

### **Removable prosthodontics**

#### *Expected learning outcomes*

Upon completion of the course the student should be able to:

- describe the bearing of complete and partial dentures
- distinguish changes caused by partial and complete tooth loss
- describe the clinical and laboratory process of making complete and partial dentures and combined works
- describe the clinical production of special types of mobile prosthetic replacements (covering, immediate, CAD/CAM prostheses, epitheses, obturators and prostheses on implants)
- understand the vector analysis of forces in partial edentulous planning
- make complete and partial dentures
- independently clinically carry out the procedures for the placement and repair of mobile prosthetic replacements

### **Fixed prosthodontics**

#### *Expected learning outcomes*

Students will be able to:

- analyze the physiology and biomechanics of the stomatognathic system
- analyze the components of the stomatognathic system
- describe interactions between components of the stomatognathic system
- evaluate the direction and actions of chewing forces
- analyze x-rays and study models
- analyze the fixed prosthetic restoration as a means of therapy
- describe clinical and laboratory course of producing a fixed prosthetic restoration
- compare selection of materials and types of fixed prosthetic restorations regarding longevity, persistence, biocompatibility and success of the therapy
- analyze the influence of endocrine, immunologic, oncologic, metabolic and cardiovascular disease on planning, implementation and success of definitive fixed prosthetic treatment
- assess the biological properties of abutment teeth
- define the plan of fixed prosthetic therapy
- set the indications and estimate contraindications for making crowns
- set the diagnosis and indication for bridge constructions
- plan the making of bridge structures (selection of abutment teeth)
- define pre-prosthetic preparation of the patient for fixed prosthetic treatment
- distinguish occlusal concepts of fixed prosthetic therapy
- analyze the correctness of laboratory making of the fixed prosthetic restoration (test its relationship to the abutment teeth, to adjacent teeth, the marginal gingiva, antagonists)
- evaluate the correctness of technical production of bridge structures (statics, the body of the bridge - hygienic - conditions, the relationship to the alveolar ridge) ·
- analyze fixed prosthetic work in prevention and treatment of periodontal disease ·
- mount indication, plan and analyze the fixed prosthetic aspect of the combined prosthetic therapy
- evaluate the indication of the use of implants as a basis for making fixed prosthetic restorations
  
- implement the history and clinical examination for the needs of fixed prosthetic treatment
- perform preparation for a full metal, full acrylic, faceted acrylic, partial, metal-ceramic, full ceramic, modified, telescopic crown rosary, and richmond crown
- perform preparation for the inlay, onlay, overlay and esthetic veneer

- use appliances and instruments in fixed prosthetic practice
- apply local anesthesia for tooth preparation
- perform preparation of the tooth by following basic principles of preparation
- perform preparation of the cervical part of the teeth tangentially and with chamfer
- mount retraction cord in the gingival sulcus of teeth
- choose the appropriate impression trays
- choose the appropriate impression material and apply the appropriate impression technique
- analyze and harmonize the occlusal and articulatory relations
- choose a color and type of esthetic material for fixed prosthetic restoration
- fix the fixed prosthetic restoration temporarily and definitely, and know to choose the optimal means for cementation
- check clinical adaptation of the new fixed prosthetic restoration
- remove worn out fixed prosthetic restoration
- rehabilitate esthetical part of the damaged fixed prosthetic restoration
- directly develop a temporary fixed prosthetic restoration
- perform the preparation of the root canal for the post
- perform a direct and indirect procedure for the laboratory made root canal post
- try, adapt and fix the individual laboratory made post
- conduct a control check of the patient with fixed prosthetic restoration
- mount the facebow to the patient
- transfer reference points from the patient to the articulator
- register intermaxillary relations in the maximum intercuspitation, centric relation and eccentric positions.
- transfer models to the semi-adjustable articulator, and individualize it
- set indication and to make preparations for more complex bridge constructions, maryland bridge, inlay bridge, cantilever bridges

## Oral Medicine

### *Expected learning outcomes*

At the end of the course students will be able to:

- define the epidemiology, etiology and clinical picture of oral mucosal disease
- define diagnostic procedures for the most common diseases of the oral mucosa and the possibilities of their treatment
- define the role of oral diseases in the development of general symptoms in the human body;
- analyze anamnestic data
- describe and define local status in the diagnosis of oral disease
- perform clinical tests of soft deposits and tartar, edema of the masticatory oral mucosa, capillary fragility, malignant changes of the oral mucosa with toluidine blue, xerostomia, vascular and pigmented efflorescences of the oral mucosa, acantholysis by Nikolsky test, lower saliva pH, salivary gal
- distinguish indications when it is necessary to refer the patient to: microbiological tests, exfoliative-cytological tests, taking a biopsy sample
- distinguish indications when the patient needs to be referred for laboratory tests (KKS, clotting time, gastric function testing, for liver and pancreatic tests, urine analysis, general allergological testing, square imaging, sialography, CT, MR, ultrasound.
- perform initial therapy for oral disease
- make a written finding of the disease

## Restorative Dental Medicine

### *Expected learning outcomes*

During seminars and clinical sessions, students consolidate and connect their theoretical knowledge acquired during previous courses and comparative lectures in the Course of Restorative Dentistry. Students practice recognition, diagnostics, operative therapeutic procedures of carious lesions, functional and aesthetic reconstruction of teeth with different materials.

