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MINISTRY OF EDUCATION AND SCIENCE OF RUSSIA

**Federal State Budgetary Educational Institution
of higher education**

**«I.N. Ulianov Chuvash State University»
(FSBEI of HE «I.N. Ulianov Chuvash State University»)**

Medical Faculty

Department of Propaedeutics of Dental Diseases and New Technologies

«APPROVE»

Vice-rector for Academic Affairs


I.E. Poverinov

« 13 » 04 2022

**Working programs of the discipline (module)
«Дентальная имплантация в стоматологии / Dental Implantation
in Dentistry»**

Direction of training / specialty 31.05.03 Стоматология / Dentistry
Graduate's qualification Врач-стоматолог / Dental Practitioner

Direction (profile) / specialization «Dentistry»

Form of training – очная / intramural

Course – 5

Term – 10

Total academic hours/credit points – 108/3

The year of beginning the training – 2022

The fundamental document for compiling the working program of the discipline (module)
Федеральный государственный образовательный стандарт высшего образования -
специалитет по специальности 31.05.03 Стоматология (приказ Минобрнауки России от
12.08.2020 г. № 984)

Approved by:

Head of the department, Candidate of Medical Sciences L.I. Nikitina

Professor, Doctor of Medical Sciences L.R. Mukhamedzhanova

The working program was approved at the meeting of the Department of Propaedeutics of
Dental Diseases and New Technologies,

25.03.2022, protocol № 8

Head of the department L.I. Nikitina

Approved by

Dean of the Medical Faculty V.N. Diomidova

Acting Head of the Educational and Methodological Department E.A. Shirmanova

1. The purpose and objectives of training in the discipline (module)

The purpose of the discipline - - acquiring theoretical skills in prosthetics on dental implants;

- to master the practical skills of inserting dental implants into the bone of the lower and upper jaw.

The objectives of the discipline - - to increase knowledge in the field of dental implants;

- to develop the ability to navigate the issues of dental implantology when choosing a method for the restoration of missing teeth;

- to be able to provide emergency treatment for patients with complications.

2. The place of practical training in the structure of the educational program of higher education

The discipline «Дентальная имплантация в стоматологии / Dental Implantation in Dentistry» относится к части учебного плана формируемой участниками образовательных отношений refers to the mandatory part in the curriculum of the educational program of higher education (hereinafter referred to as the EP of HE) in the field of training / specialty 31.05.03 Стоматология, direction (profile) / specialization of the program «Dentistry».

Previous academic disciplines (modules) and (or) practices that form the knowledge, skills and abilities necessary for training in the discipline (module):

Гнатология в ортодонтии / Gnathology in Orthodontics

Ортопедическая стоматология / Orthopaedic Dentistry

Терапевтическая стоматология / Therapeutic Dentistry

Челюстно-лицевая хирургия / Maxillofacial Surgery

Детская стоматология / Pediatric Dentistry

Ортодонтия и детское протезирование / Orthodontia and Pediatric Prosthetics

Хирургическая стоматология / Surgical Dentistry

Топографическая анатомия и оперативная хирургия головы и шеи / Topographic Anatomy and Operative Surgery of the Head and Neck

Физиотерапия в стоматологии / Physiotherapy in Dentistry

Цифровые технологии в медицине / Digital Technologies in Medicine

Материаловедение в ортопедической практике / Materials Science in Orthopedic Practice

Основы материаловедения в стоматологии / Fundamentals of Materials Science in Dentistry

Медицинская информатика и искусственный интеллект в медицине / Medical Informatics and Artificial Intelligence in Medicine

Пропедевтическая стоматология / Propaedeutic Dentistry

Профилактическая стоматология / Preventive Dentistry

Knowledge, skills and abilities formed as a result of training in a discipline (module) are necessary when teaching in the following disciplines (modules) and (or) practices:

Терапевтическая стоматология / Therapeutic Dentistry

Ортопедическая стоматология / Orthopaedic Dentistry

Гнатология в ортодонтии / Gnathology in Orthodontics

Челюстно-лицевая хирургия / Maxillofacial Surgery

Подготовка к сдаче и сдача государственного экзамена / Preparation for passing and passing the state exam

3. Planned learning outcomes in the discipline (module), correlated with the planned learning outcomes

Planned learning outcomes in the discipline (module), correlated with the planned learning outcomes

