



**CD 8.5.1 CURRICULUM DISCIPLINĂ PENTRU  
STUDII UNIVERSITARE**

<b>Redacția:</b>	<b>09</b>
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**FACULTY OF STOMATOLOGY  
STUDY PROGRAM 0911.1 STOMATOLOGY  
DEPARTMENT OF ORTHODONTICS**

APPROVED

at the meeting of the Committee for Quality Assurance and Evaluation of the Curriculum Faculty of Stomatology Minutes No. 1 of 08.09.2021

Committee president, PhD, DMS,  
Associate professor,  
Stepco Elena [Signature]

APPROVED

at the Council meeting of the Faculty of Stomatology Minutes No. 2 of 12.09.2021

Dean of the Faculty of Stomatology  
PhD, DMS, Associate professor,  
Solomon Oleg [Signature]

APPROVED

at the meeting of the Department of orthodontics  
Minutes No.1 of 24 august 2021

Head of the Department,  
PhD, DMS, Associate professor  
Trifan Valentina [Signature]



**CURRICULUM**

**DISCIPLINE ORTHODONTIC TECHNIQUE**

**Integrated studies**

Course type: **Compulsory discipline**

Chisinau, 2021



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### I. PRELIMINARIES

- **General presentation of the discipline: the place and role of the discipline in the formation of the specific competences of the vocational/ specialty training program.**

Orthodontics studies the deviation from normal growth and development of dento-maxillary apparatus and the etiology, clinic, diagnosis and treatment of dento-maxillary anomalies.

The in-depth study of dento-maxillary anomalies by using various diagnostic methods induces a correct diagnosis. In the Dental Engineering module, one of the basic methods in orthodontic diagnosis is to reflect the study patterns and the clinical manifestations of occlusion anomalies in the three reference planes. Study patterns are an important document to control the course of treatment and its completion. The study models give us the possibility to analyze: the arcade symmetry, the existing space, the dimensions of the teeth.

Today, therapeutic means have evolved through the emergence of fixed orthodontic appliances, but without diminishing the role and importance of mobile and functional orthodontic appliances, therefore, a close collaboration must exist between the orthodontist and the dental technician in order to achieve these mobilizable and functional orthodontic appliances can be easily adapted to the oral cavity of the patients.

The Dental Engineering discipline strategy is to provide the necessary information in the diagnosis and treatment of dento-maxillary abnormalities based on dentition, to apply in practice complementary study methods to help improve the efficiency of orthodontic care.

- **Mission of the curriculum (aim) in vocational training**  
Students' theoretical and practical training on prevention, diagnosis, clinical manifestations and treatment of dento-maxillary anomalies.
- **Discipline teaching languages:** Romanian, English.
- **Beneficiaries:** students of the fourth year, the Faculty of Stomatology.



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**II. DISCIPLINE ADMINISTRATION**

Discipline code		<b>S.07.O.080</b>	
Discipline name		<b>Orthodontic technique</b>	
Responsible for discipline		<b>Trifan Valentina</b> , PhD, associate professor <b>Calfa Sabina</b> , university assistant <b>Cazacu Igor</b> , university assistant	
Year	<b>IV</b>	Semester	<b>VII</b>
Total number of hours, including:			<b>60</b>
Lectures	<b>14</b>	Practical courses	<b>25</b>
Seminars	<b>10</b>	Individual work	<b>11</b>
Evaluation form	<b>E</b>	Number of credits	<b>2</b>



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### III. THE TRAINING OBJECTIVES OF THE DISCIPLINE

- ***At the level of knowledge and understanding:***

- ✓ to know the basics of orthodontics;
- ✓ to know the etiology, clinical manifestations and diagnosis, methods of diagnosis of physiological and pathological dental occlusions according to the reference plans;
- ✓ to know the biometric study of the study model as a complementary exam in the diagnosis of dento-maxillary abnormality.

- ***Application level:***

- ✓ to establish psychological and verbal contact with children of different ages.
- ✓ to establish contact with parents in the treatment of children.
- ✓ to perform palpation of soft tissues and facial bones, lymph nodes, salivary glands.
- ✓ to perform the clinical examination of the orthodontic patient.
- ✓ to determine symmetry and proportionality of the face, anthropometric indices.
- ✓ to perform sounding, percussion and appreciation of tooth mobility.
- ✓ to complete the dental formula in children of different ages.
- ✓ to determine the post-temporal plan in temporary dentition.
- ✓ to possess the determination of static and dynamic occlusion in orthodontic patients.
- ✓ to identify and interpret biometric indices on the model of study according to the reference plan.
- ✓ to apply diagnostic methods of dento-maxillary anomalies in children and adolescents.
- ✓ to interpret contact radiographs, orthopantomograms.
- ✓ to take impressions.
- ✓ to perform casting and tethering of diagnostic models.
- ✓ to have space maintainer adjustment.
- ✓ to apply the knowledge gained in assessing clinical tests.
- ✓ to solve clinical situation problems.

