

Odessa National Medical University

Faculty of Dentistry

Department of Surgical Dentistry

Syllabus of discipline

CAD CAM in dental implantology

Amount	60 hours \ 2 credits
Semester, year of study	4th year, 8th semester.
Days, time, place	8th semester - classes (2 hours) according to the schedule twice on week, 8.30-16.00; Department of Surgical Dentistry (11 Richelievskaya Street)
Teachers	Dmitrieva Natalia Borisovna, associate professor
Contact phone	+380674841866
E-mail	dmitrievanatali30 @ gmail.com
Workplace	Department of Surgical Dentistry (11 Richelievskaya Street), 2nd floor, maxillofacial clinic
Consultations	Eye consultations: Thursday from 2.30 pm to 6.00 pm every week

Communications with students - face-to-face meetings, E-mail, zoom, Microsoft teams

ABSTRACT ABSTRACT

The subject of study of the discipline.

Aimed at studying the issue of morphology of oral tissues in the presence of defects of dentitions, physiological and reparative regeneration and architecture of bone tissue of the maxillofacial area. Technical and technological features of different types of dental implants. The key issues of the discipline are dental prosthetics based on dental implants in typical clinical situations, prevention and treatment of complications associated with the use of dental implants

Prerequisites of the discipline:

1. Normal anatomy
2. Normal physiology
3. Histology, embryology and cytology
4. Pathological anatomy
5. Pathological physiology
6. Operative surgery and topographic anatomy
7. Microbiology, virology and immunology
8. Medical chemistry
9. General and clinical pharmacology

10. Hospital surgery and dental surgery
11. Social medicine, health management and economics
12. Department of General Hygiene
13. Dentures (simple prosthetics)
14. Cariesology and diseases of the hard tissues of the teeth
15. Orthodontics and pediatric prosthetics
16. Implantology and reconstructive surgery of the oral cavity
17. Dental prosthetics (complex prosthetics)
18. 3D-technologies in the diagnosis and treatment of dental diseases

The purpose of the discipline:

formation of bases of clinical thinking of the doctor, mastering of skills of inspection and logical substantiation of the diagnosis, carrying out differential diagnostics of diseases of maxillofacial system of an orthopedic profile, drawing up of the plan of treatment of patients, mastering of the basic manual skills at carrying out orthopedic treatment.

Tasks of the discipline:

1. To form the volume of basic, fundamental medical knowledge that forms the professional competencies of a dentist-orthopedist.
2. To form and improve the professional training of a dentist-orthopedist who has clinical thinking, is well versed in pathology, has knowledge of related disciplines.
3. To form skills in mastering new technologies and methods in the field of orthopedic dentistry.
4. To prepare a specialist for independent professional medical-diagnostic activity, who is able to carry out differential diagnostics, provide medical care, carry out preventive and rehabilitation measures to preserve life and health.

Expected results:

As a result of studying the discipline, higher education seekers must

be able:

1. To examine the patient in the clinic of orthopedic dentistry
2. To make the plan of preparation of an oral cavity of the patient for dental prosthetics;
3. fabricate construction her using CAD / CAM systems ;
4. Identify indications and contraindications for implantation;

5. Choose a denture design based on implants .

know:

1. Analyze the results of examination of the patient in the clinic of surgical and orthopedic dentistry ;
2. Identify the leading syndromes and symptoms in the clinic of surgical and orthopedic dentistry;
3. Demonstrate mastery of moral and deontological principles of a medical specialist and the principles of professional subordination in the clinic of surgical and orthopedic dentistry
4. Demonstrate the manufacture of implant structures on phantoms
5. Justify and draw up a preliminary clinical diagnosis in the clinic of surgical and orthopedic dentistry
6. To substantiate and draw up a syndrome diagnosis in the clinic of surgical and orthopedic dentistry
7. Conduct an examination of a dental patient
8. Carry out orthopedic treatment of major dental diseases.
9. Make a final clinical diagnosis of major diseases in the clinic of surgical and orthopedic dentistry

9. DESCRIPTION OF THE COURSE:

Forms and methods of teaching:

The course will be presented in the form of lectures (10 hours) and practical classes (10 hours), organization of independent work of students (40 hours).

The following teaching methods are used during the teaching of the discipline: verbal (lecture, explanation, instruction, conversation, educational discussion), visual (illustration, demonstration, self-observation), practical (exercises, practical work and solving situational problems to develop skills and skills), innovative (business game, case method, etc.), independent work of students on comprehension and mastering of new material, performance of individual tasks, use of control and educational computer programs on discipline.

Means of instruction , presentations, animations, computer programs, lectures, guidance for practical training for students, teaching materials, providing independent work of students practical training protocols.

Course content:

”CAD CAM in dental implantology”

Basic information on the method of manufacturing structures using CAD / CAM systems. Choice of denture design. Planning prosthetics on implants in typical clinical situations. Key factors for planning an orthopedic structure. At soblyvosti prosthetics implantatah. Osoblyvosti diagnosis and guidelines orthopedic treatment HVO ryh.