Code and name of the competence	Code and name of the competence achievement	Descriptors for the indicator of competence achievement (learning)
ПК-2 Способен назначить, контролировать эффективность и безопасность немедикаментозного и медикаментозного лечения / He/she is able to prescribe, monitor the effectiveness and safety of non-drug and pharmaceutical treatment	ПК-2.1 Способен разработать план лечения, назначить лекарственные препараты, немедикаментозное лечение, медицинские изделия в соответствии с действующими порядками оказания медицинской помощи, клиническими рекомендациями (протоколами лечения) по вопросам оказания медицинской помощи с учетом стандартов медицинской помощи / He/she is able to develop a treatment plan, prescribe medications, non-drug treatment, medical devices in accordance with current procedures for providing medical care, clinical recommendations (treatment protocols) on the issues of providing medical care, taking into account the standards of medical care	clinical picture, basic treatment methods (medical indications, contraindications, complications) of salivary gland diseases, congenital, acquired anomalies of teeth, dental rows, alveolar processes, jaws and face; methods of treatment of dento-alveolar, facial anomalies in children and adults; principles of construction and rules of operation of medical devices (dental equipment); modern medical devices (equipment, instruments and materials) used in dentistry. develop optimal treatment tactics for dental pathology in children and adults, taking into account the general medical condition and further rehabilitation of the patient; justify the scheme, plan and tactics of patient management, medical indications and contraindications for surgery. methods for the treatment of maxillary, facial anomalies in children and adults; basic methods of auxiliary surgical treatment of patients with maxillofacial anomalies.
ПК-2 Способен назначить, контролировать эффективность и безопасность немедикаментозного и медикаментозного лечения / He/she is able to prescribe, monitor the effectiveness and safety of non-drug and pharmaceutical treatment	ПК-2.2 Способен контролировать эффективность и безопасность назначенного лечения, при необходимости корректировать его в соответствии с действующими порядками оказания медицинской помощи, клиническими	topographical anatomy of the head, maxillofacial region, peculiarities of blood supply, innervation and lymphatic system, structure of teeth, embryology of maxillofacial region, main embryogenesis disorders; features of medical care in emergency and urgent forms for dental diseases. justify the scheme, plan and

	<p>рекомендациями (протоколами лечения) по вопросам оказания медицинской помощи с учетом стандартов медицинской помощи / He/she is able to monitor the effectiveness and safety of the prescribed treatment, if necessary, adjust it in accordance with current procedures for providing medical care, clinical recommendations (treatment protocols) on providing medical care, taking into account the standards of medical care</p>	<p>tactics of patient management, medical indications and contraindications for surgery; develop optimal tactics for the treatment of dental pathology in children and adults, taking into account the general medical condition and the further rehabilitation of the patient. the treatment of dental and facial anomalies in children and adults; principles, techniques and methods of anaesthesia in dentistry; principles of construction and rules of operation of medical devices (dental equipment); modern medical devices (equipment, instruments and materials) used in dentistry.</p>
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4. Structure, scope and content of the discipline (module)

Educational activities in the discipline (module) are carried out:

- in the form of students' face-to-face work with the teaching staff of the organization and (or) persons involved by the organization to implement the educational programs on other terms (hereinafter - contact work);

- in the form of students' independent work.

Face-to-face work can be classroom-based, extramural, as well as it can be conducted in an electronic information and educational environment (EIEE).

Learning sessions in the discipline (module) and interim assessment of students are conducted in the form of face-to-face work and in the form of students' independent work.

During learning sessions in the discipline (module) face-to-face work includes: lecture-type classes, seminar-type classes and (or) group consultations, and (or) individual work of students with the teaching staff of the organization and (or) persons involved by the organization to implement the educational programs on other terms (including individual consultations).

Legend:

Lec – lectures, Lab – laboratory work, Pr – practical classes, ICW – individual face-to-face work, IW – independent work.

4.1. Content of the discipline (module)

Section name	The section's content	Formed competences	Competence achievement indicator
Introduction to dental implantology. History of the development of implantology.	Introduction to dental implantology. History of the development of implantology. Materials used in dental implantation.		
Introduction to dental	Structural features of		

implantology. History of the development of implantology.	modern dental intraosseous implants.		
Dental implant bone morphology.	Bone tissue morphology. Morphological features of bone wound healing. Stages of healing. Biomechanics of the bone-implant junction.		
Diagnosis for dental implants. The surgical and orthopaedic stages of dental implantation.	Diagnosis for dental implants. Preoperative assessment of the patient's functional status and preparation for dental implants. Clinical methods of investigation. Instrumental methods of investigation. Special orthopaedic research and planning methods for dental implants. Surgical and orthopaedic phases of dental implantation.		
Specific features of implant dentures in different clinical situations. Complications of dental implants.	Specific features of implant dentures in different clinical situations. Prosthetics for single defects in the anterior region, small included defects in the lateral regions of the dentition. Prosthetics for defects in the distal parts of the teeth. Prosthodontics in the absence of a large number of teeth. Complications of dental implants.		
Personal contact work	Personal contact work (credit)		

