On extracted single-rooted and multi-rooted teeth, demonstrate the creation of a trepanation opening and access to the root canals, and distinguish between work in a dry field and work in a random field with water cooling.

P6 - P11 - Ascending technique of root canal instrumentation with irrigation

Learning outcomes: Plan and perform practical step-back instrumentation on an extracted tooth.

P12 - P14 - Root canal filling using cold lateral condensation technique.

Learning outcomes: Analyze the most favorable root canal optimization technique and perform root canal filling using the cold lateral condensation technique.

P15 - Repetition of learned material

Students' obligations:

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Students are required to regularly attend and actively participate in all forms of teaching. Attendance at lectures, seminars, and practical exercises is mandatory. A student may miss up to 30% of classes solely for health reasons (justified by a medical certificate) or a death in the family.

Assessment (exams, description of written / oral / practical exam, the scoring criteria):

ECTS Grading System:

Student evaluation is conducted according to the current Regulations on Studies and Studying at the University of Rijeka. According to the regulations of the University of Rijeka, a student must achieve 50% of the grade during the course to be eligible for the final exam, with the remaining 50% of the grade obtained at the final exam. Out of a total of 100 grade points, a student can earn 50 points during the course and another 50 points on the exam. Student grading is done using the ECTS (A-F) and numerical system (1-5). Grading in the ECTS system is done by absolute distribution.

Students earn grade points through active participation in classes, completing assigned tasks, and success in colloquia. During the course, points are earned through exercises and continuous knowledge checks.

PRACTICAL EXCERCISES: Exercises are held in the 8th, 9th, 10th, and 11th semesters.

Exercise leaders will assess theoretical knowledge and practical work on a patient. During the exercises, the student must independently perform the assigned phases of treatment, which are graded as A, B, or C. Grade C means a failing grade. If a student receives a grade of C twice during the year, it is considered that they have not met the prescribed obligations from the exercise plan and program (have not achieved the minimum 50% grade) and cannot progress to the next year of study. The student earns a certain number of points in each academic year during exercises (5 points in the 8th, 9th, and 10th semesters, and 10 points in the 11th semester), which are added to the overall grade on the final exam. Participation in preclinical and clinical exercises requires wearing a white medical uniform (in accordance with the health and safety regulations of the health and educational institution). The exercise leader can remove a student from exercises if they are inappropriately dressed or behave inappropriately.

SEMINARS:

Seminar work is an active part of teaching and requires mandatory theoretical preparation by students. Each student must have one PowerPoint presentation and/or oral presentation by the final exam, which will be worth 5 points.

COLLOQUIA:

Continuous knowledge checks will be conducted through written midterm exams (colloquia) held at the end of the 8th and 10th semesters. A maximum of 10 points can be earned per colloquium

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(2 colloquia max 20 points). Students who do not pass a colloquium (less than 50% of the test solved) will be allowed one remedial colloquium.

FINAL EXAM:

The final exam is practical and oral and covers the material specified in the course plan and program. A maximum of 50 points can be earned on the final exam, 20 points in the practical part and 30 in the oral part. The practical exam consists of a clinical dental examination, reading of a radiological image, and performing endodontic treatment (performing a phase of therapy or orally explaining it). In the oral part of the exam, the student must positively answer the questions covering all chapters of endodontics. The final exam grade is formed based on the student's overall activity, i.e., points collected during all semesters and points on the final exam. For a passing grade on the final exam, both the practical and oral parts must be successfully completed. For the final exam, the student must bring a completed Record Book of Preclinical and Clinical Exercises. In case of a failing grade on the final exam, the student has the right to take the next exam term (minimum 15 days from the last term).

Grading in the ECTS system is done by absolute distribution, based on the final achievement:

- Points earned on colloquia and exercises are added to the exam points
- Final grade:

  0-49.9%: insufficient 1 F
  50-59.9%: sufficient 2 D
  60-74.9%: good 3 C
  75-89.9%: very good 4 B
  90-100%: excellent 5 A

Other important information regarding to the course:

Any use of another's text or other form of the author's work, as well as the use of ChatGPT or any of another tool whose functionality is based on artificial intelligence technology, without unambiguous citation of sources is considered a violation of someone else's copyright and the principle of academic integrity and represents serious violation of student obligations, which entails disciplinary responsibility and disciplinary measures accordingly.
Rulebook on disciplinary responsibility of students.
Consultation time: Wednesday 13.15-14.00

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COURSE SCHEDULE (for the academic year 2024/2025)