Objective research methods with the use of modern diagnostic equipment. Radiological: radiography, tomography, panoramic radiography and pantomography. Application of artificial contrast. Computer ' Books and magnetic resonance imaging, radioisotope, ultrasound diagnostics, remote and contact thermography.

THEMATIC PLAN OF LECTURES AND PRACTICAL CLASSES

Lecture topics

No	Name topics	Number hours
1	Historical aspects of dental implantation. Diagnosis and scope of examination of patients. The plan of treatment with the use of implants. Indications and contraindications for setting implants. Principles of implant placement	2
2	Anatomical and topographic features of the maxillofacial area (blood supply, innervation). Pre- and postoperative examinations of the patient. Treatment planning. Surgical aspects of dental implantation. Stages of treatment. Biomechanics of implants. Requirements for implants to improve osseointegration	2
3	Surgical stage of dental implantation and technique	2
4	Orthopedic stage of implant treatment. Features of application of a certain orthopedic design at patients with various types of defects of dentitions	2
5	Dental database mode. Entering administrative data. 3D model. Introduction structural elements. Fitting. Approximate contact. completion of work over the structure. Designing a crown in the mode "Dental database". Introduction administrative data. 3D model alignment. Editing lines. Scaling surface. Approximate contact. Using the tool "Shape	2
Total lecture hours		10

Topics of seminars

No	Name topics	Number hours
1	Planning prosthetics on implants in typical clinical situations . Key factors for planning an orthopedic structure	2
2	Indications and contraindications to dental implantation. Choice of denture design	2

3	Modern technologies of direct tooth restorations. Materials, methods and modeling. Ways to reproduce optical effects	2
4	Technologies of indirect aesthetic restoration of teeth in orthopedic dentistry. Veneers, rules of Preparation, manufacturing technologies. metal-free orthopedic construction.	2
5	Removable prosthetics on implants, its comparative characteristics with methods of prosthetics on natural teeth.	2
Total hours of practical training		10

Individual work

№	Name topics	Number hours
1	Preparation for practical classes - theoretical training and development of practical skills	4
2	Morphological features of bone tissue. Reaction of bone tissue to mechanical damage. Morphological features of healing of the mucous membrane and periosteum	6
3	Computed tomography, 3D modeling at the stage of examination and planning of dental implantation	6
4	Materials for the manufacture of implants	6
5	Impressions and impression materials in prosthetics on implants.	6
6	Fixed prostheses cemented on implants. Fixed prostheses with screw fixation.	6
7	Removable dentures.	6
Total hours of independent student work		40

List of recommended reading:

1. Ахмеров В.Д. Предоперационное обследование и подготовка больных к дентальной имплантации: Учебное пособие. – Полтава: Рік, 2000. – 35 с.
2. Дентальная имплантология: Основы теории и практики: Науч.-практ. Пособие/ В.Л. Параскевич. – Мн.: ООО «Юнипресс», 2002. – 368 с.
3. Карапетян К.Л. Клинико-функциональная и морфологическая оценка результатов использования внутрислизистых имплантатов при сложных условиях протезирования на верхней челюсти: Дис. ... канд..мед.наук. – М., 2004. 138 с.
4. Кулаков А.А., Лосев Ф.Ф., Гветадзе Р.Ш. Зубная имплантация: основные принципы, современные достижения. – М.: ООО «Медицинское информационное агенство», 2006. -152 с.
5. Мілерян В.Є. Методичні основи підготовки і проведення навчальних занять в медичних вузах (методичний посібник). - Київ: Хрещатик, 2006. – 80 с.

6. Руководство по дентальной имплантологии /Хоббек Дж.А., Уотсон Роджер М., Сизн Ллойд Дж.Дж., Пер. с англ.; Под общ.ред. М.З. Миргазизова. – М.: МЕДпресс-информ, 2007. -224 с.
7. Стоматологическая имплантология. / Под ред. С.Ю.Иванова. – М.: ГЭОТАР-МЕД, 2004. -296 с.
8. Стрюк Е.В., Король Д.М. Стоматологічна імплантологія – Вінниця: Нова книга, 2007.128 с.
9. Лебеденко И. Ю., Вафин С. М., Глебова Т. Э., Деев М. С., Лебеденко И. Ю. CAD/CAM технология реставрации зубов - CEREC: учеб. пособие для ординаторов, обуч. по спец. Стоматология ортопедическая М.: Практическая медицина, 2014, 112
10. Аболмасов Н. Г., Аболмасов Н. Г., Бычков В. А., АльХаким А. Ортопедическая стоматология: учеб. для студентов М.: МЕДпрессинформ, 2011, 512
11. Тупикова Л. Н., Ганисик А. В., Дементьева Е. А. Эстетика в стоматологии: учебное пособие для студентов 2-го курса стоматологического факультета Барнаул: ФГБОУ ВО АГМУ Минздрава России, 2018, 192
12. Орешака О. В., Ганисик А. В., Дементьева Е. А., Грохотов И. О. Составление медицинской карты стоматологического больного на кафедре ортопедической стоматологии: метод. указания для студентов стоматологического факультета, врачейординаторов Барнаул: ФГБОУ ВО АГМУ Минздрава России, 2017, 16
13. Ортопедическая стоматология / под ред. И.Ю. Лебеденко, С.Д. Арутюнова, А.Н. Ряховского - М.: ГЭОТАР-Медиа, 2016
14. Ортопедическое лечение с опорой на дентальные имплантанты. Карл Е.Миш Москва РИД Элалвер 2010г.
15. Атлас по анатомии для имплантологов Жан-Франсуа Годи Москва Медпресс-информ 2009г.
16. Руководство по дентальной имплантологии Джон А. Хопкек Москва, ООО «Мединформ», 2008г