4.2. Scope of the discipline and types of academic work

Forms of control and types of academic work	Labor intensity of the discipline (module)	
	10	total
1. Face-to-face work:	42,2	42,2
In-class learning in total, including:	42	42

Лекционные занятия (Лек)	14	14
Лабораторные занятия (Лаб)	28	28
Индивидуальная контактная работа (ИКР)	0,2	0,2
2. Independent work of the student:	65,8	65,8
3. Intermediate certification (exam) (зачет)	3а	3а
Total:	academic hours	108
	credit units	3

№ item	The section's (theme's) name	Face-to face work, including in the electronic information and educational environment, academic hours				IW, academic hours	Total, academic hours
		Lect.	Pr.	Lab.	ICW		
	Introduction to dental implantology. History of the development of implantology.						
1	Introduction to dental implantology. History of the development of implantology. Materials used in dental implantation.	1		2		8	11
2	Structural features of modern dental intraosseous implants.	1		2		8	11
	Dental implant bone morphology.						
3	Bone tissue morphology. Morphological features of bone wound healing. Stages of healing.	2		4		8	14
4	Biomechanics of the bone-implant junction.	2		4		8	14
	Diagnosis for dental implants. The surgical and orthopaedic stages of dental implantation.						
5	Diagnosis for dental implants. Preoperative assessment of the patient's functional status and preparation for dental implants. Clinical methods of investigation. Instrumental methods of investigation.	2		4		8	14

6	Special orthopaedic research and planning methods for dental implants. Surgical and orthopaedic phases of dental implantation.	2		4		8	14
	Specific features of implant dentures in different clinical situations. Complications of dental implants.						
7	Specific features of implant dentures in different clinical situations. Prosthetics for single defects in the anterior region, small included defects in the lateral regions of the dentition.	2		4		8	14
8	Prosthetics for defects in the distal parts of the teeth. Prosthodontics in the absence of a large number of teeth. Complications of dental implants.	2		4		9,8	15,8
	Personal contact work						
9	Personal contact work (credit)				0,2		0,2
Total academic hours		14		28	0,2	65,8	108

4.3. Summary of the discipline (module), structured by sections (topics)

Раздел 1. Introduction to dental implantology. History of the development of implantology.

Тема 1. Introduction to dental implantology. History of the development of implantology. Materials used in dental implantation.

Лекционное занятие. Introduction to dental implantology. History of implantology. Leading implantologists of the world. Materials used for dental implants. Classification of dental implants. Management of patients with dental implants.

Лабораторное занятие. Introduction to dental implantology.

History of the development of implantology.

Materials used in dental implantation.

Organisational aspects of the use of dental implants in practical dentistry.

Results of implantation according to work data of the last 10-20 years.

Materials used in dental implantation.

Тема 2. Structural features of modern dental intraosseous implants.

Лекционное занятие. Structural features of modern dental intraosseous implants. Complex method of examination of the patient before dental implantation. Methods of radiological examination, patient treatment plan.

Лабораторное занятие. Structural features of modern dental intraosseous implants.

Radiological examination methods, patient treatment plan.

Раздел 2. Dental implant bone morphology.

Тема 3. Bone tissue morphology. Morphological features of bone wound healing. Stages of healing.

Лекционное занятие. Bone tissue morphology. Morphological features of bone wound healing. Stages of healing. Elements of implants.

Лабораторное занятие. Bone tissue morphology.

Morphological features of bone wound healing.

Stages of healing.

Elements of implants.

Тема 4. Biomechanics of the bone-implant junction.

Лекционное занятие. Biomechanics of the bone-implant connection. Intraosseous implant systems. Complications and prevention.

Лабораторное занятие. Biomechanics of the bone-implant connection.

Intraosseous implant systems.

Complications and prevention.

Раздел 3. Diagnosis for dental implants. The surgical and orthopaedic stages of dental implantation.

