REQUIREMENTS

Semmelweis University Faculty of Dentistry
Department of Conservative Dentistry

Name of the course: RESTORATIVE DENTISTRY, PRE-CLINICAL II
Credit value: : Cons Prop II: **4**
Lessons *(in hours)*:56 lectures: 1 practices: 3 seminars: 0
Type of the course: compulsory obligatory elective elective
Frequency of announcement *(per semester or year)*: per year (5th Semester)

Academic year: 2022-2023 1st Semester – in an ascending system

Subject code[1]:

Lecturer of the course: Beáta Kerémi DMD, PhD

Contact: SE, Department of Conservative Dentistry, 1088 Budapest, Szentkirályi u. 47.
Phone: +361-317-1598
Function: associate professor

The goals of the course in point of view of the education:
This subject serves as the establishment of basic knowledge of Restorative Dentistry with a special focus on indirect restoration. The goal is to acquire a level of theoretical and practical knowledge that can be used to treat patients in clinical practice.
During practice the students learn:
· the theoretical, practical steps of preparing inlays, onlays, overlays
· the steps of preparing them in the dental laboratory
· the use of the CAD/CAM systems
· the use of oral scanners
· the digital workflow of single restoration

Location of the course *(address of lecture hall, seminar room etc.)*:
SE FOK Oktatási Centrum, Propaedeutics lab; 1088 Budapest, Szentkirályi u. 47.

Competences acquired by completion of the course:
Upon successful completion of the subject, the student will learn the theoretical, practical, and technical steps of inlay/onlay restoration and chairside CAD/CAM system.

Pre-study requirements and prerequisites of course registration and completion:
- Restorative Dentistry, Pre-clinical I
- Odontotechnology and Prosthodontics Pre-clinical II
- Medical and Dental Physiology II

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

Method of course registration: via the Neptun system

Detailed course/lecture description[2]: *(to facilitate credit recognition in other institutions)*
This subject includes one hour theory and three hours of practice a week.
During practice the task is to prepare cavities for inlay/onlay restorations. They learn how to use oral scanners, how to design inlay/onlay with the design software that is part of the CAD/CAM system, learn about the milling process and how to cement inlay/onlay in the prepared cavity.
Students' knowledge is continuously monitored.

Themes of the lectures:

1. The concept, localization, and progression of caries in the anatomical crown
2. Fundamental concepts and clinical application of the adhesive technique
3. Composites - material science (composition, classification, properties)
4. Glass ionomer cements and other polymeric materials (composition, indication, and application)
5. Application of liner, base, and temporary fillings. Polishing, removal, and toxicology of amalgam fillings
6. Cervical lesion and its complex treatment
7. Classification (inlay/onlay/overlay/endocrown/veneer/tabletop) and materials for indirect restorations. Indications, contraindications, materials, and clinical steps for metal inlays
8. Aesthetic (composite, ceramic, hybrid) indirect restorations. Dome concept
9. Chairside CAD/CAM technology. Digital and analog impression technique for single restorations. Basics of design and milling. Indication and application of sulcus retraction.
10. Materials and cementation of indirect aesthetic restorations (material science of adhesive cement, surface treatments of the tooth and the restoration, clinical steps of cementation)
11. Equipment of the dental office, rules of clinical practices, infection control
12. Patient admission and treatment plan (general rehabilitation and sequence of restorative and endodontic dental treatments)
13. Preparation of student's case presentations, basic of dental photography
14. Caries diagnostic tools

The material of the practices:

1. Instruments, matrix application, making of Class II composite filling - repetition
2. Basics of inlay making
3. Comparison of cavity preparation of metal and aesthetic inlays
4. Class II cavity preparation for aesthetic inlay
5. Class II cavity preparation for aesthetic inlay
6. **Mid-term test I: cavity preparation for indirect restorations**
   Preparation of Class II cavity for aesthetic inlay
7. Class II cavity preparation for aesthetic onlay
8. Class II cavity preparation for aesthetic onlay
9. Indication and significance of sulcus retraction
10. Scanning of cavities prepared for inlays
11. **Mid-term test II: Digital workflow and cementation of indirect restorations**
    Design process
12. Milling process
13. Cementation of inlays
14. Finishing, polishing

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

This subject establishes the knowledge and competence for Restorative Dentistry and Endodontics and Clinical Dentistry subject, so the knowledge acquired here will expand.

Special academic work required for completion of the course[3]:-

Attendance on practices and lectures, replacement in case of missed sessions:
Attendance at lectures is not obligatory, but the materials of lectures and practices are essential for completing the practical work and passing the exam. Attendance at the practices is compulsory, and absences at any one practice may not exceed 25% of the total number of practices. Arriving late to the practices less than 15 minutes results in one absence after three times. Arriving late to the practices of more than 15 minutes counts as an absence. There is no possibility to make up a missed practice. No certificate is necessary in case of absence.

