



CD 8.5.1 DISCIPLINE CURRICULUM FOR  
UNIVERSITY STUDIES

Edition: 08  
Date: 21.02.2020

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FACULTY STOMATOLOGY  
STUDY PROGRAM 0911.1 STOMATOLOGY  
CHAIR OF ODONTOLOGY, PERIODONTOLOGY AND ORAL  
PATHOLOGY "SOFIA SÎRBU"

APPROVED

at the meeting of the Commission for Quality  
Assurance and Evaluation of the Curriculum in  
Stomatology

Minutes No. 1 of 22.09.2020

Chairman, PhD, associate professor  
Stepco Elena [Signature]  
(signature)

APPROVED

at the Council meeting of the Faculty  
Stomatology

Minutes No. 2 of 30.09.2020

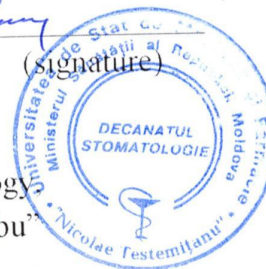
Dean of Faculty, PhD, associate professor  
Solomon Oleg [Signature]  
(signature)

APPROVED

approved at the meeting of the chair Odontology,  
periodontology and oral pathology "Sofia Sîrbu"

Minutes No. 01 of 25.08.2020

Head of chair, PhD, DMD, professor  
Ciobanu Sergiu [Signature]  
(signature)



## CURRICULUM

### DISCIPLINE CLINICAL ENDODONTICS

#### Integrated studies

Type of course: **Compulsory**

Curriculum developed by the group of authors:

Ciobanu Sergiu, PhD, DMD, associate professor

Roman Ion, MD, PhD, associate professor

Musteata Olesea, asist. univ.

Chişinău, 2020



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### I. PRELIMINARY

- **General presentation of the discipline: the place and the role of the discipline in development of specific specific skills in process of professional training/ speciality.**

The course of Endodontics represents an important component of Dentistry domain and has its major objective in study of the particularities of the onset and evolution of pathological processes in the pulp and in periapical tissues as well as the possible local and general complications at whole body levels.

Endodontics is a division of odontology dealing with morphology, physiology, pathology, clinic and treatment of dental pulp and periapical tissues.

This branch includes the study and practice of the causes of the occurrence (etiology) and the mechanisms of evolution (pathogenesis) of dental pulp and periapical tissues as well as differential diagnosis, optimization of treatment measures, prophylaxis and avoidance of early and late complications.

- **The mission of the curriculum (purpose) in professional training**

The main goals of endodontics include:

1. Study on the etiological factors of pulpal pathology and periapical tissues including the endodontic space and its peculiarities.
2. Significant importance is the development of an appropriate endodontic treatment plan with the prevention of complications.
3. Proper application of knowledge and practical skills in endodontic treatment with the application of appropriate and contemporary methods (including preservation of pulp vitality).
4. Development of compatability in the prognosis of endodontic treatment including complications and the need to avoid them.
5. Identification and application of conservative-surgical methods of endodontic treatment and estimation of prognosis over time.
6. Application of biomechanical and specific principles in postendodontic treatment restorations.
7. Correlations and evidence of periodontal clinical situations in the postendodontic treatment, their influence.
8. Application of dento-alveolar surgery in periodontal and endodontic associations.
9. Particularities of contemporary endodontic therapy in deciduous teeth.
10. Application of implant treatment as an alternative method in teeth loss situations.

- **Languages of teaching:** Romanian, Russian, English.
- **Beneficiaries:** students of the 3rd, 4th, Faculty of Stomatology.