Тема 5. Diagnosis for dental implants. Preoperative assessment of the patient's functional status and preparation for dental implants. Clinical methods of investigation. Instrumental methods of investigation.

Лекционное занятие. Diagnostics for dental implants. Preoperative assessment of the patient's functional status and preparation for dental implants. Clinical methods of investigation. Instrumental methods of investigation. CT scan of the upper and lower jaw.

Лабораторное занятие. Diagnostics for dental implants.

Preoperative assessment of the patient's functional status and preparation for dental implants. Clinical methods of investigation.

Instrumental methods of investigation.

CT scan of the upper and lower jaw.

Тема 6. Special orthopaedic research and planning methods for dental implants. Surgical and orthopaedic phases of dental implantation.

Лекционное занятие. Special orthopaedic research and planning methods for dental implants. Surgical and orthopaedic phases of dental implantation. Preparation of bone bed tissues for dental implants.

Periodontal biomechanics, facial skull bones and their elastic-stress states in prosthetics with intraosseous implants.

Лабораторное занятие. Special orthopaedic research and planning methods for dental implants.

Surgical and orthopaedic phases of dental implantation.

Biomechanics of the periodontium, the bones of the facial skull and their elastic-stress states in prosthetics with intraosseous implants.

Раздел 4. Specific features of implant dentures in different clinical situations. Complications of dental implants.

Тема 7. Specific features of implant dentures in different clinical situations. Prosthetics for single defects in the anterior region, small included defects in the lateral regions of the dentition.

Лекционное занятие. Особенности зубного протезирования на имплантатах в различных клинических ситуациях. Протезирование при одиночном дефекте в переднем отделе зубного ряда. При небольших включенных дефектах в боковых отделах зубного ряда.

Протезирование при полной адентии. Методика «Всё на четырёх». Скуловые имплантаты.

Лабораторное занятие. Протезирование при дефектах в переднем отделе зубного ряда.

Непосредственная нагрузка.

Протезирование при небольших включенных дефектах в боковых отделах зубного ряда.

Некорректная установка протеза.

Развинчивание фиксирующих супраструктур винтов.

Супраструктуры, присоединяющиеся непосредственно к имплантату одним винтом.

Тема 8. Prosthetics for defects in the distal parts of the teeth. Prosthodontics in the absence of a large number of teeth. Complications of dental implants.

Лекционное занятие. Успехи и неудачи дентальной имплантации. Осложнения. Протезирование при дефектах в дистальных отделах зубных рядов. Протезирование при отсутствии большого количества зубов и при полной адентии. Осложнения, возникающие при имплантации зубов. Периимплантиты. Мукозиты. Лечение, профилактика. Реимплантация с пластикой костного дефекта.

Лабораторное занятие. Протезирование при отсутствии большого количества зубов.

Протезирование при патологии височно-нижнечелюстного сустава.

Клинические и лабораторные этапы изготовления и установки зубных протезов.

Осложнения на хирургическом этапе имплантации.

Осложнения на ортопедическом этапе и в процессе диспансерного наблюдения за пациентами.

Профилактика и лечение осложнений дентальной имплантации.

5. Educational technologies

To implement the competence-based approach in the study of the discipline (module), extensive use of active and interactive methods of conducting classes in the educational process is provided:

The following forms of classes and educational technologies are used in the discipline:

lectures - for the presentation of new material an interactive form of the lesson can be used;

multimedia tools (electronic boards, projectors) - to improve the quality of perception of the studied material;

laboratory classes - to develop clinical thinking and actively seek ways and means of solving the problem in question.

6. Forms of control and types of evaluation materials for the discipline (module)

Intermediate attestation - evaluation of intermediate and final results of training in the discipline (module).

