Course program

**Basic information**

**Course title: CARIOLOGY**

**Code: 184091 (E2210CAR)**

**ECTS Number: 2.0**

**Hours: 15**

**Department of Endodontics and Restorative Dentistry**

**Course leader: Professor Katica Prskalo, DMD, MSc, PhD**

**Teachers:**

1. Professor Katica Prskalo

2. Professor Nada Galić

3. Professor Silvana Jukić-Krmek

4. Professor Ivana Miletić

5. Professor Božidar Pavelić

6. Professor Sanja Šegović

7. Professor Zrinka Tarle

8. Associate professor Anja Baraba

9. Associate professor Paris Simeon

10. Associate professor Ivona Bago

11. Associate professor Eva Klarić

12. Associate professor Danijela Marović

13. Associate professor Jurica Matijević

**Description and object purpose**

Cariology is the basic part of dental medicine study which based on knowledge about the development of hard tooth tissue and supporting structures and the histological and chemical composition of hard tooth tissue, study the developmental abnormalities of permanent teeth, the aetiology of hard dental tissues disease, chemical interactions during development of dental caries lesion, histopathological and clinical manifestations of caries lesions, the chemical processes in the caries lesion, caries diagnosis, the caries risk assessment, epidemiology, dental hygiene and dental caries prevention, and the impact of systemic diseases on caries formation.

Teaching is thematically divided into three parts. In the first part, students based on knowledge about growth and development of the tooth and histology of hard tooth tissue gain insight into the developmental anomalies of permanent teeth and their impact on caries development, as well as on non-caries teeth damages. The second part deals with aetiology, development, pathohistological and clinical manifestations of caries lesions, caries diagnosis, classification of carious lesions, as well as the influence of systemic diseases on caries development. The third part covers epidemiology and the prevention of caries disease.

**Assessment method**

The examination from cariology is postponed after IV semester in the form of an oral exam. During the exam, the teacher puts a seven (7) questions. Knowledge is evaluated by grades: excellent (5), very good (4), good (3), sufficient (2) and insufficient (1). To prepare the exam, the student uses the proposed basic and supplementary literature.

**Student obligations:**

Regular attendance of lectures.

**A student needs to adopt the following knowledge:**

* Developmental disorders of hard tooth tissues: Abnormalities during the initial stage of tooth formation, Morphological irregularities of permanent teeth, Structural irregularities of hard tooth tissues
* Physical and chemical damage of hard tooth tissues
* A response of pulp-dentin complex to stimulation
* Saliva and caries development
* Diet and caries development
* Oral hygiene and dental caries
* Biofilms in caries development
* Chemical processes in a caries lesion
* Pathohistological characteristics of enamel, dentin and cement caries
* Caries detection and diagnosis; visual-tactile and additional detection methods
* Clinical appearance of caries
* Classification of caries lesions
* Caries risk assessment
* Caries Prevention: Non-Operative and Operative Procedures
* Influence of systemic diseases on the development of dental caries
* Chemoprophylaxis of dental caries
* Dental caries epidemiology
* Prognosis of caries disease
* Caries of risk patients

**LITERATURE**

**Basic literature**

1. Ole Fejerskov, Bente Nyvad, Edwina Kidd. Dental Caries. The Disease and it's Clinical Management. 3rd ed. Wiley-Blackwell; 2015. 480 p.

2. Materials on the repository of the course Cariology on the Merlin system

3. Tarle Z et al. Restorative dental medicine. 1st ed. Zagreb: Medicinska naklada; 2021. 380 p.

Chapters: Eva Klarić. Developmental teeth disorders. (Chapter 2)

Danijela Marović. Dental Caries.

**Supplementary Literature**

1. Fejerskov O, Thylstrup A. Textbook of Clinical Cariology. 2nd. Munksgaard, Copenhagen, 1996. 421 p.

# [Examination terms](https://www.sfzg.unizg.hr/en/course/175790?@=5ug4#news_363148)

Regular: 31. 01. 2021.

13. 06. 2022.

27. 06. 2022.

04. 07. 2022.

11. 07. 2022.

22. 08. 2022.

29. 08. 2022.

05. 09. 2022.

12.0 9. 2022.

**EXAM QUESTIONS:**

1. Abnormalities during the initial stage of tooth formation? /(Abnormalnosti za vrijeme inicijalnog stadija razvoja zuba?)

2. Abnormalities during morfodiferentiation of the tooth? /(Abnormalnosti za vrijeme morfodiferencijacije zuba?)

3. Abnormalities during aposition of tooth tissue? /(Abnormalnosti za vrijeme apozicije zuba?)

4. Tooth colour disturbances? /(Poremećaji u boji zuba?)

5. Non-caries tooth defects: Abrasion, attrition, erosion and abfraction? / (Nekarijesna oštećenja zuba?)

6. Dentin hypersensitivity (aetiology, therapy)? /Dentinska preosjetljivost (etiologija, terapija)? /

7. Primary, secondary and tertiary dentin? /Primarni, sekundarni, tercijarni dentin?

8. Major and minor salivary glands? / Velike i male žlijezde slinovnice?

9. Secretion and composition of saliva? / Sekrecija i sastav sline?

10. Functions of saliva? / Funkcija sline u usnoj šupljini?

11. Measurement of unstimulated and stimulated flow rate? / Mjerenje količine stimulirane i nestimulirane sline?

12. The oral microflora? / Mikroflora usne šupljine?

13. Tooth Biofilms? / Naslage na površini zuba?

14. The microbiology of caries (enamel, dentin, root surface)? /Mikrobiologija karijesne lezije (u caklini, dentinu i cementu)?

