Semmelweis University, Faculty of Dentistrye – single, long-cycle medical training - Undivided, one-tier training in dentistry
Name of the host institution (and any contributing institution):
Helyreállító Fogászati és Endodonciai Klinika

Name of subject in Hungarian: Restorative Dentistry and Endodontics V.
Name of subject in English: Restorative Dentistry and Endodontics V.
Name of subject in German: Restorative Dentistry and Endodontics V.

Credit value of the course: 3
Semester: 10th semester
(in which the subject is taught according to the curriculum)

Weekly hours	Lecture	Practice	Seminar
3.0	0.0	3.0	0.0

Semester hours	Lecture	Practice	Seminar
36.0	0.0	36.0	0.0

Type of course:
obligatory

Academic year:
2026/27

Language of instruction (for optional and elective subjects):
Angol

Course code:
FOKOKFK357_5A
(in the case of a new course, to be completed by the Dean’s Office, following approval)

Course coordinator name: Dr. Vág János
Course coordinator location of work, telephone availability: Helyreállító Fogászati és Endodonciai Klinika, 061459-1500/59377
Course coordinator position: klinika igazgató
Course coordinator Date and number of habilitation: 2019.06.06 09/2019

Objectives of the course, and its place in the curriculum of the medical training program:

Students should learn the basic steps of restorative and endodontic dental treatments.

Format of the course (lectures, group work, practical lessons, etc.):

Practice

Competencies acquired through completion of course:

After taking a general and dental history, diagnosis and preparation of an appropriate treatment plan. Learning the skills of assisting and getting acquainted with more complex restorative dental and endodontic treatments.

Course outcome (names and NEPTUN ID of related subjects):

Prerequisites for course registration and completion: (NEPTUN ID):

Prosthodontics IV., Restorative Dentistry and Endodontics IV.

In the case of multi-semester courses, position on the possibility of and conditions for concurrent registration:

Based on the individual curriculum and the individual judgment of the subject supervisor of restorative dentistry and endodontics.

The number of students required to start the course (minimum, maximum), method of selecting participants:

Detailed course syllabus (if the course can be divided into modules, please indicate): (Theoretical and practical instruction must be broken down into hours (weeks), numbered separately; names of instructors and lecturers must be listed, indicating guest lecturers/instructors. It cannot be attached separately! For guest lecturers, attachment of CV is required in all cases!)

The students examine and treat the patients who appear in the practices together with the practice leader. The students work in groups, so they take turns assisting each other.

Other courses with overlapping topics (obligatory, optional, or elective courses) in interdisciplinary areas. To minimalize overlaps, topics should be coordinated. NEPTUN ID(s) of courses (to be provided):

Requirements for attendance, options for making up missed sessions, and method of absence justification:

Participation in the practices is mandatory, and absences may not exceed 25% of the practices for any reason. If the practice falls on a public holiday, it will not be held; there is no possibility of making it up. In such a case, the total number of classes in the given semester will be reduced by

this amount. Therefore, the 25% absence must be calculated from this reduced total number of classes. Being late for three practices for less than 15 minutes is considered an absence. Being late for practice for more than 15 minutes is considered an absence. There is no possibility of making it up. Absences do not need to be justified.

Assessment methods during semester (number, topics, and dates of midterms and reports, method of inclusion in the course grade, opportunities for make-up and improvement of marks):
(number, topics, and dates of midterms and reports, method of inclusion in the course grade, opportunities for make-up and improvement of marks)

Students must arrive at the practices prepared, which are regularly checked and assessed verbally and/or in writing by the practice leader. The work done during the practices is checked and assessed by the practice leaders every time.

Number and type of individual assignments to be completed, submission deadlines:

The final exam at the end of the 10th semester requires the presentation of three documented clinical treatments. These must be completed during Restorative Dentistry and Endodontics I-V, General Dental Summer Practice, and Clinical Dentistry I-II. practices. The three mandatory treatments that must be presented are:

• Composite filling

• CAD/CAM inlay or crown

• Completed root canal treatment of a single or multi-rooted tooth

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Requirements for the successful completion of the course:

A minimum of 75% attendance is required for the practices, and absences may not exceed 25% of the practices for any reason (see Requirements for participation in classes and the possibility of making up for absences). The condition for signing the semester is the appropriate level of continuous and consistent theoretical preparation and the appropriate level of practical performance. The average of the theoretical and practical grades must reach an average of 2.0 separately. By the 11th week, a photographic case documentation presenting the student's work must be submitted to the practical supervisor.