6.1. Sample list of questions for the credit test

1. What are dental implants?
2. the biochemical characteristics of implant prosthetics.
3. The history of implantology.
4. Planning of implant surgery. Indications and contraindications.
5. Analysis of radiographs.
6. What factors ensure long-term effectiveness of dental implants?
7. The equipment of the operating theatre during implantation.
8. Who is involved in the fabrication of prosthetic crowns to be placed on the dental implant?
9. How often should the dental implants be checked after placement?
10. What is a dental implant?
11. How long does it take to insert a dental implant? Techniques. Stages.
12. Factors contributing to the rejection of dental implants.
13. Types of dental implants.
14. What investigations are carried out before dental implants?
15. What is osseointegration?
16. Osteointegration in implantology.
17. What is a sinus lift?
18. What is guided osseointegration?
19. Why do I usually have to wait several months for a denture after a dental implant?
20. Can a new dental implant be inserted after the old one has collapsed?
21. What is the material used for implants?
22. What are the advantages of dental implants over traditional dentures?
23. The technique of dental implantation.
24. Are there any allergic reactions to implants?
25. Is general anaesthesia required for the placement of implants?
26. Are there any contraindications to implants for the elderly?
27. Comparative characteristics of different implant systems.
28. Can implants be placed immediately after tooth extraction? Indications. Contraindications.
29. Possible complications after tooth implantation.
30. Post-implantation follow-up programme for patients. Rehabilitation. Oral hygiene.
31. Inlays. Types. Classification according to manufacturing method. Indications and contraindications for use. Materials.
32. Veneers. Lumineers. Features. Indications and contraindications. Fabrication methods.
33. Frameless crowns "ARTGLASS". Technological peculiarities. Advantages and disadvantages of the method. Application in paediatric practice.
34. CAD/CAM systems. Factory automation and CAD systems. CEREC. Advantages.
35. Zirconia crowns. PRETTAU technology. Advantages. Technologies. Indications and contraindications.
36. Removable dentures. Modern materials and technologies for fabrication of removable dentures. Acry Free dentures. Nylon dentures. Advantages and disadvantages. Indications for application.
37. Peculiarities of prosthesis on implants. Types of impressions. Recommended impression materials. Clinical and laboratory stages.

38. Dental anomalies. Orthodontic treatment methods. Bracket systems, classifications. Principle of action. Advantages and disadvantages of various braces.
 39. Timing of treatment. CAD/CAM systems in orthodontics.
 40. Dental implantation. Indications. Contraindications. Stages. Complications.
 41. Intraosseous implants. Classification of implants. Indications for use. Conditions, state of bone tissue before implantation.
 42. Types of implantation. Choice and indications. Factors influencing the conduct of the intervention. Anatomic-topographic and clinical features.
 43. Single-stage implantation and immediate loading. Types. Implant prosthetics. Advantages, indications.
 44. Basal implants. Features of basal implantology. Devices and installation technique. Indications and contraindications.
 45. Postimplantation period. Dynamic monitoring (evaluation of surrounding soft tissue, integration of soft and hard tissue in the implant area).
 46. Mucositis and peri-implantitis. Signs. Methods of treatment (therapeutic and surgical). Application of modern technologies in treatment of peri-implantitis (ultrasonic scalers, diode lasers).
 47. Directed tissue regeneration. Biological basis of bone grafting. General principles of bone grafting.
 48. Osteoplastic materials. Classification (according to their origin, expression of osteoinductive potential). Representatives.
 49. Biological osteoplastic materials. Classification. Main properties. Advantages and disadvantages of the materials. Representatives.
 50. Autogenous bone grafts. Methods of harvesting bone tissue. Instruments. Materials and medicines.
 51. Biocompatible materials. Types. Classification according to expression of osteoconductive potential and interaction with bone tissue. Characteristics of properties. Representatives.
 52. Composite osteoplastic materials. Characteristics of properties. Application. Main representatives.
 53. Alloplastic bioactive materials. Classification. Basic properties. Advantages. Area of application.
 54. Membranes for directed tissue regeneration. Classification. Basic properties and area of application. Representatives.
 55. Causes of bone tissue deficit. Ways to preserve maximum tissue volume.
 56. Optimisation of the well during and after extraction. Methods and instruments (collagen membranes, cones, hemostatic sponges, etc.). Representatives.
 57. Soft tissue plastics. "Pink aesthetics. Mucograft. Properties, indications for use.
 58. Plasmolifting. Characteristics of the method. Indications and contraindications. Stages of the procedure. Side effects. Recommendations for preparing for the procedure.
 59. PRP. Rationale for the method. Obtaining platelet-rich plasma. Application. The main differences between plasmolifting and the PRP method.
 60. Methods to slow down recession of the extraction site after extraction. Atraumatic methods of tooth extraction (system EASY X-TRAC, PHYSICS forceps, Rusakova-Zhelezno method etc.).
 61. Tooth saving operation. Resection of the tooth apex. Instruments (special rotational tips, ultrasonic, microsurgical mirrors, corkscrews). Materials for retrograde filling of root canals.
 62. Non-injection types of anesthesia. Indications and contraindications for the method. Application of physical methods of anesthesia in dentistry (electromagnetic waves,

electric current etc.). Innovative developments.