- ***At the integration level:***

- ✓ to appreciate the importance of orthodontics in the context of dentistry;
- ✓ to address creatively the problems of fundamental and clinical medicine;
- ✓ to deduce the purpose of cooperation between orthodontics and other clinical disciplines.
- ✓ to have skills to implement and integrate knowledge gained in clinical disciplines.
- ✓ to be able to objectively evaluate and self-assess the knowledge in the field of dentistry.
- ✓ to be able to apply new achievements in Dental Engineering discipline.
- ✓ to be able to implement the knowledge gained in the research activity.
- ✓ to be competent to use critical and reliable scientific information obtained using the new information and communication technologies.
- ✓ to be able to use the biometric study in the diagnosis of dento-maxillary abnormalities according to the teeth.
- ✓ to be able to impress the results of the biometric study in dental care.



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### IV. PRECONDITIONS AND EXIGENCIES

Good knowledge of the subject is required in the field of fundamental medicine, therapeutic dentistry, orthopedic dentistry, oro-maxilo-facial surgery, etc.

Student of the fourth year requires the following:

- knowledge of the language of instruction;
- confirmed competences in lyceum sciences (biology, chemistry, physics);
- digital competences (use of the Internet, document processing, electronic tables and presentations, use of graphic programs);
- skills obtained in preclinical and clinical dental disciplines: dental propedeutics; odontology, orthopedic dentistry, prophylaxis of dental diseases,
- ability to communicate and team work;
- qualities - tolerance, compassion, autonomy.



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**V. THEMES AND ORIENTATIVE DISTRIBUTION OF HOURS**

<b>Courses (lectures)</b>		
<b>Nr. d/o</b>	<b>THEME</b>	<b>Number of hours</b>
1.	Facial development and growth. Definition of occlusion. Development of dental occlusion, age specificity.	4
2.	Functional and morphological characteristic of normal occlusion.Types.	4
3.	Biometric model exam in orthodontics. The role of biometric methods in the diagnosis of dento-maxillary abnormalities.	6
	<b>TOTAL</b>	<b>14</b>

<b>Practical works, seminars:</b>				
	<b>THEME</b>	<b>Number of hours</b>		
		<b>Seminars</b>	<b>Practice</b>	<b>Individual</b>
1	Introduction to orthodontics. Organization and technical equipment of the orthodontics department. Aseptic and antiseptic rules. Laboratory of dental technology, equipment, materials, tools, work safety technique.	2	3	2
2	Prenatal development of the face. Postnatal growth of the facial skeleton. Integrating growth processes with the development of face muscles.	2	3	1
3	Occlusion. Definition. Physiological occlusion, types. Particularities of physiological dental occlusion at different ages.	2	5	2
4	Pathological occlusion. Definition. Types. The general characteristic of occlusion disorders in sagittal, vertical and transverse direction.	2	6	2
5	Biometric model study. Appreciation of the development of dento-alveolar arches in the three reference panels.	2	8	4
	<b>TOTAL</b>	<b>10</b>	<b>25</b>	<b>11</b>



