PET BASICS-course (PGS_1709-3003)

Dates:	8.–10.4.2024
Place:	Haartman Lecture Hall (TG1) and https://utu.zoom.us/j/
Organiser:	Turku PET Centre
Language:	English
Target attendees:	Physicians, scientists, PhD students, all interested in PET

Course is free of charge and worth of 2.0 credits for MSc and PhD degree, and 15 h for MD specialist's degree.

Positron emission tomography (PET) is non-invasive and quantitative imaging modality using molecules labelled with positron-emitting radioisotopes in tracer quantities (i.e. without pharmacological effect) to visualize and measure rates of biochemical processes (e.g. enzyme reactions, ligand-receptor interactions, cellular metabolism, cell proliferation, gene expression) in tissues of living subjects. Therefore, PET is an important tool to elucidate mechanisms associated with diseases and drug actions. The course aims to provide students with a broad and general introduction to the PET imaging. The main purpose of this course is to enable students to understand the interdisciplinary nature of PET imaging. After the course one should have basic knowledge of the PET imaging field of its physics, radiochemistry, and data analysis, research and clinical applications.

Please note: degree students enroll in Peppi (PGS_1709-3003)

Please **register latest March 25, 2024** to Minna Kangasperko, minna.kangasperko@tyks.fi

Further information: Prof Anne Roivainen, anne.roivainen@utu.fi

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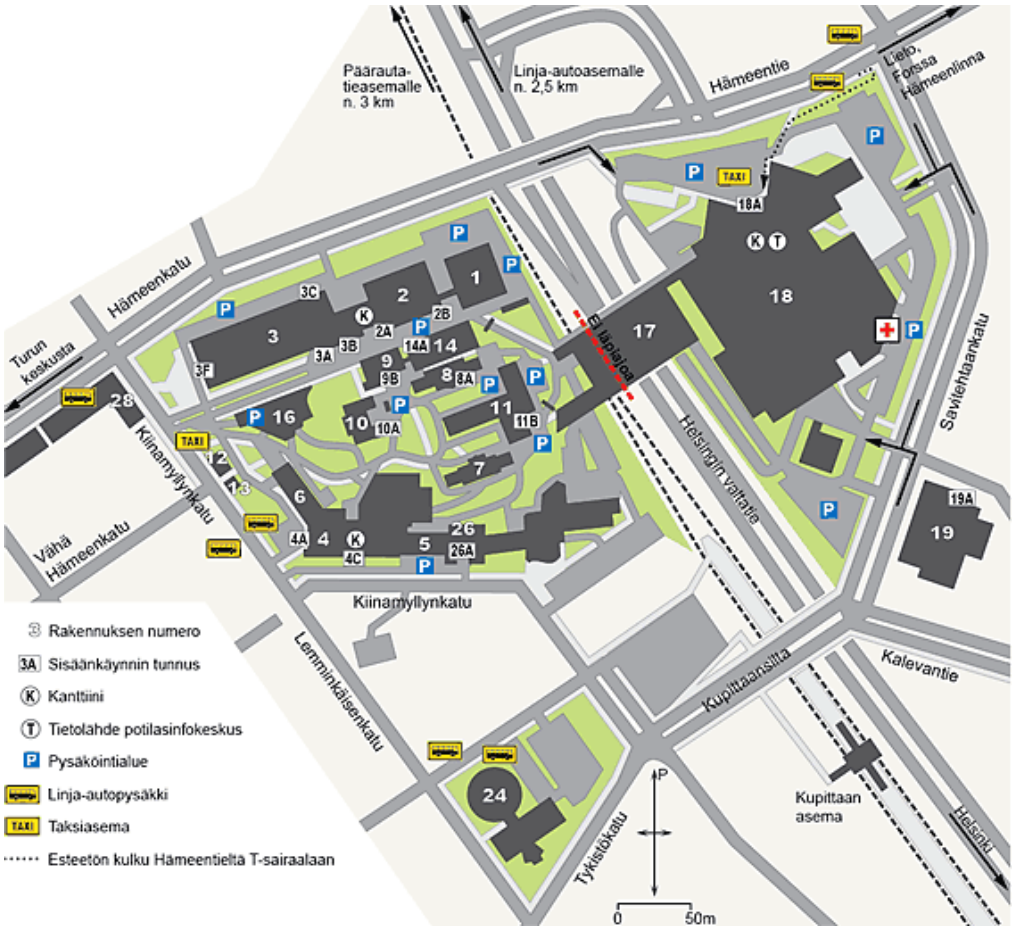

