Course program

**Basic information**

**Course title: CARIOLOGY**

**Code: 184091 (E2210CAR)**

**ECTS Number: 2.0**

**Number of hours: 15**

**Basic unit: Department of Endodontics and Restorative Dentistry**

**Course leader: Višnja Negovetić Mandić, PhD, DMD**

**Teachers and associates:**

1.Assis. Prof. Višnja Negovetić Mandić, PhD, DMD

2. Prof. Katica Prskalo, PhD, DMD

3. Prof. Nada Galić, PhD, DMD

4. Prof. Silvana Jukić-Krmek, PhD, DMD

5. Prof. Ivana Miletić, PhD, DMD

6. Prof. Božidar Pavelić, PhD, DMD

7. Prof. Sanja Šegović , PhD, DMD

8. Prof. Zrinka Tarle, PhD, DMD

9. Assoc. Prof. Anja Baraba, PhD, DMD

10. Assoc. Prof. Paris Simeon, PhD, DMD

11. Assoc. Prof. Ivona Bago, PhD, DMD

12. Assoc. Prof. Eva Klarić, PhD, DMD

13. Assoc. Prof. Danijela Marović , PhD, DMD

14. Assoc. Prof. Jurica Matijević, PhD, DMD

**Description and aim of the course**

Cariology is a branch of dentistry that deals with the development of dental tissues and periodontium, as well as their histological and chemical composition. It also studies the developmental disorders of permanent teeth, aetiology of tooth structure diseases, chemical interactions in the development of caries lesions, histopathological and clinical manifestations of caries lesions, chemical processes in the caries lesion, caries diagnosis, caries risk assessment, epidemiology, dental hygiene and caries prevention, and the effects of systemic diseases on caries formation.

The lessons are thematically divided into three parts. The first part provides knowledge about the growth and development of the tooth and the histology of the tooth structure, insights into the developmental anomalies of the permanent teeth and their effects on caries development and non-carious tooth damage. The second part deals with the aetiology, development, pathohistological and clinical manifestations of caries lesions, caries diagnosis, classification of carious lesions and the influence of systemic diseases on caries development. The third part deals with the epidemiology and prevention of caries.

**Grading**

The exam in cariology is given after IV semester in the form of an oral exam. During the exam, the teacher asks seven (7) questions. Knowledge is evaluated with the following grades: excellent (5), very good (4), good (3), sufficient (2) and insufficient (1). To prepare for the exam, the student should use the suggested required and recommended literature.

**Student obligations:**

Regular attendance of lectures.

**A student must acquire 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**

**Required literature:**

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

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

https://moodle.srce.hr/2019-2020/course/view.php?id=62496

**Recommended Literature:**

1. Fejerskov O, Thylstrup A. Textbook of Clinical Cariology. II ed. Munksgaard, Copenhagen, 1996.

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

Regular:

12.06.2023.

26.06.2023.

03.07.2023.

10.07.2023.

28.08.2023.

04.09.2023.

11.09.2023.

18.09.2023

**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. 2022/23**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Ord.**  **Num.** | **Date** | **Lecture theme** | **Duration** | **Lecturer** |
|  |  | Introduction to the Cariology course | *1* | **Negovetić Mandić**  *Prskalo* |
|  |  | 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* |