ЦЕНТЪР ЗА ОБУЧЕНИЕ – БАН

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Basic Information:

Course Title: Radiation Protection
Lecturer: Assoc. Prof. Dr. Mladen Mitev
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Total Teaching Hours: 30 hours

Annotation

The course provides the theoretical background and training necessary for the radiological protection requirements of ionizing radiation used in nuclear medicine, energy and industry. The lecture module covers the necessary areas, namely: basic radiation protection concepts, radioactive decay and ionizing radiation characteristics, neutron and ionizing rays detectors, dosimetry, biological effects of radiation exposure, monitoring instrumentation, protection design features, procedures, emergencies and protective barriers, policies, regulations and legislation, ALARA approach, contamination control and transport, radiation alarms, risks assessment and safe practices. At the end of the course, as a demonstration, specific tasks from the fields of the doctoral students enrolled in the course will be examined.

Course content

Topic 1: Introduction to radiation protection
Topic 2: Basic dosimetric quantities
Topic 3: Interaction of ionizing radiation with matter
Topic 4: Measurement of ionizing radiation
Topic 5: Biological effects of ionizing radiation
Topic 6: Protection from ionizing radiation in medicine, industry and energy
Topic 7: Regulatory framework in radiation protection

Teaching and assessment methods

The teaching will be performed by lecturing.
The final grade will be formed by a passed exam in test form

Competencies acquired as a result of training

Planning of Radiation protection
Organization of Radiation protection
Measurement of dosimetry quantities

Literature:

1. Наредба за радиационна защита, в сила от 20.02.2018 г. приета с ПМС № 20 от 14.02.2018 г.

2. Г. Василев, С. Ушев „Съвременни основи на радиационната защита“ Тита Консулт, 2017
3. Манушев, Б. П., Практическа метрология на ядрените лъчения, 2001, 592с.
4. В. Козлов, Справочник по радиационной безопасности, Энергоатомиздат, М. 1999.
5. Публикации на Международната комисия за радиационна защита (МКРЗ), www.icrp.org.