Date	Lectures (time and place)	Seminars (time and place)	Practicals (time and place)	Instructor
30.09.2024.	L1(14.00 – 14.45) Krešimirova 40			Prof. Ivana Brekalo Pršo, PhD,DMD
07.10.2024.	L2(14.00 – 14.45) Krešimirova 40			Prof. Ivana Brekalo Pršo, PhD,DMD
14.10.2024.	L3(14.00 – 14.45) Krešimirova 40			Prof. Ivana Brekalo Pršo, PhD,DMD
21.10.2024.	L4(14.00 – 14.45) Krešimirova 40			Prof. Ivana Brekalo Pršo, PhD,DMD
28.10.2024.	L5(14.00 – 14.45) Krešimirova 40			Prof. Alen Braut, PhD,DMD
04.11.2024.	L6(14.00 – 14.45) Krešimirova 40			Prof. Ivana Brekalo Pršo, PhD,DMD
11.11.2024.	L7(14.00 – 14.45) Krešimirova 40			Prof. Ivana Brekalo Pršo, PhD,DMD
25.11.2024.	L8(14.00 – 14.45) Krešimirova 40			Prof. Ivana Brekalo Pršo, PhD,DMD
03.12.2024.	L9(14.00 – 14.45) Krešimirova 40			Prof. Ivana Brekalo Pršo, PhD,DMD
10.12.2024.	L10(14.00 – 14.45) Krešimirova 40			Asst Prof. Romana Peršić Bukmir, PhD DMD
17.12.2024.	L11(14.00 – 14.45) Krešimirova 40			Asst Prof. Romana Peršić Bukmir, PhD DMD
24.12.2024.	L12(14.00 – 14.45) Krešimirova 40			Prof. Ivana Brekalo Pršo, PhD,DMD
13.01.2025.	L13(14.00 – 14.45) Krešimirova 40			Asst Prof. Romana Peršić Bukmir, PhD DMD
20.01.2025.	L14 (14.00 – 14.45) Krešimirova 40			Asst Prof. Romana Peršić Bukmir, PhD DMD
03.03.2025.	L15 (14.45 – 15.30) Krešimirova 40			Asst Prof. Romana Peršić Bukmir, PhD DMD
04.03.2025.			P1 E (14.00– 16.15)	Elvis Božac, DMD

			Preclinical practicum Krešimirova 42	Asst Prof. Romana Peršić Bukmir, PhD DMD
			P1 F (16.15– 18.45) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Prof. Ivana Brekalo Pršo, PhD,DMD
06.03.2025.		S1 (14.00 – 15.30) ONLINE		Ivana Vidović Zdrilić, PhD DMD
10.03.2025.	L16 (14.45 – 15.30) Krešimirova 40			Prof. Alen Braut, PhD DMD
11.03.2025.			P2 E (14.00– 16.15) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Asst Prof. Romana Peršić Bukmir, PhD DMD
			P2 F (16.15– 18.45) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Prof. Ivana Brekalo Pršo, PhD,DMD
13.03.2025.		S2 (14.00 – 15.30) ONLINE		Ivana Vidović Zdrilić, PhD DMD
17.03.2025.	L17 (14.45 – 15.30) Krešimirova 40			Prof. Alen Braut, PhD DMD
18.03.2025.			P3 E (14.00– 16.15) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Asst Prof. Romana Peršić Bukmir, PhD DMD
			P3 F (16.15– 18.45) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Prof. Ivana Brekalo Pršo, PhD,DMD
20.03.2025.		S3 (14.00 – 15.30) ONLINE		Ivana Vidović Zdrilić, PhD DMD
24.03.2025.	L18 (14.45 – 15.30) Krešimirova 40			Prof. Ivana Brekalo Pršo, PhD DMD
25.03.2025.			P4 E (14.00– 16.15) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Asst Prof. Romana Peršić Bukmir, PhD DMD
			P4 F (16.15– 18.45) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Prof. Ivana Brekalo Pršo, PhD,DMD

