

**MEDICAL UNIVERSITY – SOFIA
FACULTY OF DENTAL MEDICINE**

CURRICULUM

Discipline denomination: Propaedeutics of Prosthetic Dental Medicine

Educational degree: Master

Discipline category: Mandatory

Course duration: 4 /four/ semesters: I, II, III and IV

Course level: *Level M /master level/*

Forms of evaluation: Current grades, grades from seminars, grades from practical and theoretical exam.

What educational forms and methods are utilized in the course:
Lectures, demonstrations, seminars, practical exercises

Semester exams: Including both practical and theoretical exam at the end of the IV semester

LEADING LECTURERS: Associate Professor Dr Julia Kamenova, DDM; Associate Professor Dr Bozhidar Jordanov, DDM

DEPARTMENT: Prosthetic dental medicine

COURSE ANNOTATION: The course in Propaedeutics of Prosthetic Dental Medicine presents opportunities for acquiring knowledge in regards to the morphological and functional characteristics of the masticatory apparatus, design and fabrication technology of prosthetic dental appliances. The theoretical basis of the course is developed upon the most contemporary achievements in the science of dental materials, and in fabrication technologies of prosthetic dental appliances. In the course of the practical exercises students individually fabricate the main types of prosthetic dental appliances and acquire competence, necessary for conducting dental care in the field of prosthodontics in full value.

COURSE DESCRIPTION: The course consists in 315 academic hours, which represent various types of workload:

- lectures - 75 hours
- practical exercises - 224 hours
- work-seminars – 16 hours

Grade formation:

- Evaluation of students' activity during the entire course
- Evaluation of the practical work during the entire semester
- Theoretical exam test
- Exam result during the student session

Aspects in forming the grade:

- participation in seminars
- grade on the practical work
- grade on the practical exam
- grade on the theoretical exam – written and oral assignment

EDUCATIONAL ASSISTING MEANS: slide-projection materials, schemes, demonstration models, study films.

AIM OF THE STUDY PROGRAM: Acquirement of knowledge in regards to the morphology and physiology of the masticatory apparatus, to the design of prosthetic dental appliances and their fabrication technology. Mastering practical skills in fabricating the main types of fixed and removable prosthetic dental appliances.

TASKS OF THE STUDY PROGRAM:

1. Acquirement of theoretical knowledge about the morphology and physiology of the masticatory apparatus.
2. Acquirement of theoretical knowledge about the classification, design and fabrication technology of the prosthetic dental appliances.
3. Acquirement of practical skills in fabrication of artificial dental crowns, bridges, removable partial dentures and complete dentures.

PRELIMINARY REQUIREMENTS

In order to start education in Propaedeutics of Prosthetic Dental Medicine, it is necessary that students possess basic knowledge on: anatomy and physiology

EXPECTED RESULTS: Upon graduating the course, students should have obtained knowledge about the anatomy and physiology of the masticatory apparatus. To know in details the morphology and the occlusal relationships of the teeth. To know the main types of prosthetic dental appliances, utilized in the treatment of partially and completely edentulous patients. To master the basic principles of designing the prosthetic dental appliances and to be able to fabricate them individually.

RECCOMENDED LITERATURE SOURCES:

1. Ralev. R., T. Peev, A. Filchev – “Propaedeutics of Prosthetic Stomatology” (Medical Faculty, Sofia, 1995.)
2. Ralev. R., A. Filchev – “Propaedeutics of Prosthetic Stomatology” (Medical Faculty, Sofia, 2008.)
3. Raychinova Ek.; Joncheva Ars. “Practical Manual of Propaedeutics of Prosthetic Stomatology” (Medical Faculty, Sofia, 1990.)
4. Jordanov B.; Joncheva I. “Practical Manual of Propaedeutics of Prosthetic Stomatology” (Medical Faculty, Sofia, 2000.)

