

FIȘA DISCIPLINEI

1. Date despre program

1.1 Instituția de învățământ superior	UNIVERSITATEA DE MEDICINA SI FARMACIE "VICTOR BABEȘ" TIMIȘOARA
1.2 Facultatea	-FACULTATEA DE MEDICINĂ DENTARĂ
1.3 Departamentul	I
1.4 Domeniul de studii de. ¹⁾	Licență
1.5 Ciclul de studii ²⁾	Licență
1.6 Programul de studii/ Calificarea	DM

2. Date despre disciplină

2.1. Denumirea disciplinei	TEHNOLOGIA PROTEZELOR DENTARE							
2.2 Titularul activităților de curs	Dr. Sinescu Cosmin							
2.3 Titularul activităților de laborator	Dr. Sinescu Cosmin, Dr.Hajaj Tareq							
2.4 Anul de studiu	II	2.5 Semestrul	III + IV	2.6 Tipul de evaluare	Examen	2.7 Regimul disciplinei	Conținut ³⁾	DS
							Obligativitate ³⁾	DI

3. Timpul total estimat (ore pe semestru al activităților didactice)

3.1 Număr de ore pe săptămână	6	3.2 din care: curs	2	3.3 laborator	4
3.4 Total ore din planul de învățământ	168	3.5 din care: curs	56	3.6 laborator	112
Distribuția fondului de timp					ore
Studiul după manual, suport de curs, bibliografie și notițe					100
Documentare suplimentară în bibliotecă, pe platformele electronice de specialitate și pe teren					14
Pregătire seminarii/ laboratoare/ proiecte, teme, referate, portofolii și eseuri					56
Tutoriat					0
Examinări					12
Alte activități					0
3.7 Total ore studiu individual	182				
3.8 Total ore pe semestru	350				
3.9 Numărul de credite ⁵⁾	7 + 7				

4. Precondiții (acolo unde este cazul)

4.1 de curriculum	Functional morphology of the stomatognathic system , Head anatomy
4.2 de competențe	Nu este cazul

5. Condiții (acolo unde este cazul)

5.1 de desfășurare a cursului	<ul style="list-style-type: none"> • Telephone conversations are not tolerated during the course. • Delay of students at the course will not be tolerated, as it proves to be disruptive to the educational process. • Mandatory attendance is required, a maximum of 30% absences being accepted in the course. • Final exam programing is made by the teacher in accordance with the students' needs. There won't be accepted any delay requests, excepting well motivated or special situations.
5.2 de desfășurare a seminarului/ laboratorului/ proiectului	<ul style="list-style-type: none"> • Mandatory attendance is required, a maximum of 15% absences being accepted in the course. Redeeming of the absences can be made according to the schedule, in agreement with the group assistant and course teacher, after paying the appropriate fee. • The delay of students in the laboratory is not accepted as it may disturb the educational process. • Throughout the course of the practical work, mobile phones will be shut down during. Moreover, students leaving the work room for personal phone calls is not accepted. • Tests during the semester are announced in advance according to the program and the corresponding bibliography. • In the activities of the practical work, it is necessary to perform the necessary requirements and the marking of each stage done. • The practical exam will be from the bibliography, in the last week of the semester. Requests for postponement will only be accepted for justified reasons.

6. Competențe specifice acumulate

Competențe Profesionale	<ol style="list-style-type: none"> 1. Identifying the modalities of morphofunctional restoration of dental arches with fixed prosthetic restorations. 2. Explaining and interpreting the modalities of morphofunctional reconstruction of dental arches with fixed prosthetic restorations 3. Practical application of the acquired knowledge for the passage of all technological stages involved in prosthetic restorations 4 Recognizing the limits of the applicability of certain maneuvers and the qualitative assessment of finite restorations 5. Introduction and development of modern, computerized working technologies
Competențe transversale	<ol style="list-style-type: none"> 1. Identification of the objectives to be achieved, the available resources, the conditions for their completion, the stages of work, the working times, the related implementation deadlines and the related risks. 2. Identify roles and responsibilities in a multidisciplinary team and apply effective relationship and work techniques within the team and in relation to the patient. 3. Effective use of information resources, communication resources and assisted training (Internet websites, specialized software applications, databases, on-line courses, etc.) both in Romanian and in an international language.