6.2. Sample list of questions for the examination

There is no examination.

6.3. Suggested themes of term papers (projects)

There are no courseworks.

6.4. Suggested themes of term projects

There are no coursework projects.

6.5. Suggested topics of calculation and graphic works

There are no calculation and graphic works.

7. Educational, methodological, informational and software support of the discipline (module)

The electronic catalog and electronic information resources provided by the scientific library of the FSBEI of HE "I. N. Ulianov Chuvash State University" are available at the link <http://library.chuvsu.ru/>

7.1. Regulatory documents, standards and rules

7.2. Recommended basic educational and methodological literature

№ item	Name
1	

7.3. Recommended supplementary educational and methodological literature

№ item	Name
1	

7.4. List of resources of the "Internet" information and telecommunication network

№ item	Name	Link to the resource
1	Единое окно к образовательным ресурсам [Электронный ресурс]. – Режим доступа: http://window.edu.ru	http://window.edu.ru
2	Российская государственная библиотека [Электронный ресурс]. – Режим доступа: http://www.rsl.ru	http://www.rsl.ru
3	Российская национальная библиотека [Электронный ресурс]. – Режим доступа: http://www.nlr.ru	http://www.nlr.ru
4	Научная электронная библиотека «Киберленинка» [Электронный ресурс]. – Режим доступа: http://cyberleninka.ru	http://cyberleninka.ru

7.5. Software, professional databases, information and reference systems, electronic educational resources and electronic library systems

Software, professional databases, information and reference systems provided by the Informatization Department of the FSBEI of HE "I.N. Ulianov Chuvash State University" are available for download at the link <http://ui.chuvsu.ru> //. The Unified Register of Russian programs for electronic computers and databases, including freely distributed ones, is available at the link reestr.minsvyaz.ru/reestr/.

7.5.1. Licensed and freely distributed software

Microsoft Windows operating System and/or Unix-like operating system and/or mobile operating system;

Office software packages:

Microsoft Office and/or LibreOffice
and (or) OpenOffice and (or) analogues;

Browsers, including Yandex.Browser.

List of software:

OpenOffice 3.3.0

7.5.2. Lists of professional databases and (or) information reference systems and (or) electronic library systems and (or) electronic educational resources

Electronic library system IPRbooks

Electronic library system «Lan Publishing House»

Consultant of a Student. Student Electronic Library

8. Material and technical support of the discipline

Classrooms for lecture-type classes in the discipline are equipped with a teacher's automated workplace consisting of: a personal computer/laptop, multimedia equipment with a screen and (or) SMART interactive whiteboard/SMART TV.

The premises for students' independent work are equipped with computer equipment enabling to connect to the Internet and provide access to the electronic information and educational environment of the FSBEI of HE "I.N. Ulianov Chuvash State University".

№ item	Lesson type	Brief description and characteristics of the composition of installations, measuring and diagnostic equipment, computer equipment and experimental automation tools
1	Зачёт	Учебная аудитория для занятий семинарского типа, текущего контроля и промежуточной аттестации. Оборудование: учебная доска, учебная мебель, переносное мультимедийное оборудование (проектор, экран, ПК или ноутбук), лабораторные стенды
2	Лаб	Учебная аудитория для занятий семинарского типа, текущего контроля и промежуточной аттестации. Оборудование: учебная доска, учебная мебель, переносное мультимедийное оборудование (проектор, экран, ПК или ноутбук), лабораторные стенды

3	Лек	Учебная аудитория для занятий семинарского типа, текущего контроля и промежуточной аттестации. Оборудование: учебная доска, учебная мебель, переносное мультимедийное оборудование (проектор, экран, ПК или ноутбук), лабораторные стенды
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9. Means of adapting the discipline teaching to the needs of persons with physical conditions

If necessary, persons with physical conditions can be offered one of the following options for perceiving information, taking into account their individual psychophysical characteristics:

1) using e-learning and distance learning technologies.

2) using special equipment (enginery) and software in accordance with the students' health restrictions in the Training Centers for Persons with Disabilities and Physical Conditions (hereinafter referred to as special needs) available at the university.

In the course of training, if necessary, the following conditions are provided for persons with visual, hearing and musculoskeletal disorders:

- for persons with visual impairments: educational and methodological materials in printed form in enlarged font; in the form of an electronic document; in the form of an audio file (conversion of educational materials into audio format); in printed form in Braille; individual consultations involving a tactile interpreter; individual assignments and consultations.

