

MEDICAL UNIVERSITY – PLOVDIV
FACULTY OF MEDICINE

SYLLABUS

IN

PAEDIATRIC DENTISTRY

Approved by the Department Council on Protocol № 163/27.02.2024

Confirmed by the Faculty Council - Protocol № 5/24.04.2024

PEDIATRIC DENTISTRY – PART I
Syllabus

Discipline	Final exam/ semester	Auditorium classes				ECTS non-auditorium classes	ECTS total	Academic hours in years and semesters			
		Total	Lectures	Practices	ECTS			2 nd year		3 rd year	
								III	IV	V	VI
PEDIATRIC DENTISTRY – PART I	V	60	30	30	4.4	-	4.4	-	1/1	1/1	-

DISCIPLINE:

PEDIATRIC DENTISTRY – PART I

TYPE OF DISCIPLINE ACCORDING TO THE UNIFORM STATE REQUIREMENTS:

Compulsory

LEVEL OF QUALIFICATION:

Master`s degree

FORMS OF TRAINING:

Lectures, seminar classes, self-study

YEAR OF TRAINING:

Second and third course

DURATION OF TRAINING:

Two semesters

ACADEMIC HOURS:

30 lecture hours, 30 seminar class hours

TECHNICAL EQUIPMENT APPLIED IN THE TRAINING:

Multimedia presentations, discussions, monitoring tests, figures, interpretation of case reports, practical tasks solving, workbook, manual

FORMS OF EVALUATION:

Ongoing monitoring, participation in seminars and colloquia, monitoring tests, figure drawings, semester examination

EVALUATION CRITERIA:

Average assessment grade per semester

ASPECTS OF EVALUATION CRITERIA:

Participation in discussions, seminars and colloquia, monitoring tests, figures drawing

SEMESTER EXAM:

Test, written and/or oral examination

STATE EXAM:

Test, clinical case task, written and/or oral examination in Pediatric Dentistry Part I, Dental Prevention and Pediatric Dentistry Part II

LECTURER:

Habilitated Professor of Pediatric Dentistry

DEPARTMENT:

Paediatric Dentistry

ANNOTATION

Paediatric Dentistry Part I presents the basic concepts concerning histogenesis, morphology, and physiology of the dental structures, dynamics in the development of primary and permanent dentitions, abnormalities in the morphology and dental structure, oral physiology, oral ecosystem, and defense mechanisms in children, factors influencing normal development of hard dental tissues, gingiva, and oral mucosa.

The discipline-related knowledge and skills improve the ability for organization and realization of prevention and treatment of oral diseases in children.

BASIC AIMS OF THE DISCIPLINE

To gain basic knowledge and skills about:

- histogenesis of oral structures;
- morphology of the oral structures;
- physiology of the oral structures;
- dynamics in the development of primary and permanent dentition;
- anatomical and physiological features of primary and permanent teeth;
- anomalies in the development of teeth;
- physiology of oral cavity;
- oral ecosystem and its dynamics in childhood;
- oral defense mechanisms and characteristics of children's immunity.

EXPECTED RESULTS

After the end of the course, the students must be able to:

- describe the characteristics of the stages in the histogenesis of oral structures
- know the morphological units and the structure of the tooth, periodontium, and oral mucosa
- know the physiology of the oral structures and their features associated with childhood.

- know the dynamics of dental development, to determine the deviations in their development, indicating the possible causes and time of their manifestation, as well as ways to prevent them.
- know the pre- and post-eruptive influence of the various factors related to the dynamics of dental development, indicating the ways to prevent them.
- know the reasons and mechanisms for the occurrence of developmental disturbances
- know the physiology and composition of the oral environment and its features associated with childhood.
- know the mechanisms and dynamics in the formation of the oral ecosystem.
- know the defense mechanisms in the oral cavity and the characteristics of children's immunity.