Learning outcomes:

- list and describe the types of hand and rotary instruments in restorative dentistry
- list the ways of isolating the operating field
- describe and classify carious lesions
- describe simple class i and v cavities for amalgam
- describe the class ii amalgam cavity
- list and describe the composition and purpose of materials for conservative tooth reconstruction in the dental office
- indicate and describe the class iii cavity for adhesive materials
- describe the procedure, step by step, for each preparation and restoration of the cavity
- carry out procedures for sealing the fissure system of the tooth with a seal and seal filling on the patient.

## Endodontics

*Expected learning outcomes*

Upon completion of the course the student should be able to:

- Describe etiological factors for development of the pulpal and periapical diseases
- Describe in detail endodontal tooth morphology of all teeth
- Describe characteristics and correct application of hand and engine driven endodontic instruments
- Describe pathohistological and clinical characteristics of pulpitis and apical periodontitis
- List therapeutic guidelines in treatment of inflammatory and regressive changes in the tooth pulp, and lesions of the apical parodontitis
- List the methods for vital pulp therapy
- Describe characteristics and correct usage of the endodontic materials
- Apply the previous knowledge from restorative dentistry
- List the indications for the antibiotics usage in endodontics
- Autonomously take medical history
- Autonomously establish endodontic diagnose (application of all diagnostic tests, radiological analysis)
- Determine correct therapy plan in treatment of diseases of the dental pulp and apical parodontal tissue
- Determine the appropriate type and application technique of anesthesia
- Perform all types of field isolation techniques
- Perform direct and indirect pulp capping
- Technically correctly perform pulpotomy
- Technically correctly perform vital pulp extirpation
- Instrument the root canal at single and multi rooted teeth utilizing ascendant instrumentation technique
- Obturate the root canal at single and multi rooted teeth utilizing cold lateral condensation technique
- Assess the patient risk group in the endodontic office and apply appropriate premedication measures
- Recognise urgent conditions in endodontics and apply appropriate therapy

## Periodontology I

*Expected learning outcomes*

Knowledge which needs to be demonstrated at the end of the course:

- describe and explain anatomy and physiology of the healthy periodontal and periimplant tissues;
- describe microscopic, clinical and radiological properties of periodontal and periimplant diseases;
- explain role of bacteria and the host in etiology of periodontal and periimplant disease;

- compare pathogenesis and natural course of periodontal and periimplant diseases;
- analyze interactions between periodontal and systemic diseases.

Skills to be mastered at the end of the course:

- recognition of periodontal instruments,
- handling and use of manual instruments used for root debridement,
- performe supragingival manual scaling on artificial jaws,
- performe subgingival manual scaling on artificial jaws,
- performe probing on artificial jaws.

## **Preclinical Oral Surgery**

*Expected learning outcomes*

At the end of the courses the students will be able to:

- describe the applied anatomy of the head and neck
- distinguish local anesthetics used in dentistry and oral surgery
- describe all necessary instruments for performing oral surgical procedures
- explain and demonstrate all local anesthesia techniques
- describe complications during local anesthesia, tooth extraction and surgery
- explain the concepts of disinfection and sterilization in oral surgery
- report all procedures in patient preparation for oral surgery
- describe all measures necessary for postoperative care of patients.

## **Preventive Dentistry**

*Expected learning outcomes*

At the end of the courses the students will be able to:

- describe the oral microbial flora
- distinguish the microbial flora of carious lesions and the microbial flora of the inflammatory process of the periodontium
- describe the composition of saliva and its role in the defense of the oral cavity
- describe and distinguish the processes of demineralization and remineralization of hard dental tissues
- describe normal periodontal conditions
- describe the principle of development of periodontal disease
- carry out a diet counseling plan
- describe the impact of diet on caries
- distinguish fluoridation methods
- perform topical fluoridation of teeth
- discuss the indications for fissure sealing
- describe the procedure of sealing fissures

## **Orofacial Genetics**

*Expected learning outcomes*

Upon completion of the course students should be able to:

- describe the history and significance of orofacial genetics
- define the etiology of hereditary malformations
- define the syndromes
- define the syndromes with orodental anomalies
- describe the epidemiology of craniofacial malformations