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**VI. REFERENT OBJECTIVES AND CONTENT UNITES**

<b>Objectives</b>	<b>Content units</b>
<b>Theme (Chapter) 1.</b> Introduction to orthodontics. Organization and technical equipment of the orthodontics department. Aseptic and antiseptic rules. Laboratory of dental technology, equipment, materials, tools, work safety technique.	
<ul style="list-style-type: none"><li>✓ to define the discipline - Orthodontics;</li><li>✓ to know the main disciplines of pediatric dentistry;</li><li>✓ to comment on the interaction of Orthodontics with other dental disciplines;</li><li>✓ to demonstrate knowledge of age in children, development of the organism;</li><li>✓ to know the technical equipment of the Orthodontics Department;</li><li>✓ to know the rules of aseptic and antiseptic;</li><li>✓ to develop own opinions on the individual particularities of the growing child;</li><li>✓ apply the knowledge gained in other disciplines;</li></ul>	Main compartments of discipline. orthodontics - a compartment of dentistry. Ages in children.
<ul style="list-style-type: none"><li>✓ to know the premises of the orthodontic dental laboratory;</li><li>✓ to know the set of tools necessary for arcing the secondary elements;</li><li>✓ to be able to carry a wire rod with various arched elements of anchor and active wire;</li><li>✓ to know the stages of the laboratory for making mobilisable and mobile devices.</li></ul>	Orthodontic dental laboratory. Materials used in the manufacture of mobile and mobile devices. Laboratory stages of mobile and mobile devices.
<b>Theme (Chapter) 2.</b> Prenatal development of the face. Postnatal growth of the facial skeleton. Integrating growth processes with the development of face muscles.	
<ul style="list-style-type: none"><li>✓ to know the prenatal development of the face;</li><li>✓ to know facial buds and terms of development;</li><li>✓ to know the postnatal development of the facial skeleton;</li><li>✓ to know the development of the muscles of the face.</li></ul>	Prenatal development of the face. Postnatal development of the facial skeleton. Developing face muscles.



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<b>Objectives</b>	<b>Content units</b>
<b>Theme (Chapter) 3.</b> Occlusion. Definition. Physiological occlusion, types. Particularities of physiological dental occlusion at different ages.	
<ul style="list-style-type: none"><li>✓ to define the notion of dental occlusion;</li><li>✓ to know the varieties of dental occlusion according to dentition;</li><li>✓ to know the aetiology, pathogenesis, risk factors in malocclusions;</li><li>✓ to know the particularities of the clinical evolution of temporary dentition;</li><li>✓ to know the particularities of the clinical evolution of mixed dentition;</li><li>✓ to know the particularities of the clinical evolution of permanent dentition;</li><li>✓ to know and perform the determination of static and dynamic dental occlusion;</li><li>✓ to know the biometric methods of the study model;</li><li>✓ to formulate conclusions.</li></ul>	Dental occlusion in different age groups. Variety of physiological occlusion. Anatomico-physiological features of temporary dentition. The varieties of the post-planal plan.
<b>Theme (Chapter) 4.</b> Pathological occlusion. Definition. Types. The general characteristic of occlusion disorders in sagittal, vertical and transverse direction.	
<b>Objectives</b>	<b>Content units</b>
<ul style="list-style-type: none"><li>✓ to define the notion of malocclusion;</li><li>✓ to know the dento-maxillary abnormalities classification;</li><li>✓ to know the etiology, pathogenesis, risk factors of dento-maxillary anomalies;</li><li>✓ to know and be able to perform the clinical examination of the orthodontic patient;</li><li>✓ to know the methods of the orthodontic patient's complementary examination;</li><li>✓ to know the particularities of the clinical manifestations of sagittal malocclusions;</li><li>✓ to know the particularities of the clinical manifestations of transversal malocclusions;</li><li>✓ to know the peculiarities of clinical manifestations of vertical malocclusions;</li><li>✓ to know the methods of diagnosis of dento-maxillary anomalies used in orthodontics;</li></ul>	Pathological occlusion in children. Classifications of dento-maxillary abnormalities. Particularities of clinical manifestations of malocclusions according to the reference plans. Clinical examination of the orthodontic patient.





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<b>Objectives</b>	<b>Content units</b>
<ul style="list-style-type: none"><li>✓ apply interdisciplinary knowledge.</li><li>✓ to formulate eloquent conclusions.</li></ul>	
<b>Theme (Chapter) 5.</b> Biometric model study. Appreciation of the development of dento-alveolar arches in the three reference planes.	
<b>Objectives</b>	<b>Content units</b>
<ul style="list-style-type: none"><li>✓ to know the methods of biometric model study in the detection of disharmonial-alveolar in sagittal sense;</li><li>✓ have fingerprinting of the upper and lower jaws;</li><li>✓ to know the fingerprinting materials;</li><li>✓ to perform the casting of the diagnostic model and the socketing methods;</li><li>✓ to know and be able to carry out the biometric method after Pont;</li><li>✓ to know and be able to carry out the biometric method after Korkhaus;</li><li>✓ to know and be able to carry out the biometric method after Nanse;</li><li>✓ to know and be able to carry out the biometric method after Bolton;</li><li>✓ to evaluate the effectiveness of the biometric method in the diagnosis of dento-maxillary anomalies;</li><li>✓ to formulate conclusions.</li></ul>	Method of analysis of dento-alveolar status as a diagnostic element of dento-maxillary abnormalities by the three reference planes. Assessment of the efficiency of the biometric method of analysis of the study model.



