



Course: Prevention in dentistry

Course Coordinator: Danko Bakarčić, DDM, PhD, professor

Department: Pediatric dentistry

Study program: University Integrated Undergraduate and Graduate Study of Dental Medicine (in English)

Study year: 4

Academic year: 2025./26.

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.):

Course Coordinator:

Prof. Danko Bakarčić, Ph.D

Course Collaborators:

Prof. Nataša Ivančić Jokić, Ph.D

Odri Cicvarić, Ph.D

Marija Šimunović Erpušina, MD.Dent.

The Preventive Dental Medicine course is a mandatory course in the fourth year of the Integrated Undergraduate and Graduate University Study of Dental Medicine and consists of 20 hours of lectures, 10 hours of exercises, a total of 30 hours (2 ECTS). The course is held in the premises of the Clinic for Dental Medicine of the Rijeka Clinical Hospital Center.

The objectives of the course are:

Mastering the knowledge necessary to achieve optimal oral health of patients through the application of various preventive, health-educational and therapeutic procedures.

Course content:

The importance of preventive dental medicine. The formation of plaque and the development of a carious lesion. The role of plaque in the development of periodontal diseases. Defense capabilities and defense systems of the organism. Personal oral hygiene: brushes and brushing techniques, toothpastes, aids. Action and application of fluoride. Methods of systemic and topical application of fluoride. Sealing fissures and sealing fillings. Caries activity tests and caries risk assessment. The influence of diet on



caries formation and dietary counseling. Epidemiology of dental and periodontal diseases. Health education, group and individual preventive programs.

Conducting classes:

Classes are conducted in the form of lectures (in e-form - lectures are available through the Merlin system throughout the semester) and exercises. The expected duration of the class is one semester. During the exercises, the teacher demonstrates and supervises the active participation of the students in performing the exercises. Teachers discuss with students the specifics of performing individual exercises. Several colloquiums will be held during the class, and at the end of the class there will be a written test for the final exam. By completing all teaching activities and participating in mandatory colloquiums and the final exam, the student earns 2 ECTS points. consultations are carried out in agreement with the head of the course.

Assigned reading:

Bakarčić D, Ivančić Jokić N. Osnove prevencije karijesa i parodontnih bolesti. Redak, Split, 2013

Optional/additional reading:

Jurić H. *Dječja dentalna medicina*. Naklada Slap, Jastrebarsko, 2015:187-211.

Glažar I. *Priručnik oralne higijene*. Medicinski fakultet sveučilišta u Rijeci, Rijeka, 2017:15-17.

COURSE TEACHING PLAN:

The list of lectures (with topics and descriptions):

P1. Introduction to the subject and historical review

Learning outcomes:

- become familiar with the objective of the preventive dental medicine course.
- get to know and acquire knowledge about the historical facts of the development of the prevention of oral diseases
- break down preventive and curative care - a coordinated approach

P2. Development and structure of dental adhesive materials, dental plaque and tartar

Learning outcomes;

- connect the oral microbial flora with the process of formation of plaque and tartar
- distinguish between the microbial flora of a carious lesion and the microbial flora of the periodontal inflammatory process

P3. Demineralization and remineralization

Learning outcomes;

- describe and analyze the processes of demineralization and remineralization of hard dental tissues



P4. Origin and development of periodontal disease

Learning outcomes;

- describe normal periodontal conditions
- formulate the principle of periodontal diseases
- describe inflammatory periodontal diseases caused by bacteria

P5. The role of saliva in the prevention of oral cavity diseases

Learning outcomes;

- describe the composition of saliva and its role in the defense of the oral cavity

P6. The role of nutrition in the prevention and occurrence of caries

Learning outcomes;

- define the foundations of the prevention of caries and periodontal diseases regarding dietary factors,
- plan dietary counseling
- describe the influence of nutrition on the development of caries

P7. Carbohydrates and sweeteners

Learning outcomes;