27.03.2025.		S4 (14.00 – 15.30) ONLINE		Ivana Vidović Zdrilić, PhD DMD
31.03.2025.	L19 (14.45 – 15.30) Krešimirova 40			Asst Prof. Damir Šnjarić, PhD DMD
01.04.2025.			P5 E (14.00– 16.15) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Asst Prof. Romana Peršić Bukmir, PhD DMD
			P5 F (16.15– 18.45) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Prof. Ivana Brekalo Pršo, PhD,DMD
03.04.2025.		S5 (14.00 – 15.30) ONLINE		Ivana Vidović Zdrilić, PhD DMD
07.04.2025.	L20 (14.45 – 15.30) Krešimirova 40			Asst Prof. Damir Šnjarić, PhD DMD
08.04.2025.			P6 E (14.00– 16.15) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Asst Prof. Romana Peršić Bukmir, PhD DMD
			P6 F (16.15– 18.45) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Prof. Ivana Brekalo Pršo, PhD,DMD
10.04.2025.		S6 (14.00 – 15.30) ONLINE		Ivana Vidović Zdrilić, PhD DMD
14.04.2025.	L21 (14.45 – 15.30) Krešimirova 40			Prof. Ivana Brekalo Pršo, PhD,DMD
15.04.2025.			P7 E (14.00– 16.15) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Asst Prof. Romana Peršić Bukmir, PhD DMD
			P7 F (16.15– 18.45) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Prof. Ivana Brekalo Pršo, PhD,DMD
17.05.2025.		S7 (14.00 – 15.30) ONLINE		Ivana Vidović Zdrilić, PhD DMD
22.04.2025.			P8 E (14.00– 16.15) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Asst Prof. Romana Peršić Bukmir, PhD DMD

			P8 F (16.15– 18.45) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Prof. Ivana Brekalo Pršo, PhD,DMD
24.04.2025.		S8 (14.00 – 15.30) ONLINE		Ivana Vidović Zdrilić, PhD DMD
28.04.2025.	L22 (14.45 – 15.30) Krešimirova 40			Prof. Ivana Brekalo Pršo, PhD,DMD
29.04.2025.			P9 E (14.00– 16.15) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Asst Prof. Romana Peršić Bukmir, PhD DMD
			P9 F (16.15– 18.45) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Prof. Ivana Brekalo Pršo, PhD,DMD
05.05.2025.	L23 (14.45 – 15.30) Krešimirova 40			Asst Prof. Romana Peršić Bukmir, PhD DMD
06.05.2025.			P10 E (14.00– 16.15) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Asst Prof. Romana Peršić Bukmir, PhD DMD
			P10 F (16.15– 18.45) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Prof. Ivana Brekalo Pršo, PhD,DMD
08.05.2025.		S9 (14.00 – 15.30) ONLINE		Ivana Vidović Zdrilić, PhD DMD
12.05.2025.	L24 (14.45 – 15.30) Krešimirova 40			Prof. Ivana Brekalo Pršo, PhD,DMD
13.05.2025.			P11 E (14.00– 16.15) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Asst Prof. Romana Peršić Bukmir, PhD DMD
			P11 F (16.15– 18.45) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Prof. Ivana Brekalo Pršo, PhD,DMD
15.05.2025.		S10 (14.00 – 15.30) ONLINE		Ivana Vidović Zdrilić, PhD DMD
19.05.2025.	L25 (14.45 – 15.30) Krešimirova 40			Prof. Ivana Brekalo Pršo, PhD,DMD

20.05.2025.			P12 E (14.00– 16.15) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Asst Prof. Romana Peršić Bukmir, PhD DMD
			P12 F (16.15– 18.45) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Prof. Ivana Brekalo Pršo, PhD,DMD
26.05.2025.	L26 (14.45 – 15.30) Krešimirova 40			Asst Prof. Romana Peršić Bukmir, PhD DMD
27.05.2025.			P13 E (14.00– 16.15) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Asst Prof. Romana Peršić Bukmir, PhD DMD
			P13 F (16.15– 18.45) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Prof. Ivana Brekalo Pršo, PhD,DMD
02.06.2025.	L27, 28 (15.30 – 17.00) Krešimirova 40			Prof. Alen Braut, PhD,DMD Prof. Ivana Brekalo Pršo, PhD,DMD
03.06.2024.			P14 E (14.00– 16.15) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Asst Prof. Romana Peršić Bukmir, PhD DMD
			P14 F (16.15– 18.45) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Prof. Ivana Brekalo Pršo, PhD,DMD
09.06.2025.	L29, 30 (15.30 – 17.00) Krešimirova 40			Asst Prof. Damir Šnjarić, PhD DMD Asst Prof. Romana Peršić Bukmir, PhD DMD
10.06.2025.			P15 E (14.00– 16.15) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Asst Prof. Romana Peršić Bukmir, PhD DMD
			P15 F (16.15– 18.45) Preclinical practicum Krešimirova 42	Elvis Božac, DMD Prof. Ivana Brekalo Pršo, PhD,DMD

List of lectures, seminars and practicals:

	LECTURES (Topics)	Teaching hours	Location/Lecture room
L1	Introduction to endodontics	1	Krešimirova 40
L2	Basic functions of dental pulp	1	Krešimirova 40
L3	Sterilization and dry working field	1	Krešimirova 40
L4	Mechanism of formation and perception of dentine and pulp pain - etiology of pulp pain	1	Krešimirova 40
L5	Indications and contraindications for endodontic treatment	1	Krešimirova 40
L6	Diagnostics in endodontics	1	Krešimirova 40
L7	Morphology of the endodontic space - Part I	1	Krešimirova 40
L8	Morphology of the endodontic space - Part II	1	Krešimirova 40
L9	Reaction of the pulp to caries and dental procedures. Etiology of pulp diseases	1	Krešimirova 40
L10	Regressive and degenerative pulp changes and pulp response to acute and chronic stimuli	1	Krešimirova 40
L11	Division of pulp diseases	1	Krešimirova 40
L12	Acute and chronic pulpitis	1	Krešimirova 40
L13	Pulp necrosis	1	Krešimirova 40
L14	Periodontitis apicalis acute and chronic; Immunological events in the pulp and periapex	1	Krešimirova 40
L15	Periodontitis apicalis acute and chronic; Immunological events in the pulp and periapex	1	Krešimirova 40
L16	Endodontic instruments (hand, machine, ultrasonic)	1	Krešimirova 40
L17	Endodontic therapy, endodontic access cavity preparation, Part I	1	Krešimirova 40
L18	Endodontic therapy, endodontic access cavity preparation, Part II	1	Krešimirova 40
L19	Determining the length of the root canal	1	Krešimirova 40
L20	Pulpotomy, pulpectomy (indications, techniques)	1	Krešimirova 40
L21	Instrumentation of the endodontic space	1	Krešimirova 40
L22	Rotary root canal treatment	1	Krešimirova 40
L23	Chemical root canal treatment	1	Krešimirova 40
L24	Root canal filling techniques	1	Krešimirova 40
L25	Failures and complications of endodontic treatment	1	Krešimirova 40

L26	Medicines in endodontics	1	Krešimirova 40
L27	Endodontic treatment of high-risk patients	1	Krešimirova 40
L28	Post-endodontic treatment of teeth	1	Krešimirova 40
L29	Emergencies in endodontics	1	Krešimirova 40
L30	Teeth whitening	1	Krešimirova 40
	TOTAL TEACHING HOURS	**30**	

	SEMINARS (Topics)	Teaching hours	Location/Lecture room
S1	Anamnesis, patient's consent, preparation for endodontic treatment	1	Krešimirova 40
S2	Pain transmission and local anesthesia, pain control	1	Krešimirova 40
S3	Endodontic radiography	1	Krešimirova 40
S4	Vital pulp therapy and complicated tooth fractures	1	Krešimirova 40
S5	Diagnostics and differential diagnosis of pulp diseases	1	Krešimirova 40
S6	Diagnostics and differential diagnosis of periapical diseases	1	Krešimirova 40
S7	Root canal instrumentation techniques	1	Krešimirova 40
S8	Techniques and agents for root canal irrigation	1	Krešimirova 40
S9	Root canal filling techniques	1	Krešimirova 40
S10	Postendodontic care of teeth	1	Krešimirova 40
	TOTAL TEACHING HOURS	**10**	

	PRACTICALS (Topics)	Teaching hours	Location/Lecture room
P1	Establishment of a dry working field	3	Krešimirova 42
P2	Establishment of a dry working field	3	Krešimirova 42
P3	Coronary phase of endodontic therapy	3	Krešimirova 42
P4	Coronary phase of endodontic therapy	3	Krešimirova 42
P5	Coronary phase of endodontic therapy	3	Krešimirova 42
P6	Ascending instrumentation technique root canal with irrigation	3	Krešimirova 42
P7	Ascending instrumentation technique root canal with irrigation	3	Krešimirova 42
P8	Ascending instrumentation technique root canal with irrigation	3	Krešimirova 42

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P9	Ascending instrumentation technique root canal with irrigation	3	Krešimirova 42
P10	Root canal filling using cold lateral condensation technique	3	Krešimirova 42
P11	Root canal filling using cold lateral condensation technique	3	Krešimirova 42
P12	Root canal filling using cold lateral condensation technique	4	Krešimirova 42
P13	Root canal filling using cold lateral condensation technique	4	Krešimirova 42
P14	Root canal filling using cold lateral condensation technique	4	Krešimirova 42
	TOTAL TEACHING HOURS	**45**	

	FINAL EXAM DATES
1.	
2.	
3.	

	Lectures	**Seminars**	**Practicals**	**Total**
Total number	30	10	14	54
On-line	0	10	0	10
Percentage	0	100%	0	18%