SUBJECTS OF INDIVIDUAL STUDY:

1. Morphology, structure and functional characteristics of incisors and canines.

2. Morphology, structure and functional characteristics of premolars and molars.
3. Prosthetic treatment with artificial crowns.
4. Prosthetic treatment of partially edentulous arches with dental bridges.
5. Prosthetic treatment of partially edentulous arches with removable prosthetic dental appliances – removable partial dentures.
6. Planning and designing of cast metal-framework removable partial dentures.
7. Combined reconstruction of partially edentulous cases utilizing fixed and removable prosthetic appliances.
8. Prosthetic treatment of the completely edentulous patient.

EXAMINATION SYNOPSIS: contains 84 items. Attached copy will be sent to You.

Modules, forming the curriculum of the discipline “Propaedeutics of Prosthetic Dental Medicine”:

1. Morphology and anatomy of the teeth.
2. Types of mandibular movements and devices for reproduction of these movements.
3. Technology of fixed metal dental appliances.
4. Technology of removable dental appliances.
5. Technology of complete dentures.

FACULTY OF DENTAL MEDICINE - SOFIA
DEPARTMENT OF PROSTHETIC DENTAL MEDICINE

LECTURE CURRICILUM ON PROPAEDEUTICS OF
PROSTHETIC DENTAL MEDICINE

1st UNIVERSITY YEAR, 1st SEMESTER

15 study weeks with 2 lecture hours on every other week

Week	Lecture subjects
1	I. Teeth, plains and surfaces for teeth designation and orientation. Teeth functional groups and dental formulas. Teeth sizes. Markers for teeth identification. Teeth morphology – common features.
3	II. Morphology of permanent incisors and canines.
5	III. Phylogenetic evolution of the masticatory apparatus and the maxillofacial region. Morphology of premolars.
7	IV. Morphology of molars.
9	V. Dental wax modeling techniques. P. K. Thomas wax modeling technique. Anatomical and functional wax modeling of tooth crowns on dental plaster models.
11	VI. Ontogenetic development. Theories on tooth development and eruption. Morphology of deciduous teeth – markers for identification.
13	VII. Functional anatomy of the masticatory apparatus. Oral cavity. Bones of the masticatory apparatus: maxilla and mandibula. Innervation of the masticatory apparatus.
15	VIII. Functional anatomy of the masticatory apparatus. Temporomandibular joint. Function of the muscles of the masticatory apparatus: masticatory and mimic muscles. Salivary glands.

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**LECTURE CURRICULUM ON PROPAEDEUTICS OF
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1st UNIVERSITY YEAR, 2nd SEMESTER

Week	Lecture subjects
1	I. Gnathology and Occlusodontics. Main positions of the mandible. Central occlusion (maximum intercuspation), centric relation, myocentric occlusion. Lateral and anterior occlusion. Occlusal anatomy. II. Waxing technique for modeling tooth crowns in real size.
3	III. Common classification of prosthetic dental appliances. Artificial crowns. Tooth preparation for a complete crown. Impressions and working casts for artificial crowns. Plaster bitelock. IV. Pouring of two-layered plaster master model with removable dies. Technology of a metal cast crown utilizing polypropylene coping, known as "Adapta" system. Contouring, finishing and polishing of the metal prostheses.
5	VI. Functional-mechanical equilibrium of the parodontium. Muscle forces. Masticatory pressure. Parodontal pressure. VII. Technology of a metal cast crown utilizing wax coping.
7	VII. Biomechanics of the mandibular movements. Basic movements. Theories on mandubular movements. Types of articulators. VIII. Cast post-and-core build-up.
9	IX. Physiologic-functional changes of the masticatory apparatus. Dental attrition, abrasion and erosion. X. Technology of ceromeric and resin crown.
11	XI. Physiologic-functional changes of the masticatory apparatus. Changes in parodontium. Clinical radix and crown. Changes in the temporomandibular joint (TMJ) and the maxillofacial muscles in the course of partial and complete edentulous progression. XII. Combined crowns. Types of metal-acrylic and porcelain fused to metal (PFM) crowns. Technology of metal-acrylic crown with vestibular acrylic esthetic coverage.
13	XIII. Methods for determination of the functional condition of the masticatory apparatus. XIV. Technology of complete ceramic and PFM crowns.
15	XV. Partial crowns – classification and technology.

