

# Radioecology and environmental radioactivity monitoring

## Lecturers

Nicolas PAULY (Coordinator) and Geert BIERMANS

## Course mnemonic

PHYS-H515

## ECTS credits

2 credits

## Language(s) of instruction

English

## Course period

Second term

## Course content

Notions of nuclear physics, effects of ionizing radiations on living being, atmospheric, aquatic, and terrestrial transfers of radioactive wastes, transfer in the food chain, modelling of these transfers, prevention and countermeasures (in the short-, medium- and long-term), sampling methods and measurement of external radiological exposure.

## Objectives (and/or specific learning outcomes)

Notions essential for the understanding and for the modelling of the behaviour and of the transfer of radioactive waste in environment, of the effects of ionizing radiations on the living organisms and of the associated risks. Description of the methods of sampling, of measurement of the external radiological exposure and of the contamination in environment.

## Teaching method and learning activities

Lectures + practical exercises

## References, bibliography and recommended reading

Van Der Stricht, E & R Kirschmann Eds. Radioecology : Radioactivity and Ecosystems, Fortemps 2001 (ISBN 2-9600316-0-1) Pöschl M. & Nollet L.M.L. Eds. Radionuclide concentrations in food and the environment, CRC Press, Taylor & Francis Pub. 2007 (ISBN 0-8493-3594-9) Eisenbud M. Environmental radioactivity from natural, industrial and military sources (3rd Ed), Academic Press 1987 1991. (ISBN 0-12-235153-3) Kathren R.L. Radioactivity in the environment: sources, distribution and surveillance, Harwood Academic Pub. (ISBN 3-7186-0532-5) Till J.E. & Grogan H.A. Eds. Radiological risk assessment and environmental analysis, Oxford University Press 2008. (ISBN 978-0-19-512727-0)

## Other information

### Contact(s)

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## Evaluation method(s)

Other

### Evaluation method(s) (additional information)

Oral examination (about 45 minutes)

### Main language(s) of evaluation

English

## Programmes

### Programmes proposing this course at the Brussels School of Engineering

MA-IRPH | Master of science in Physical Engineering | finalité Professionnel/unit 2