7. Obiectivele disciplinei (reieșind din competențele specifice acumulate)

7.1 Obiectivul general al disciplinei	<ol style="list-style-type: none"> 1. Study of fixed partial prosthesis components, their classification, indications and contraindications for use, as well as technological stages of their realization. It is also included the design and manufacture of fixed prosthetic restorations. 2. Knowledge, understanding of the concepts, theories and basic methods of the domain and of the specialization area; their proper use in professional communication. 3. Use of basic knowledge to explain and interpret various types of concepts, situations, processes, projects, etc. associated with the domain 4. Applying basic principles and methods for solving problems / well-defined situations, typical of the field of dental technique. 5. Appropriate use of standard criteria and methods of assessment to assess the quality, merits and limits of the teaching processes, programs, projects, concepts, methods and theories.
7.2 Obiectivele specifice	<ol style="list-style-type: none"> 1. Definition of the ways to restore the working concepts for the morphofunctional restoration of the dental arches with fixed prosthetic restorations 2. Explaining, interpreting and applying the modalities of morphofunctional reconstruction of dental arches with fixed prosthetic restorations 3. Practical application of accumulated knowledge to cover all technological stages involved in fixed prosthetic restorations. 4. Appropriate appreciation of the quality of finite restorations by classical and modern methods 5. Realization of a project, performing with responsibility specific roles in a multidisciplinary team

8. Conținuturi

8.1 Curs	Metode de predare	Număr de ore	Observații
Third Semester			
1. Coronal lesions: etiology and clinical aspects. The prosthetic field (general aspects). Dental prostheses; definition, classification; clinical and laboratory procedures; the dental office and the dental laboratory. Coronal restoration, covering, substitution, bonded restorations.	<ul style="list-style-type: none"> • Interactive oral lecture with Powerpoint presentation structured in accordance with the topic displayed, with clear and suggestive images. • In Powerpoint presentations, specific images, schedules and classifications of partial edentations, complications • During the lecture, students will be asked questions about the course material. • The concepts presented are constantly updated according to established, recent techniques and technologies for fixed prosthetics. • During the course, case presentations will be introduced for the most effective presentation of the theoretical notions into practice, debates on technological options will 	2 hours/ week	Bibliografia destinată specializării TS este disponibilă spre consultare la sediul Disciplinei de Propedeutică și Materiale Dentare, la sala de lectură a bibliotecii UMFVBT
2. Impression and cast in dentistry. Analogical, auxiliary and virtual models.		2 hours/ week	
3. Dental articulators and facial bows.		2 hours/ week	
4. Laboratory procedures for dental prostheses. Handling and use of polymers (thermoplastic and chemoplastic) and ceramics (sintering, pressing, pouring, drilling, CAD/CAM systems, electrostatic layering). Physico-chemical processes and systems. Laboratory methods and procedures for		2 hours/ week	

handling of dental metals and alloys. Systems and devices.	be initiated in various types of interstitial editions. • At the beginning of each course the educational objectives of the course will be presented, and in conclusion the presentation summary will be presented in order to better define the notions presented.		
5. Single tooth restorations; definition and classification. Clinical and laboratory procedures. The cast, resin and ceramic inlay, onlay restorations; direct and indirect patterns. Post retained crowns, custom made posts and cores. The Richmond crown.		2 hours/ week	
6. The complete cast crown; definition, classification, laboratory procedures; the partial veneer crown.		2 hours/ week	
7. The all-ceramic crowns and the all-polymeric crowns; definition, classification, laboratory procedures		2 hours/ week	
8. Metal-polymeric restorations: definition, classification, laboratory procedures.		2 hours/ week	
9. Metal-ceramic restorations: definition, classification, laboratory procedures.		2 hours/ week	
10. Partial edentulous ridges (general aspects).Fixed partial prostheses (general aspects). General principles in the therapy with fixed partial prostheses. The prosthetic field.		2 hours/ week	
11. Fixed partial prostheses; design description and laboratory procedures. The components of FPP. Conventional FPP: clinical and laboratory procedures. Intermediar elements in the upper and lower jaw.		2 hours/ week	
12. Ceramic veneered FPP. Provisional FPP. Bonded bridges. The Crownless Bridge System. Fixed-removable FPP. Special systems. Provisional FPP.		2 hours/ week	
13. Modern technological alternatives in manufacturing dental prostheses: galvanofarming, SLS/SLM techniques, CAD/CAM/CAE techniques, electroerosion, soldering and welding.		2 hours/ week	
14. Difficulties, errors and accidents in the FPP technology.		2 hours/ week	
Forth Semester			
1. The completely edentulous patient; aetiology, complications and symptomatology; hinge axis, terminal hinge axis, estimated hinge axis, face – bow. Completely edentulous ridges. The complete denture – components and stabilizing factors. Biodynamics of the complete denture.			
2. Clinical and laboratory procedures for manufacturing complete dentures. Preliminary impression and cast; muscles of the facial expression; anatomic landmarks; impression objectives; impression materials; impression techniques; techniques and materials required for the individual tray.			
3. The final impression; preliminary compound impression; functional position; rest position; equipment; refining. Different concepts and impression techniques. Final cast manufacturing.			

