



### 1. Operations

- **Production of isotopes:** *general aspects & production chain for open and sealed sources* (3 units)
- **Quality assurance and quality control:** *standards, guidelines and practice* (2 units)
- **Radiation metrology and dosimetry:** *includes process and environmental monitoring* (1 unit)
- **Packaging and transport of radioactive material** (1 unit)
- **Safety:** *safety analysis, occupational safety, emergency planning and security* (3 units)
- **Decontamination, waste management, and decommissioning** (1.5 units)

### 2. Current & Future Applications

- **Human health:** *diagnostics, therapy, molecular imaging technology, imaging instrumentation, radiopharmacy practices* (4 units)
- **Industrial process management:** *use of industrial radiotracers and sealed source techniques* (2 units)
- **Nuclear techniques in food and agriculture:** *includes mutation-aiding crop production & food safety and security* (2 units)
- **Nuclear techniques for sustainable use of natural resources** (1 unit)
- **Radioisotope-aided R&D in biological and life sciences** (1 unit)

### 3. Regulatory Frameworks & Infrastructure

- **Setting up RI production and application programmes:** *includes issues relating to licensing, siting, environmental assessment, and end-user agreements* (2 units)
- **Radiological protection:** *radiation effects with reference to UNSCEAR, and the current international RP paradigm with reference to ICRP* (2 units)
- **International safety regime for radioisotopes:** *includes the system of international conventions and standards established by IAEA* (2 units)

### 4. Key Contexts

- **Role of reactors and accelerators:** *includes the molybdenum crisis* (2 units)
- **Nuclear power and its renaissance:** *covers the important links between nuclear power and RI industries* (1 unit)
- **Socio-economics of RI production and application programmes** (2 units)
- **Communication and networking:** *includes risk and crisis communication* (1.5 units)
- **Knowledge management:** *covers research and development, knowledge sharing, and knowledge preservation* (1 unit)