Method of checking acquired knowledge during the study period[4]:
Students must arrive in the practice with knowledge of the material related to the scheduled program available on Moodle website. During the semester, small tests take place weekly. T**wo midterms will be given, one on the 6th week (inlay/onlay/overlay preparation) and the second on the 12th week (digital workflow, cementation)**. The topic includes the material of the lectures. If a student does not pass the exam the first time, the exam can be retaken in two weeks. A maximum of two additional attempts for the retake will be provided. It will be assessed in accordance with the procedure laid down in the Study and Examination Regulations of Semmelweis University.
The work carried out on the practices will be monitored and assessed by the practice leaders at each stage. The results of the evaluations are included in the semester rating.

Requirements of an accepted semester *(signature of the lecturer)*:
A minimum of 75% attendance is required at the practices, and absence may not exceed 25% of the practices regardless of the reason.
The signature of the semester, a sufficient level of continuous and consistent theoretical preparation, the passed demonstration, and a sufficient level of practical performance are required. The average grade of the theoretical part and the average grade of the practical part must separately reach the 2.0-grade. The midterm tests must individually reach a level of at least 2.0

Type of the exam: Final exam

Requirements of the exam[5]:
The grades given for each theoretical topic must separately reach grade 2.0. In addition, correctly identifying an extracted human tooth, the instrument recognition&application (e.g., matrix placement), prepared cavity analysis must also reach an average of 2.0. If any part of the examination fails (does not reach 2.0), the final exam also fails. The exam questions are available on the Moodle interface.

Topics for final exam:
Questions A

1. The anatomy of the remaining teeth. Marking of teeth. Mühlreiter marks
2. Concept, localization, and progression of caries on the anatomical crown
3. Histology of caries (enamel, dentin, and root caries)
4. Manual and powered cutting equipment and instruments (micromotor, turbine, burs)
5. Isolation of teeth, methods and tools

6. Classification of cavities by Black, the basis of classification. Preparation design, methods, and nomenclature
7. Rules and steps of cavity design for aesthetic direct restoration
8. Class I cavity preparation for a composite filling
9. Class II cavity preparation for a composite filling
10. Class III cavity preparation for a composite filling
11. Class IV cavity preparation for a composite filling. Treatment of crown fractures of anterior teeth.
12. Class V cavity preparation and cavities prepared for cervical filling
13. The aim and type of the fillings. Required properties of filling materials. Classification of filling materials.
14. Application of liners, bases and temporary filling. Polishing, removal and toxicology of amalgam fillings
15. Glass-ionomer cement and other polymeric materials (composition, indication and application)
16. Composites - materials science (composition, classification, properties)

Questions B

1. Fundamental concepts of the adhesive technique
2. Clinical application of the adhesive technique
3. Matrices and matrix systems
4. Clinical technique for direct class III and IV composite restoration
5. Clinical technique for direct class I composite restoration
6. Clinical technique for direct class II composite restoration
7. Contouring, finishing and polishing of fillings
8. Classification (inlay/onlay/overlay/endocrown/veneer/tabletop) and materials for indirect restorations
9. Clinical steps and cavity preparation for indirect restorations. Similarities and differences compared to the plastic fillings
10. Indications, contraindications, materials and clinical steps for metal inlays
11. Indications, contraindications, materials and clinical steps for aesthetic (composite, ceramic, hybrid) indirect restorations. Dome concept
12. Digital and analog impression technique for indirect restorations. Indication and application of sulcus retraction.
13. Chairside CAD/CAM technology. Basics of design and milling
14. Cementation of indirect aesthetic restorations (material science of adhesive cement, surface treatments of the tooth and the restoration, clinical steps of cementation)
15. Patient admission and treatment plan (sequence of general rehabilitation and restorative and endodontic dental treatments)
16. Equipment in the dental office, ergonomics, four-handed treatment, infection control
17. Caries diagnostic tools

Grading of courses[6]:

The semester signature is a prerequisite for admission to the course.

The grading for the final exam is a five-point scale. Theoretical items (two questions) make up 60% of the final exam mark. Tooth recognition makes up 20%. The recognition and the use of the instruments and analysis of a prepared cavity contribute 10-10% to the final exam. If any part of the exam fails, the whole exam does as well.

Exam registration: via the Neptun system
Rules of repeating exams: via the Neptun system, based on the current university Study and Exam Regulations.
List of textbooks, lecture notes and recommended textbooks: 1. Ritter AV, Boushell LW, Walter R: Sturdevant's Art and Science of Operative Dentistry 7th ed. St. Louis, Mosby, 2018.
Signature of course lecturer: **Beáta Kerémi DMD, PhD**
Signature of head of department: **János Vág DMD, PhD**
Date of submission:
Opinion of OKB:
Notes from the Dean's Office:
Signature of Dean:

[1] Filled out by the Dean's Office following approval
[2] Detailed and numbered for each week of theoretical and practical lessons one by one, indicating the names of lecturers and instructors
[3] Eg. field practice, medical chart analysis, survey conducting, etc.
[4] Eg. homework, report, midterm exam etc. Topics, dates, method of retake and replacement.
[5] List of topics in case of theoretical exam, thematic and method in case of practical exam.
[6] Method of inclusion of theoretical and practical exams. Method of inclusion of midterm assessments.