Type of assessment:
comprehensive examination

Exam requirements (list of topics, topics of the test exam, and the optional project topics accepted as an exam)

The final exam consists of three parts:
1. The student selects one title from each of the three groups of topics and reports on his/her knowledge based on this (3 partial marks, 20-20-20% of the final exam grade).
2. He/she also presents three documented clinical cases representing his/her own work, which he/she prepared during the five semesters of Restorative Dentistry and Endodontics, or the two semesters of Clinical Dentistry, or possibly during the Summer Internship at the Department of Restorative Dentistry and Endodontics. The cases were supervised and approved by the student's clinical practice leader (3 partial marks, 10-10-10% of the final exam grade).
The three completed treatments to be presented are:
- Multi-surface composite filling
- CAD/CAM inlay or crown •

Completed root canal treatment of a single or multi-rooted tooth
3. The third element of the exam is the analysis of an intraoral X-ray. The student must determine what teeth are visible on it, what diagnosis can be made, and based on this what treatment is necessary (1 partial mark, 10% of the final grade).
If any part of the exam is insufficient, the result of the exam, and therefore the exam grade, is also failure. The exam questions can be found on Moodle.

Topics for final exam:

Questions A

1. Concept, localization, and progression of caries on the anatomical crown

2. Histology of caries (enamel, dentin, and root caries)

3. Manual and powered cutting equipment and instruments (micromotor, turbine, burs)

4. Isolation of teeth (methods and tools)

5. Classification of cavities by Black (principles of classification, cavity design, and

nomenclature)

6. Rules and steps of cavity design for direct aesthetic restoration

7. Class I cavity preparation for a composite filling

8. Class II cavity preparation for a composite filling

9. Class III cavity preparation for a composite filling

10. Class IV cavity preparation for a composite filling. Treatment of crown fractures of anterior

teeth

11. Class V cavity preparation and cavities prepared for cervical filling

12. The aim and type of the fillings. Required properties of filling materials. Classification of filling materials

13. Application of liners, bases, and temporary filling. Polishing, removal, safety/toxicology aspects of amalgam fillings

14. Glass-ionomer cement and other polymeric materials (composition, indication, and application)

15. Composites - materials science (composition, classification, properties)

16. Fundamental concept and clinical application of the adhesive technique

17. Matrices and matrix systems

18. Clinical technique for direct Class III and IV composite restorations

19. Clinical technique for direct Class I and V composite restorations

20. Clinical technique for direct Class II composite restorations

Questions B

1. Classification (inlay/onlay/overlay/endocrown/veneer/tabletop) and materials for indirect restorations

2. Clinical steps and cavity preparation for indirect restorations. Similarities and differences compared to the plastic fillings

3. Indications, contraindications, materials, and clinical steps for metal inlays

4. Indications, contraindications, materials, and clinical steps for indirect restorations for aesthetic (composite, ceramic, hybrid). Dome concept

5. Digital and analog impression techniques for indirect restorations. Indication and application of sulcus retraction

6. Chairside CAD/CAM technology. Basics of design and milling

7. Cementation of indirect aesthetic restorations (material science of adhesive cement, surface treatments of both the tooth and the restoration, clinical steps of cementation)

8. Patient admission and treatment plan (sequence of general rehabilitation and restorative and

endodontic dental treatments)

9. Equipment in the dental office, ergonomics, four-handed treatment, infection control

10. Caries diagnostic tools

11. Indications, contraindications, and methods of tooth whitening. Possible side effects and their prevention

12. Endodontic treatment of accidentally damaged teeth

13. Restorative and endodontic treatment for patients requiring special care. Odontogenic focal infection

14. Surgical interventions in restorative dentistry and endodontics (crown lengthening, drainage, apicectomy, hemisection, bicuspidation, root amputation)