- for people with hearing impairments: educational and methodological materials in printed form; in the form of an electronic document; video materials with subtitles; individual consultations involving a sign language interpreter; individual assignments and consultations.

- for persons with disorders of the musculoskeletal system: educational and methodological materials in printed form; in the form of an electronic document; in the form of an audio file; individual assignments and consultations.

10. Guidelines for students to perform independent work

The purpose of the student's independent work (IW) is to consolidate the theoretical knowledge gained and to acquire practical skills in using and performing research of algorithms and data structures when designing application software programs. IW includes independent study of educational issues, preparation for laboratory classes, performing calculation and graphic work, preparation for a test and an exam.

The list of questions and tasks for independent work to prepare for laboratory classes is given in the corresponding methodological instructive regulations in the description of each laboratory work.

The list of questions and tasks for independent work to carry out calculation and graphic work is given in the relevant methodological instructive regulations.

Independent work of students is an integral part of the educational process. The purpose of students' independent work is to master fundamental knowledge, professional skills, experience of creative, research activities.

The main forms of independent work of students are: classroom independent work under the guidance and supervision of a teacher (at lectures, laboratory classes, etc. and consultations); extracurricular independent work under the guidance and supervision of a teacher (at consultations, during the research work), extracurricular independent work -

planned training, educational research, research work of students carried out outside class time on the task and with the method

When performing independent work, students should rely mainly on the knowledge and skills acquired during lectures and laboratory classes. This provides the necessary basis for further in-depth study of other disciplines. However, this knowledge needs to be intensified.

The forms of students' independent work provided by the discipline "Dental implantation in dentistry" include:

- Preparation for laboratory classes.
- Independent study of training issues.
- Preparation for credit.

The following sources are recommended for independent preparation for laboratory classes, study of academic issues, preparation for the test:

- lecture notes and materials of practical, laboratory, group and individual classes;
- Academic (scientific) literature in the relevant area;
- internet resources.

At the beginning of the course the teacher informs students about the forms, types and content of independent work, explains the requirements for the results of independent work, as well as forms and methods of control and evaluation criteria.

According to the questions proposed by the teacher learner studies the content of the recommended on the topics of sections, chapters, paragraphs, textbooks, textbooks and monographs; statistical collections; reviews; articles in the periodical press. Forms of control of such individual work are quizzes in laboratory classes, checking notes and conclusions.

Individual creative assignments include:

- preparation of analytical individual work on the topics proposed by the teacher. The assignment is assessed on the basis of the quality of the analysis performed, identification of factors, causes, conditions of changes, trends; substantiating conclusions; proposals made by the author;

- preparation for discussion, business games, etc;
- critical review of articles from the list recommended by the teacher, etc.

Quizzes are a form of current control. They are designed to highlight the main provisions of the discipline, understand the features based on theory, repeat and consolidate the learning material, check knowledge, control residual knowledge.

Topics for independent study, students need to take notes. The abstract shall briefly outline the main essence of the training material, provide the necessary tabular data, charts.

The main stages of independent study of academic issues:

1. Initial familiarisation with the material of the study topic from the textbook.
2. Highlighting the main points in the studied material, making usual brief notes.
3. Selection of reference cues for the text in the form of individual words, pictures.
4. Thinking about a schematic way of coding knowledge, using different fonts, etc.
5. Making a synopsis of the text.

11. Methodological instructive regulations for students studying the discipline (module)

The first thing to do when studying "Dental Implantation in Dentistry" is to familiarise yourself with the content of the programme of work (hereinafter referred to as "WPD").

The lectures aim to provide a systematic basis of scientific knowledge.

While studying and working on theoretical material it is necessary to

- repeat the material outlined in the lecture class and supplement it with the recommended literature on the topic;

- when studying a theoretical topic independently, make an outline, using the recommended literature sources in the RPD.

- while preparing for the current and intermediate control, use the materials of the

FSC.

Work with educational-methodical and scientific literature is one of the important forms of work on mastering the discipline and is necessary in preparation for oral questioning in seminar-type classes, for control works, testing, credit. It includes study of the lecture material - study of the recommended sources and literature on the topics of the lectures. The lecture abstract should contain an abstract of the main issues of the lecture, the schemes proposed by the teacher (at their demonstration), the main sources and literature on the topics, conclusions on each issue. The abstract should be made in a separate notebook on the discipline. It must be neat, well readable, not contain irrelevant information or drawings.

