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STUDII UNIVERSITARE

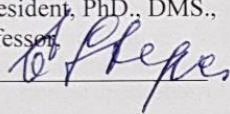
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FACULTY OF STOMATOLOGY

STUDY PROGRAM 0911.1 STOMATOLOGY

CHAIR OF STOMATOLOGICAL PROPAEDEUTICS „PAVEL GODOROJA”

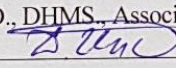
APPROVED

at the meeting of the Committee for Quality
Assurance and the evaluation of the Curriculum
Faculty of Stomatology
Minutes No. 1 of 22.09.2020
Committee President, PhD., DMS.,
Associate professor
Stepco Elena 

APPROVED

at the Council meeting of the Faculty of
Stomatology
Minutes No. 2 of 30.09.2020
Dean of Faculty of Stomatology, PhD.,
DMS., Associate professor,
Solomon Oleg 

APPROVED

at the meeting of the chair of Stomatological
Propaedeutics
„Pavel Godoroja”
Minutes nr. 3 from 18.09.2020
Head of chair, PhD., DHMS., Associate professor
Uncuța Diana 

CURRICULUM

DISCIPLINE: PRECLINICAL DENTAL IMPLANT PROSTHETICS

Integrated studies

Type of course: **Compulsory discipline**

Chisinau, 2020



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I. PRELIMINARIES

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

"Preclinical dental implant prosthetics" is an indispensable compartment of dental prosthetics for both dental propaedeutics and other branches of modern dentistry.

Students' training at the preclinical stage of implant prosthetic treatment is conducted by familiarizing them with the prosthesis on implants specificity in the prosthetic dentistry treatment: types of prosthetic abutments, restoration planning, types of implant-prosthetic restorations and the steps necessary for their realization. Each aspect has a crucial role in ensuring the success of implant-prosthetic treatment.

Mission of the curriculum (aim) in the vocational training

Preclinical dental implant prosthetics, aims to introduce and present the importance of preclinical prosthesis on implants in dental treatment. In-depth training and integration of the knowledge of future dentists in the field of realization of restorations on implants of the partial and total edentulism is absolutely necessary in the formation of the dentist. The provision of information necessary for the knowledge and practical application of preclinical, clinical and laboratory principles of implant prosthetic rehabilitation is indispensable.

- **Discipline teaching languages:** Romanian, English.
- **Beneficiaries:** students of the fourth year, semester VIII, faculty of Stomatology.

II. DISCIPLINE ADMINISTRATION

Code of the discipline		S.08.O.099	
Name of the discipline		Preclinical dental implant prosthetics	
Responsible for discipline		Bajurea Nicolae, PhD., DMS., Associate professor Cheptanaru Olga, Assistant professor	
Year	V	Semester	X
Total number of hours, including:			30
Course	8	Practical work	14
Seminars	6	Individual work	2
Form of assessment	E	Number of credits	1

III. TRAINING OBJECTIVES WITHIN THE DISCIPLINE

- **At the level of knowledge and understanding:**
 - ✓ to know the clinical forms of edentulism in which is indicated the implant-prosthetic treatment;
 - ✓ to know the types of prosthetic abutments used in the implant-prosthetic treatment;
 - ✓ to know the types of prosthetic implant / abutment connections;
 - ✓ to understand the biomechanical aspects in the prosthetic restorations on implants;
 - ✓ to know the impression techniques of implant prosthetic area;
 - ✓ to know the types of prosthetic loads on implants;



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- ✓ to know the particularities and options of implant-prosthetic treatment in the single tooth edentulism ;
- ✓ to know the particularities and options of implant-prosthetic treatment in the partial edentulism;
- ✓ to know the particularities and options of implant-prosthetic treatment in the total edentulism;
- ✓ to know the types of paraclinical investigations used for implant-prosthetic treatment;
- ✓ to know the tools and devices required for the clinical and laboratory stages needed to perform a prosthetic restoration on implants;
- ✓ to know the treatment sequence of implant supported prosthesis;
- ✓ to know the technology of realizing the fixed restorations on implants;
- ✓ to know the technology of realizing the removable restorations on implants;
- ✓ to know the complications and accidents of the prosthetic stages in dental implantology;
- ✓ to know the notion of nosocomial infections, asepsia and antisepsia in implant prosthetics.