EVALUATION

Methods of current control

Current control is based on daily control of theoretical knowledge and practical skills according to specific goals of each topic by verbal control, computer control test using a test database and situational problems that are at the department, on each class for 5 - t and point traditional scale . At the end of the discipline, the current performance is calculated as the average current score.

Forms and methods of final control

At the end of the 10th semester, students take a standardized state test exam (licensed integrated exam Step-2 "Dentistry") and OSKI - an objectively structured clinical exam. The method is used to assess clinical competencies. The method is based on a comprehensive assessment by final multiplication (10-20) of assessment stations that simulate various aspects of clinical competencies. Various simulators and stimulators, standardized patients, as well as additional diagnostic elements are used for the exam. The essence is to create reproductive clinical situations for the student, which allow to demonstrate the acquired technical, deductive (diagnostic, cognitive) and communication skills. OSKI simulates the process of examination and treatment of patients, so the practical tests at the OSKI station are tasks for the interpretation of the study, assessment of

communication skills (history taking, etc.). OSKI stations allow to check the clinical competence connected with independent clinical activity.

Independent work of students

Independent work of students (VTS) is one of the organizational forms of learning, which is regulated by the working curriculum and is performed by students independently outside the classroom. The following types of independent work of students are possible: preparation for practical classes and study of topics that are considered only in terms of independent student work, search and study of additional literature, writing essays, reports for presentations in practical classes.

DISCIPLINE POLICY ("GAME RULES")

The student must acquire knowledge, perform all types of educational tasks, pass all types of educational control, attend all types and forms of classes provided for in the curriculum, avoiding omissions and delays.

Deadline and recompilation policy.

The student completes the missed lecture in the form of writing an abstract on the topic of the lecture. The student completes the missed practical lesson either in the form of writing an essay on the topic of the lesson, or by interviewing the teacher on duty (twice a week on Thursday and Saturday).

Academic Integrity Policy

Adherence to academic integrity by students involves independent performance of educational tasks, tasks of current and final control of learning outcomes.

Unacceptable in the educational activities of participants in the educational process is the use of family or business ties to obtain a positive and higher assessment in the implementation of any form of control of learning outcomes, the use of prohibited aids or technical means (cheat sheets, headphones, telephones, smartphones, etc.); passing of procedures of control of results of training by fictitious persons.

For violation of academic integrity, the applicant may be held subject to the following academic liability:

- reduction of assessment results (exam, test, etc.),
- re-assessment (exam, test, etc.),
- appointment of additional control measures (additional individual tasks, tests, etc.),
- re-passing the relevant educational component of the educational program,
- deprivation of the right to participate in competitions for scholarships,

- deprivation of tuition benefits provided by the University,
- deductions from the university.

Attendance and lateness policy.

Absence of a student at a lecture or practical lesson is noted in the journal of visits in the form of a mark "nb", delay - "op". The student must work off the practical classes for 2 weeks.

Mobile devices

The student can not use technical means (phones, smartphones, tablets) when compiling a test computer control using a database of test and situational tasks that are on the website of the department.

Behavior in the audience.

It is important for students to follow the rules of good behavior at the university. These rules are common to all, they also apply to all faculty and staff, and are not fundamentally different from the generally accepted norms.

During classes

●allowed:

- leave the audience for a short time if necessary and with the permission of the teacher;
- drink soft drinks;
- take photos of presentation slides;
- take an active part in the lesson).

●forbidden:

- eat (except for persons whose special medical condition requires another - in this case, medical confirmation is required);
- smoking, drinking alcohol and even low-alcohol beverages or drugs;
- use obscene language or use words that offend the honor and dignity of colleagues and faculty;
- gambling;
- damage the material and technical base of the university (damage inventory, equipment; furniture, walls, floors, litter the premises and territories);
- shouting, shouting or listening to loud music in classrooms and even in corridors during classes.