FACULTY OF DENTAL MEDICINE – SOFIA
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PRACTICAL EXERCISES CURRICILUM ON PROPAEDEUTICS
OF PROSTHETIC DENTAL MEDICINE

1st UNIVERSITY YEAR, 1st SEMESTER

15 study weeks with 2 hours of practical exercises = 30 study hours

Week	Subjects of practical exercises
1	I. Drawing teeth in triple size - 11/21, 12/22, 13/23, 31/41, 32/42, 33/43.
2	II. Drawing teeth in triple size - 14/24, 15/25, 34/44, 35/45.
3	III. Drawing teeth in triple size - 16/26, 17/27, 36/46, 37/47.
4	IV. Sculpturing of first maxillary permanent incisor.
5	V. Sculpturing of maxillary permanent canine.
6	VI. Sculpturing of mandibular permanent first premolar.
7	VII. Sculpturing of maxillary permanent first molar.
8	VIII. Modeling cone, arch and dash shape on a study plate with relief templates, utilizing dental wax modeling technique.
9	IX. Recreation of maxillary first premolar on a study plate, utilizing
10	
11	X. Preparation and mounting of study plaster models in articulator. Carving teeth 11, 15, 17 and 31, 34, 36 for their following recreation, utilizing dental wax modeling technique.
12	XI. First modeling of teeth 11, 15, 17 и 31, 34, 36, utilizing dental wax modeling technique.
13	
14	XII. Second modeling of teeth 11, 15, 17 и 31, 34, 36, utilizing dental wax modeling technique.
15	

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PRACTICAL EXERCISES CURRICILUM ON PROPAEDEUTICS
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1st UNIVERSITY YEAR, 2nd SEMESTER

15 study weeks with 4 hours of practical exercises = 60 study hours

Week	Subjects of practical exercises
1	I. Prosthetic treatment of tooth crown destruction. Types of artificial crowns. Mounting of the working models with removable dies in occludator (non-adjustable articulator).
2	II. Technology of cast metal-acrylic crown, utilizing the «Adapta» system on tooth 24.
3	
4	III. Technology of cast metal crown, utilizing the «Adapta» system on tooth 26.
5	
6	IV. Technology of cast metal crown, utilizing the wax dipping
7	
8	V. Technology of cast metal crown, utilizing the wax dipping
9	
10	V. Technology of cast metal crown on tooth 26 and metal-acrylic crown on tooth 24 – contouring, applying the esthetic acrylic coverage, finishing and polishing.
11	VII. Technology of cast metal crowns on teeth 45 and 47 - contouring, finishing and polishing.
12	VIII. Post build-up of dental crowns with severe crown destruction. Cast post-and-core on tooth 21 – preparing, modeling.
13	IX. Post build-up of dental crowns with severe crown destruction. Cast post-and-core on tooth 21 – contouring and adjusting.
14	X. Technology of acrylic crown on tooth 21 - modeling, mold preparation, polymerization of acrylics.
15	XI. Technology of acrylic crown on tooth 21 - contouring, finishing and polishing. Presentation of the semestrial work to the leading lecturer.