4. Record bases and occlusion rims; recording maxillo-mandibular relations; vertical relations; centric relation record; eccentric relation record; lateral relation record; articulators, uses, limitation, precision, accuracy and sensitivity. Intra-oral and extra-oral recording methods. Transferring the records to the laboratory and mounting the casts.			
5. The wax-up of the complete denture (preliminary and final). Tooth selection, anterior teeth, posterior teeth, tooth arrangement, factors governing the positions of the teeth, arranging the artificial teeth for the trial denture.			
6. Laboratory procedures for the press and pack technique, wax contouring, preparation of mold, laboratory investment procedures, pressing, packing and heat curing of the resin.			
7. Technological alternatives of manufacturing complete dentures (injection molding, pouring etc.). Divestment, processing and finishing the dentures. The insertion of the full dentures into the oral cavity. The immediate replacement complete denture, Duplicating complete dentures. The unimaxillary complete denture. The transformation of a completely edentulous ridge into a partially edentulous one by the insertion of dental implants.			
8. Partially edentulous ridges and removable partial prostheses. Components of the removable partial dentures.			
9. The acrylic partial removable prosthesis. Advantages and disadvantages. Components. Clinical and laboratory procedures. The flexible removable partial dentures: features, advantages, disadvantages. Components and laboratory procedures.			
10. RPDs with metallic framework. Protezele mobilizabile scheletizate. features, advantages, disadvantages. Components and laboratory procedures.the duplicate model. The majors and minors connectors.			
11. Direct and indirect retainers.			
12. Special retainer systems.			
13. Manufacturing of the metallic framework- techniques. Manufacturing of the artificial arches, processing and finishing the RPD.			
14. Repairing, relining and rebasing of the RPD			
Bibliografie obligatorii: <ol style="list-style-type: none"> 1. Bratu D., Nussbaum R. and colab.- Bazele clinice și tehnice ale protezării fixe, Editura Signata, 2001. 2. M. Leretter – Procedee de laborator în protezarea fixă, Editura Eurobit, 2002. 3. Meda Lavina Negruțiu and colab. – Tehnologia Protezelor Dentare. Volumul 1. Proteze unidentare, Lito UMF Victor Babes Timișoara, 2005. 4. C. Sinescu and colab.Sisteme CAD-CAM utilizate în medicina dentară.Editura Eurobit 2015 5. C. Sinescu and colab. – Alternative Tehnologice în medicina dentară, Editura Mirton, Colecția Medica, 2006. 6. Cursul predat 			

Bibliografie facultativă:

1. Rosenstiel - Contemporary Fixed Prosthodontics, 2001.
2. Uram-Țuculescu S., Bratu E., Lakatos S. - Titanul în stomatologie. Ed. Signata, Timișoara, 2001.
3. Sinescu C., Negruțiu Meda, Negru R., Faur N., Romînu M. - Mic atlas de investigații neinvazive în medicina dentară, Editura Mirton, Colecția Medica, 2006.