- **At application level:**

- ✓ be able to highlight the diagnosis of clinical forms of edentulism for the planning of an implant-prosthetic restoration;
- ✓ be able to determine the required paraclinical examination methods depending on the clinical situation;
- ✓ be able to argue about the choice of the implant-prosthetic treatment type depending on the clinical situation;
- ✓ be able to describe the clinical and technical stages of the implant supported prostheses;
- ✓ be able to take an impression of the prosthetic area with open and closed tray in various clinical situations on the phantom model;
- ✓ to distinguish the errors and complications that may occur during the implant restoration stages;

- At integration level:*

- ✓ to assess the level and importance of preclinical prosthesis on implants in the prosthetic dental treatment;
- ✓ to highlight the clinical form of edentulism with the appreciation of the necessary options for implant prosthetic treatment;
- ✓ to use the necessary instruments according to their purpose (prosthetic abutments, open and closed tray transfers, analogs, cover screws, healing screws);
- ✓ to ensure the respect for professional ethics and deontology;
- ✓ to know how to apply the method of preventing the spread of nosocomial infection to implant prosthesis.

III. PREVIOUS CONDITIONS AND REQUIREMENTS

Knowledge of the anatomic particularities of the partially or totally edentulous prosthetic area, favorable for fixed, movable and mobile implant-prosthetic treatment. Acquiring edentulism classification in the prosthetics on implants. Knowledge of tools, prosthetic and clinical components of implant-prosthetic restorations. Knowledge of the particularities of the clinical-technical stages of the varieties of implantation restorations. Knowledge of the types of fixation of fixed implant- prostheses (cementation, screwing, special retainers). Knowledge of the impression techniques with closed and open trays, of working models in the implant - prosthetic rehabilitation. Acquiring biomechanical aspects in the implant prosthetic restorations. To know the materials, tools, equipment needed for the partial or total removable prostheses with implant support. Knowledge of concepts in the total overdenture on implants. Knowing the means of maintaining the support and stabilizing partial and / or total prostheses with implant support. Designing the treatment plan for partial and / or total prostheses with implant support. Performing the technique of impression in partial and total edentulous prosthetic area on the phantom model. Knowledge of the technique of realization of the working model and of the mesostructure. Knowledge of the clinical and technical stages of the implant overdenture design and fabrication.



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IV. INDICATIVE TOPICS AND ASSIGNMENT OF HOURS

No. d/o	THEME	Number of hours			
		lectur es	semin ars	Practi ce	indivi dually
1.	Brief history in dental implant prosthetics. Types of prosthetic abutments used in the implant-prosthetic treatment. Prosthetic abutment. Notion. Classification criteria. Classification of prosthetic abutments by the implant generation used. Classification of the abutments by the shape of prosthetic abutments. Classification of the abutments by the abutment axis in relation to the implant body and by the number of abutment components. Classification of the abutments according to the material, by the method of retention to the final prosthetic restoration. External connection between the implant and prosthetic abutment. Internal connection between the implant and the prosthetic abutment.	1	1	2	
2.	Biomechanics in implant supported prostheses. The crown / implant ratio. Morphology of occlusal surface of crowns in implant prosthetic restorations. Extensions of prosthetic restorations, their length. Indications. Particularities of biomechanics in prosthetic restorations with mixed support (on implants and on natural teeth). The role of dumper force systems in biomechanics.	1	1	2	
3.	Assessment and design of the implant-prosthetic treatment plan. Criteria for choosing an implant-prosthetic restoration. Classification of implant-prosthetic restorations by Misch. Types of implant-prosthetic treatment in case of single tooth edentulism. Types of implant-prosthetic treatment in case of partial edentulism. Types of implant-prosthetic treatment in case of total edentulism. Fixed implant supported prostheses. Indications. Advantages. Disadvantages. Overdentures. Advantages. Disadvantages. Provisional restorations on implants. Diagnostic imaging and techniques (based on panoramic radiography and computed tomography with conical beam).	1	1	2	
4.	Stages of prosthetic treatment in fixed implant supported prostheses in partial edentulism. Impression of implant prosthetic area. Techniques of impressions. Impression with closed tray for second-generation implants. Used materials. Closed – tray impression technique for first-generation implants. Used materials. Open- tray impression technique. Used materials. Stages of prosthetic treatment in progressive prosthetic loading (gradual). Stages of prosthetic treatment in immediate prosthetic loading. Particularities in the treatment of anterior single tooth replacement. Particularities in the treatment of posterior single tooth replacement. Particularities in the treatment of partial edentulism.	2	1	3	1



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No. d/o	THEME	Number of hours			
		lectur es	semin ars	Practi ce	indivi dually
5.	Stages of implant prosthetic treatment in total edentulism. Clinical and technical stages for the implant-prosthetic restoration. Particularities of provisional implant-prosthetic restorations. Particularities of the definitive fixed implant-prosthetic restoration. Implant overdenture - steps of fabrication. Particularities of the components of an overdenture. Advantages of implant overdentures versus fixed implant-prosthetic restorations. Types of attachments in a implant overdenture.	1	1	3	1
6.	Accidents and complications of prosthetic stages in the implant-prosthetic treatment. Hospitalization. Accidents that occur when the prosthetic abutment is mounted. Accidents occurring during the installation of the final prosthesis. Post-therapeutic complications (implant mobilization, implant and prosthetic abutment fracture, unscrewing the prosthetic abutment, periimplantation infections) Need for the hospitalization of the patient with implant prosthesis. Sanitation of prosthetic restorations on implants.	1	1	2	
Total		8	6	14	2