DEPARTMENT OF PROSTHETIC DENTAL MEDICINE

LECTURE CURRICILUM ON PROPAEDEUTICS OF OF PROSTHETIC DENTAL MEDICINE

15 study weeks with 2 lecture hours on every weeks = 30 hours

Week	Lecture themes
	Prosthetic rehabilitation of partially edentulous dentitions by fixed partial dentures
1.	I. Bridge prostheses – components, pontic and abutment retainers Technology of mandibular hygienic bridge prosthesis using the Adapta technique.
2.	II. Bridge prostheses – classification. Technology of maxillary esthetic bridge with a modified ridge lap pontic using the Adapta technique
3.	III. Bridge prostheses – basic principles of construction
4.	IV. Types of bridge prostheses. Cantilever bridges. Immediate bridges. Complex FDPs with non-rigid connectors . Resin retained bridges with selectively opened partial retainers and Maryland retainers. Bridges on implants. Model-cast bridges.
5.	V. Technological characteristic and mistakes of bridges fabricated using different technologies
6.	VI. Resin-based partial dentures. Components: clasps (wrought, cast and resin). Impression making for partial dentures and pouring of a working cast. Technology of bent clasps (single-arm, two-arm and Jackson clasp)
7.	VII. Other components of removable partial dentures: precision attachments, telescope and bar attachments. Connecting elements – connectors. Technology of wire major connectors. Indirect retainers (minor connectors, occlusal rests, Кипмайдери). Mounting casts.
8.	VIII. Basic principles of planning and construction of RPD. Construction principles of resin-based partial dentures with wrought clasps. Technology of resin-based RPD in the upper and lower jaw.
9.	IX. Construction of the metal framework of RPD. Investing.
10.	X. Technology of the metal framework RPD.
11.	XI. Technology of immediate RPD. Fixing of broken or damaged RPD
12.	XII. Processing errors in the partial denture technique.
13.	XIII. Types of partial dentures. Combining RPDs and FDPs in the prosthetic rehabilitation of the partially edentulous dentition.
14.	XIV. Fundamentals of prosthetic splinting – basic principles
15.	XV. Technology of fixed and removable splints.

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**LECTURE CURRICILUM ON PROPAEDEUTICS OF
OF PROSTHETIC DENTAL MEDICINE**

2nd UNIVERSITY YEAR, IV SEMESTER

15 study weeks with 2 lecture hours on every two weeks

Week	Lecture themes:
	Prosthetic rehabilitation of totally edentulous patients
1	I. Technology of complete dentures. Impression trays, impressions and working casts II. Constructing an individual tray
3	III. Pouring of functional working casts, outlining the boundaries and placing reference marks of the complete dentures IV. Constructing baseplates and occlusal rims. Determining the centric occlusal position of the mandible and placing landmarks?
5	V. Selection of artificial teeth and esthetic aspects of the dentition VI. Orthognathic arrangement of artificial teeth according to Gysi
7	VII. Esthetic requirements for the arrangement of artificial teeth for complete dentures. Crossbite, prognathic and progenic arrangement VIII. Waxing , flasking, polymerization, cleaning and polishing of the complete dentures
9	IX. Types of complete dentures – comparative assessment X. Mistakes in the technology of complete dentures
11	XI. Gnathology – intraoral graphic registration according to Gerber XII. Occlusal articulation of complete dentures in an adjustable articulator
13	XIII. Retention and stabilization of complete dentures – mechanical and biomechanical factors?/means? XIV. Retention and stabilization of complete dentures – physical and biophysical factors/means
15	XV. Technology of maxillofacial prosthesis