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### VII. PROFESSIONAL (SPECIFIC (SC)) AND TRANSVERSAL (TC) COMPETENCES AND STUDY OUTCOME

#### Professional competencies (specific) (SC)

**SC1:** Knowledge of dental occlusion in statics and dynamics according to dentition.

**SC2:** Knowledge of the varieties of physiological occlusion, the morpho-functional particularities of orthogonal occlusion in children from different periods of development of the dento-maxillary apparatus.

**SC3:** Knowledge of the variants of pathological occlusion, the morpho-functional peculiarities of sagittal malocclusions in children from different development periods. Knowledge of using the biometric method of analysis of the study model for the diagnosis of dento-maxillary anomalies in children according to the teeth.

**SC4:** Performing various practical exercises and procedures in the diagnosis of dento-maxillary anomalies and prevention of malocclusions in children based on the knowledge of the fundamental and clinical disciplines (including dental).

**SC5:** Planning, co-ordinating and conducting activities to prevent dento-maxillary abnormalities and prophylactic measures to improve oral health in children at the individual and community level; to establish and implement complex dispensary plans applicable to school and pre-school colleges;

**SC6:** Implementation of professional standards for assessment and quality assurance of orthodontic assistance for children with dento-maxillary abnormalities. Knowledge of the basic principles and functional structure of the medical and dental care especially for the children of the Republic of Moldova.

#### Transverse competencies (TC)

**TC1:** Applying professional standards of assessment, acting according to professional ethics, as well as the provisions of the legislation in force. Promoting logical reasoning, practical applicability, evaluation and self-assessment in decision-making;

**TC2:** Performing activities and exercising the roles specific to team work in medical institutions and especially in dental care. Promoting the spirit of initiative, dialogue, cooperation, positive attitude and respect for others, empathy, altruism and continuous improvement of their own activity.

**TC3:** Systematic assessment of personal competencies, roles and expectations, application of self-assessments of learned processes, acquired skills and professionalism needs, knowledge in information technologies, effective use of language skills, research and communication skills for quality dental services and adapting to the dynamics of policy requirements in health and for personal and professional development.



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### **Study finalizations**

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

- to characterize the main peculiarities of dental occlusion according to the teeth;
- to know the varieties of physiological occlusion, the morpho-functional particularities of orthogonal occlusion in children from different periods of development of the dento-maxillary apparatus;
- to perform the clinical examination of dental occlusion in static and dynamic;
- to be able to characterize the morpho-functional peculiarities of occlusion anomalies;
- to appreciate the efficiency of the biometric method of analysis of the study model;
- to possess the methods of studying the model;
- to have photometric analysis of pre and post-treatment photos;
- to know the anthropometric face study;
- to formulate optimal conclusions in diagnosis in children with dento-maxillary abnormalities;
- to apply various ways of psychological and moral support of children with dento-maxillary abnormalities during the orthodontic assistance period.



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**VIII. THE STUDENT'S INDIVIDUAL WORK**

One of the least effective methods of pedagogical learning is passive obedience to courses, but practical performance is much more effective. For these reasons, Orthodontics discipline is the individual practice activity of each student with the guidance of the teachers.

<b>Nr.</b>	<b>The expected product</b>	<b>Implementation Strategies</b>	<b>Evaluation criterias</b>	<b>Deadline</b>
1.	Working with books and ICT	Work systematically in the library and mediate. Exploring current electronic sources on the subject.	1. Quality of formed judgments, logical thinking, flexibility. 2. The quality of the systematization of the informational material obtained through its own activity.	During the semester
2.	Report	Analysis of relevant sources on the topic of the paper. Analysis, systematization and synthesis of information on the proposed theme. Compilation of the report in accordance with the requirements in force and presentation to the chair.	1. The quality of systematization and analysis of the informational material obtained through its own activity. 2. Concordance of information with the proposed theme.	During the semester
3.	Case study analysis	Selection and description of the case study with malocclusions in the vertical and transversal plane. Analysis of the causes of the issues raised in the case study. Prognosis of the case investigated. Deduction of the expected outcome of the case.	1. Analysis, synthesis, generalization of data obtained through own investigation. 2. Formation of an algorithm of knowledge based on the obtained conclusions.	During the semester



## IX. METHODOLOGICAL SUGGESTIONS FOR TEACHING-LEARNING-ASSESSMENT

- **Teaching and learning methods used**

The discipline of Orthodontics is taught in classical ways: with lectures and practical works. At the lectures the theoretical course is read by the course holders. In practical work students study the particularities of dental care for children, diagnosis, clinical picture, treatment and prevention of dento-maxillary anomalies in children.