V. REFERENT OBJECTIVES AND CONTENT UNITS

Objectives	Content units
Techniques of fixed implant prostheses fabrication	
✓ to know the anatomic particularities of the partial or total edentulous prosthetic area, favorable for fixed implant-prosthetic treatment; ✓ to acquire the classification of edentulism in implant prosthetic treatment; ✓ to know the tools, prosthetic and clinical components of the implant-prosthetic restorations; ✓ to know the particularities of the clinical-technical stages of the implant supported prostheses fabrication; ✓ to acquire the type of retention of fixed implant - prostheses (cement - retention, screw - retention, special attachments); ✓ to know the principles of impression technique	The anatomical elements of the partial and total edentulous arches Classification of implant-prosthetic restorations by Misch Prosthetic components in implant-prosthetic restorations: prosthetic abutments, open - tray, closed-tray, transfers Implant / prosthetic abutment connections Impression of the implant prosthetic area Achieving the working model for fixed prosthesis on implants



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Objectives	Content units
- and realization of working models in the implant-prosthetic rehabilitation. ✓ to acquire the biomechanical aspects in implant prosthetic restorations. ✓ to know the types of prosthetic loading of dental implants.	
Techniques of removable implant protheses fabrication	
✓ to know the anatomic particularities of the partial or total edentulous arches of the prosthetic area, favorable for fabrication the removable implant protheses; ✓ to know the materials, tools, equipment needed for the fabrication the removable implant protheses; ✓ to know the concepts in total implant overdenture; ✓ to know the overdenture attachments; ✓ to be able to design the treatment plan of an implant overdenture; ✓ to be able to perform the impression of partial and total edentulous arches of the prosthetic area on the phantom model ✓ to know the technique of fabrication the working cast ✓ to know the technique of fabrication the mesostructure ✓ to know the clinical and technical stages of fabrication the movable partial and total implant protheses.	Particularities of the partial or total edentulous arches of the prosthetic area, favorable for fabrication the removable implant protheses; The materials, tools, equipment needed for the fabrication the removable implant protheses; Principles and concepts in total implant overdentures; Overdenture attachments; Realization of the treatment plan of an implant overdenture; The impression of partial and total edentulous arches of the prosthetic area on the phantom model; Fabrication the working cast; The technique of fabrication the mesostructure; The clinical and technical stages of fabrication the movable partial and total implant protheses.

I. PROFESSIONAL (SPECIFIC (SC)) AND TRANSVERSAL (TC) COMPETENCIES AND STUDY OUTCOME

Professional competencies (specific) (CS)

CP1: Knowledge of the theoretical bases of clinical forms of edentulism in which implant-prosthetic treatment is indicated.

CP2: Simulation on the phantom, the clinical and paraclinical examination of patients with different clinical forms of edentulism and the realization of the clinical and technical stages of fabrication the varieties of implant restorations on models.

CP3: Selection of mandatory elements and elaboration of the treatment algorithm in fixed and mobile prosthesis with implant support on phantom models. Determination of options for establishing the diagnosis and treatment plan.

CP4: Analysis of the data of indicated laboratory paraclinical investigations and their description. Analysis of radiological images, evaluation and description of clinical forms of edentation and types of implant-prosthetic treatment based on the orthopantomograms and computed tomography with conical fascicle.

CP5: Description of varieties of implant-prosthetic treatment, as well as their application levels. Evaluation of implant-prosthetic treatment methods depending on the clinical forms of edentation.

CP6: Demonstration and application of acquired knowledge in implant-prosthetic treatment evaluation.



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Transversal competences (CT)

CT1: Application of professional assessment standards, acting according to professional ethics, and applicable legislation. Promoting logical reasoning, practical applicability, assessment and self-assessment in decision-making.

CT2: Performing activities and exercising the roles specific to the teamwork within the simulation cabinet / room. Promoting the spirit of initiative, dialogue, cooperation, positive attitude and respect for others, empathy, altruism and continuous improvement of 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 finalities

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

- to acquire the specialty terms in implant prosthetics and their properly use in the context ;
- to identify the clinical forms of edentulism in which the implant-prosthetic treatment is indicated;
- to know the basic clinical elements of implant prosthetic therapy;
- to have sufficient knowledge about materials and technologies used for implant prosthetic treatment;
- to know the particularities of the clinical-technical stages of the varieties of implant restorations;
- to know the specifics of impression techniques in implant prosthetic therapy;



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II. STUDENT'S INDIVIDUAL WORK