8.2 Seminar/ Laborator/stagiu/ proiect	Metode de predare-învățare	Număr de ore	Observații
Third Semester			
1. The dental technical laboratory (full presentation). The dental technician's armamentarium. Dental prostheses and the prosthetic field of the single tooth and FPP. Laboratory procedures, general aspects. History.	<p>Each laboratory starts with a sustained oral lecture with Powerpoint presentations in accordance with the topics displayed.</p> <ul style="list-style-type: none"> • A practical demonstration, conducted by the instructors for each laboratory stage, is carried out in each training session, according to the displayed schedule. • Presentation and realization of the methods of making working models, mounting models in simulators, making of models. • Presenting the indications, the counterindications, the realization of the intermediaries in relation to the edged breach according to the topography of the breach and its extent are presented. • There are presented different types of aggregation elements and ways of making them, respectively the factors involved in their choice. • Presentation of various classical and modern technological processes for the processing of metals and dental alloys, polymers and ceramic masses. • Specific oral presentations and protocols include typical examples of edentations and therapeutic options as well as interactive discussions on selected clinical cases. 	4 hours/ week	
2. Impression and cast in dentistry: general aspects, classification, techniques and materials, indications, contraindications, advantages, disadvantages. Analogical cast-and-die systems (solid cast-multiple pour system). auxiliary and virtual models.		4 hours/ week	
3. Dental articulators and facial bows: definition, classification, components, using. Registration with an facial bow and programming of the Kavo Protar II articulator. Demonstration.		4 hours/ week	
4. Laboratory procedures and methods of manufacturing dental prostheses. Handling and use of polymers (chemoplastics and thermoplastics) and of dental ceramics (sintering, pressing, pouring, grinding, CAD/CAM techniques, electrostatic layering). Physico-chemical processes, handling and use of dental alloys and metals (methods and techniques): bending, galvanofarming, electroerosion, soldering and welding. Systems and devices.		4 hours/ week	
5. Single tooth restorations. Definition and classification. Inlays and Onlays. Classification. Presenting different types of inlays. Manufacturing the wax pattern of a metal class I inlay. Composite inlays. Manufacturing a light cured composite inlay – demonstration. Ceramic inlay systems. Posts and cores. Tooth restoration with prefabricated posts and composite resin. The pattern of the custom made post and core. The Richmond crown.		4 hours/ week	
6. The complete cast crown. Manufacturing the wax pattern of a complete cast crown with guided thickness (advantages and disadvantages). Manufacturing the wax pattern of a complete cast crown with full thickness (advantages and disadvantages). Manufacturing the wax pattern of a partial cast crown. Practical demonstration. Investing, melting and casting of a complete cast crown. Practical demonstration.		4 hours/ week	
7. The polymer jacket crown – types and laboratory procedures. Manufacturing of the pattern. Manufacturing a light		4 hours/ week	

cured composite resin jacket crown – practical demonstration.			
8. The mixed metal polymeric crown: types and laboratory procedures. Manufacturing of the wax pattern of the metallic infrastructure. Manufacturing the pattern of an acrylic veneer and veneering the conditioned metallic infrastructure with light cured composite resin - practical demonstration.		4 hours/ week	
9. The mixed metal-ceramic crown: types and laboratory procedures. Layering ceramics on a metal infrastructure – practical demonstration. Differences between post retained crowns and posts and cores. Rotary instruments, devices and materials for processing and finishing single tooth restorations.		4 hours/ week	
10. Presenting edentulous ridges that can be restored with fixed partial prostheses. Presentation and classification of working casts. The relationship between the intermediary elements with the edentulous ridge. The component parts of a fixed partial prostheses. Laboratory procedures of manufacturing conventional and soldered fixed partial dentures. The wax pattern of the intermediary elements of a hygienic pontic with prefabricated elements.		4 hours/ week	
11. The intermediary elements of a mixed metal-polymeric fixed partial restoration on the upper jaw. Manufacturing of the metallic infrastructure and of the mechanical retentions. Metal-ceramic fixed partial prostheses. Features of the metallic infrastructures. Layering the ceramic masses. Retouching and finishing. Glazing.		4 hours/ week	
12. Provisional fixed partial dentures. Practical aspects and methods. Provisional FPP manufactured by thermoforming: Erkoform-Erkodent. Manufacturing of the pattern of a provisional acrylic FPP. Investment of the wax pattern of the acrylic provisional FPP. Polymerization. Divestment and Processing.		4 hours/ week	
13. Modern technological alternatives in manufacturing dental prostheses: galvanofarming, SLS/SLM techniques, CAD/CAM/CAE techniques, electroerosion, soldering and welding. Recapitulation.		4 hours/ week	
14. Practical exam		4 hours/ week	
Forth Semester			
15. The completely edentulous patient; aetiology, complications and symptomatology; hinge axis,			

