

## REQUIREMENTS

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| <b>Semmelweis University Faculty of Dentistry</b>  |
| <b>Name of the course:</b> Radiation Protection<br><b>Credit value:</b> 2<br><b>Lessons (<i>in hours</i>):</b> 2,5 <b>lectures:</b> 1,5 <b>practicals:</b> 1 <b>seminars:</b><br><b>Type of the course:</b> <u>compulsory</u> obligatory    elective    elective<br><b>Frequency of announcement (<i>per semester or year</i>):</b> per year   |
| <b>Academic year:</b> 2020/2021  |
| <b>Subject code<sup>1</sup>:</b> FOKOODT135_1A   |
| <b>Lecturer of the course:</b> Dr. Szabó Bence Tamás<br><br><b>Contact:</b> Orális Diagnosztikai Tanszék, +36 1 459 1500 / 59161   |
| <b>The goals of the course in point of view of the education:</b><br>Students learn the aspects and requirements of radiation protection for taking X-ray acquisitions, during the course according to 487/2015. (XII.30.) Government decree. By completing the course, the students will receive "Extended Knowledge of Radiation Protection" certificate, enabling the students to take dental X-rays of their patients, independently.  |
| <b>Location of the course (<i>address of lecture hall, seminar room etc.</i>):</b><br><b>place of lectures:</b> Árkövy József lecture hall; 1088 Budapest, Szentkirályi utca 47. ground floor<br><b>place of practices:</b> Department of Oral Diagnostics seminar room; 1088 Budapest, Szentkirályi utca 47. III. floor   |
| <b>Competences acquired by completion of the course:</b><br>Competences detailed in 487/2015. (XII.30.) Government decree.   |
| <b>Pre-study requirements and prerequisites of course registration and completion:</b><br>Biophysics II.   |
| <b>Number of students required for announcement of course (<i>min., max.</i>):</b><br>n.a.   |
| <b>Method of course registration:</b><br>In NEPTUN system.   |
| <b>Detailed course/lecture description<sup>2</sup>:</b> ( <i>to facilitate credit recognition in other institutions</i> )<br><br><b>Lectures:</b> <ol style="list-style-type: none"><li>1. Atomic structure, radioactivity, ionizing radiations.</li><li>2. Interaction of ionizing radiations with materials, dosimetry, physical dose concepts</li><li>3. Principles of radiation protection, dose limits</li><li>4. Public exposure</li><li>5. Biological effects of the radiation</li><li>6. Radiation protection of the patients</li><li>7. Radiation protection in dentistry</li><li>8. X-ray equipments</li></ol> |

9. Radiation protection regulation aspects
10. Radiation protection legalisation in Hungary
11. General rules of ionizing radiation applications
12. Nuclear and radiological accidents. Prevention, emergency plan
13. Medical exposure
14. Consultation, written pre-test

**Practices:**

1. Possible tools and methods of basic nuclear measurements.
2. Measurement of X-ray radiation dose and dose performance on phantom.
3. Measurement X-rays absorption
4. Measurements of half-value layer
5. Describing the use of ionization chamber
6. Describing the use of G-M Tube
7. Describing the use of scintillation detector
8. Describing the use of thermoluminescent dosimeter
9. Personal dosimetry
10. Describing isotope diagnostics – contamination measurements
11. Record and physical protection of radiation sources. 190/2011 Governmental Decree and 11/2010. KHEM Decree. Defence-in-depth concept and its levels.
12. Technical parameters that affect the quality of x-rays
13. The application of X-ray films in dental radiology
14. Tools of reducing the patients' radiation exposure and their application

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

**Special academic work required for completion of the course<sup>3</sup>:**  
not required

**Attendance on practices and lectures, replacement in case of missed sessions:**  
Students must attend on the practices. The signature will be refused, if the student was absent in more than 25% of the duration of the practices.

**Consequences of absence from sessions and exams:**  
According to the Study and Examination Policy.

**Method of checking acquired knowledge during the study period<sup>4</sup>:**  
No midterm.

**Requirements of an accepted semester (*signature of the lecturer*):**  
Attendance on the practices according to the Study and Examination Policy.

**Type of the exam:**  
Semifinal

**Requirements of the exam<sup>5</sup>:**  
Entire knowledge of the lectures and practices of the Radiation Protection course.

**Grading of courses<sup>6</sup>:**  
No practical mark.

**Exam registration:**  
In NEPTUN system.

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| <b>Rules of repeating exams:</b><br>According to the Study and Examination Policy.  |
| <b>List of textbooks, lecture notes and recommended textbooks:</b><br>Mary Alice Statkiewicz Sherer Paula Visconti E. Russell Ritenour Kelli Haynes: Radiation Protection in Medical Radiography<br><a href="https://semmelweis.hu/oralis-diagnosztika/en/education/radiation-protection/">https://semmelweis.hu/oralis-diagnosztika/en/education/radiation-protection/</a> |
| <b>Signature of course lecturer:</b>  |
| <b>Signature of head of department:</b>   |
| <b>Date of submission:</b>  |
| <b>Opinion of OKB:</b>  |
| <b>Notes from the Dean's Office:</b>  |
| <b>Signature of Dean:</b>   |

<sup>1</sup> Filled out by the Dean's Office following approval

<sup>2</sup> Detailed and numbered for each week of theoretical and practical lessons one by one, indicating the names of lecturers and instructors

<sup>3</sup> Eg. field practice, medical chart analysis, survey conducting, etc.

<sup>4</sup> Eg. homework, report, midterm exam etc. Topics, dates, method of retake and replacement.

<sup>5</sup> List of topics in case of theoretical exam, thematic and method in case of practical exam.

<sup>6</sup> Method of inclusion of theoretical and practical exams. Method of inclusion of midterm assessments.