Nr.	The expected product	Implementation Strategies	Evaluation criteria	Deadline
1.	Working with information sources	Reading the lecture or the material in the manual on the respective topic. Reflection on the topic in the questions from the topic. Know and select additional information sources on the topic. Read the text carefully and describe the essential content. Wording of generalizations and conclusions regarding the importance of the theme / subject.	The ability to extract the essential. Interpretative skills. The ability to analyze and communicate the material accumulated on its own.	Throughout the module
2.	Solving the situation problems	Solving the case problems, arguing the conclusions at the end of each practical work. Verification of the finalities and appreciation of their achievement. Selection of additional information, using electronic addresses and additional bibliography.	The quality of solving the situation and clinical case problems, the ability to formulate and interpret clinical and paraclinical data. Ability to analyze selected information from national and international professional websites.	Throughout the module
3.	Assessment of indications for implant-prosthetic treatment	The student should study the particularities of implant-prosthetic treatment varieties and argue for the need to indicate each type of treatment.	Assessing the accuracy of the information described by the student.	Throughout the module
4.	Project preparation.	Students will prepare information on the selected theme from the thematic plan with schematic and graphics rendering in Power Point.	Evaluating the quality of the selected material, the design of the project and the ability to reproduce the information.	Throughout the module



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III. METHODOLOGICAL SUGGESTIONS FOR TEACHING-LEARNING-EVALUATION

✓ Teaching and learning methods used

In teaching the discipline of preclinical dental implant prosthetics, different methods and **teaching** processes are used, oriented towards the efficient acquisition and achievement of the objectives of the didactic process. For the discipline there are course hours (lectures), seminars, practical works and individual work. The courses are taught in semester VIII by the course owner. The following forms of training are used in the practical works: frontal, individual activity, brainstorming sessions, group discussions, case study. As a teaching aid, the specialized manuals available in the university library, the methodological recommendations of the chair staff, tables, schemes, electronic information sources, national and international professional websites, etc. are available. Students receive individual assignments that are presented for group discussions, which subsequently assess the quality of individual work and practical skills. In order to acquire the didactic material and teambuilding skills, during the module, the students perform a mini-research in the field, the results of which are presented in the seminars and practical lessons organized during the module.

As **learning** methods are recommended: acquiring theoretical material by lecture and manual; observation - identification of elements characteristic to implant-prosthetic treatment; analysis - when using the clinical and paraclinical examination methods of patients, as well as the methods and stages of implant-prosthetic treatment; comparison - comparison by analysis of the methods of making prostheses on implants in dental treatment; elaboration of the algorithm - selection of the mandatory elements and elaboration of the treatment algorithm in fixed and mobile prosthesis with implant support; modeling - the identification and application in practice of the general clinical and laboratory principles of prosthetic implant rehabilitation.

✓ Applied didactic strategies / technologies (*discipline specific*)

Frontal, individual activity, brainstorming sessions, group discussions, clinical cases analysis, teambuilding, performance on phantom models of clinical and laboratory stages of implant prosthetic rehabilitation.

✓ Methods of evaluation (*including by the indication of the final grade calculation method*)

Current: Current checks during seminars and practical works, 2 totals in writing and / or in test-control form. For individual work achieved during the semester, the student is evaluated, the grade being included in totalizations. At the end of the module, based on the grades of the totalizations sustained, the average annual grade is calculated.

Final: The course ends with an exam. The note at the exams of the annual average calculated at the end of the study discipline based on the two positive grades from the totalizers - 50%; the test-control - 20% and the oral interview - 30%. The annual average grade and the grades of all stages of final examination (test and oral answer) – are expressed in numbers according to the rating scale (see table) and the final mark awarded is expressed in a number with two decimal places, which will be passed in the student's record book.



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The method to round up the grades at the evaluation steps

Grid of the intermediate grades (annual average, grades at the stages of the differentiated colloquy)	National grading system	ECTS Equivalent
1,00-3,00	2	F
3,01-4,99	4	FX
5,00	5	E
5,01-5,50	5,5	
5,51-6,00	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
8,51-9,00	9	
9,01-9,50	9,5	A
9,51-10,0	10	

Note: The absence from a colloquy without justified reason is recorded as "absent" and is equivalent to 0 (zero). The student is entitled to 2 repeated submissions of the unsuccessful exam.

IV. RECOMMENDED BIBLIOGRAPHY:

A. Compulsory:

1. Lecture materials.
2. Vasile Nicolae. Restaurări protetice în implantologia orală, Editura Universității „Lucian Blaga”, Sibiu, 2009
3. Bratu D., Nussbaum R.: Bazele clinice și tehnice ale protezării fixe, Editura Medicală, București, 2009
4. Bratu D., Bratu E., Antonie S.: Restaurarea edentațiilor parțiale prin proteze mobilizabile, Editura Medicală, București, 2008
5. C. Misch - Contemporary Implant Dentistry, Mosby, 2007