LECTURES
LECTURE PROGRAMME
IV semester, II course

№	TOPICS	HOURS
1.	Introduction of the concept of specialty Paediatric dentistry.	1
2.	Ontogenetic development of the maxillofacial region.	1
3.	Ontogenetic development of the tooth germ – elements, stages of development.	2
4.	Histogenesis, morphology and physiology of enamel. Theories of mineralization. Features of enamel in primary and permanent teeth.	4
5.	Histogenesis, morphology and physiology of the dentin. Features of dentin associated with childhood.	2
6.	Histogenesis, morphology and physiology of the dental pulp. Features of dental pulp associated with childhood.	2
7.	Histogenesis, morphology and physiology of the cementum. Features of cementum associated with childhood.	1
8.	Histogenesis, morphology and physiology of the periodontal ligament. Features of periodontal ligament associated with childhood.	1
9.	Histogenesis, morphology and physiology of the oral mucosa. Features of the oral mucosa associated with childhood.	1
	Total	15 hours

LECTURE PROGRAMME
V semester, III course

№	TOPICS	HOURS
1.	Histogenesis, morphology and physiology of periodontium. Features of the components of the periodontium associated with childhood.	1
2.	Dynamics of primary and permanent dentition development. Stages and eruption times.	2
3.	Dental anatomy and physiology – characteristics of primary and permanent dentition.	1
4.	Abnormalities in tooth morphology.	2
5.	Dysplasia - etiology, pathogenesis and classification.	2
6.	Physiology of oral cavity - components of saliva and salivary role in the physiology of the oral cavity.	3
7.	Oral ecosystem- origin and dynamics in childhood.	2
8.	Characteristics of the immune system in children. Defense mechanisms of oral cavity.	2
	Total	15 hours

SEMINAR SLASS PROGRAMME
IV semester, II course

№	TOPICS	HOURS
1.	Introduction of the concept of specialty Paediatric dentistry.	2
2.	Ontogenetic development of the maxillofacial region.	2

3.	Ontogenetic development of the tooth germ – elements, stages of development.	2
4.	Histogenesis, morphology and physiology of the enamel. Theories of mineralization. Features of enamel in primary and permanent teeth.	2
5.	Histogenesis, morphology and physiology of the dentin. Features of dentin associated with childhood.	2
6.	Histogenesis, morphology and physiology of the dental pulp. Features of dental pulp associated with childhood.	2
7.	Histogenesis, morphology and physiology of the cementum and periodontal ligament. Features of cementum and periodontal ligament associated with childhood.	2
8.	Histogenesis, morphology and physiology of the oral mucosa. Features of the oral mucosa associated with childhood.	1
	Total	15 hours

SEMINAR CLASS PROGRAMME
V semester, II course

№	TOPICS	HOURS
1.	Histogenesis, morphology and physiology of periodontium. Features of the components of the periodontium associated with childhood.	2
2.	Dynamics of primary and permanent dentition development - stages and eruption times.	2
3.	Dental anatomy and physiology – characteristics of primary and permanent dentition.	2
4.	Abnormalities in tooth morphology.	2
5.	Dysplasia - etiology, pathogenesis and classification.	2

6.	Physiology of oral cavity - components of saliva and salivary role in the physiology of the oral cavity	2
7.	Oral ecosystem - origin and dynamics in childhood.	2
8.	Characteristics of the immune system in children. Defense mechanisms of the oral cavity.	1
	Total	15 hours

LECTURE № 1 – 1 hour

INTRODUCTION OF THE CONCEPT OF SPECIALTY PAEDIATRIC DENTISTRY.

1. Introduction to the curriculum in Paediatric Dentistry
2. Historical presentation of the Department of Paediatric Dentistry.
3. Presentation of the staff of the Department of Paediatric Dentistry.
4. Programme of the discipline Paediatric Dentistry - Part I.

LECTURE № 2 – 1 hour

ONTOGENETIC DEVELOPMENT OF MAXILLOFACIAL REGION.

1. Origin of the human embryo.
2. Development of the oral pit.
3. Pharyngeal apparatus - pharyngeal arches.
4. Jaw development of human embryo.
5. Development of the tongue and the floor of the mouth of the human embryo.
6. Defects in the development of the maxillofacial region.

LECTURE № 3, 4 – 2 hours

ONTOGENETIC DEVELOPMENT OF TOOTH GERM – ELEMENTS AND STAGES OF DEVELOPMENT

1. Stages of the formation of the tooth germ.
2. Layers of the enamel organ – structure and functions
3. Origin and characteristics of the dental papilla and dental follicle.