FACULTY OF DENTAL MEDICINE – SOFIA
DEPARTMENT OF PROSTHETIC DENTAL MEDICINE

PROGRAM FOR THE WORKSHOPS
IN PRE-CLINICAL PROSTHETIC DENTISTRY

II year, III semester (WINTER)
15 weeks, 6 hours every week = 90 academic hours

Week	Lecture themes
Fixed Dental Prosthesis (FDP)	
1	I. Bridge prostheses. Technology of mandibular hygienic bridge prosthesis using the Adapta technique (34-37). Fabrication of working cast with removable dies, plastic copings, waxing.
2	
3	II. Bridge prostheses. Technology of maxillary esthetic bridge with a modified ridge lap pontic using the Adapta technique (13-16). Fabrication of working cast with removable dies, plastic copings, waxing.
4	
5	III. Bridge prostheses. Technology of mandibular hygienic bridge prosthesis using the Adapta technique (34-37). Finishing and polishing
6	IV. Bridge prostheses. Technology of maxillary esthetic bridge with a modified ridge lap pontic using the Adapta technique (13-16). Finishing and polishing
7	V. Bridge prostheses. Technology of maxillary esthetic bridge with a modified ridge lap pontic using the Adapta technique (13-16). Fabrication of resin esthetic veneer.
Removable partial dentures (RPD)	
8	VI. Retention and bracing of the RPD's. Clasps. Fabrication of single arm wrought clasp.
9	VII. Fabrication of two-arm clasp and Jackson clasp. Fabrication of a wrought major connector for mandibular RPD.
10	VIII. Technology of the RPD. Fabrication of a shellac record base and occlusion wax rims. IX. Recording the maxillomandibular relationships. Mounting the casts.
11	X. Technology of the acrylic- based RPD. Selecting prosthetic teeth. Arranging the prosthetic teeth on the upper and lower prosthesis. XI. Waxing and flasking the dentures.
12	XII. Technology of the acrylic-based RPD. Processing acrylic resin. Finishing and polishing of the dentures.
13	XIII. Fabrication of master models by pouring stock tray alginate impression from upper and lower jaws.
14	XIV. Fixing a broken RPD
15	XVI. Planning the design of the metal framework of the RPD. Combining RPD and FDP. Seminar.

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PROGRAM FOR THE WORKSHOPS
IN PRE-CLINICAL PROSTHETIC DENTISTRY

II year, IV semester (summer)

15 weeks, 4 hours weekly = 60 academic hours for the IV semester

Week	Lecture themes
Prosthetic treatment of the edentulous patient – total prosthesis	
1.	I. Prosthetic treatment of edentulous patient. Tracing the boundaries. Fabrication of custom tray for upper and lower jaw.
2.	II. Fabrication of the record base and occlusal rims for upper and lower jaw. Placing the reference marks on the casts and fixing the centric position. Mounting the casts on an articulator.
3.	III. First arrangement of the prosthetic teeth according to Gysi. Arranging the anterior teeth, premolars and molars on the upper complete denture.
4.	IV. First arrangement of the prosthetic teeth according to Gysi. Compensating curves and arrangement of the prosthetic teeth on the lower complete denture.
5.	V. Second arrangement of the prosthetic teeth according to Gysi. Arranging the anterior teeth, premolars and molars on the upper jaw.
6.	VI. Second arrangement of the prosthetic teeth according to Gysi. Compensating curves and arrangement of the prosthetic teeth on the lower complete denture.
7.	VII. Third arrangement of the prosthetic teeth according to Gysi on the upper and lower complete dentures.
8.	VIII. Waxing upper and lower total dentures.
9.	IX. Flasking the dentures.
10.	X. Packing the mold and processing the acrylic resin.
11.	XI. Retrieving the dentures from the mold, finishing and polishing of the complete dentures.
12.	XII. Pouring working casts based on an anatomical alginate impression from one's own mouth. Fabrication of full palatal acrylic baseplate – waxing and flasking.
13.	XIII. Fabrication of a full palatal acrylic baseplate – packing and processing the resin, finishing, intraoral adjustments and polishing.
14.	XIV. Adjusting the occlusion of the complete dentures – occlusal principles
15.	XV. Presenting the complete dentures and the baseplates to the course director . Identifying natural teeth.

Partially edentulous dentitions/jaws

Fixed partial dentures

Wrought, wire, bent clasps – телени огънати куки

Glossary (according to MacEntee : The Complete Denture – A Clinical
Pathway)(Iwao Hayakawa – Principles and Practices of Complete Dentures):

Complete dentures

Impression trays – отпечатъчни лъжици

Impressions – отпечатъци,
construction of an individual tray

Study casts (working casts)

Master casts

Outlining the boundary

Reference markings

Wax rims (occlusion rims)

Shellac baseplate

Flasking- опаковане на протезите в кювети

Border molding – Кантиране на инд.лъжица