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### II. ADMINISTRATION OF THE DISCIPLINE

|                                |                 |   |                 |
|--------------------------------|-----------------|---|-----------------|
| Code of the discipline         |                 | <b>S.06.O.064 / S.07.O.077</b>  |                 |
| Name of the discipline         |                 | <b>Clinical endodontics (I) / Clinical endodontics (II)</b>   |                 |
| Responsible for the discipline |                 | Ciobanu Sergiu, PhD, DMD, associate professor<br>Roman Ion, MD, PhD, associate professor<br>Musteata Olesea, asist. univ. |                 |
| Year                           | <b>III - IV</b> | Semester / Semesters  | <b>VI - VII</b> |
| Total hours including:         |                 |   | <b>90/120</b>   |
| Theoretical courses            | <b>34/22</b>    | Practical / laboratory work   | <b>34/33</b>    |
| Practical courses              | <b>17/22</b>    | Individual work   | <b>5/43</b>     |
| Form of evaluation             | <b>C/E</b>      | Number of credits   | <b>3/4</b>      |

### III. TRAINING OBJECTIVES IN THE DISCIPLINE

✓ *At the level of knowledge and understanding:*

Need to know:

1. The History of Endodontics. The subject of Endodontics - medical and surgical branch of the dental medicine sciences. Terminology Anatomy of the endodontic space. Morphology and physiology of dental pulp. Morphological and functional characteristics of the pulpo-dentinal complex and their role in the success of biostimulating therapeutical methods.
2. Etiological Factors of Pulp and Periapical Pathology. Elements of prophylaxis in endodontics. Means of diagnosis. Radiological examination. Tooth ratio with local anatomical structures.
3. Inflammatory manifestations of pulp tissue and periapical tissues. Symptoms of pulp and periapical pathology. Preoperative evaluation of the possibilities of correct endodontic treatment.
4. Reversible and irreversible character of pulp and periapical inflammation. Indications and principles concerning the preservation of dental pulp by conservative biological treatment. Contraindications in biologically conservative treatment of pulp inflammation.
5. Study on clinical and radiological interpretation.
6. Amputation and extirpation of dental pulp. Indications and contraindications. Methods for determining the working length of the root canals. Permiabilization methods and techniques of mechanical and chemical processing of root canals.
7. Principles and methods of three-dimensional canal obturation
8. Approach to errors and complications in endodontic treatment.
9. Evaluation of endodontic treatment. Possible failures in endodontic treatment and clinical resolution.
10. Errors and complications in endodontic treatment.



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11. Combating recurrences in endodontic treatments. Monitoring of patients with endodontic treatment.
12. Principles of the quality of morpho-functional coronary restoration in endodontically treated teeth.
13. Methods of coronary restoration of teeth treated endodontically.
14. Methods of diagnosis and treatment of endo-periodontal pathology.
15. Dento-periodontal traumas with pulp and apical implications. Methods of treatment.
16. Changes in dental pulp (pathological and age changes).
17. Dental discromies at devital teeth. Methods and treatment materials.

### ✓ *At application level:*

To make:

- Performing the clinical examination in endodontics (Anamnesis collection, exo and endobuccal examination, complementary tests, diagnosis and treatment plan).
- The importance of radiological examination in endodontics. Correct interpretation of the radiological cliché in determination of the correct diagnosis and treatment plan.
- Instruments used in endodontic treatment (consultation and treatment).
- Methods and means of isolation in endodontic treatment. Rubber dam system, components and methods of application.
- Making access to the endodontic space. Tools and techniques.
- Determining the root canal length. Techniques and equipment needed.
- Mechanical processing of root canals. Rotary and manual instruments and their working techniques. Step Back, Crown Down techniques.
- Endodontic microscope. The importance of its use in endodontic treatment.
- Obturation of root canals. The techniques, equipment and the instruments that are used.
- Radiological examination. Its importance in the positive and differential diagnosis of different forms of chronic apical periodontitis.
- Diagnosis and treatment of various errors and complications that may occur during the various stages of endodontic treatment.
- Management of internal and external root resorbtions.
- Endodontic surgery. Solving of complex endo-periodontal lesions by orthograde endodontic treatment methods.
- Endodontic retreatment: purposes, materials, instrumentation, techniques and methods.
- Techniques and methods of performing a corono-radical restoration according to biomechanical principles, to endodontically treated teeth.