- critically assess the influence of nutrition on the formation of caries with special reference to carbohydrates as the main factors in the formation of caries

P8. Assessment of the presence of caries and the risk of caries

Learning outcomes;

- describe the methods of assessment and identification of risk for caries
- choose the option when using caries activity tests for the dental office

P9. Fluoridation – caries prevention with fluoride

Learning outcomes;

- describe the methods of systemic fluoridation
- choose an option when implementing topical dental fluoridation

P10. Other means for tooth remineralization

Learning outcomes;

- distinguish between tooth remineralization methods

P11. Fissure sealing

Learning outcomes;

- argue the indications for fissure sealing
- present the fissure sealing procedure



P12. Initial carious lesion

Learning outcomes;

- describe the oral microbial flora and the process of caries formation with special reference to the initial caries lesion
- distinguish the microbial flora of the caries lesion

P13. Minimally invasive techniques

Learning outcomes;

- describe minimally invasive dental restoration techniques

P14. Dental prevention in society

Learning outcomes;

- argue the importance of caries prevention
- describe caries prevention strategies
- distinguish between individual and collective prevention methods
- define the foundations of prevention of orthodontic anomalies

P15. Prevention of caries and periodontal diseases in specific population groups.

Learning outcomes;

- describe the prevention of caries and periodontal diseases in persons with developmental disabilities and in patients with chronic diseases

The list of seminars with descriptions:

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The list of practicals with descriptions:

Exercises are performed in the office of the Department of Pediatric Dentistry at the Clinic for Dental Medicine of the Rijeka Clinical Hospital Center in Rijeka.

Before accessing the exercises, students are required to acquire theoretical knowledge that they will perform practically.

Students will practically perform exercises on each other and on patients.

Students' obligations:

Students are obliged to regularly attend and actively participate in all forms of classes.

Maximum absences of up to 30% of classes with written justification and compensation

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

Student evaluation is carried out according to the valid " **Pravilniku o studijima Sveučilišta u Rijeci** " (Rulebook on studies of the University of Rijeka).

The students' work will be evaluated and evaluated during the course and in the final exam. Out of a total of 100 points, a student can get 70 points during classes, and 30 points in the final exam.



Students are graded using the ECTS (A-F) and numerical system (1-5). Grading in the ECTS system is carried out by absolute distribution.

Out of the maximum 70 grade points that can be obtained during classes, the student must collect a minimum of 35 grade points in order to take the final exam. Students who collect less than 34.99 grade points (F grade category) must re-enroll in the course.

The student acquires grade points by actively participating in classes, completing assigned tasks. A student must achieve a minimum of 50% of the grade during classes in order to be able to take the final exam, and can achieve a maximum of 70%. The student earns the final 30% of the grade in the final exam. In order for a student to be evaluated with a final grade, he must successfully pass the final exam. The exam threshold for the final exam is 50% of the successfully completed exam. If he does not pass the final exam, he will receive a negative grade overall.

All forms of teaching are graded, the maximum number of points is 100, and 25% of the points collected during the exercises with the patient are added to the points from the written exam, because in this way the student's oral and practical knowledge is checked in a real situation in the office!

Final grade:

- the points achieved in the exercises are added to the points from the exam
- final grade:

0- 49.9 = F

50-59.9 = D - 2

60-74.9 = C - 3

75-89.9 = B - 4

90-100 = A - 5

Other important information regarding to the course:

Any use of another's text or other form of author's work, as well as the use of ChatGPT or any of another tool whose functionality is based on artificial intelligence technology, without clear and 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 to "Pravilnik o stegovnoj odgovornosti studenata (Rulebook on disciplinary responsibility of students)".

Consultation time: Thursdays at 8:00 a.m. with mandatory prior notice at least one day before.