LECTURE № 5, 6, 7, 8 – 4 hours

HISTOGENESIS, MORPHOLOGY AND PHYSIOLOGY OF TOOTH ENAMEL. THEORIES OF MINERALIZATION. FEATURES OF ENAMEL IN PRIMARY AND PERMANENT TEETH

1. Anatomy of tooth enamel – general characteristics.
2. Amelogenesis
3. Mineralization of the enamel matrix
 - 3.1. Mechanisms.
 - 3.2. Theories
4. Morphology of the tooth enamel. Morphologic units.
5. Physiology of the tooth enamel.
6. Stages of the ionic exchange.
7. Features of enamel associated with childhood.

LECTURE № 9, 10 – 2 hours

HISTOGENESIS, MORPHOLOGY AND PHYSIOLOGY OF TOOTH DENTIN. FEATURES OF DENTIN ASSOCIATED WITH CHILDHOOD.

1. Anatomy of the tooth dentin – general characteristics. Composition.
2. Histogenesis of the tooth dentin.
 - 2.1. Life cycle of odontoblasts
 - 2.2. Stages of dentinogenesis
 - 2.2.1. Formation of the organic matrix.
 - 2.2.1.1. Fibrilogenesis.
 - 2.2.1.2. Maturation of the organic matrix
 - 2.3. Mineralization of the mature dentin organic matrix.
3. Morphological units of the dentin.
 - 3.1. Dentinal tubules
 - 3.2. Peritubular dentin
 - 3.3. Intertubular dentin
4. Dentin types.
 - 4.1. Mantle dentin, orthodontin (circumpulpal), interglobular dentin, predentin
 - 4.2. Primary, secondary and tertiary dentin
5. Incremental lines
6. Physiology of the dentin – exchange, sensitivity (theories), functions.
7. Features of dentin associated with childhood.

LECTURE № 11, 12 - 2 hours

HISTOGENESIS, MORPHOLOGY AND PHYSIOLOGY OF DENTAL PULP. FEATURES OF DENTAL PULP ASSOCIATED WITH CHILDHOOD.

1. General characteristics.
2. Histogenesis of the dental pulp – origin and development.
3. Anatomy of the dental pulp.
4. Histology of the dental pulp:
 - 4.1. Peripheral area
 - 4.1.1.1. Odontoblastic layer
 - 4.1.1.2. Zone of Weil
 - 4.1.1.3. Cell-rich zone
 - 4.2. Pulp core – central layer
5. Vascularization of the dental pulp.
6. Innervation of the dentino-pulpal complex
7. Physiology of the dental pulp.
8. Regressive changes in the dental pulp.
9. Features of the dental pulp associated with childhood.

LECTURE № 13 – 1 hour

HISTOGENESIS, MORPHOLOGY AND PHYSIOLOGY OF TOOTH CEMENTUM. FEATURES OF CEMENTUM ASSOCIATED WITH CHILDHOOD.

1. Anatomy of the tooth cementum – general characteristics.
2. Histogenesis – origin and development: differentiation of cementoblasts, deposition of organic matrix and mineralization.
3. Morphology of the tooth cementum.
4. Composition.
5. Functions of the tooth cementum.
6. Features of the tooth cementum associated with childhood.

LECTURE № 14 – 1 hour

HISTOGENESIS, MORPHOLOGY AND PHYSIOLOGY OF PERIODONTAL LIGAMENT. FEATURES OF PERIODONTAL LIGAMENT ASSOCIATED WITH CHILDHOOD.

1. Anatomy of the periodontal ligament – general characteristics.
2. Histogenesis – origin and development.
3. Histology of periodontal ligament
 - 3.1. Cells
 - 3.2. Extracellular substance
 - 3.2.1. Fibers
4. Vascularization, lymphatic vessels and innervation of the periodontal ligament.
5. Physiology of the periodontal ligament.
6. Features of the periodontal ligament associated with childhood.

LECTURE № 15 – 1 hour

HISTOGENESIS, MORPHOLOGY AND PHYSIOLOGY OF ORAL MUCOSA. FEATURES OF THE ORAL MUCOSA ASSOCIATED WITH CHILDHOOD.

