**Dental Technician**

**Course Syllabi**

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| **Course** | **Implantology** |
| **Type** | **Semester** | **ECTS** | **Code** |
| **OBLIGATORY (O)** | **5** | **4** |  |
| **Course Lecturer** | **Lec. Saranda Dermaku, PhD Can** |
| **Course Assistant** |  |
| **Aims and Objectives** | The Dental Implantology course aims to provide a solid theoretical basis and practical skills in fixed prosthetic treatments related to dental implants. The objectives of the course are as follows:**Providing a solid foundation in dental implantology:*** Providing complete and approximate knowledge of anatomy, physiology and processes of implant integration in bone.
* Inclusion of materials and techniques used for implant placement and reconstruction, including crowns, bridges and other fixed restorations.

**Development of practical skills :*** Equipping students with practical experience in the design, fabrication and evaluation of fixed prostheses for dental implants
* Training students to perform implant placement in a laboratory and clinical environment, using the necessary techniques and equipment

**Study of research and critical thinking:*** Encouraging students to explore new literature and incorporate the latest technologies and methodologies in the field of dental implantology
* Promotion of independent research and development of research projects related to innovations in fixed prosthetic treatments for dental implants

**Promotion of ethical professional practice:*** Focus on understanding and adhering to ethical standards regarding patient care and ensuring data confidentiality
* Encouraging commitment to quality craftsmanship and meeting ethical standards in the practice of dental implantology

**Increasing cooperation and communication skills:*** Training students to communicate and collaborate effectively with health care teams and other professionals in the field
* Focusing on the importance of group collaboration for planning and executing the treatment of patients with dental implants in an effective and coordinated manner

Through this course, students will be prepared to meet the demands of the dental technician profession and become part of the world of successful dental implantology practice  |
| **Learning outcomes** | **After successful completion of this course, students should be able to:*** **To compare the technological processes of different fixed prostheses**
* **Gain theoretical knowledge and enhanced technical skills in implantation procedures**
* **To acquire treatment planning skills in the technical aspect**
* **Understand the clinical aspect of treatment**
* **To observe the accuracy of the work from a clinical point of view**
* **To gain knowledge about the components of implants**
* **Create case portfolios**
* **To become an active and valuable part of the implant team**
* **Communicate better with the implant surgeon**
* **Understand techniques**
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| **Alignment of Course’s Learning Outcomes to Programs’ Learning Outcomes.** | **Selection and use of implantological materials:*** Evaluation of the quality and characteristics of materials used for dental implants, including biocompatibility, durability and ability to integrate into bone.
* Applying knowledge of materials to select those that best meet patient needs and preferences.

**Procedures and techniques for placing implants:*** Using knowledge of anatomy and physiology of bone and tissue to identify the appropriate location and depth for implant placement.
* • Application of appropriate surgical techniques for safe and effective implant placement.

**Repair and maintenance of dental implants**:* Selection and implementation of appropriate methods for repair and adjustment of damaged implants.
* Ensuring proper care after implant placement to guarantee successful integration and longevity.

 **Cooperation with dental professionals and patients:*** Clear and inclusive communication with patients and colleagues to discuss implant options, requirements and expectations.
* Collaborate with surgeons and dentists to coordinate overall planning and care for patients requiring dental implantology.

 **Management of operations in the implantological laboratory:*** Organization and efficiency management of laboratory operations for the preparation and production of dental prostheses for patients with implants.
* Implementation of organizational strategies to ensure that productivity and overall quality of services remain at high levels.

By integrating these topics with the knowledge and skills mentioned above, you will develop a suitable and specialized approach to the field of dental implantology. |
| **Course Content** | The course is structured to progressively build students' knowledge and skills, culminating in the ability to design, fabricate and evaluate fixed dental restorations.**1. Week 1 History of Implants:*** Development of dental implantology technology
* Evolution of materials and techniques in the history of implantology
* Types of implants

**2. Week 2 Jaw anatomy:*** The structure and functions of the jaws in the mouth
* Relation between jaw anatomy and implant treatment planning

**3. Week Analysis of ATM movements:*** Understanding the importance of correct functioning of ATM in implantology
* Temporomandibular dysfunction and its impact on implant treatment planning
* Techniques for the analysis of ATM movements and their application in the practice of implantology

**Week 4 Implants**:* Characteristics and features of modern implants
* Types of implants
* Materials and layers used in the manufacture of the implant
* Implant placement techniques and factors affecting treatment success

**Week 5 Classification of implants:*** Classification based on the shape and structure of the implant
* Classification based on the clinical use of the implant
* Importance of implant classification in patient planning and treatment

