UV Radiation and classification

- **UV-C:**
  - Short-wavelength.
  - Most harmful but are completely absorbed by the Earth’s atmosphere and does not reach the Earth’s surface.

- **UV-B:**
  - Medium-wavelength.
  - Biologically active but cannot penetrate beyond the superficial skin layers.
  - Responsible for delayed tanning and burning.
  - Enhances skin ageing and significantly promotes the development of skin cancer.
  - Exposure to UV-B rays can cause DNA and cellular damage in living organisms.
  - Most solar UVB is filtered by the atmosphere.

- **UV-A:**
  - Relatively long-wavelength.
  - Accounts for approximately 95% of the UV radiation reaching the Earth’s surface.
  - Penetrate into the deeper layers of the skin and is responsible for the immediate tanning.
  - Enhances the development of skin cancers.

**UVGI (Ultra violet germs irradiation) Working Method:**

- UVGI replicates UV wavelengths and uses its destructive properties to target pathogens.
- It disinfects contaminated spaces, air and water and helps in preventing certain infectious diseases from spreading.
- According to the US Centers for Disease Prevention and Control (CDC), UVGI is a promising method for disinfection.
  - In 2005, the CDC revised its guidelines for using UVGI with regards to the spread of tuberculosis (TB) in hospital settings.
  - The guidelines intended to eliminate the spread of infection to healthcare workers from patients or others with unsuspected or undiagnosed infection.
- Scientists advise that fixtures containing UVGI lamps can be mounted on the walls or suspended from the ceilings.
  - Such fixtures will shine light on the upper interior surface of a room and trap pathogens.
  - Installing a fan in such spaces can further draw the air upward, which will increase the speed with which the UVGI can destroy pathogens.
- UVGI lamps can also be installed in room corners, in air ducts of ventilation systems or portable or fixed air cleaners.
- UVGI fixtures are and should be installed above people’s heads because their short wavelengths can irritate the skin and eyes.