

NUCLEAR TECHNOLOGY EDUCATION CONSORTIUM

N03

RADIATION & RADIOLOGICAL PROTECTION

Summary

Explains the properties of different types of radiation occurring as a result of nuclear processes and identifies means whereby levels of radiation and dosages can be detected and measured. The principles of radiation protection and shielding are outlined and demonstrated through practical experience with radioactive sources and detection equipment. The module concludes with an overview of ionising radiation regulations and legislation governing the impact of radiation on people and the environment. The safe handling of accidents is illustrated through case studies of real incidents.

On completion, students should have obtained:

- A full understanding of the sources, types of radiation and hazards associated with nuclear processes
- Knowledge of radiation detection and monitoring equipment
- Appreciation of the principles governing the design of radiological protection equipment
- Understanding of Ionising Radiation Regulations
- Practical experience of radiation detection equipment

Syllabus

- The nucleus and nuclear processes
- Radiation and radiation detection
- Biological effects of radiation
- Assessment of radiation exposure
- Dosimetry
- Ionising radiations regulations
- Evaluating the effects of exposure to radiation
- Practical laboratory: introduction to radiation detectors and monitors
- Practical laboratory: demonstration of properties of nuclear radiation
- Case studies – safe handling of accidents