**Week 6: Seminar presentations:*** Prezantimi i temave të zgjedhura nga studentët bazuar në praktikat më të mira dhe studimet e rasteve të suksesshme
* Diskutimi dhe shkëmbimi i përvojave në lidhje me aplikacionet praktike të implantologjisë dentare

**Week 7: Patient preparation for implant placement:*** Communicating and informing the patient about the implant placement process and their expectations
* Preprosthetic care planning to ensure the success of implant treatment

**Week 8: Preprosthetic surgery:*** The role and importance of preprosthetic surgery in the success of implant treatment
* Surgical techniques and procedures for implant site preparation for prosthetic restoration

**Week 9: Complications in implantology:*** Identification and management of potential complications during implant placement and retention
* Prevention of complications through proper planning and regular monitoring of patients

**Week 10:Implant-prosthetic rehabilitation in the immediate load protocol**:* Use of immediate loading protocols for rehabilitation of implant patients
* Techniques and strategies for ensuring the success of treatment with immediate load

**Week 11: Complications after placing implants*** Infections
* Loss of surrounding bone
* Loss of Implant
* Peri-implantitis

**Week 12: Implant measurement: Week 13 Digital presentation*** Mass-taking procedures and techniques for the production of implant-based prosthetic restorations
* Ensuring accurate machining and fitting of restorations to meet patient requirements

**Week 13: Digitalization of the gold standard of implantology*** Use of digital technologies such as digital radiographs, computed tomography (CT) and intraoral scanners to provide a complete anatomical view for planning implantology cases.
* Use of advanced software for surgical and prosthetic implant planning, including 3D simulation and advanced modeling.

**Week 14: Prezantime dixhitale të rrjedhës së punës*** Projektet
* Puna praktike

**Week 15:Final assessment*** Evaluation of theoretical and practical skills acquired during the dental implantology course
* Preparation of final exams and analysis of student progress during the course

The content of this course is designed to provide a comprehensive foundation in fixed prosthodontics, ensuring that students are well prepared for further specialization in dental technology and able to contribute effectively to dental health care teams.**Exercises: Dental Implantology**These topics will include a wide range of activities, starting from the preparation of materials needed for demonstrations, through the creation and refinement of prototypes, to the analysis and evaluation of results. Here is a possible summary of laboratory work for each topic for 15 weeks: **Week 1: History of Implants:*** Discussion
* Research and study of literature and historical sources related to the evolution of implantology technology.
* Preparation of presentation materials, including multimedia presentations, graphics and diagrams.

**Week 2: Anatomy of the jaws:*** Discussion
* The study of anatomical-odontological models to understand the structure and functions of the jaws.
* Demonstration of jaw techniques in the laboratory
* Video

**Week 3: Analysis of ATM movements:*** Preparation of dental models and apparatus for the analysis of TMJ movements.
* Recording and analysis of ATM movements through special equipment and dedicated software

**Week 4: Implants:*** Assembly and preparation of dental models for demonstration of implant placement techniques.
* The use of various laboratory machines for the production of implant prototypes and their quality analysis
* Video

**Week 5: Classification of implants:*** Compiling information about implant classification and placing them in defined systems.
* Demonstration of different implants and identification of their features for classification.

**Week 6: Seminar presentations:*** Preparation and organization of seminar presentation materials, including multimedia technologies and lab presentation equipment.
* Making presentations and moderating discussions about the topics chosen for the workshop

**Week 7: Patient preparation for implant placement:*** Clinical dental visit
* Demonstration of techniques for implant site preparation on dental models.
* Simulation of procedures for patient preparation and implant placement in different laboratory situations.

**Week 8: Preprosthetic surgery:*** Analysis and identification of possible complications during implant placement and maintenance through laboratory simulations.
* Development of strategies for management and prevention of implant complications.

**Week 9: Complications in implantology:*** Analysis and identification of possible complications during implant placement and maintenance through laboratory simulations.
* Development of strategies for management and prevention of implant complications.

**Week 10: Implant-prosthetic rehabilitation in the immediate load protocol:*** Creation and refinement of prosthetic prototypes for immediate load handling.
* Demonstration of techniques for holding and adjusting prosthetics in cases of immediate load.
* Clinical dental visit
* Discussions with the oral surgeon
* Case analysis

**Week 11: Complications after placing implants*** Clinical dental visit
* Discussions with the oral surgeon
* Analysis of cases with the oral surgeon

**Week 12 : Measurement of implants:*** Visit to the dental clinic in collaboration with the oral surgeon
* Preparation of the implant site for taking the mass and maintaining the situation for taking the mass on the implant.
* Realization and analysis of mass measurements for the production of prosthetic restorations.

