Subject	NUCLEAR MEDICINE
Study programme	Professional study programme for radiology technologists
Code	SRT-223
Academy year	II (second)
Semester	IV (fourth)
Total of classes	115
ECTS credits	7
Type of subject	Obligatory / Compulsory
Precondition	Completion/ realization of all precondition for enrolling in second academy year
Perform/Realize	Department of Nuclear medicine
Responsible professor	Prof Daniela Pop Gjorcheva, PhD MD
Address	Institute of pathophysiology and nuclear medicine, Medical Faculty, Vodnjanska 17, Skopje, R.Macedonia Tel.+389 2 31 12 831; e-mail: dpopmed@gmail.com
Key words	Radiology technologist study programme, basic subjects, nuclear medicine
Educational purposes	To learn a basic principles of nuclear physics, production of radioisotopes and radiopharmaceuticals and radionuclide application in diagnosis and therapy of diseases.
Short contents	Theoretical course/education (Lectures) • Basic aspects of radioactivity and radionuclide decay • Detectors of radioactivity in use in nuclear medicine • Radiopharmaceuticals- production and application • Principles of radiotracers methods, application of radionuclides in diagnostic procedures and therapy of diseases. Practical course/education (Practice activities) • Radionuclides transformation, absolute radioactivity - measurement units, principles of detection and measurement of radioactivity (background radioactivity, standard geometry of measuring) • Statistics of radioactive decay, • Physical, biological and effective half-time of radionuclides • Production of radionuclides • Radiolabeling and quality control of radiopharmaceuticals • The application of radionuclides for In vitro procedures • Computers' technology in nuclear medicine • Presentation of the most common performed nuclear medicine visualizing diagnostic procedures
Organization	Lecture: 30 classes Practice activities: 45 classes Practice training: 40 classes
Methods of learning	Lectures, practices, training
Predicted/Expected learning results	**Knowledge and understanding:** to achieve a basic knowledge about nuclear medicine and modalities of its diagnostic and therapeutic application. **Key skills:** implementation of achieved knowledge of nuclear medicine in routine practice.
Specific recommendation	To get signature, students are obliged to attend minimum 60% of lectures, 50% of practice activities and 70% of practice training. Admittance to continuous

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<td>during the teaching process</td>
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examinations is precondition for getting signature, too.

All predetermined teaching activities are valued as:

Attendance of the lectures:
51% - 60% - 3 points
61% - 70% - 3.5 points
71% - 80% - 4.0 points
81% - 90% - 4.5 points
91% -100% - 5 points

Attendance and examination of each practice activity – 0,4 points (0,2 plus 0,2)

Attendance of practice training:
51% - 60% - 1 points
61% - 70% - 1.5 points
71% - 80% - 2.0 points
81% - 90% - 2.5 points
91% -100% - 3 points

Activity grading:
Fair-7
Good - 9
Excellent-10

Table 1.
<table>
<tr><td>Type of teaching activities</td><td></td><td></td></tr>
<tr><td></td><td>Minimum</td><td>Maximum</td></tr>
<tr><td>Lectures</td><td>3</td><td>5</td></tr>
<tr><td>Practice activities</td><td>9</td><td>18</td></tr>
<tr><td>Training activities</td><td>9</td><td>13</td></tr>
<tr><td>Colloquiums– two</td><td>30</td><td>50</td></tr>
<tr><td>Final exam</td><td>9</td><td>14</td></tr>
<tr><td>Total</td><td>60</td><td>100</td></tr>
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Table 2.
Passing grades:
<table>
<tr><td>Scores</td><td>Mark</td><td>Grade</td></tr>
<tr><td>93-100 points</td><td>10</td><td>A</td></tr>
<tr><td>85- 92 -//-</td><td>9</td><td>B</td></tr>
<tr><td>77- 84 -//-</td><td>8</td><td>C</td></tr>
<tr><td>69- 76 -//-</td><td>7</td><td>D</td></tr>
<tr><td>60- 68 -//-</td><td>6</td><td>E</td></tr>
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<tr>
<td>Knowledge examination</td>
<td>Continuous examination:
Regular attendance of lectures, practice activities and practice training are precondition for admittance of students to continuous knowledge examination-colloquiums. Two colloquiums are anticipated, both in written form (mostly in multiple questionare form). The continuous examination is thought to be passed with minimum 60% achieved points of both colloquiums, which allows admittance to final exam (after getting signature). Passing of one of two colloquiums allows students admittance to complete final exam (failed colloquiums and final exam). Failing of both colloquiums do not allow admittance to final exam.</td>
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	Final exam (in written form): Include practical course of the subject and is a part of an examination session (May/June and August/September). The mark of the whole subject is composed of total points achieved from attendance of lectures, practice course and practice training and points achieved from continuous testing and final exam. Extraordinary study programme: It is organized to perform 40% of anticipated theoretical and practical course of ordinary study programme. Final exam as a part of exam session is in written forma (MCQ) and include both part of the education (lectures and practice activities). Subject mark is compose according the total achieved points and passing grade (see Table 1 and Table 2)
Textbooks	1. Vaskova O, Miceva Ristevska S, Pop Gjorcheva D, Miladinova D, Loparska S, Janevik-Ivanovska E: Basic nuclear medicine, Boro Grafika, Skopje, 2008