1. Oral mucosa – general characteristics.
2. Histogenesis of oral mucosa
3. Morphology of the oral mucosa.
 - 2.1. Epithelium (lamina epithelialis)
 - 2.2. Mucosa (lamina propria mucosae)
 - 2.3. Submucosa (lamina submucosa)
4. Types of oral mucosa based on the structure and functions.
5. Features of the oral mucosa associated with childhood.

LECTURE № 16 – 1 hour

HISTOGENESIS, MORPHOLOGY AND PHYSIOLOGY OF PERIODONTIUM. FEATURES OF THE COMPONENTS OF THE PERIODONTIUM ASSOCIATED WITH CHILDHOOD.

1. Definition
2. Histogenesis and morphology of the periodontium.
3. Characteristics of the components of the periodontium associated with childhood.
4. Physiology of the periodontium.

LECTURE № 17, 18 – 2 hours

DYNAMICS OF PRIMARY AND PERMANENT DENTITION DEVELOPMENT. STAGES AND ERUPTION TIMES.

1. Development of teeth.
 - 1.1. Process of laying down the tooth germ.
 - 1.2. Start of mineralization.
 - 1.3. Formation of the crown.
 - 1.4. Eruption-periods.
 - 1.5. Root formation.
 - 1.6. Root resorption of the primary teeth.
2. Factors influencing normal tooth development.
 - 1.1. Physiological factors.
 - 1.2. Pathologic factors.
3. Eruption patterns.

LECTURE № 19 - 1 hour**DENTAL ANATOMY AND PHYSIOLOGY – CHARACTERISTICS OF PRIMARY AND PERMANENT DENTITION.**

1. Dentitions.
2. Dental surfaces.
3. Anatomical characteristics of the crown.
4. Anatomy and physiology of primary teeth.
5. Anatomy and physiology of permanent teeth.
6. Comparison between primary and permanent teeth. Identifiable features of primary and permanent teeth.

LECTURE № 20, 21 – 2 hours**ABNORMALITIES IN TOOTH MORPHOLOGY.**

1. Etiology of the abnormalities in tooth morphology.
 - 1.1. Genetic factors.
 - 1.2. Endogenous factors.
 - 1.3. Exogenous factors.
2. Abnormalities in the number of teeth
 - 2.1. Hyperdontia
 - 2.2. Hypodontia
 - 2.3. Anodontia
3. Abnormalities in the size of teeth - micro- and macrodontia.
4. Abnormalities in the shape of teeth.
 - 4.1. Concrecence
 - 4.2. Fusion.
 - 4.3. Gemination
 - 4.4. Supernumerary cusps
 - 4.5. Other abnormalities in the shape of teeth
5. Abnormalities in the directions of the crown and roots of teeth.
6. Abnormalities of the tooth roots
7. Abnormalities in the position of teeth

LECTURE № 22, 23 – 2 hours**DYSPLASIA - ETIOLOGY, PATHOGENESIS AND CLASSIFICATION**

1. Definition of dental dysplasia.
 - 1.1. Definition.
 - 1.2. Types
2. Etiology of the abnormalities in dental structure.
 - 2.1. Genetic factors.
 - 2.2. Endogenous factors – mother`s, child`s and environmental influence.
 - 2.3. Exogenous factors.
3. Pathogenesis of the abnormalities in dental structure.
4. Classification of the abnormalities in dental structure.

LECTURE № 24, 25, 26 – 3 hours**PHYSIOLOGY OF ORAL CAVITY - COMPONENTS OF SALIVA AND SALIVARY ROLE IN THE PHYSIOLOGY OF THE ORAL CAVITY.**

1. General characteristics of the oral fluid. Significance.
2. Saliva - salivary glands
3. Composition of saliva.

4. Salivary secretion.
5. Disturbances of salivary secretion
6. Functions of saliva

LECTURE № 27, 28 – 1 hour

ORAL ECOSYSTEM – ORIGIN AND DYNAMICS IN CHILDHOOD.