### ✓ *At the integration level:*

- be able to assess the place and role of endodontics in the clinical training of the dental student;
- be able to link the physiological processes of pulp and periapical tissues;



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- be able to link the structure and functions of the pulp and periapical tissues, the pathogenic mechanism of onset and evolution of the pulp inflammatory process;
- be able to explain the mechanism of harmful action of the root canal filling materials;
- be able to deduce the possible causes of the occurrence of complications after endodontic treatment;
- be able to implement the knowledge gained in the research activity;
- be competent to use critically and with confidence the scientific information obtained using the new information and communication technologies;
- be able to use multimedia technology to receive, evaluate, store, produce, present and exchange information;
- be able to learn how to study, which will contribute to the management of the professional development.

#### **IV. PREVIOUS CONDITIONS AND REQUIREMENTS**

Student of the third and fourth year requires the following:

- to know of the language of instruction;
- to have skills confirmed in preclinic, clinical abilities (anatomy and morphology of the endodontic space, dental instrumentation, mechanical and chemical processing of root canals on the simulator, classification of pulp and periapical diseases and properties of endodontic obturation materials);
- digital competences (use of the Internet, document processing, electronic tables and presentations);
- ability to communicate and team work;
- qualities - tolerance, compassion, autonomy.



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**V. THEMES AND ORIENTATIVE REPARTISATION OF COURSES  
Courses (lectures) and practical courses Year III, semester VI:**

| Nr. | THEME   | Number of hours | Practical courses | Practice | Individual |  |  |
|-----|---|-----------------|-------------------|----------|------------|--|--|
|     |   | Courses         |                   |          |            |  |  |
| 1.  | Dental pulp. Clinical and morphological data of dental pulp. The peculiarities of age of dental pulp. Dystrophic changes in the pulp. Pulp electrical excitability in normal and pathology.   | 3               | 1                 | 2        | 1          |  |  |
| 2.  | Pulpitis. Etiology and pathogenesis of pulpitis. Classification of pulpitis. Diagnosis. Morphopathology of pulpitis   | 2               | 1                 | 2        | 1          |  |  |
| 3.  | Clinical picture, positive diagnosis of acute pulpitis. Differential diagnosis. Elements of prophylaxis in endodontics. Diagnostic methods. Radiological examination. Tooth ratio with local anatomical structures.   | 2               | 1                 | 2        | 1          |  |  |
| 4.  | Clinical picture, positive and differential diagnosis of chronic pulpitis. Clinical picture, positive and differential diagnosis of acute pulpitis, and chronic one in stage of exacerbation.   | 2               | 2                 | 4        | 1          |  |  |
| 5.  | Treatment methods of pulpitis. Indications and contraindications for the use of conservative methods of pulpitis treatment.   | 2               | 1                 | 2        | 1          |  |  |
| 6.  | The biological method of pulpitis treatment. Biological methods for the total preservation of the dental pulp (direct and indirect dressing). Medicinal substances used in the direct and indirect dressing of the dental pulp. Their mechanism of action. Indications and contraindications. | 2               | 1                 | 2        |            |  |  |
| 7.  | Methods of partial preservation of the dental pulp (vital amputation). Desensitization methods  | 2               | 1                 | 2        |            |  |  |
| 8.  | Surgical methods of pulpitis treatment. Vital extirpation of the pulp. Methods of vital extirpation. The advantages and disadvantages of the method. Methods of total removal of the dental pulp (vital extirpation).   | 2               | 1                 | 2        |            |  |  |
| 9.  | Methods of sensitizing the dental pulp (arsenic and non-arsenic pastes). Medicinal remedies. Mechanism of action. Devital amputation. Indications and contraindications. Work stages.   | 2               | 2                 | 4        |            |  |  |