terminal hinge axis, estimated hinge axis, face – bow. Completely edentulous ridges. The complete denture – components and stabilizing factors. Biodynamics of the complete denture.			
16. Clinical and laboratory procedures for manufacturing complete dentures. Preliminary impression and cast; muscles of the facial expression; anatomic landmarks; impression objectives; impression materials; impression techniques; techniques and materials required for the individual tray.			
17. The final impression; preliminary compound impression; functional position; rest position; equipment; refining. Different concepts and impression techniques. Final cast manufacturing			
18. Record bases and occlusion rims; recording maxillo-mandibular relations; vertical relations; centric relation record; eccentric relation record; lateral relation record; articulators, uses, limitation, precision, accuracy and sensitivity. Intra-oral and extra-oral recording methods. Transferring the records to the laboratory and mounting the casts.			
19. The wax-up of the complete denture (preliminary and final). Tooth selection, anterior teeth, posterior teeth, tooth arrangement, factors governing the positions of the teeth, arranging the artificial teeth for the trial denture.			
20. Laboratory procedures for the press and pack technique, wax contouring, preparation of mold, laboratory investment procedures, pressing, packing and heat curing of the resin.			
21. Technological alternatives of manufacturing complete dentures (injection molding, pouring etc.). Divestment, processing and finishing the dentures. The insertion of the full dentures into the oral cavity. The immediate replacement complete denture, Duplicating complete dentures. The unimaxillary complete denture. The transformation of a completely edentulous ridge into a partially edentulous one by the insertion of dental implants.			

22. Partially edentulous ridges and removable partial prostheses. Components of the removable partial dentures.			
23. The acrylic partial removable prosthesis. Advantages and disadvantages. Components. Clinical and laboratory procedures. The flexible removable partial dentures: features, advantages, disadvantages. Components and laboratory procedures.			
24. RPDs with metallic framework. Protezele mobilizabile scheletizate. features, advantages, disadvantages. Components and laboratory procedures. the duplicate model. The majors and minors connectors.			
25. Direct and indirect retainers.			
26. Special retainer systems.			
27. Manufacturing of the metallic framework- techniques. Manufacturing of the artificial arches, processing and finishing the RPD.			
28. Repairing, relining and rebasing of the RPD			
29.			
Bibliografie obligatorie: <ol style="list-style-type: none"> 1 Bratu D., Nussbaum R. and colab.- Bazele clinice și tehnice ale protezării fixe, Editura Signata, 2001. 2 M. Leretter – Procedee de laborator în protezarea fixă, Editura Eurobit, 2002. 3 Tehnologia protezelor dentare – Meda Negruțiu, Cosmin Sinescu – cursul multimedia prezentat 4 Tehnologia protezelor dentare. Volumul I - Proteze unidentare, Negruțiu Meda, Sinescu C., Leretter M., Lakatos S., Romînu M., Florița Z., Sandu Liliana, Pop Daniela, Stoia Adelina, Lito UMF "Victor Babeș" Timișoara, 2005 5 Bazele clinice și tehnice ale protezării fixe, Dorin Bratu Robert Nussbaum, Editura Signata Timișoara 2001 6 Simulatoarele ADM și principiile funcționale ale ocluziei. Fetzer W., Bratu D., Negruțiu Meda, Ed. Helicon, Timișoara, 1996 7 Herbert Shillingburg and colabs, Fundamentals of Fixed Prosthodontics, Quintessence books, 1997 Bibliografie facultativă: <ol style="list-style-type: none"> 1. 2. 			