**Week 13: Digitization of the gold standard of implantology*** Use of CAD/CAM technology
* 3D scanning and printing

**Week 14: Presentation of case studies:*** Realization and presentation of case study analyzes in the laboratory
* Discussion and exchange of management ideas and solutions achieved for case studies.

**Week 15: Final assessment:*** Assessment of student progress and skills through laboratory work and final exams.
* Analysis of students' performance and their final assessment regarding knowledge and skills in dental implantology.
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| **Teaching/****Learning****Methods** | These methods are designed to foster a deep understanding of the principles of Dental Implantation to create practical techniques, and to acquire a laboratory, didactic and dental work.**Lectures: 15%**• Purpose: To provide basic knowledge and theoretical concepts.Implementation: Regular weekly lectures covering comprehensive course content.**Laboratory practice: 30%**Purpose: To develop practical skills in the fabrication and evaluation of prostheses.Application: Laboratory work after lectures to put theoretical knowledge into practice.**Digital Workflows Training: 10%**• Purpose: To acquaint students with the digital technologies of dentistry.• Implementation: Specific sessions dedicated to CAD/CAM software and digital fabrication methods.**Guest lectures and seminars: 10%**• Purpose: To provide exposure to external expertise and new developments.• Implementation: Occasional guest lectures and seminars throughout the course.**E-learning resources: 25%**• Purpose: To supplement and reinforce learning outside the classroom.• Implementation: Access to online materials and forums for further study and discussion.• These percentages are indicative and may be adjusted based on specific course requirements, institutional guidelines, or student group needs. The allocation provides a strong emphasis on practical practice and laboratory work (30%), reflecting the practical nature of the field of dental technology, while also maintaining a solid theoretical foundation through lectures (25%). Interactive and student-centered learning methods, such as workshops, case studies, and digital workflow training, are integrated to enhance critical thinking, collaboration, and technology skills. Ethical |
| **Course Resources** | These resources have been selected to provide comprehensive coverage of theoretical knowledge, practical skills and current trends in Dental Implantology. Here is a detailed list of course resources• Textbooks and reference books• Simultaneous Oral and Maxillo – Facial Surgery James R. Hupp Edward Ellis 111 Myron R. Tucker.A basic text covering the principles of tooth preparation, material selection and denture design.• Online journals and databases• Journal of Prosthetic Dentistry• Provides access to the latest research findings, case studies and review articles in prosthetics.• Dental Materials• Focuses on the properties and applications of dental materials used in fixed prostheses.• Digital learning platforms and software• CAD/CAM software instructions• Access to online tutorials for popular CAD/CAM software used in dental technology, such as 3Shape, Dental Wings or CEREC.• CAD/CAM systemsAccess to in-house or partner dental laboratories with CAD/CAM systems for digital design and milling in Dental Implantology.• Online Video and Multimedia• Instructional video• Webinars and online seminars• Access to recorded or live webinars hosted by experts in the field of Dental Implotology.• Guest lectures and Industrial Partnerships• Visit of experts• Industry tours and demonstrations• Organized visits to dental laboratories and manufacturing facilities for direct observation of professional practices and technologiesThese resources have been selected to ensure that students have access to a wide range of materials supporting both the theoretical and practical aspects of Dental Implantology. Incorporating a variety of learning tools, such as textbooks, digital tools, and hands-on experiences, enriches the learning environment and prepares students for professional practice in dental technology. |
| **ECTS Workload** | **1. Lectures** | **30 h** | **15.0 %** |
| **2. Hands-on Laboratory Sessions** | **60 h** | **30.0 %** |
| **3. Seminars and Group Discussions** | **23 h** | **10.0 %** |
| **4. Digital Workflows Training** | **23 h** | **10.0 %** |
| **5. Guest Lectures and Workshops** | **23 h** | **10.0 %** |
| **6. E-Learning Resources** | **51 h** | **25.0 %** |
| **Total** | **210 h** | **100.0 %** |
| **Literature** | **1. Vlado Vankovski, Dental implantology, 2014.****2. Ezio Nardi, Implantology Guide - dentists and dental** **technicians, 2016.** |
| **Contact** | **Lec. Saranda Dermaku, PhD Can; saranda.dermaku@ubt-uni.net** |

**Pre-requirements for the course**

This course does not have any pre-requirements.