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| Nr.   | THEME   | Number of hours |  | Practical courses | Practice | Individual |
|-------|---|-----------------|--|-------------------|----------|------------|
|       |   | Courses         |  |                   |          |            |
|       | Errors and complications. Devital extirpation of the pulp. Indications and contraindications. Realization technique. Medicines used. Required tools.  |                 |  |                   |          |            |
| 10.   | Mechanical preparation of root canals in the dental pulp extraction method. Methods. Stages. Instruments. Root canal sterilization. Chemical, physico-chemical methods. Medicinal remedies, the mechanism of action. Mechanical and medicinal treatment of the root canal after extirpation of the dental pulp. | 5               |  | 1                 | 2        |            |
| 11.   | Root canal filling materials. Chemical composition. Physical-chemical properties. Root canal obturation methods. Materials and technique of canal obturation. Principles and methods of three-dimensional root canal obturation.  | 2               |  | 1                 | 2        |            |
| 12.   | Obturation of root canals with: pastes, gutta-percha cones. The technique of cementing a single cone calibrated at the apex. Principles and methods of three-dimensional root canal obturation.   | 2               |  | 1                 | 2        |            |
| 13.   | Root canal obturation technique by individual modeling of the gutta-percha cone. Cold and hot lateral condensation technique. Magnification of the operating field in endodontics, devices and their characteristics.   | 2               |  | 1                 | 2        |            |
| 14.   | Condensation techniques: vertical hot gutta-percha, thermomechanical, injection of softened gutta-percha by heating. Other root canal obturation techniques. Morpho-functional restoration of endodontically treated teeth.   | 2               |  | 1                 | 2        |            |
| 15.   | Errors and complications in the diagnosis and treatment of pulpitis. Their mechanism of action.   | 2               |  | 1                 | 2        |            |
| Total |   | 34              |  | 34                | 17       | 5          |

**Courses (lectures) and practical courses Year IV, semester VII:**

| Nr.<br>d/o | TEMA | Numărul de ore |  |
|------------|------|----------------|--|
|            |      |                |  |
|            |      |                |  |



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|       |  | Prelegeri | Semi-<br>narii | Prac-<br>tică | Indivi-<br>dual |  |  |
|-------|--|-----------|----------------|---------------|-----------------|--|--|
| 1.    | The periodontium. Morpho-functional data. Apical periodontitis. Etiology. Pathogenesis. Classification   | 2         | 2              | 2             | 3               |  |  |
| 2.    | Clinical and morphopathological characteristics of acute, chronic and exacerbated apical periodontitis. Positive and differential diagnosis.   | 2         | 1              | 2             | 4               |  |  |
| 3.    | Local and general treatment of acute and chronic exacerbated apical periodontitis. Principles. Techniques and methods  | 2         | 1              | 3             | 4               |  |  |
| 4.    | Treatment of chronic apical periodontitis. Principles. Indications and contraindications.  | 2         | 1              | 3             | 4               |  |  |
| 5.    | Endodontic space irrigation in apical periodontitis. Root canal sterilization methods. Medicines needed.   | 2         | 2              | 2             | 4               |  |  |
| 6.    | Determination of the working length of root canals. Techniques and the necessary equipment.  | 2         | 2              | 3             | 4               |  |  |
| 7.    | Root canal obturation methods in the treatment of apical periodontitis. Obturation of root canals with different materials. Methods of three-dimensional obturation of root canals. Materials and technique of canal obturation. | 2         | 2              | 3             | 4               |  |  |
| 8.    | Magnification of the operative field in endodontics, devices and their characteristics. The endodontic microscope. The importance of its use in endodontic treatment   | 2         | 2              | 3             | 4               |  |  |
| 9.    | Surgical treatment methods associated with conventional endodontic treatment. Endo-periodontal correlations. Errors and complications in the diagnosis and treatment of apical periodontitis                                     | 2         | 2              | 3             | 4               |  |  |
| 10.   | Endodontic retreatment. Indications and contraindications. Stages, instrumentation   | 2         | 2              | 3             | 4               |  |  |
| 11.   | The biomechanical principles of making morpho-functional restorations specific to endodontically treated teeth.  | 2         | 2              | 3             | 4               |  |  |
| 12.   | Recapitulation/Totalization  |           | 3              | 3             |                 |  |  |
| Total |  | 24        | 22             | 33            | 43              |  |  |