15. Aesthetic and functional restoration of root canal-treated teeth (post and core buildup, single crown, endocrown, indirect restorations)

16. Evaluation of endodontic outcome. Orthograde retreatment of failed root canal treatments (revision)

Questions C

1. History taking, patient examination, and treatment plan in endodontics

2. Tools for diagnosis in endodontics

3. Anatomy and histology of the pulp. Description of the pulp chamber

4. Anatomy of the root apex and periapical tissues

5. Pulpal and periapical diseases: classification and pathogenesis

6. Differential diagnosis of pulpal and periapical diseases. Therapy of pulpal diseases

7. Preventive endodontics: the importance of pulp protection. Vital pulp therapies

8. Pathophysiology, symptoms, diagnosis, and therapy of acute (symptomatic) and chronic (asymptomatic) apical periodontitis and condensing osteitis

9. Pathophysiology, symptoms, diagnosis, and therapy of acute and chronic apical abscess

10. Concept, purpose, indication, contraindication, and limitation of root canal therapy

11. Emergency procedures in endodontics

12. Endodontic hand instruments powered instruments in root canal treatment. Terminology, standards, and the method of use.

13. Access openings (trepanation) and pulp extirpation. Orifice opening and shaping

14. Importance and methods of working length determination. Apical stop/apical seal

16. Root canal preparation using the step-back technique

17. Microbiological aspects of endodontics. Purpose, protocol, and technique of root canal

irrigation and local medication in endodontic treatment

17. Hand and rotary root canal preparation techniques (beyond the step-back)

18. Procedural errors during root canal preparation

19. Root canal obturation techniques (cold and warm guttapercha techniques)

20. Definitive root canal obturation using lateral condensation

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Clear, specific minimum requirements for assessment. (The list of mandatory concepts, parameters, diagrams, calculations, and practical skills required to obtain a passing grade, as well as the criteria for the completion and evaluation of project assignments accepted as an exam.) A link published on the department’s website referring to the minimum requirements of the course.

Students must arrive at the practices prepared, which are regularly checked and assessed verbally and/or in writing by the practice leader. The work done during the practices is checked and assessed by the practice leaders every time.

Method and type of grading (Share of theoretical and practical examinations in the overall evaluation. Inclusion of the results in the end-of-term assessment. Possibilities of and conditions for offered grades.): (Share of theoretical and practical examinations in the overall evaluation, Inclusion of the results in the end-of-term assessment, Possibilities of and conditions for offered grades)

The final exam consists of three parts:
1. The student selects one title from each of the three groups of topics and reports on his/her knowledge based on this (3 partial marks, 20-20-20% of the final exam grade).
2. He/she also presents three documented clinical cases representing his/her own work, which he/she prepared during the five semesters of Restorative Dentistry and Endodontics, or the two semesters of Clinical Dentistry, or possibly during the Summer Internship at the Department of Restorative Dentistry and Endodontics. The cases were supervised and approved by the student's clinical practice leader (3 partial marks, 10-10-10% of the final exam grade).
The three completed treatments to be presented are:

• Multi-surface composite filling
• CAD/CAM inlay or crown
• Completed root canal treatment of a single or multi-rooted tooth

3. The third element of the exam is the analysis of an intraoral X-ray. The student must determine what teeth are visible on it, what diagnosis can be made, and based on this what treatment is necessary (1 partial mark, 10% of the final grade).

If any part of the exam is insufficient, the result of the exam, and therefore the exam grade, is also failure. The exam questions can be found on Moodle.

Artificial intelligence systems used in the teaching of the subject and the manner of their application

Education is primarily based on textbooks, lectures, seminars, and practices. The student may use artificial intelligence (ChatGPT) during the education but must consult with his/her practice leader about the authenticity of the information received. The use of AI tools is not permitted during assessments (e.g. test exams).

Signature of habilitated instructor (course coordinator) announcing the course:

Signature of the director of the host institution:

Date of submission:
