

CURRICULUM

Semmelweis University Faculty of Dentistry, Dentistry

Name of the course: Modern approach to implant prosthetics: digital vs traditional methods

Credit value: 2

Lessons (*in hours in the whole semester*): 22 from this, lectures: 0 practicals: 8 (8x45 min)
seminars: 14 (14x45min)

Type of the course: compulsory obligatory elective elective

Semester in which it is announced according to the curriculum: 2024/25 Semester II (English)

Frequency of announcement (*per semester or year*): annually

The responsible educational and research organizational unit for teaching the subject: Department of Prosthodontics, Semmelweis University

Academic year: 2024/25 2nd semester

Subject (Neptun) code:

Lecturer of the course: Dr. Krisztina Ágnes Mikulás

Academic position: associate professor

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The goals and place of the course in regards to the education of dental students:

The aim of this course is to teach students the principles of implant prosthodontics and the advantages of a modern approach in digital implant positioning (backward planning) and restoration planning, which are important for achieving successful long-term results. Students will gain insight into ideal material selection, implant abutment and prosthesis design in a given clinical situation.

Biomechanical aspects, loading and aesthetic considerations will be discussed.

Location of the course (*address of lecture hall, seminar room etc.*):

1088 Budapest, Szentkirályi u. 47. 6th floor, Digital Laboratory 5th floor

Competences acquired by completion of the course:

The student will gain an insight into digital, prosthetic approach to implant positioning and restoration planning. The course has a strong emphasis on practical training, consisting of seminars and a practical part, during which students will be introduced to the benefits and challenges of a fully digital workflow in addition to traditional workflows.

In addition to planning the 3D implant position and selecting the appropriate implant abutment, the exercises will also involve the students in the planning and printing of the navigation template. Temporary implant supported restoration is planned in case of anterior tooth loss. Aspects influencing the design of the emergence profile and impression taking (traditional and digital) will be highlighted during the practical training.

Pre-study requirements and prerequisites of course registration and completion, in case of a multi-semester subject, the standpoint of the educational-research unit on the concurrent subject registration and on the requirements of permission thereof :

Implantology I, General and Dental Radiology II.

Number of students required for announcement of course (*min.*, *max.*), method of selection:

max. number of students: 14

Method of course registration:

Through the Neptun system

Detailed course/lecture description¹: (*to facilitate credit recognition in other institutions*)

Seminars

1. Introduction. Prosthetic approach in implant position planning I. - Biomechanical aspects.
2. Prosthetic approach in implant position planning II - Digital 3D implant position planning and implant abutment selection
3. Healing and health maintenance of peri-implant hard- and soft tissues, types of healing abutments, emergence profile design
4. Implant placement and loading protocols, biological aspects (prosthetic recommendations during loading), immediate temporary restorations
5. Material selection and CAD/CAM design (aesthetics and function)
6. 3D printing in implantology
7. Digital vs traditional impression taking techniques in implantology
8. Digital workflow I - Anterior region – single restorations, smile design
9. Digital workflow II - Analogue, semi-digital, complete-digital workflow
10. Analogue and digital workflows III - in complex rehabilitation
11. Gnatological aspects in the fabrication of extensive implant supported restorations
12. Implant prosthodontic treatment of periodontally affected patients and supportive therapy
13. Consultation
14. Exam, case presentation

Practices (Digital Laboratory 5th floor)

- 1-2. Complex prosthetic treatment plan, digital dental imaging (2x45 min)
- 3-4. Backward planning and planning of temporary restorations for single implant supported restorations (2x45 min)
5. Surgical navigation template planning, printing (45 min)
- 6-7. Digital mapping of emergence profile and implant position (2x45 min)
8. Preparing your own case for the exam

The course is not offered on a first-come, first-served basis, but due to the very limited number of places available, the best students in each year are admitted to the course. The best students are selected on the basis of a pre-test, similar to the Clinical Talent Management Programme.

Courses (*compulsory and obligatory elective*) which in part or entirely overlap the topics of above course:

Oral Implantology, Oral Radiology, Periodontology, Prosthodontics

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| <p>Special academic work required for completion of the course²: Digital planning of implant position and temporary restoration in case of single tooth loss, digital mapping of emergence profile and implant position.</p> |
| <p>Attendance on practices and lectures, replacement in case of missed sessions: Students must attend the seminars. The maximum number of absences from practicals and seminars in relation to the teaching of the subject is 10%. There is no possibility to make up for absences from exercises.</p> |
| <p>Method of checking acquired knowledge during the study period³: Each phase of work will be graded on the exercises.</p> |
| <p>Requirements of an accepted semester (<i>signature of the lecturer</i>): The maximum number of absences from practicals and seminars in relation to the teaching of the subject is 10%. There is no possibility to make up for absences from exercises.</p> |
| <p>Type of the exam: Colloquium, material of the semester.</p> |
| <p>Requirements of the exam³: Colloquium (1 semester): the exam is a review of the semester's study material</p> |
| <p>Grading of courses⁴. The possibility and requirements of an offered grade: Practical exam in week 14, during which a single implant case planning must be presented (grade: 1-5)</p> |
| <p>Exam registration: In the Neptun system</p> |
| <p>Rules of repeating exams: As per the current regulations of University</p> |
| <p>List of textbooks, lecture notes and recommended textbooks, online material: The presentations will be available as hand-outs and will be accompanied by recommended literature.</p> |
| <p>Signature of course lecturer:</p> |
| <p>Signature of head of department:</p> |
| <p>Date of submission: 04.03.2024.</p> |
| <p>Opinion of OKB:</p> |
| <p>Notes from the Dean's Office:</p> |
| <p>Signature of Dean:</p> |

¹ Detailed and numbered for each week of theoretical and practical lessons one by one. In an annex, cannot be attached appendix!

² Eg. homework, report, midterm exam etc. Topics, dates, method of retake and replacement

³ List of topics in case of theoretical exam, thematic and method in case of practical exam

⁴ Method of inclusion of theoretical and practical exams. Method of inclusion of midterm assessments.