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**VI. REFERENCE OBJECTIVES AND CONTENTS UNITS**

| <b>Objectives</b>  | <b>Contents Units</b>  |
|--|--|
| <b>Chapter1. „Organization and structure of endodontics”</b>   |  |
| <ul style="list-style-type: none"><li>• To define the place and the role of endodontics as a discipline in the training of dentists.</li><li>• To know the organization of dental care, especially the component of endodontics.</li><li>• To know the organization and endowment of the dentist's office with specific endodontics.</li><li>• To know the rules of aseptic and antiseptic dentistry.</li></ul>  | Endodontics - the structure and its role in the training of a future specialist.<br>Normative acts regulating the dental service.<br>Schemes for dental equipment, tools, consumables. Guides, sanitary-epidemiological instructions - basic rules in aseptic and antiseptic.  |
| <b>Chapter 2. Pulp tissues: structure, physiological processes, etiological factors in the occurrence of pulpal pathology.</b>   |  |
| <ul style="list-style-type: none"><li>• To know the basic components and functions of pulp and periapical tissues.</li><li>• To know and understand the physiological processes occurring at the level of the pulp and periapical tissues, the action of the teratogenic factors.</li><li>• To define the determining and favorable factors in the appearance of pulp and periapical affections.</li><li>• To know and understand the morphology of the pulp inflammatory process in various forms;</li><li>• To know the pulp and periapical inflammation classifications (national and international).</li><li>• To identify methods of diagnosis of pulp and periodontitis.</li></ul> | The structure and the functions of pulp and periapical tissues.<br>Physiology of pulp and periapical tissues.<br>Circulation of dental fluid, mechanism of pain transmission, formation and deposition of tertiary dentine, teratogenic factors.<br>Etiologic factors in the appearance of pulpitis and periodontitis<br>Morphology of pulp, morfological disorders of pulp and periapical tissue.<br>The classifications of pulpitis and periodontitis.<br>Methods of clinical and paraclinical diagnosis (eg subjective, objective and complementary). |



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**Chapter 3. Procedures and techniques for preparation of endodontic access cavities in the treatment of pulpitis and periodontitis**

- To realize practically the patient's treatment plan with pulp and periapical pathology;
- To possess anesthetic techniques for endodontic treatment;
- To possess skills in order to apply the isolation systems (digits) of the working field (teeth);
- To possess techniques for preparing endodontic access cavities in different groups of teeth;
- To irrigate in a properly way the endodontic space;

The treatment plan in stages  
Anesthesia - techniques and procedures, anesthetic substances, mechanism of interaction at local and general level, possible complications, emergency medical assistance.  
Diga - components, types and application techniques  
Preparation of the endodontic access cavities - principles, tools, mills, accessories  
The irrigation of the endodontic space (solutions, consecutivity, exhibition, drying procedures)

**Chapter 4. Endodontic obturation space (materials, tools, techniques and procedures)**

- • To know the classification of channel obturation materials (provisional and lasting);
- • To know and understand the properties of the channel filling materials;
- • To know and understand the mechanism of action of obturation materials on hard dental tissues;
- • To know the possible errors and complications during and after endodontic treatment;

Classification, physico-chemical properties of channel-filled and long-lasting channel filling materials  
Properties, viscosity, volumetric properties, biocompatibility.  
Intervention of channel material with hard dental tissues - fixation mechanism (chemical, mechanical), possible complications.  
Complications - Immediate and late, solving them.

**VII. PROFESSIONAL COMPETENCES (CY) AND TRANSVERSAL (CT) COMPETENCES AND STUDY FINDINGS**

**PROFESSIONAL COMPETENCES:**

CP1. Highlighting and preventing the etiological factors of pulp and periapical pathology by knowing the morphophysiology of the dental pulp and the anatomy of the endodontic space



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and the apical periodontium.

CP2. Preoperative evaluation of the possibilities of correct endodontic treatment by establishing the reversible or irreversible stage of pulp disease.