COURSE SCHEDULE (for the academic year 2025/2026)

Date	Lectures (time and place)	Seminars (time and place)	Practicals (time and place)	Instructor
01.10.2025.	P1(11:45-13:15) online			Prof. Danko Bakarčić, Ph.D
03.10.2025.			V1 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent.
08.10.2025.	P2, P3 (11:45-13:15) online			Prof. Nataša Ivančić Jokić , Ph.D
15.10.2025.	P4, P5 (11.45-13.15) online			Prof. Nataša Ivančić Jokić , Ph.D
22.10.2025.	P6, P7 (11.45-13.15) online			Prof. Nataša Ivančić Jokić , Ph.D
29.10.2025.	P8, (11.45-13.15) online			Prof. Danko Bakarčić, Ph.D
05.11.2025.	P9 (11.45-13.15) onsite			Prof. Danko Bakarčić, Ph.D
07.11.2025.			V2 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent.
12.11.2025.	P10, P11 (11.45-13.15) onsite			Prof. Nataša Ivančić Jokić , Ph.D
19.11.2025.	P12 (11.45-13.15) onsite			Prof. Nataša Ivančić Jokić , Ph.D
26.11.2025.	P13 (11.45-13.15)			Prof. Danko Bakarčić, Ph.D



	onsite			
03.12.2025.	P14 (11.45-13.15) onsite			Prof. Danko Bakarčić, Ph.D
05.12.2025.			V3 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent.
12.12.2025.			V4 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent.
19.12.2025.			V5 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent.
09.01.2026.			V6 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent.
16.01.2026.			V7 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent.
23.01.2026.			V8 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent.



List of lectures, seminars and practicals:

	LECTURES (Topics)	Teaching hours	Location/Lecture room
P1	Development and structure of dental adhesive materials, dental plaque and tartar	2	lecture room Kreš. 40
P2	Demineralization and remineralization	1	lecture room Kreš. 40
P3	The role of saliva in the prevention of oral cavity diseases	1	lecture room Kreš. 40
P4	The role of nutrition in the prevention and occurrence of caries	1	lecture room Kreš. 40
P5	Carbohydrates and sweeteners	1	lecture room Kreš. 40
P6	Assessment of the presence of caries and the caries risk assessment	1	lecture room Kreš. 40
P7	Origin and development of periodontal disease	1	lecture room Kreš. 40
P8	Fluoridation – caries prevention with fluoride	2	lecture room Kreš. 40
P9	Other means for tooth remineralization	2	lecture room Kreš. 40
P10	Fissure sealing	1	lecture room Kreš. 40
P11	The initial caries lesion	1	lecture room Kreš. 40
P12	Minimally invasive techniques	2	lecture room Kreš. 40
P13	Dental prevention in society	2	lecture room Kreš. 40
P14	Prevention of caries and periodontal diseases in specific population groups.	2	lecture room Kreš. 40
	Total	20	

	SEMINARS (Topics)	Teaching hours	Location/Lecture room
	Total	0	

	PRACTICALS (Topics)	Teaching hours	Location/Lecture room
V1	OHI index assessment	1	office 3 - Kreš. 40
V2	Fluoridation	1	office 3 - Kreš. 40
V3	Creating an individual prevention plan for patients	1	office 3 - Kreš. 40
V4	Creating an individual prevention plan for patients	1	office 3 - Kreš. 40
V5	Creating an individual prevention plan for patients	1	office 3 - Kreš. 40
V6	Creating an individual prevention plan for patients	1	office 3 - Kreš. 40
V7	Creating an individual prevention plan for patients	2	office 3 - Kreš. 40
V8	Creating an individual prevention plan for patients	2	office 3 - Kreš. 40
	Total	10	



	FINAL EXAM DATES
1.	28.01.2026.
2.	11.02.2026.
3.	10.06.2026.
4.	02.09.2026.

	Lectures	Seminars	Practicals	Total
Total number	20		10	30
On-line	10		0	10
Percentage	50		0	33,3