



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: 2026./27.

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.

Leda Bašić, 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 practicals, 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 practicals. 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 practicals. Teachers discuss with students the specifics of performing individual exercises. Colloquium will be held during the course, and at the end of the course there will be a written test for the final exam. By completing all teaching activities and participating in mandatory colloquium and the final exam, the student earns 2 ECTS points.

Consultations are carried out in agreement with the head of the course.

Assigned reading:

Harris NO, Garcia-Godoy F, Nathe CN. Primary Preventive Dentistry. Pearson Education, Harlow, 2013.

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 "Pravilnik 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.

Students earn grading points through active participation in classes and by completing assigned tasks. During the course, students can earn a maximum of **70 points**:

1) Practicals (maximum 50 points)

- practicals without patient (max. 5 points)
- practicals with a patient – assessment of the patient's oral health status (max. 15 points)
- practicals with a patient – development of an individualized prevention plan: selection of toothbrushing techniques and other preventive procedures for the patient (max. 15 points)
- practicals with a patient – development of an individualized prevention plan: fluoride regimen, dietary counseling, and recall examination schedule (max. 15 points)

2) Colloquium (maximum 20 points)

Students can earn a maximum of 20 points on the midterm assessment/colloquium.

The midterm assesses the student's knowledge and understanding of the complete course content. Students must successfully pass the midterm assessment (**≥50%**) in order to be eligible to take the final exam.

Students who do not successfully pass the colloquium (<50%) are allowed one additional attempt.

Of the maximum 70 grading points that can be earned during the course, students must obtain **at least 35 points** to be eligible to take the final exam. Students who earn less than 35 points (grade category F) must re-enroll in the course.

The remaining **30%** of the final grade is earned through the final exam.

The **final exam** is a written 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 (F) overall.

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



Sveučilište u Rijeci
University of Rijeka



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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 2026/2027)

Date	Lectures (time and place)	Seminars (time and place)	Practicals (time and place)	Instructor
28.09.2026.	P1,P2 (18:30-20:00) ONSITE			Prof. Danko Bakarčić, Ph.D
05.10.2026.	P3, P4 (18:30-20:00) online			Prof. Nataša Ivančić Jokić , Ph.D
12.10.2026.	P5, P6 (18:30-20:00) online			Prof. Nataša Ivančić Jokić , Ph.D
19.10.2026.	P7, P8 (18:30-20:00) online			Prof. Nataša Ivančić Jokić , Ph.D
26.10.2026.	P9 (18:30-20:00) online			Prof. Danko Bakarčić, Ph.D
02.11.2026.	P10 (18:30-20:00) onsite			Prof. Danko Bakarčić, Ph.D
06.11.2026.			V1 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent. Leda Bašić, MD.Dent.
09.11.2026.	P11, P12 (18:30-20:00) onsite			Prof. Nataša Ivančić Jokić , Ph.D
13.11.2026.			V2 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent. Leda Bašić, MD.Dent.
16.11.2026.	P13 (18:30-20:00) onsite			Prof. Nataša Ivančić Jokić , Ph.D
20.11.2026.			V3 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina,



				MD.Dent. Leda Bašić, MD.Dent.
23.11.2026.	P14 (18:30-20:00) onsite			Prof. Danko Bakarčić, Ph.D
27.11.2026.			V4 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent. Leda Bašić, MD.Dent.
30.11.2026.	P15 (18:30-20:00) onsite			Prof. Danko Bakarčić, Ph.D
11.12.2026.			V5 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent. Leda Bašić, MD.Dent.
18.12.2026.			V6 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent. Leda Bašić, MD.Dent.
08.01.2027.			V7 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent. Leda Bašić, MD.Dent.
15.01.2027.			V8 (08.45-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent. Leda Bašić, MD.Dent.
22.01.2027.			V9 (09.30-10.15)	Prof. Danko Bakarčić, Ph.D Odri Cicvarić, Ph.D Marija Šimunović Erpušina, MD.Dent. Leda Bašić, MD.Dent.



List of lectures, seminars and practicals:

	LECTURES (Topics)	Teaching hours	Location/Lecture room
P1	Introductory lecture	1	lecture room Kreš. 40
P2	Development and structure of dental adhesive materials, dental plaque and tartar	1	lecture room Kreš. 40
P3	Demineralization and remineralization	1	lecture room Kreš. 40
P4	Origin and development of periodontal disease	1	lecture room Kreš. 40
P5	The role of saliva in the prevention of oral cavity diseases	1	lecture room Kreš. 40
P6	The role of nutrition in the prevention and occurrence of caries	1	lecture room Kreš. 40
P7	Carbohydrates and sweeteners	1	lecture room Kreš. 40
P8	Assessment of the presence of caries and the caries risk assessment	1	lecture room Kreš. 40
P9	Fluoridation – caries prevention with fluoride	2	lecture room Kreš. 40
P10	Other means for tooth remineralization	2	lecture room Kreš. 40
P11	Fissure sealing	1	lecture room Kreš. 40
P12	The initial caries lesion	1	lecture room Kreš. 40
P13	Minimally invasive techniques	2	lecture room Kreš. 40
P14	Dental prevention in society	2	lecture room Kreš. 40
P15	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 and fluoridation	1	office 3 - Kreš. 40
V2	OHI index assessment and fluoridation	1	office 3 - Kreš. 40
V3	OHI index assessment and fluoridation	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	1	office 3 - Kreš. 40
V8	Colloquium	2	lecture room Kreš. 40/42



V9	Creating an individual prevention plan for patients	1	office 3 - Kreš. 40
	Total	10	

	FINAL EXAM DATES
1.	05.02.2027.
2.	19.02.2027.
3.	11.06.2027.
4.	03.09.2027.

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