In order to acquire deeper material, different semiotic systems (scientific language, graphical and computerized language) and teaching materials (tables, diagrams, photophotographs, transparencies) are used. Inside lessons and extracurricular activities are used Communication Technologies - PowerPoint presentations.

- ✓ *Applied teaching strategies / technologies (specific to the discipline)*

Exposure, interactive lecture, group interview, debate, creative controversy, problem-solving, brainstorming, group work, individual study, work with textbook and manual, case study, problem solving, role play, simulation, interactive listening.

- ✓ *Methods of assessment (including the method of final mark calculation)*

**Current:** front and / or individual control via

- (a) the application of docimological tests,
- (b) solving problems / exercises,
- (c) analysis of case studies
- (d) playing role plays on the topics discussed.
- (e) quiz

**Final:** Exam

The final evaluation of the students in the discipline Orthodontic technique is in the form of exam, in the 4th year, 7th semester.

Students who have not recovered their absences and negative grades from the practical work are not admitted to the exam.

The final grade consists of the average annual grade (coefficient 0.5), test-control (coefficient 0.2) and the grade of the oral interview (coefficient 0.3).

The average annual grade is established based on 2 totals. The score is set in the range from 1 to 10.

For the oral exam 60 questions are selected and 20 tickets are prepared. Each ticket contains 3 questions. The oral exam is evaluated with grades from 1 to 10.



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**Method of mark rounding at different assessment stages**

Intermediate marks scale (annual average, marks from the examination stages)	National Assessment System	ECTSEquivalent
<b>1,00-3,00</b>	<b>2</b>	<b>F</b>
<b>3,01-4,99</b>	<b>4</b>	<b>FX</b>
<b>5,00</b>	<b>5</b>	<b>E</b>
<b>5,01-5,50</b>	<b>5,5</b>	
<b>5,51-6,00</b>	<b>6</b>	
<b>6,01-6,50</b>	<b>6,5</b>	<b>D</b>
<b>6,51-7,00</b>	<b>7</b>	
<b>7,01-7,50</b>	<b>7,5</b>	<b>C</b>
<b>7,51-8,00</b>	<b>8</b>	
<b>8,01-8,50</b>	<b>8,5</b>	<b>B</b>
<b>8,51-8,00</b>	<b>9</b>	
<b>9,01-9,50</b>	<b>9,5</b>	<b>A</b>
<b>9,51-10,0</b>	<b>10</b>	

***Note:** Absence on examination without good reason is recorded as "absent" and is equivalent to 0 (zero). The student has the right to have two re-examinations.*



## **X. RECOMMENDED LITERATURE**

### **A. Compulsory:**

1. Boboc Gh. Aparatul dento-maxilar, formare și dezvoltare – ediția a II-a. Editura Medicală, București, 2016, 462 p.
2. Dorobăț V., Stanciu D. Ortodonție și ortopedie dento-facială. Editura Medicală, București, 2014, 502 p.
3. Graber T., Vanarsdall R., Vig K. Orthodontics, 4th Edition – Current Principles and Techniques. Ed. C. V. Mosby Comp. St. Louis, 2005, 1232 p.
4. Grivu O., Podariu A., Jianu R.. Tehnica ortodontică. Timișoara: Mirton, 1994. – 4exemplare
5. Proffit W.R., Fields H.W.Jr., Contemporary Orthodontics, sixth edition. Mosby, USA, St. Louis, 2018, 744 p.
6. Stanciu D., Boboc L., Ortodonție practică. Aparate ortodontice. București: Ed. Medicală, 2011. – 8 exemplare
7. Trifan V., Godoroja P. Ortodonție: compendiu. Chișinău : Medicina, 2009. – 32 exemplare

### **B. Additional:**

1. McDonald R., Avery D. Dentistry for the Child and Adolescent. 9th Ed. Mosby, 2011, 720 p.
2. Персин Л.С. Ортодонтия. Диагностика и лечение зубочелюстно-лицевых аномалий и деформаций. Учебник. Издательство ГЭОТАР-Медиа, Москва, 2016, 640 с.
3. Хорошилкина Ф.Я. Ортодонтия. Москва, Медицина, 2010, 591 с.
4. Калвелис Д. А. Ортодонтия. М., Медицина, 1994 г. – 5 exemplare
5. Бушан М. Г. Справочник по ортодонтии. Кишинев, 1990 г. – 51 exemplare