The abstracts of scientific literature in preparation for the classes should also be executed neatly, contain answers to each question posed in the topic, have a reference to the source of information with the obligatory indication of the author, title and year of publication of the used scientific literature. The outline can be basic (contain only the main key positions), but at the same time it allows to give a complete answer to the question, can be detailed. It is up to the learner to determine the length of the outline.

While working with academic and scientific literature, a student may:

- make reading notes in the form of a simple or extended plan (create a list of the main issues discussed in the source);
- write abstracts (citing the most important parts of an article or monograph, briefly summarising the author's main ideas);
- write summaries (a short summary of the main issues in a paper);
- write an abstract (a detailed summary of the main points of a paper).

Work with literature should begin with an analysis of the RAP, which lists the main and additional literature, educational and methodological publications necessary for mastering the discipline and work in the seminar-type classes.

After selecting the desired source, find the section of interest by the table of contents or alphabetical index, as well as the same section of the lecture notes or textbook. In case of difficulties in understanding the study material, you should refer to other sources, where the presentation may be more accessible. It should be noted that work with literature is not only useful as a means of deeper study of any discipline (module), but is also an integral part of the professional activities of a future graduate.

11.1. Methodological instructive regulations for preparing for seminar-type classes

Laboratory works represent one of the forms of mastering theoretical material with simultaneous formation of practical skills in the studied discipline.

The purpose of laboratory work is to deepen the study of theoretical material, the formation of practical skills through regular and systematic independent work of students throughout the course. The process of preparation for laboratory work includes the study of legal documents, compulsory and additional literature on the issue under consideration. Direct performance of laboratory work involves:

- studying theoretical material on the topic of laboratory work (on the issues of the studied topic);
- performing the necessary calculations and experiments;
- drawing up a report with the completion of the necessary tables, graphs, preparation of conclusions on the experiments and theoretical calculations;
- for each laboratory work there is a control: checking the content of the report, checking the assimilation of theoretical material. The control of mastering of theoretical material is individual.

11.2. Methodological instructive regulations for preparing for an examination

There is no examination.

11.3. Methodological instructive regulations for preparing for a test

Preparing trainees for the exam includes: reviewing the syllabus; reviewing the syllabus:

- Reviewing the syllabus of the course;
- Identifying the sources required for preparation (textbooks, additional literature, Internet resources, etc.) and studying them;
- Using lecture notes and practical case study materials;
- consulting with the teacher.

Preparation for the credit begins with the first class of the discipline, in which students receive a general instruction of the teacher and a list of basic requirements for current and final reporting. It is important to learn the material systematically from the very beginning, guided primarily by the list of questions for the test, to take notes on important sources for solving academic tasks.

A learner who has completed all the tasks specified in the work programme of the discipline (module) is allowed to take the test. In the case of missing any types of training sessions for valid or unexcused reasons, the learner independently perform and submit for review in writing general or individual assignments, determined by the teacher. The test for the theoretical course is held in oral or written form (determined by the teacher) on the basis of a list of questions that reflect the content of the current working programme of the discipline. The students are recommended to:

- prepare for the test by carefully reading the questions for the test;
- make a plan for answering each question, highlighting the key points of the material;
- having studied several questions, discuss them with classmates.

The answer shall be reasoned. The results of pass-fail assessments shall be assessed with the mark "pass" or "fail".

11.4. Methodological instructive regulations for performing computational and graphical

There are no calculation and graphic works.

11.5. Methodological instructive regulations for performing a control work

Evaluation criteria for control questions:

The grade "excellent" is given if the student has shown a deep and complete knowledge of the material of the discipline, assimilation of the main and additional literature recommended by the work program of the discipline.

The grades "good" are given to the student who has shown full knowledge of the basic material of the discipline, knowledge of the main literature and familiarity with the additional literature recommended by the work program.

Grades "satisfactory" are given if the student did not show knowledge of the main provisions on the topic, made some errors and managed to eliminate them with the help of a teacher who is familiar with the main literature on the subject.

The assessment is "unsatisfactory", the answer revealed significant gaps in the knowledge of the main provisions of the discipline, the inability of the student, even with the help of a teacher. to formulate correct answers to questions.

11.6. Methodological instructive regulations for performing a course work (project)

There are no courseworks (coursework projects).

List of additions and changes

The name and details (if any) of the document attached to the Working Program of the discipline (module) containing the text of updates	Department's decision		Full name of department head:
	Date	Protocol №	