

Course on “Radon and its radiological impact”		
Units and LO Statements		
Unit 1 –Radiological characterisation of radon (1 ECTS)	Responsibility / Autonomy	
	Autonomously apply radon measurements and characterisation from radiological protection point of view	
	Skills	Knowledge
<p>Analyzes radon origin and its spread in environment, according to UNSCEAR reports in terms of their radiological impact</p> <p>Evaluates radon influence over the precise measurement of low activity samples in order to assure the survey of the environment</p> <p>Applies the specific methods for the measurement of radon activity in order to verify the compliance with established reference levels</p>	<ul style="list-style-type: none"> • Select and use of the appropriate equipment in the measurement of radon in various media • Use special physical quantities specific to radon measurement • Apply methods and use appropriate equipment for the measurement of radon and progeny concentrations in different places – quality assurance • Apply the correct methods/procedures for measurement of radon activity in various media: in air, in water, in soil, at home and working places • Apply radon background corrections when measuring various low activity samples in different phases of NPP operation 	<ul style="list-style-type: none"> • Describe the uranium-radium-radon and daughters decay chain characteristics • Knowledge and interpretation of UNSCEAR data bases • Describe the specific quantities in radon measurement: activity (SI and non SI units) and energy (Potential Alpha Energy Concentration, Equilibrium factor) • Understand of the methods for subtraction of background influence in low activity samples, applying the principles of the ISO11929/2010 standard
Unit 2 – Regulatory control on exposure to indoor radon in dwellings and workplaces (1 ECTS)	Responsibility / Autonomy	
	Autonomously apply radiation protection against radon in workplaces and at home	
	Skills	Knowledge
<p>Analyzes the European and international documents in terms of radon exposure requirements</p> <p>Applies the national regulatory requirements regarding radon exposure in order to implement of the optimisation process for exposures in existing exposure situations</p> <p>Applies radon specific dosimetric assessments in order to ensure the adequate level of radiation protection in workplaces and at home</p>	<ul style="list-style-type: none"> • Accomplishment of the international legislation (EC Directive 59/2013) regarding radon, in the light of the ICRP PUBLICATION 115 /2010 • Apply the relevant regulations and guidance for the existing exposure situations involving exposure to radon • Calculation of the doses for personnel being irradiated from distance or incorporating radon and daughters, at home and at work places • Calculation of the effective doses due to radon (internal and external) exposure 	<ul style="list-style-type: none"> • Specify the relevant international Documents: EC59/2013, ICRP115/2010, etc. • Describe the regulatory requirements regarding radon exposure in workplaces and at home • Describe the calculation of dose to activity conversion factors to be applied in evaluation of doses due to radon exposure
Assessment criteria = to demonstrate mastery and innovation, advanced skills, required to solve complex and unpredictable problems in a specialised field of “Radon measurement and dose evaluation”		
Recommended assessment methods: Practical and written test, face to face examination, grid test with multiple choices [choosing among different options].		

Course applicable (in part or fully) for the following job profiles:

- Radiation Protection Officer (in uranium mining, uranium processing, fuel fabrication)
- Radiation Protection Officer (in NPP operation and radioactive waste management)
- Professionals of Public Health Service (Physicists, Chemists)
- Professionals of Environment Monitoring