1. Components of the oral ecosystem. Features of the oral microflora associated with childhood.
 - 1.1. Oral mucosa.
 - 1.2. Tooth enamel.
 - 1.3. Oral fluid;
 - 1.4. Oral microflora.
 - 1.4.1. Types of microorganisms.
 - 1.4.2. Ontogenetic development of oral microflora of the oral cavity.
 - 1.4.3. Different species of microorganisms.
 - 1.4.4. Relationships between microorganisms.
 - 1.4.5. Factors of the oral microbial homeostasis.
 - 1.4.6. Protective factors of the macroorganism.
 - 1.4.7. Role of the external factors
2. Protective functions of the oral ecosystems.
 - 2.1. Role of the enamel – mechanical barrier, acid resistance.
 - 2.2. Role of the oral mucosa and periodontium
 - 2.3. Role of oral fluid.
 - 2.4. Role of oral microflora.

LECTURE № 29, 30 – 2 hours

CHARACTERISTICS OF THE IMMUNE SYSTEM IN CHILDREN. DEFENSE MECHANISMS OF ORAL CAVITY.

1. Immune system, immunity – definition.
2. Non-specific immunity – characteristics and defense lines
 - 2.1. First line of defense – mechanical and chemical barriers
 - 2.2. Second line of defense
 - 2.3. Non-specific protective factors
 - tissue factors;
 - cellular factors (characteristics, function)
 - mediators of inflammation - vasoactive amines, plasma proteins, interferon
 - 2.4. Non-specific defense mechanism - inflammation
 - Nonspecific inflammatory response
 - Specific inflammatory response
 - Mechanism of inflammation, stages of phagocytosis
3. Specific immunity
 - 3.1. Antibodies, immune cells
 - antigens – types and characteristics
 - antibodies - types and characteristics, mechanisms
 - cytokines
 - cells of specific immunity
 - 3.2. Humoral and cell-mediated immune responses.
 - 3.3. Immune tolerance.
 - 3.4. Development of the immune system in children.
 - 3.5. Immunopathological reactions

- hypersensitivity
- autoimmunity
- immunodeficiency.

3.6. Oral immunity – defense mechanisms

- Protective function of oral mucosa;
- Protective function of oral lymphoid tissue.
- Protective function of saliva – mechanical action; enzymes, leukocytes, buffer systems, secretory immune system.
- Protective function of the gingiva-crevicular fluid.

SEMINAR CLASSES

SEMINAR CLASS № 1 – 2 hours

INTRODUCTION OF THE CONCEPT OF SPECIALTY PAEDIATRIC DENTISTRY.

1. Introduction to the facilities of the Department of Pediatric Dentistry.
2. Introduction to the main objectives of the course of Pediatric dentistry.
3. Introduction to the curriculum in Paediatric Dentistry
4. Historical presentation of the Department of Paediatric Dentistry.
5. Presentation of the staff of the Department of Paediatric Dentistry.
6. Programme of the discipline Paediatric Dentistry - Part I.

SEMINAR CLASS № 2 – 2 hours

ONTOGENETIC DEVELOPMENT OF MAXILLOFACIAL REGION.

1. Ontogenetic development of the maxillofacial region.
2. Development of the oral pit – Stomodeum.
3. Pharyngeal apparatus - pharyngeal arches.
4. Jaw development of human embryo.
5. Development of the tongue and the floor of the mouth of the human embryo.
6. Defects in the development of the maxillofacial region
7. Multimedia presentation
8. Figures drawing.

SEMINAR CLASS № 3 – 2 hours

ONTOGENETIC DEVELOPMENT OF TOOTH GERM – ELEMENTS, STAGES OF DEVELOPMENT.

1. Ontogenetic Development of the tooth germ.
 - 1.1. Stages of development of tooth germ
 - 1.2. Layers of the enamel organ – functions.
 - 1.3. Origin and characteristics of dental papilla and dental follicle.
 - 1.4. Developmental periods of the tooth germ.
2. Multimedia presentations.
3. Figures drawing.

SEMINAR CLASS № 4 – 2 hours

HISTOGENESIS, MORPHOLOGY AND PHYSIOLOGY OF TOOTH ENAMEL. THEORIES OF MINERALIZATION. FEATURES OF ENAMEL IN PRIMARY AND PERMANENT TEETH.