- vary the frequency of genetic diseases in the population
- describe the anomalies of craniofacial structures (minor and major anomalies)
- distinguish between genetic anomalies of the teeth: anomalies of number, shape, size and structure of the tooth.
- describe and distinguish the symptoms of growth disorders in the orofacial region
- describe and distinguish the symptoms of the syndrome, the most common genesis with various manifestations in the orofacial region
- Describe the most frequent chromosomal syndromes that affect the orofacial structures (Down, fragile X, Klinefelter, Turner syndrome).
- describe ectodermal dysplasia (classification, diagnosis and detection of heterozygotes)
- describe the metabolic disturbances of the craniofacial structures (mucopolysaccharidoses, mucopolisidosys, Homocystinuria, Lesch-Nyhan syndrome)
- describe the genetic damage of periodontal structures
- describe and distinguish between cleft lip and palate
- distinguish between syndromes with cleft (Rovina sequences, EEC syndrome, Vander - Woude syndrome)
- combination of different syndromes in which we meet with orodental anomalies
- describe the review and evaluation of the craniofacial region in craniofacial dimorphism
- different methods in genetics (analysis of the family, population studies, twins, chromosomes, dermatoglyphes)
- perform genetic counseling in dental medicine

## History of Dental Medicine

### *Expected learning outcomes*

At the end of the course the student will be able to:

- describe the chronology of the development of medicine and dental medicine
- describe the development of dental medicine

## Public Health

### *Expected learning outcomes*

After completing the course, the student will be able to:

- define the terms health, disease and quality of life
- define the scope of oral epidemiology
- describe the principles of oral epidemiology
- identify epidemiological terms
- define epidemiological methods
- analyze indices to assess morbidity
- calculate DMFT index
- calculate the Full mouth plaque score
- calculate the Full mouth bleeding score
- define oral health policy
- explain the relationship between oral epidemiology and oral health policy
- analyze the advantages and disadvantages of private practice and contractual relationship with the public health insurance fund
- define standards, norms and "healthcare basket" in the public dental health service
- analyze the reasons for expanding and reducing the "healthcare basket"
- describe how to plan dental public health measures
- analyze the possibilities and limitations of dental public health measures by target population groups

## **Forensic Dental Medicine**

### *Expected learning outcomes*

At the end of the course the student will be able to:

- to acquire knowledge about the history of forensic dentistry in Croatia and in the world
- analyse the procedure of dental medical identification, instruments, management of dental and oral medical documentation
- interpret knowledge about identification in case of mass casualties. Be able to determine the age at the time of death, determine race and gender
- acquire knowledge of DNA analysis from dental tissues in the identification of the human body
- analysed the hereditary and acquired changes in the teeth important for the identification of the human body.
- explain how to analyze bites on the victim's body and identify the perpetrator
- acquainted with the cases of dental medical expertise
- classify injuries of the stomatognathic system.

## **Gnathology**

### *Expected learning outcomes*

Upon completion of this course, the dental student will be able to:

- explain the anatomy, histology and neurophysiology of the stomatognathic system.
- demonstrate the functional movements of the orofacial region - chewing, swallowing, speaking.
- classify the types of occlusion and recognise deviations from physiological occlusion
- distinguish centric and eccentric movements of the mandible
- recognise and explain the reasons for the occurrence of pain in the orofacial region
- know the causes and classification of temporomandibular dysfunctions
- describe and compare the influence of psychological and systemic factors as well as gender on the occurrence of orofacial pain
- perform a diagnostic and therapeutic protocol for orofacial pain
- use middle articulators
- plan and control the etching splint

## **Pediatric dentistry**

### *Expected learning outcomes*

After attending classes, the student will be able:

- describe and compare the forms of behavior of children in the dental office
- define and implement behavioral control methods in children
- establish a parent-child relationship in a dental office
- perform a clinical dental examination of the child
- describe and compare the growth and development of deciduous and permanent teeth
- distinguish and recognize deciduous and permanent teeth in the oral cavity
- explain and describe radiological techniques used in pediatric dentistry
- analyze X-rays by recognizing anatomical and pathological structures
- describe and perform a therapeutic procedure on deciduous and young permanent teeth
- distinguish and use drugs that are applied to prevention and therapy in pediatric dentistry
- describe and use materials and therapeutic agents used in pediatric dentistry

## **Preclinical Orthodontics**

### *Expected learning outcomes*

At the end of the courses students will be able to:

- differentiate between growth and development monitoring methods
- describe the keys of an ideal occlusion
- take impressions in orthodontics and pour and process plaster models
- distinguish the elements of orthodontic appliances
- describe methods of manufacturing orthodontic appliances
- understand the purpose of the construction bite
- recognize orthodontic appliances
- explain dentition phases
- analyze dentition phase and the type of teeth on panoramic radiographs
- analyze occlusion in three dimensions
- perform basic cephalometric analysis

## **Oral Surgery**

### *Expected learning outcomes*

Upon completion of this course, the dental student will be able to:

- perform a detailed dental examination with an emphasis on oral surgery
- analyze radiological images with recognition of all anatomical and pathological lesions
- select and apply local anesthesia techniques used in oral surgery
- perform the complete procedure of tooth extraction, fractured tooth / root
- describe all complications during and after tooth extraction
- perform the installation of individual stitches and the removal of stitches
- recognize and describe the clinical aspects of odontogenic inflammation and treatment procedures
- establish indications / contraindications for the treatment of impacted teeth
- distinguish traumatic injuries of teeth and supporting tissues, plan and perform appropriate therapy
- recognize periapical pathological conditions and describe treatment options
- perform assistance in dentoalveolar surgery