15. Development of dental plaque (pellicle formation, microbial colonization, immature and mature dental plaque)? / Nastanak dentobakterijskog plaka (stvaranje pelikule, kolonizacija mikroorganizama, nezreli i zreli plak)?

16. Fissure and smooth surface plaque (microbiology and structure)? / Fisurni plak i plak glatkih ploha (mikrobiologija i struktura)?

17. Metabolism of dental plaque? /Metabolizam dentobakterijskog plaka?

18. Chemical interaction during the development of caries lesion (demineralisation and remineralisation)? / Kemijske interakcije tijekom nastanka karijesne lezije (demineralizacija / remineralizacija)?

19. Clinical and histological manifestations of enamel caries („white spot“ lesions)? / Klinički i histološki izgled karijesa cakline (klinički vidljive „bijele mrlje“) ?

20. Progression of the enamel lesion? / Napredovanje karijesne lezije u caklini?

21. A clinical and histological manifestation of dentin caries? / Klinički i histološki izgled karijesa dentina?

22. Progression of the dentin lesion? / Napredovanje karijesne lezije u dentinu?

23. Dentin reaction to caries progression? / Odgovor dentina na napredovanje karijesne lezije?

24. Caries Classification (Black class., ICDAS II, ICCMS)? / Podjela karijesa?

25. Root surface caries (active and inactive (arrested) root surface lesion)? / Karijes na površini korijena (aktivna i zaustavljena lezija)?

26. Occlusal caries and smooth surface caries? / Okluzalni karijes i karijes glatkih ploha?

27. Clinical diagnosis of smooth-surface caries, pit and fissure caries, approximal surface caries? / Klinička dijagnostika karijesa glatkih ploha, jamica i fisura, aproksimalnog karijesa?

28. Radiographic diagnosis of caries lesions? / Radiološka dijagnostika karijesa?

29. Advanced methods of caries diagnosis? / Suvremeni postupci dijagnostike karijesa?

30. Prevention of dental caries? /Prevencija karijesa?

31. Oral hygiene and dental caries (toothbrushing, flossing, professional tooth cleaning and dental caries)? / Oralna higijena i zubni karijes (četkanje zuba, uporaba zubne svile, profesionalno čišćenje zuba)?

32. Diet and the caries process (systemic and local dietary effects)? / Prehrana i karijes (sistemski i lokalni utjecaj prehrane)?

33. Chemoprophylaxis of dental caries? / Kemoprofilaksa karijesa?

34. Fissure sealants and dental caries (indication, contraindication, materials)? /Pečaćenje fisura (indikacije, kontraindikacije, materijali za pečaćenje)?

35. Tests for the assessment of caries risk? /Testovi za procjenu rizika nastanka karijesa?

36. Caries of risky patients? / Karijes rizičnih pacijenata?

37. The prognosis for caries lesions? / Prognoza karijesne lezije?

38. An epidemiological approach to dental caries (analysis and interpretation of data)? /Epidemiologija zubnog karijesa (indeksi karijesa, analiza i interpretacija podataka)?

**CARIOLOGY LECTURES, SEMESTER IV, ac. yr. 2021/22**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ord.**  **Num.** | **Date** | **Lecture theme** | **Duration** | **Lecturer** |
|  |  | Introduction to the Cariology course | *1* | **Prskalo**  *Marović* |
|  |  | Developmental disorders of hard tooth tissues; disorders of initial stage teeth development; morphological irregularities of permanent teeth | *1* | **Jukić-Krmek**  *Tarle* |
|  |  | Structural irregularities of hard tooth tissues | *1* | **Tarle**  *Jukić Krmek* |
|  |  | Physical and chemical damage of the hard tooth tissues. A response of pulp-dentine complex to stimulation | *1* | **Simeon**  *Klarić* |
|  |  | Oral cavity, saliva | *1* | **Šegovi*ć***  *Miletić* |
|  |  | Caries development factors; the role of nutrition in caries development | *1* | **Bago**  *Galić* |
|  |  | Oral microflora  Tooth biofilms  The role of oral hygiene in caries development | *1* | **Miletić**  *Šegović* |
|  |  | Physical and chemical processes in caries lesion | *1* | ***Pavelić***  *Prskalo* |
|  |  | Pathohistological and clinical features of caries lesions | *1* | **Galić**  *Matijević* |
|  |  | Diagnosis of carious lesion | *1* | **Prskalo**  *Miletić* |
|  |  | Caries risk assessment and treatment planning | *1* | **Marović**  *Prskalo* |
|  |  | Classification of carious lesions (Black class., ICDAS II, ICCMS) | *1* | **Baraba**  *Matijević* |
|  |  | Caries prevention; nonoperative and operative procedures | *1* | **Matijević**  *Bago* |
|  |  | Caries in risky patients, a prognosis of caries lesion, epidemiology of caries | *1* | **Klarić**  *Bago* |