

University: <i>University of Presov</i>	
Faculty/university workplace: <i>Faculty of Health Care</i>	
Code: <i>6/RAT/RAPT2-ER/25</i>	Course title: <i>Radiological Instrumentation 2</i>
Type, scope and method of educational activity: Type of educational activity: <i>Lecture, Practical seminar</i> Scope of educational activity: <i>2,4 hour per week, 26,52 per semester</i> Method of educational activity: <i>Attendance</i>	
Number of credits: <i>6</i>	
Recommended semester:	
<i>2nd year WT</i>	<i>radiological technology (RT)</i>
Study grade: <i>Bachelor</i>	
Prerequisites: <i>6/RAT/RAPT1/22 - Radiological instrumentation 1</i>	
Conditions for passing the course: Form of assessment: Final evaluation: <i>Assessment and completion of the course: Exam</i> <i>Full-time study contact lessons 78 hours / semester, 2 hours (lecture / week), 4 hours (seminar / week), non-contact teaching 102 hours / semester, total student workload 180 hours, full-time teaching.</i> <i>During the semester, the student implements a written test with an evaluation - 25 points (10 hours of student preparation). Student success must be at least 50%.</i> <i>A (100 - 90%)</i> <i>B (89.99 - 80%)</i> <i>C (79.99 - 70%)</i> <i>D (69.99-60%)</i> <i>E (59.99 - 50%)</i> <i>FX (49.99 and less%).</i> <i>Oral examination of knowledge from the selected topic - 75 points (37 hours of student preparation)</i> <i>A = 100 - 90 points</i> <i>B = 89 - 80 points</i> <i>C = 79 - 70 points</i> <i>D = 69 - 60 points</i> <i>E = 59 - 50 points</i> <i>FX = less than 50 points</i> <i>The rules of student load assessment are available at: https://www.unipo.sk/fakulta-zdravotnictva/pokyny/</i> Final rating: <i>The evaluation will be given on the basis of meeting all the above requirements according to the classification scale A, B, C, D, E, FX - Study Regulations PU in Prešov https://www.unipo.sk/fakulta-zdravotnictva/vzdelavanie1/</i>	
Learning outcomes: <i>Learning outcomes:</i> <i>After completing the course, students can:</i> Knowledge: <i>VV1 - description of basic functions and use of radiological devices, operation and regular inspection,</i> <i>'VV2 - fault description so that it is possible to make unambiguous orders for repairs, inspections and planning of new equipment,</i> Skills: <i>VV3 - apply knowledge in practice when working with radiological equipment.</i> competences <i>VV4 - work independently with radiological devices.</i>	

Course content:

Lectures : seminars:

The principle of X-ray tubes , type , glow circuits , levies rotation.

2. High-voltage circuits , types of generators.

3. Block diagram of a conventional X-ray device block functions . Timing diagram for electric values during exposure .

4. The primary lens (Lysholm) , secondary lens (Bucky) - technical solution.

5. X-ray image intensifier and the possibility of recording (spot, video , cinema camera).

6. Automatic Exposure .

7. The TV chain.

8. radiographic , fluoroscopic complete C- arm , mobile devices , dental devices (intraoral , panoramic) , mammography.

9. hard and soft imaging technique .

10. Ultrasonography .

11. Digital subtraction .

12. Digital radiography .

13. Computer tomography .

14. Magnetic resonance imaging .

15. processing and storage in Radiology - PACS .

16. Seminar analysis and practical demonstration of typical systems.

17. Consultations .

Recommended literature :

1. REŽNÁK I.: HUŠÁK, V., KAŠUBA J., MIŠTINA L.: Moderné zobrazovacie metódy v lekárskej diagnostike, Martin: Osveta 1992.

2. CHUDÁČEK, V.: Rádiodiagnostika, Martin: Osveta 1993.

3. KOVÁČ, A.: Abdominálna sonografia, Martin: Osveta 1995.

4. ELIÁŠ, P., ŽÍŽKA J.: Dopplerovská ultrasonografie.

5. WEIS, J., BOŘUTA, P.: Úvod do magnetickej rezonancie. GOEN Bratislava, 1998.

6. Časopisy: Praktická rádiologie, Česká rádiologie, Radiology, Diagnostic Imaging Europe.

Notes:

Attendance at lectures - min. 80%, participation in seminars - min. 90%.

An individualized approach is provided for students with special needs based on the recommendation of the faculty coordinator.

Course evaluation:

Total number of students evaluated: 167

A	B	C	D	E	FX
46%	29%	16%	5%	2%	2%

Lecturers:

prof. MUDr. Marie Černá, Ph.D., guarantor

Bc. Katarína Tokarčíková, co-guarantor, lecturer, examiner, instructor, seminary supervisor

Bc. Ján Tarasovič, co-guarantor, lecturer, examiner, instructor, seminary supervisor

doc. RNDr. Marek Chmelík, PhD., co-guarantor, lecturer, examiner, instructor, seminary supervisor

Bc. Vladimír Remeta, co-guarantor, lecturer, examiner, instructor, seminary supervisor

PhDr.Bc. Janka Slaninková, PhD., co-guarantor, lecturer, examiner, instructor, seminary supervisor

Date of last change: 01.09.2024

Approved by: prof. MUDr. Marie Černá, Ph.D.