Course Overview: Nordic PET Principles and Practice

This three-day course is intended for doctors, physicists, radiographers, technologists, nurses and other health professionals working with Siemens PET-CT systems.

The first two days provide the underpinning knowledge of the technical principles of PET imaging, including: PET instrumentation; acquisition and reconstruction settings and their influence on image quality; PET quantification; image analysis and interpretation; and PET quality control. The third day covers optimising PET acquisition and processing protocols, finding the best compromises between required image quality, quantification, scan time and radiation dose, for the range of clinical PET examinations. It further covers motion management and advanced practices such as 4D imaging and multiparametric PET, and addresses how to validate new techniques and protocol changes. Learning is achieved through both theoretical and practical sessions.

Course language: English

Preliminary Agenda: Nordic PET Principles & Practice

**Day 1: 09.00 - 16.00**

**Technical principles - acquisition and quality control**

- PET radiopharmaceuticals
- Radioactive decay, interactions and emissions
- PET instrumentation and imaging principles
- Static, flow, dynamic and gated acquisitions
- Acquisition parameters
- Factors affecting image quality
- Sinograms and PET quality control

**Day 2: 08.00 - 16.00**

**Image reconstruction, quantification and evaluation**

- Reconstruction parameters
- Image quantification
- Factors affecting image quality and quantification
- Image corrections
- PET-CT image registration
- Image viewing and analysis
- Image interpretation
- Practical session

**Day 3: 08.00 - 15.00**

**Optimisation of clinical scan and image display protocols**

- SUV harmonisation
- Respiratory and cardiac motion management
- Specialised applications (for image acquisition, processing and reporting)
- Optimising clinical protocols
- Optimisation strategies and validating protocol changes
- Multiparametric PET basics
- Practical session