1. Histogenesis, morphology and physiology of the tooth enamel.
 - 1.1. Histogenesis of the tooth enamel.

- 1.2. Mineralization of the enamel matrix. Mechanisms of enamel mineralization. Theories of mineralization.
- 1.3. Morphology of the tooth enamel. Morphologic units.
- 1.4. Physiology of the tooth enamel. Stages of the ionic exchange.
- 1.5. Features of enamel associated with childhood.
2. Multimedia presentation
3. Figures drawing.

SEMINAR CLASS № 5 – 2 hours

HISTOGENESIS, MORPHOLOGY AND PHYSIOLOGY OF TOOTH DENTIN. FEATURES OF DENTIN ASSOCIATED WITH CHILDHOOD.

1. Histogenesis, morphology and physiology of the tooth dentin.
 - 1.1. Histogenesis of the tooth dentin. Mechanism of dentinogenesis. Odontoblasts.
 - 1.2. Morphology of the tooth dentin. Morphologic units.
 - 1.3. Dentin layers.
 - 1.4. Physiology of the tooth dentin.
 - 1.5. Features of dentin associated with childhood.
2. Multimedia presentations
3. Figures drawing.

SEMINAR CLASS № 6 – 2 hours

HISTOGENESIS, MORPHOLOGY AND PHYSIOLOGY OF DENTAL PULP. FEATURES OF DENTAL PULP ASSOCIATED WITH CHILDHOOD.

1. Histogenesis, morphology and physiology of the dental pulp.
 - 1.1. Histogenesis of the dental pulp – origin and development.
 - 1.2. Morphology of the dental pulp.
 - 1.3. Histology of dental pulp.
 - 1.4. Vascular supply and innervation of the pulp.
 - 1.5. Physiology of the dental pulp.
 - 1.6. Regressive changes in the pulp
 - 1.7. Features of dentin associated with childhood.
2. Multimedia presentations.
3. Figures drawing.

SEMINAR CLASS № 7 – 2 hours

HISTOGENESIS, MORPHOLOGY AND PHYSIOLOGY OF TOOTH CEMENTUM AND PERIODONTAL LIGAMENT. FEATURES OF CEMENTUM AND PERIODONTAL LIGAMENT ASSOCIATED WITH CHILDHOOD.

1. Histogenesis, morphology and physiology of the tooth cementum and periodontal ligament.
 - 1.1. Histogenesis, morphology and physiology of the tooth cementum.
 - 1.1.1. Histogenesis of the tooth cementum – origin and development.
 - 1.1.2. Morphology of the tooth cementum.
 - 1.1.3. Composition
 - 1.1.4. Physiology of the tooth cementum.
 - 1.1.5. Features of cementum associated with childhood.
 - 1.2. Histogenesis, morphology and physiology of the periodontal ligament.
 - 1.2.1. Histogenesis of the periodontal ligament – origin and development
 - 1.2.2. Histology of the periodontal ligament.
 - 1.2.3. Physiology of the periodontal ligament.

- 1.2.4. Blood and nerve supply of the periodontal ligament.
- 1.2.5. Features of the periodontal ligament associated with childhood.
2. Multimedia presentations.
3. Figures drawing.

SEMINAR CLASS № 8 – 1 hour

HISTOGENESIS, MORPHOLOGY AND PHYSIOLOGY OF ORAL MUCOSA. FEATURES OF THE ORAL MUCOSA ASSOCIATED WITH CHILDHOOD.

1. Morphology and physiology of the oral mucosa.
 - 1.1. Histogenesis of the oral mucosa.
 - 1.2. Structure of the oral mucosa.
 - 1.3. Types of the oral mucosa based on the function and histology.
 - 1.4. Blood supply and innervation of the oral mucosa.
 - 1.5. Morphology and physiology of the oral mucosa.
 - 1.6. Features of the oral mucosa associated with childhood.
2. Multimedia presentations.
3. Figures drawing

SEMINAR CLASS № 9 – 2 hours

HISTOGENESIS, MORPHOLOGY AND PHYSIOLOGY OF PERIODONTIUM. FEATURES OF THE COMPONENTS OF THE PERIODONTIUM ASSOCIATED WITH CHILDHOOD.

1. Definition.
2. Morphology and physiology of the periodontium.
3. Characteristics of the principal components of the periodontium.
4. Physiology of the periodontium.
5. Features of the components of the periodontium associated with childhood.
6. Multimedia presentations.
7. Figures drawing.

SEMINAR CLASS № 10 – 2 hours

DYNAMICS OF PRIMARY AND PERMANENT DENTITION DEVELOPMENT - STAGES AND ERUPTION TIMES.

1. Development, eruption and root resorption of the primary teeth.
2. Development and eruption of the permanent teeth.
3. Multimedia presentations
4. Figures drawing.

SEMINAR CLASS № 11 – 2 hours

DENTAL ANATOMY AND PHYSIOLOGY – CHARACTERISTICS OF PRIMARY AND PERMANENT DENTITION

1. Dental anatomy and physiology – characteristics of primary and permanent dentition
2. Comparison between primary and permanent teeth. Identifiable features of primary and permanent teeth.
3. Identification of extracted teeth.
4. Multimedia presentations.
5. Figures drawing.

SEMINAR CLASS № 12 – 2 hours

ABNORMALITIES IN TOOTH MORPHOLOGY.

1. Etiology of the abnormalities in tooth morphology.
2. Abnormalities in the number, shape, size, roots and position of teeth.
3. Multimedia presentations.
4. Figures drawing, tables

SEMINAR CLASS № 13 – 2 hours

DYSPLASIA - ETIOLOGY, PATHOGENESIS AND CLASSIFICATION.

1. Etiology and pathogenesis of the abnormalities in dental structure.
2. Classification of the abnormalities in dental structure.
3. Characteristics of the types of dental dysplasia.
4. Multimedia presentations.
5. Figures drawing.

SEMINAR CLASS № 14 – 2 hours

PHYSIOLOGY OF ORAL CAVITY- COMPONENTS OF SALIVA AND SALIVARY ROLE IN THE PHYSIOLOGY OF THE ORAL CAVITY.

1. Salivary secretion. Salivary glands.
2. Disturbances of saliva secretion.
3. Salivary functions and composition.
4. Functions of saliva
5. Multimedia presentations.
6. Figures drawing.

SEMINAR CLASS № 15 – 2 hours

ORAL ECOSYSTEM – ORIGIN AND DYNAMICS IN CHILDHOOD.

1. Components of an oral ecosystem and their protective functions in the physiology of the oral cavity.
2. Oral microflora. Features of the oral microflora associated with childhood.
3. Multimedia presentations.
4. Figures drawing.

SEMINAR CLASS № 16 – 1 hour

CHARACTERISTICS OF THE IMMUNE SYSTEM IN CHILDREN. DEFENSE MECHANISMS OF ORAL CAVITY.

1. Non-specific immune system and specific immune system, development of immune system, Characteristics of Immune System in Children.
2. Oral immunity.
3. Immunopathological reactions.
4. Multimedia presentations.
5. Figures drawing

BIBLIOGRAPHY

1. Lecture course in Pediatric dentistry-Part I, Department of Paediatric Dentistry – Plovdiv
2. Tests in Pediatric dentistry – Part I, Medical University - Plovdiv, 2020
3. Garant P.R Oral Cells and Tissues, Quintessence Publishing Co, Inc, 2003
4. Nanci A. Ten Cate's Oral Histology, 9th Edition. Development, Structure, and Function. 2018.
5. Chiego D. Essential of Oral Histology and Embryology: A Clinical Approach, Mosby, 3 Edition, 2014.
6. Koch G, Poulsen S. Pediatric dentistry. John Willey and Sons, 2009.
7. Wellbury, R., Duggal. Pediatric Dentistry. 5-edition. Oxford University Press, 2005.

