



## IONISING RADIATION PROTECTION & SAFETY

Coordinated by Associate Professor Ravi Sood

The course is designed to meet the needs of the Australian work place regarding exposure to ionising radiation, both natural and human-made, in the form of X-rays, gamma-rays, neutrons and electrons. This course prepares OH&S officers and staff who may be exposed to ionising radiation in the workplace to understand the principles of ionising radiation safety and to implement and monitor relevant safety procedures. The reference for the course is the Australian Standard AS2243.4-1998. The course outcomes are to have the participants trained to:

- Implement ionising radiation safety in the workplace
- Monitor ionising radiation hazards
- Maintain records of radiation exposure
- Implement safe practices in the use, storage, transport and disposal of radioactive materials
- Implement contingency plans for radiation accidents.

## COURSE METHODOLOGY

We offer a five-day course that consists of a series of modules involving lectures, tutorials, laboratory based exercises including the use of radiation monitors, and practical and written tests. Participants are given comprehensive notes and are trained to fully understand and implement procedures according to the Australian Standard AS2243.4-1998. While the course assumes a limited understanding of secondary school science and mathematics applicable to ionising radiation, pertinent training can be provided via a self-paced pre-course package that can be worked through at the client's premises. The relevant concepts are also revised via simple exercises in introductory lectures at the start of the course.

The five-day course can be modified to meet the specific needs of organisations that encounter ionising radiation in the workplace, e.g. materials testing using X-ray machines; scanning of goods and humans using X-ray, gamma-ray and neutron radiation; monitoring of natural and human-made ionising radiation; irradiation of food using gamma-radiation.

We also offer a shorter 1 – 2 day version of the course for personnel requiring basic ionising radiation awareness, or as a refresher course for those staff who may previously have attended the full 5-day course.

## COURSE OUTLINE

- Mathematical tools
- The atom & radioactive decay
- Units of measurement of ionising radiation and doses
- Effects of ionising radiation on the human body
- Principles of radiation protection
- Shielding
- Radiation monitoring devices
- Control, storage and disposal of radioactive materials
- Transport of radioactive materials
- Ionising radiation aspects of tritium
- X-ray radiation from machines
- Decontamination principles and procedures
- The regulatory role of ARPANSA
- Developing workplace safety plans for ionising radiation.