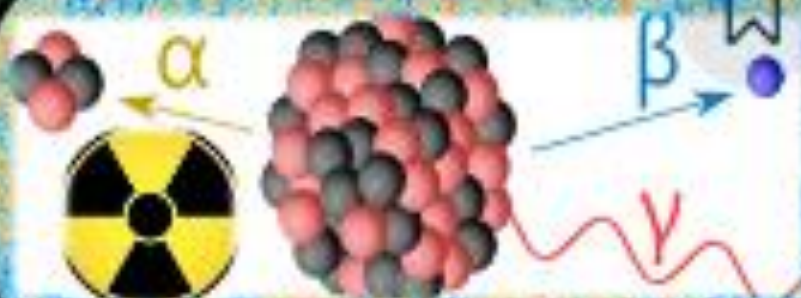


Understanding Radiations



Benefits and Hazards

Course Name : Understanding Radiations: Benefits & Hazards

Course Duration : 30 Hours

Course Type: CC/DC

Mode: Blended mode

Course Coordinator:

Dr Rita Crasta

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Course Instructors:

Dr Nilakanthan V K

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Module 1 (15 hours)

Introduction to the concept of radiation, Basic definitions-wave, amplitude, frequency, time period, phase etc., Types of radiations: Electromagnetic radiation, Particle radiation, Neutron radiation and Acoustic radiation. Propagation of electromagnetic radiation.

Module 2 (15 hours)

Ionizing Radiations: X-rays, Gamma rays, neutron radiation and particle radiations. Principles of detection of radiations and their applications, Radiation hazards: Ionizing effects, damage to biological systems etc. Non-Ionizing Radiations: Radio waves, Micro waves, Infra-red radiation, Ultraviolet radiation, their production and detection. Other non-ionizing radiations and applications.

References:

1. Ghoshal S N, 1994 'Atomic and Nuclear Physics', Vol I and Vol II (S Chand and Co.,)
2. Griths D J, 2001 'Introduction to elementary particles', (II Rev Edn. Pear-son,)
3. Kapoor S S, Ramamurthy V S, 1986 'Nuclear Radiation Detectors', (New Age International,)
4. Knoll G F, 1989 'Radiation Detection and Measurement', (II Edn. John Wiley,)
5. Krane K S, 1988 'Introductory Nuclear Physics', (John Wiley,)
6. Patel S B, 1991 'Nuclear Physics - An Introduction', (Wiley Eastern,)

Mode of Evaluation : Test – 02 & Assignment – 02 (Each Module)