9. Coroborarea conținuturilor disciplinei cu așteptările reprezentanților comunităților epistemice, asociaților profesionale și angajatori reprezentativi din domeniul aferent programului

The student is familiar with the current specialty terminology, diagnosis and orientation towards a treatment plan based on patient expectations. Taking into account the fact that in future practice he will encounter various cases of partially edentulous patients, the student needs to know the materials, the technological processes and the laboratory facilities that are necessary for the realization of different types of fixed partial prostheses and implications for the dental technique.

Thus the student acquires complex information, skills and knowledge, which will allow him to meet the current requirements of the labor market in the field of dental technology in accordance with the European educational and professional standards. The profession of dental technician is regulated at EU level, which provides minimum training standards, considered within curricular content.

In order to update the content of the subject, as well as the teaching / learning methods, the teachers participate in national and international specialty congresses. The themes focused on the use of biomaterials in dental medicine and dentistry, identifying the needs and expectations of patients on the one hand and employers in the field.

For a better professional development in the case of students interested in the research activity, they have the opportunity to be co-opted in the Students' Scientific Circle in collaboration with Prof. Univ Dr. Sinescu Cosmin, having the opportunity to work under the direct guidance of the teaching staff of the discipline of Propedeutics and Dental Materials, and then the results obtained can be disseminated through active participation in the national student scientific sessions.

10. Evaluare

Tip activitate	10.1 Criterii de evaluare	10.2 Metode de evaluare	10.3 Pondere din nota finală
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10.4 Curs	<p><i>Knowledge for grade 5:</i> Knowledge of definitions, classifications, enumeration of the etiological factors responsible for the production of the partial edentation. Use of basic knowledge for explanation and interpretation of various types of partial edentations and selection of partial prosthesis design according to the principles: biomechanical, biofunctional and prophylactic.</p> <p><i>Knowledge for grade 10:</i> Knowledge of specific terminology, prosthetic field notions, complications associated with unprotected edentation, of the used techniques. Explaining, interpreting and applying the morphofunctional reconstruction of the dental arches by means of fixed partial prostheses. Conceived in different situations. Knowledge of methods, techniques and application of the dental technique component to the treatment plan established in accordance with the current state of knowledge. tratament stabilit în concordanță cu stadiul actual de cunoaștere.</p>	<p><i>Final evaluation:</i> multiple choice with 50 questions, Passing the theoretical exam is conditioned by accumulating a minimum of 50% of the maximum score.</p>	<p>Theoretical exam (multiple choice) 60% Lecture attendance 10%</p>
10.5 Laborator/Stagiu	<p><i>Knowledge for grade 5:</i> Practical exam is mandatory and eliminatory Practical execution of various stages of laboratory involved in making fixed partial prosthetic restorations by classical and modern procedures Use of a suitable medical vocabulary, correct identification of different types of fixed prosthetic restorations, component elements and the establishment of an edentation class.</p> <p><i>Knowledge for grade 10:</i> Applying in practice the accumulated knowledge to cover all the technological stages involved in the realization of fixed prosthetic restorations. Identifying all changes associated with partial edentation status, enumeration of possible causes underlying changes, developing therapeutic solutions involving established and alternative technological processes.</p>	<p><i>Continuous evaluation::</i> - ongoing verification with multiple choice tests - laboratory activities: the practical activity at the labs requires the fulfilling of the ready reckoner, respectively of each type of partial fixed prosthesis</p> <p><i>Final evaluation:</i> practical exam - <i>oral</i> - recognition of three types of fixed partial prosthesis or the manufacturing and working lab protocols. - <i>practical examination:</i> execution of different lab working protocols performed during the semester</p>	<p>Mean of the practical activity during the semester and the practical examination – 30%.</p>
10.6 Standard minim de performanță			
Executarea practică a diferitelor restaurări protetice parțiale fixe prin procedee clasice și moderne.			

Data completării 19.12.2017	Semnătura titularului de curs Dr. Sinescu Cosmin	Semnătura titularului de laborator/stagiu 1 Dr. Sinescu Cosmin 2 Dr.Hajaj Tareq
Semnătura șefului de disciplină Prof: Univ. Dr. Romînu Mihai.....		
Data avizării în departament	Semnătura directorului de departament Prof. Dr.Podariu Angela Codruța	