CP3. Correct diagnosis and treatment plan. Knowledge of the modern principles and techniques of conservative endodontic treatment by applying the most appropriate methods allowing the total or partial maintenance of the live pulp in the case of a reversible pulp disease as well as the principles and therapeutic techniques applied in the case of an irreversible pulping condition.

CP4. Knowledge of endodontic treatment methods. Endodontic and dento-alveolar surgery. Knowledge of the biomechanical principles of performing morpho-functional restorations specific to the teeth treated endodontically;

CP5. Identification of the factors that may affect the evolution and prognosis of an orthodontic endodontic treatment, as well as the possibilities in case of need for its possible resumption. Description of the concept and types of prophylaxis, as well as their application levels (individual, group, society).

CP6. Demonstration and application of acquired knowledge in the clinical and paraclinical assessment of the patient. Selection and argumentation of communication techniques, data collection and patient preparation for endodontic treatment. Promoting the principles of tolerance and compassion towards patients.

### **TRANSVERSAL COMPETENCES:**

CT1: Applying professional evaluation standards, acting according to professional ethics, as well as the provisions of the legislation in force. Promoting logical reasoning, practical applicability, assessment and self-assessment in decision-making.

CT2: Performing activities and exercising the roles specific to teamwork within the curative cabinet. Promoting the spirit of initiative, dialogue, cooperation, positive attitude and respect for others, empathy, altruism and continuous improvement of their own activities;

CT3: Systematically assessing personal skills, roles and expectations, applying self-assessments to learned processes, acquired skills and professionalism needs, effective use of language skills, knowledge in information technologies, research and communication skills to deliver quality services and adapting to the dynamics of policy requirements in health and for personal and professional development.

### **STUDY FINDINGS**

- To know the particularities of the organization of the dental service, the specifics of the endodontic office, equipment, location requirements, equipment and instrumentation.
- To understand the principles of structure of endodontic compartments.



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- To understand the relationship: oral cavity microorganisms → harsh dental tissues → carious process → lesion of non-carious origin → appearance of carious lesion or lesion of naive origin → occurrence of pulp and periapical inflammation.
- To know the classification of pulp and periapical disorders.
- To know the principles of treatment of pulp and periapical disorders.
- To know the evolution and prognosis of acute and chronic pulmonary and periodontitis.
- To know and understand the methods of permeabilization, mechanical processing of root canals using optical microscopy, advantages and disadvantages.
- To know the method of channeling by different techniques (classical technique, condensation, injection).
- To know the evaluation of errors in avoiding complications following endodontic treatment.
- To know the obturation materials (curative and lasting), the physico-chemical properties, the interaction with the hard dental tissues and the adhesive system.
- To know and apply the techniques of polymerization of the filling material (direct and indirect) after endodontic treatment.
- To know and realize the procedures for adjusting, grinding and polishing dental restorations.
- To be able to assess the place and role of molecular biology in the pre-clinical training of the student physician.
- To be able to implement the knowledge gained in the research activity;
- To be competent to use critically and with confidence the scientific information obtained using the new information and communication technologies.

### VIII. INDIVIDUAL WORK OF STUDENT

| Nr. | Contemplate product              | Strategies of realizing                                     | Evaluation criterion         | Realizing term  |
|-----|----------------------------------|---|------------------------------|-----------------|
|     | Work with informational sources: | Reading the lecture or material from the book to respective | The capacity to take out the | During semester |