**Assessment of Competence**

For the class to reach a Bechelor level of learning, students must prepare by reading the given material, complete all assignments for each class. Students will be evaluated for participation as:

* Full participation in class activities and group work.
* Participation in class discussions (without dominating the conversation).
* Demonstrating understanding of the content of the material read.
* Providing critical thinking about the subject matter.
* Adding ideas to class discussion.
* Helping others clarify an idea.
* Supporting others as they share their ideas and speak in class.
* Raising new ideas and questions.
* Arriving on time and staying throughout the lesson.

**Participation policy**

Students are expected to attend all lectures and exercises. The importance of class attendance is reflected in the percentage of the grade associated with attendance. You cannot receive attendance grades if you are not in class. If you have an emergency and cannot attend class, please email me in advance to let me know. Class will start on time to honor everyone's commitment. If you are late, please enter the classroom quietly. Participation marks will be deducted for lateness.

**Students must be present at least 80% of the activities.**

**Rules and Regulations**

**Attendance**

UBT College undertakes the responsibility of training future professionals to the highest standards. One of these standards is taking responsibility for personal actions. If a student misses a particular session, the student has lost that instruction forever. They can never be repeated. When a student is late to class, the entire class is interrupted. Such interruptions will not be tolerated. Students have a responsibility and a contract to stay in class for the duration of the sessions, for each day. Students who leave sessions early, even if they leave with permission, cause disciplinary problems that will not be tolerated.

You made a contract with the UBTs to be in class and attentive throughout the learning process. Every student must be in every session, every day that is scheduled, throughout the semester.

All teaching sessions begin at their designated times in the lesson timetable. All sessions start and end at designated times in the class schedule. Any student who leaves the class session early will be considered absent.

**Electronic Devices**

It is distracting to everyone in the classroom when cell phones ring during class. This is even worse if it happens during a test or quiz. Since this is a classroom and not a room for listening and/or viewing electronic devices such as smart phones, personal laptops and/or other electronic devices will not be allowed.

The classroom will be a cell phone free zone. If you must bring a cell phone to class, it must be turned off or set to vibrate. It is distracting for a classroom to have students constantly answering cell phones during class. If you absolutely must answer the call, leave the classroom. A student who accepts calls during class will be asked to leave class. Hearing devices will not be allowed in the classroom for any reason.

**Tests And Quizzes**

Tests and quizzes are usually scheduled at the beginning of the lesson. Tests and quizzes are one-way teachers measure a student's knowledge. Failure to participate in tests or quizzes interferes with this process. UBT College does not reward students who do not take their tests or quizzes on time; therefore, the teacher cannot allow students to take tests or quizzes after the deadline.

Tests and quizzes must be taken by each student, any student who asks for help or helps other students during a test or quiz will be removed from the test and will be graded zero for that test or quiz. It is the student's responsibility to prepare for tests and quizzes at all times. It is the student's responsibility to know when there are tests or quizzes to take.

**Seminars and Projects**

Seminars and projects must be done on the student's own time, not during class.

Never allow another student to copy your seminars and projects.

Never copy another student's seminars and projects.

**Due Dates**

One thing all professionals must learn is to be on time. Excuses do not make the student and teacher feel better about their wasted time. For all assigned tasks, sufficient time is given to complete, and all work must be completed in the time set by the teacher. **No delay in the completion of the works will be accepted**.

**Proper Attire**

Professionals must dress appropriately. Any student who does not dress appropriately during class time will not be allowed to participate in class activities.

**Conduct**

Students at UBT College must learn to work in groups, regardless of group composition. Tolerance, courtesy, respect, and a peaceful environment are required in the classroom.

All students are expected to be respectful to other students and to the teacher during class and in dealing with class matters. Disrespectful behavior will affect your participation grade. Examples of respectful behavior in the classroom include, but are not limited to:

* Listening to each other and exchanging ideas.
* Arrival and departure according to the class schedule, except in cases of emergency.
* Turn off the cell phone ringer and do not receive calls in class.
* Speak so that others can hear and understand what you are saying.
* Engaging in class discussion (avoiding side conversations during class and dominating class discussion).
* Listening (not speaking) when the teacher or other students are addressing the class.
* Working collaboratively with a specific or selected group.
* Completion of class work on time.
* Focusing on class topics and not on personal matters or work unrelated to the class.
* Viewing your computer and/or cell phone only when related to class work.
* Raising questions when there is no clarification about the work in class.

**Academic Dishonesty**

Violations of Academic Integrity include, but are not limited to, the following actions:

* Cheating on an exam.
* Plagiarism.
* Working together on an individual assignment, paper, or project when the instructor has specifically stated students should not do so.
* Submitting the same term paper to more than one instructor or allowing another individual to assume one’s identity for the purpose of enhancing one’s grade.