CONSPECTUS

1. Ontogenetic development of the maxillofacial region. Origin of the primary intestine. Development of the oral pit – stomodeum; pharyngeal apparatus.
2. Ontogenetic development of the jaws, oral cavity floor and tongue. Formation of lips and palate. Jaws ratios. Factors influencing the development.
3. Ontogenetic development of the tooth germ – elements, stages of development, origin and characteristics of tooth germ elements. Periods of the tooth germ development. Morphological and biological characteristics.
4. Histogenesis of tooth enamel. Characteristics of the ameloblasts. Stages of amelogenesis. Enamel matrix. Initial mineralization, mineralization and maturation. Chemical composition of enamel.
5. Mineralization of the enamel matrix. Mechanisms of enamel mineralization. Theories of mineralization. Physiology of tooth enamel. Crystalline structure. Ionic exchange in enamel.
6. Morphology of the tooth enamel. Morphological units of mature enamel. Characteristics of the enamel of primary and permanent teeth in childhood.
7. Histogenesis of tooth dentin. Origin and composition. Formation of dentinal matrix and dentin mineralization.
8. Morphology of tooth dentin. Classification and layers in dentin. Dentin physiology – metabolism, sensitivity and functions. Characteristics of the dentin in primary and permanent teeth in childhood.
9. Histogenesis of dental pulp – origin and development. Development of the dental papilla – cells, blood vessels and nerves. Anatomy of dental pulp.
10. Histomorphology of dental pulp. Pulp layers, physiology and functions of pulp. Characteristics of the pulp in primary and permanent teeth in childhood.
11. Histogenesis, morphology and physiology of dental cementum. Anatomy and chemical composition. Characteristics of dental cementum in childhood.
12. Histogenesis, morphology and physiology of periodontium. Anatomy and chemical composition. Blood supply, lymphatic network and innervation. Characteristics of periodontium in childhood.
13. Histogenesis, morphology, physiology of oral mucosa. Anatomy – main characteristics and morphology of oral mucosa. Types of oral mucosa. Cell composition, blood supply and innervation. Oral mucosa of lips and tongue. Characteristics of oral mucosa according to age.
14. Histogenesis, morphology and physiology of periodontium. Composition of periodontium -elements. Morphological characteristics in childhood. Functions.

15. Dynamics and development of primary dentition. Development periods and stages. Factors influencing tooth eruption. Mechanism, signs and sequence of eruption. Resorption organ. Pathology of tooth eruption.
16. Dynamics and development of permanent dentition. Development periods and stages. Development and formation of the roots. Factors influencing tooth eruption. Mechanism and sequence of eruption. Pathology of tooth eruption.
17. Anatomical and physiological characteristics of primary and permanent teeth - main characteristics of both types of dentitions. Anatomical features of dental crown.
18. Anatomical and physiological features of primary and permanent teeth - morphological characteristics of temporary and permanent teeth. Differences between primary and permanent teeth.
19. Abnormalities in the development of teeth. Abnormalities in the number of teeth – etiology, types. Abnormalities in the size of teeth – etiology, types.
20. Abnormalities in the development of teeth. Abnormalities in the form of teeth – etiology, types. Abnormalities in the position of teeth – etiology, types. Localized abnormalities in tooth eruption.
21. Abnormalities in the structure of the teeth. Types of structural anomalies. Risk factors for the occurrence of structural abnormalities. Pathogenetic mechanisms.
22. Abnormalities in the structure of teeth. Classification of dental dysplasia. Inherited dental dysplasia.
23. Abnormalities in the structure of the teeth. Congenital dental dysplasia – etiology, types. Acquired dental dysplasia – etiology, types.
24. Liquid oral environment – definition. Saliva, salivary glands – macroscopic and microscopic structure, formation and secretion of saliva, regulation of salivary secretion.
25. Composition of saliva. Stimulated and unstimulated salivary flow. Factors influencing salivary flow and composition.
26. Physiology of saliva. Gingival sulcus fluid – origin, composition and functions.
27. Oral ecology. Oral microflora. Types of microorganisms. Microbial interactions. Oral niches. Characteristics of oral microflora according to age.
28. Oral ecology. Factors influencing the oral microbial homeostasis. Protective mechanisms of the oral ecosystem.
29. Immunity - definition. Nonspecific and specific immunity. Types of immunopathological reactions. Characteristics of immunity in childhood.
30. Oral immunity. Protective mechanisms of the oral mucosa, oral lymphoid tissue, saliva and gingival fluid. Immune reactions and protective mechanisms in the main oral diseases.