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| <b>Nr.</b> | <b>Contemplate product</b>                         | <b>Strategies of realizing</b>   | <b>Evaluation criterion</b>  | <b>Realizing term</b> |
|------------|--|--|--|-----------------------|
|            |  | <p>subject, with attention. Reading the questions from the subject, that necessitate a reflection under the subject. To be familiar with the list of additional informational sources to respective subject. To select the additional informatio sources to respective subject.</p> <p>Reading the full text, with attention, writing essential of content. Formulation the generalities and conclusions regarding the importance of topic or subject.</p>   | essential; interpretative abilities; work volume   |                       |
|            | Practical work with patient:                       | <p>Until performing the clinical manual work to analyse the obtained information from hystory, objective examination and paraclinic examination (pulp testing, radiography) settled diagnosis and treatment plan. Carrying out the consecutive treatment stages. Description of manual work carried out in patient medical card. Formulation the recommendations for patient. Analyse and appreciation the fulfilling of practical work on thematic patient. Selection of additional information using electronic addresses and additional bibliography.</p> | Volum of work, solution of clinical situations, ability in arrangement of medical card on thematic patient.  | During semester       |
|            | <i>Application of different studies techniques</i> |  | Volum of work, degree in penetration in essence of different subjects, level of scientific arrgumentation, quality of conclusions, elements of creativity, demonstration and | During semester       |



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| <b>Nr.</b> | <b>Contemplate product</b>                                   | <b>Strategies of realizing</b>   | <b>Evaluation criterion</b>  | <b>Realizing term</b> |
|------------|--|--|--|-----------------------|
|            |  |  | understanding the problem, formation of personal attitude.   |                       |
|            | <i>Work with materials on-line</i>                           | Autoevaluation on-line, study the on-line materials from the department site, expression the own opinion by forum and chat.  | Number and duration the incoming on site, results of autoevaluation.   | During semester       |
|            | <i>Preparing and defending the presentations/portofolio.</i> | Theme selection, settle the plan of exposition, settle the terms of execution. Settle the components of presentation in Power Point – theme, purpose, results, conclusions, practical applications, bibliography. Collegues review. Professors review. | Volum of work, the degree of getting to the bottom of theme essence, the level of scientific argumentation, quality of conclusions, elements of creativity, formation of personal attitudes, coherence of exposure and scientific correctness, graphycal presentation, the modality of presentation. | During semester       |



## IX. METHODOLOGIC SUGESTIONS OF TEACHING-STUDYING-EVALUATION

### • *Methods of teaching used*

In teaching the endodontic discipline are used different methods and didactic procedures, directed to efficient assimilation and achievement the objectives of didactic process. During theoretical lessons, beside traditional methods (lecture-exposure, lecture-conversation) are used also modern methods (lecture-disscusion, lecture-conversation, lecture with problems). During the practical lessons are used: clinical activity (practical work/practical manual work) to thematic patient or to simulator. For deeper assimilation of material, are used different semiotic systems (scientific language, graphic language or computer) and didactic materials (tabels, schemes, photos, video images with clinical cases). Within the scope of lessons and extracurricular activities are used Informational Technologies of Communication – presentations Power Point.

### • *Recommended methods of studying*

- **Observation** – Identification the characteristic elements of pulpal and periapical tissues inflamation.
- **Analysis** – Sytematization of subjective examination information, objective and paraclinic. Evidencing the essential clinical elements making a difference between them and settle a diagnosis and treatment plan.
- **Analyse the scheme/figure** – Selection the necessary information. Recognition in knowledge base and selected informationthe indicated structures in scheme, picture. Analyse functions/importance the recognized structures.
- **Comparisson** – Analyse the first object/process from the group and detrmation the essential features. Analyse the second object/process and setting its essential particularities. The comparisson of objects/processes and evidense of common features. Comparisson the objects/processes and determination of differences. Setting the distinction criterion. Formulation the conclusions/diagnosis and treatment plan.
- **Classification** – Identification the structures/processes that muste be classified. Determination the criterion in which base the classification must be done. Repartization the structures/processes on groups according to settled criterion.
- **Scheme elaboration** – Selection the elements, which must figure in scheme. To render the chosen elemnts through different symbols/colors and indication the relations between them. Formulation of adequate title and the list of conventional simbols.
- **Modelling** – Identification and selection necessary elements for modelling the clinical situation. Imagination (R-phic, photostatic) of studied clinical situation. Solution of similar clinical situation using the elaborated model. Formulation of diagnosis and tratment plan, concluded from arguments and ascertainment of clinical and paraclinical examination.
- **Experiment** – Formulation of hypothesis, starting from known facts, reffering to process/phenomenon that are studied. Verification of hypothesis with realizing the processes/phenomenon that are studied in laboratory conditions. Conclusions formulation concluded from arguments or ascertainments.



