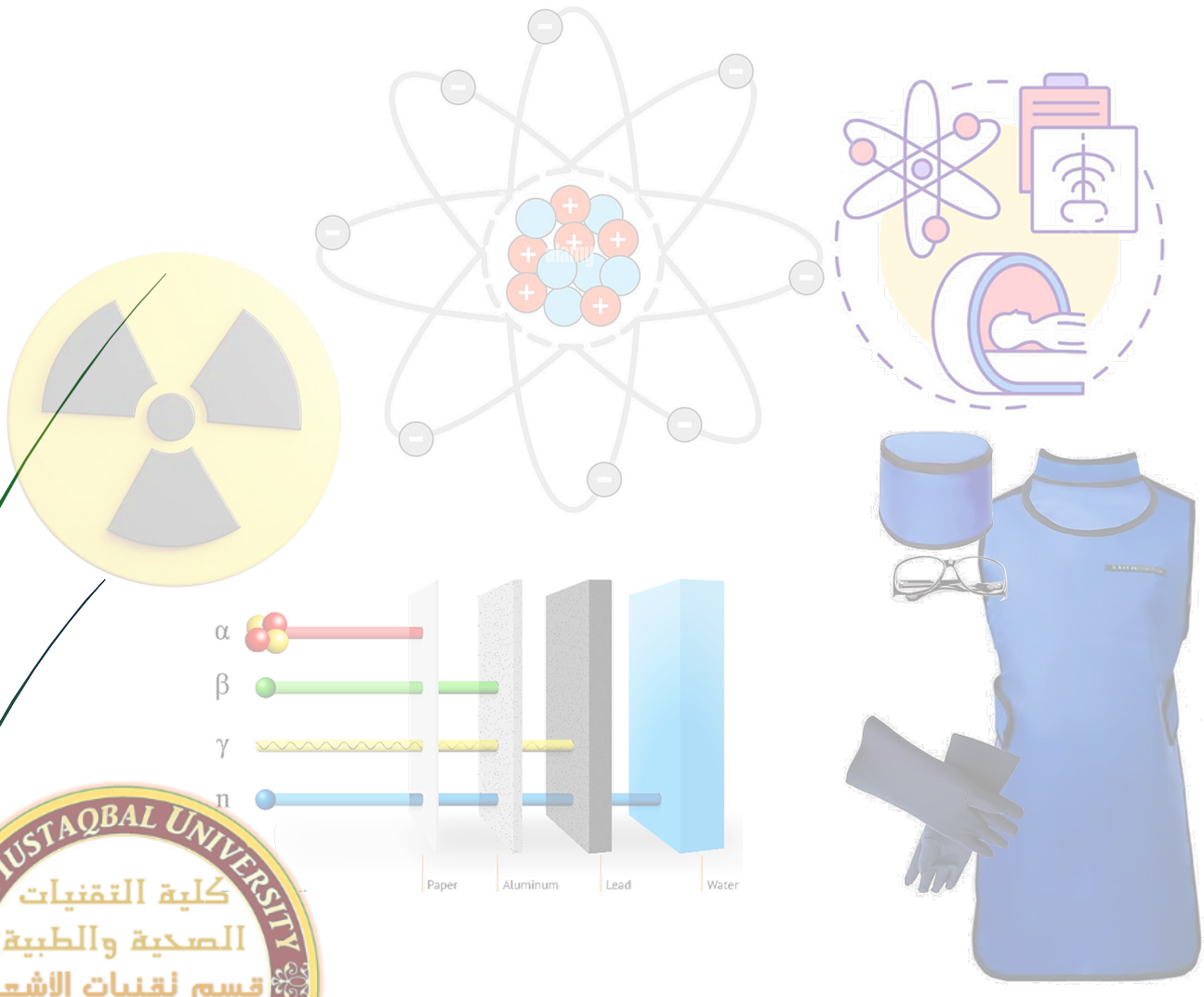
Radiation Protection

The Second Stage

First Semester –Second Lecture

2026 - 2025



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Introduction to the Radiation

OUTLINES:

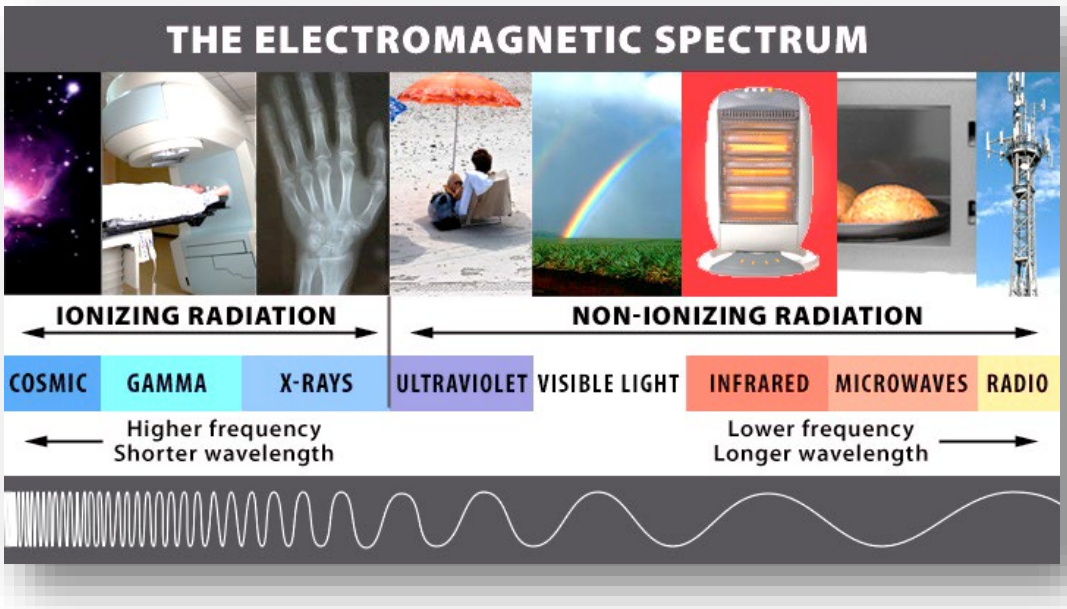
- What is Radiation?
- Sources of Radiation.
- Types of Radiation.
- How is Radiation Produced?
- We Live with Radiation?
- Do We Need Radiation Protection?
- What Can Radiation Do?

What is Radiation?

Radiation is energy that moves from one place "from the source" to another in a form that can be described as waves or particles.

Many radioisotopes naturally occurring and originated during the formation of the solar system and through the interaction of cosmic rays with molecules in the atmosphere. Tritium is an example of a radioisotope formed by this interaction.

It can come from unstable atoms that undergo radioactive decay, or it can be produced by machines "radioactive generator; X-ray tube; cyclotron".



Sources of Radiation.

Radiation sources may be natural or human productions. The difference between man-made sources of radiation and naturally occurring sources is the location from which the radiation originates.

1- Natural radiation sources:

A. Cosmic rays or astro-particles are high-energy particles or clusters of particles (primarily represented by protons or atomic nuclei) that move through space at nearly the speed of light. They originate from the Sun,