Innovative Postgraduate Education In The Field Of Environment Protection: Methods And Tools

ENV PRO
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Environmental Radiation Protection

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6 October 2022

BIO Presenter

2007-2012 – PhD Student of CENS

2005-2016 – Junior Researcher, Researcher, Senior researcher at the Environmental Geochemistry Department of CENS

2013 PhD in Biology

2016-up to now Head of Radioecology Department in CENS

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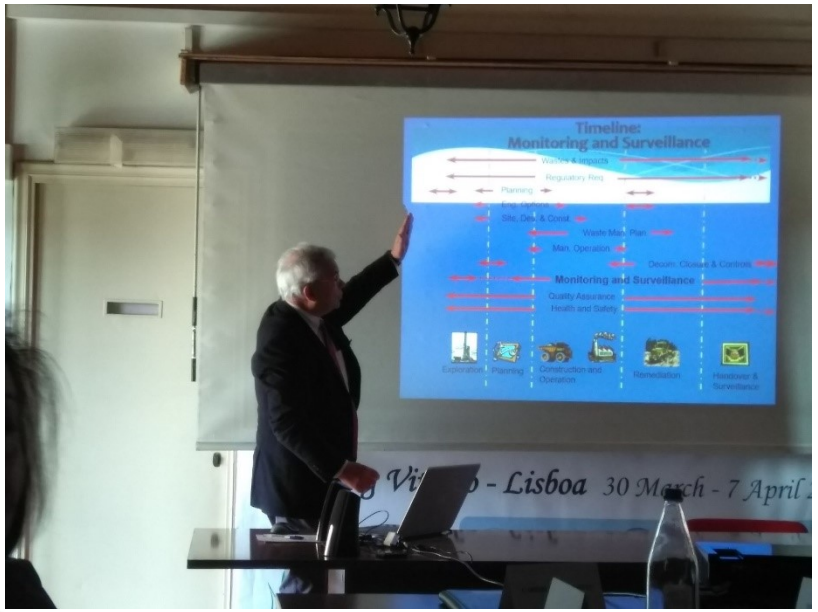
Course Benchmarking

Fernando P. Carvalho
Environmental Radiation Monitoring



- "Environmental Radiation" curriculum provided by Técnico Lisboa – ULISBOA (Portugal) (available on: https://fenix.tecnico.ulisboa.pt/cursos/mpsr/disciplina-curricular/283003985068208)
- "Radiation Protection and Radiation Safety", module – University of Oslo, Norway, (available on https://www.uio.no/studier/emner/matnat/fys/nedlagte-emner/FYS-KJM9570/index.html)

Course Outcomes

As a result of learning course modules, the students will:

Know

- law of radioactive decay, basic parameters of radionuclides, types of ionizing radiation and their effects on living matter;
- methods and modern equipment used in measuring of radioactivity;
- NORM issues; application of radioactive and nuclear materials
- organization and implementation of environmental radiation monitoring;
- environmental radiation protection and safety principals.

Be able to

- use databases and databases of radioactive decay
- use existing databases and datasets in the field of dosimetry
- choose the relevant analytical methods for identification and measurements of alpha, beta and gamma emitting isotopes;
- identify hazardous radioactive sources in order to inform the relevant authorities;
- calculate individual and collective effective doses based on the specific activity of the radioactive source.

Master

- in situ measurement of the absorbed dose rate in air;
- the calculation of specific activity of radionuclides based on law of radioactive decay;
- the calculation of the individual doses and assess dose rate;
- the calculation of individual annual effective dose;
- the calculation of collective annual effective dose;
- the extraction of information from the existing databases and datasets in the field of radiology and dosimetry.

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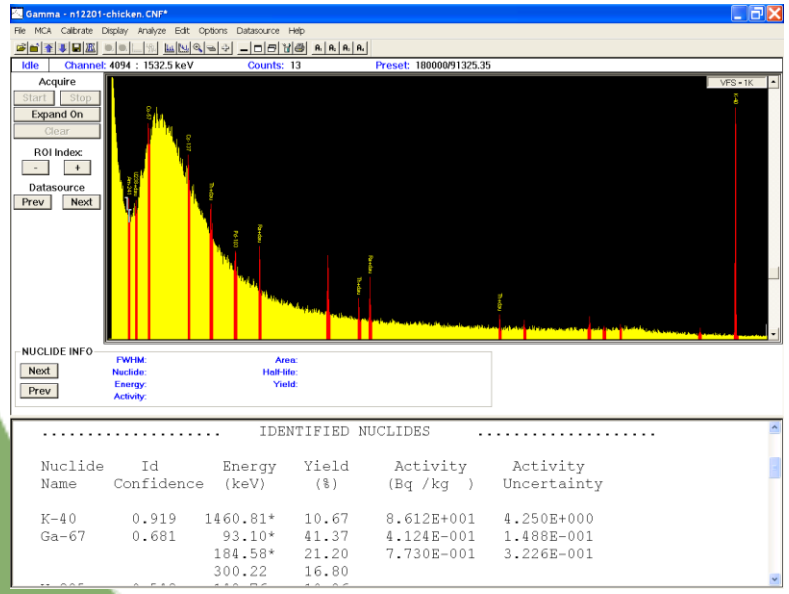
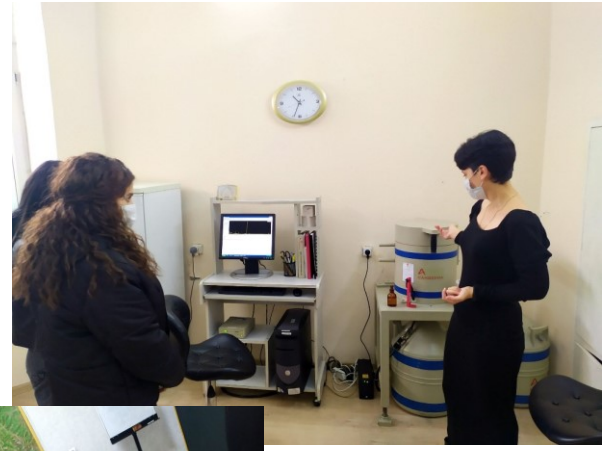
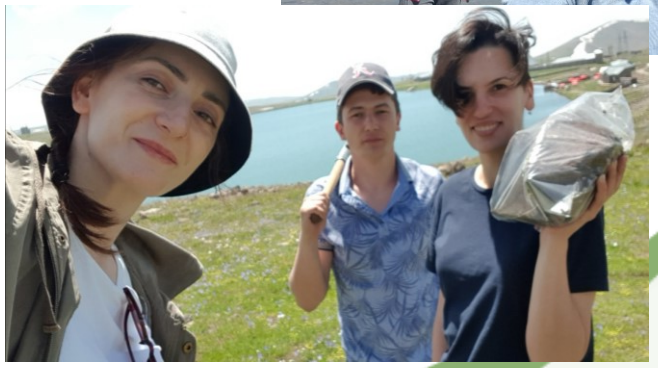
ERLEP Laboratory Involvement in Course Curricula



- ✓ Application analytical facilities and field equipment of CENS



- ✓ Collaborative learning and
- ✓ Inquiry-based learning



- ✓ Project-based learning

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THANK YOU !

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