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- **Strategies/applied didactic technologies (specific to discipline);**  
„Round table”, „ Group interview”, „Study of clinical case”, „Creative controversy”, „Presentations in Power Point”. Clinical-video cases, Master-class.
- **Evaluation methods (including with indication the modality of calculation the final mark).**
  - ✓ **Current:** frontal control or/and individual through:
    - (a) to apply dicimologic tests,
    - (b) solving problems on situation/clinical cases,
    - (c) analyse the study cases,
    - (d) realizing of some games with discussed topics,
    - (e) control works.
  - ✓ **Final:** exam

**Final mark** will be composed from medium mark to three probes: practical work/clinic, anual media and final coloquium (quota part 0,), probe final test in test-editor (quota pat 0,) and oral interview (quota part 0,).

The anual medium mark and marks for all stages of final exam (assisted to computer, testing) – all are going to be expressed in numbers according the scale of notation (according tabel), but the final mark obtained will be expressed in number of two decimal, that will be transfered in carnet of notes.

### Notation scale

| GRID OF INTERMEDIATE NOTES<br>( anual average, marks from exam stages) | The System of<br>national Notation | Equivalent<br>ECTS |
|--|------------------------------------|--------------------|
| 1,00-3,00  | 2                                  | F                  |
| 3,01-4,99  | 4                                  | FX                 |
| 5,00   | 5                                  | E                  |
| 5,01-5,50  | 5,5                                |                    |
| 5,51-6,0   | 6                                  |                    |
| 6,01-6,50  | 6,5                                | D                  |
| 6,51-7,00  | 7                                  |                    |
| 7,01-7,50  | 7,5                                | C                  |
| 7,51-8,00  | 8                                  |                    |
| 8,01-8,50  | 8,5                                | B                  |
| 8,51-8,00  | 9                                  |                    |
| 9,01-9,50  | 9,5                                | A                  |





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**9,51-10,0**

**10**

*Not attending the exam without any motivated reasons is registered as „absent”and is equivalated with qualifying 0(zero). The student has the right 2 times to repeated defend the unpromoted exam.*

**X. RECOMMENDED BIBLIOGRAPHY**

*A. Obligatory:*

1. Nicolaiciuc, Valentina. Practical guide : clinical practical lessons for the 4th year of study 7th semester : subject : Apical periodontitis. Non-cariou disease / V. Nicolaiciuc ; State University of Medicine and Pharmacy "Nicolae Testemitanu", the Department of Therapeutical Dentistry. - Chişinău : Medicina, 2012
2. Nicolaiciuc, Valentina. Dental pulpitis and elements of endodontic therapy : course of lectures for the 3rd year of study the 6th semester / V. Nicolaiciuc ; Public Institution the State University of Medicine and Pharmacy "Nicolae Testemitanu", Department of Therapeutical Dentistry. - Chişinău : Medicina, 2013
3. Fermin A. Carranza, Michael G. Newman. Clinical Periodontology. 8<sup>th</sup> Edition. W.B. Saunders Company. 1996

*B. Additional:*

1. Cohen. Pathways of the Pulp Expert Consult 11. Edition 2015;
2. Fuhrmann, Andreas. Dental radiology : a contemporary guide to dental radiology for students and practitioners / Andreas Furmann. - Stuttgart : Thieme, 2015
3. Nisha Garg, Amit Garg. Textbook of Endodontics. Jaypee Brothers Medical Publishers LTD
4. Theodore M. Roberson, Harald O. Heymann, Edward J. Swift. Operative Dentistry. Fourth Edition. Mosby 2002.
5. Nicolaiciuc, Valentina. Practical guide : clinical practical lessons for 4th year of study 8th semester : subject : Periodontal disease / V. Nicolaiciuc ; State University of Medicine and Pharmacy "Nicolae Testemitanu", the Department of Therapeutical Dentistry. - Chişinău : Medicina, 2012