Haartman Lecture Hall: building 18 – TG1; PET Centre: building 14.

Monday 8.4.2024
Haartman Lecture Hall of T Hospital, (Building 18, 1st floor)

9.00–9.15	Anne Roivainen	Introduction of PET and Turku PET Centre
9.15–9.45	Virva Saunavaara	Radiation physics and safety
9.45–10.15	Virva Saunavaara	PET instrumentation
10.15–10.30	*Break*	
10.30–11.00	Anu Airaksinen	Introduction to radiopharmaceutical chemistry
11.00–11.30	Mikael Bergelin	Production of PET radionuclides
11.30–12.30	*Break*	
12.30–13.00	Semi Helin	Carbon-11 and oxygen-15 radiochemistry
13.00–13.30	Anu Airaksinen	Fluorine-18 radiochemistry
13.30–14.00	Xiang-Guo Li	Radiochemistry of radiometals: ^{68}Ga, ^{64}Cu and ^{89}Zr
14.00–14.15	*Break*	
14.15–14.45	Riikka Kivelä	Radiopharmacy and GMP guidelines for PET
14.45–15.15	Riku Klen	Image acquisition and reconstruction
15.15–17.00	*Visit to cyclotron and radiochemistry laboratory, and PET scanners and clinical chemistry laboratory PET Centre (building 14)*	

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Tuesday 9.4.2024
Haartman Leccture Hall of T Hospital, (Building 18, 1st floor)

9.00–9.30	Sergey Nesterov	Information technologies and image analysis in PET
9.30–10.00	Richard Aarnio	Radiometabolism of PET tracers
10.00–10.15	*Break*	
10.15–11.15	Marco Bucci	Quantification of PET
11.15–12.15	*Break*	
12.15–12.45	Marcus Sucksdorff	Imaging of neuroinflammation with PET
12.45–13.15	Lauri Nummenmaa	Statistical analysis of brain-PET data
13.15–13.45	Kirsi Virtanen	Brown adipose tissue imaging in humans
13.45–14.00	*Break*	
14.00–14.30	Pirjo Nuutila	Quantitative PET imaging of metabolic diseases
14.30–15.00	Jukka Kemppainen	PET in cancer diagnosis and therapy
15.00–15.30	Marko Seppänen	PET in the diagnosis of neuroendocrine tumors
15.30–17.00	*Visit to preclinical laboratories, BioCity, Tykistökatu 6*	

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Wednesday 10.4.2024
Haartman Lecture Hall of T Hospital, (Building 18, 1st floor)

9.00–9.30	Tove Grönroos	Small animal imaging and pre-clinical evaluation of PET tracers
9.30–10.00	Kari Kalliokoski	Imaging of exercise responses with PET
10.00–10.15	*Break*	
10.15–10.45	Jussi Hirvonen	Neurotransmitter systems studied with PET
10.45–11.15	Juha Rinne	PET in clinical neurology
11.15–12.15	*Break*	
12.15–12.45	Juhani Knuuti	PET in clinical cardiology
12.45–13.15	Antti Saraste	Preclinical cardiovascular research
13.15–13.30	*Break*	
13.30–14.00	Heikki Minn	Oncological research
14.00–14.30	Jukka Kemppainen	PET imaging of infection/inflammation
14.30–15.00	Eleni Rebelos	Preclinical inflammation research
15.00–15.15	Anne Roivainen	Closing words