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Medical Imaging Physics and Technology - Principles of Optimisation, Safety, and Education Development for Building Capacity in Developing Countries | (smr 3734)

Monday 05 September 2022

Registration formalities - Kastler Lecture Hall (AGH) (09:00-09:45)

REGISTRATION: Upon arrival, Visitors not staying in the ICTP Guest Houses, are kindly requested to complete registration formalities at the Adriatico Guesthouse. The Registration Desk will be open at the Lower level from 9.00 to 9.45.

Time zone: You can choose your time zone (in place of Europe/Rome) on the top right of the page and the programme time will be modified accordingly.

notitle - Kastler Lecture Hall (AGH) (09:50-15:50)

time	title	presenter
09:50	Medical Imaging – History, Progress and Future Trends	SLAVIK TABAKOV
10:40	Coffee break	
11:00	Medical Physics - professional development in LMIC countries healthcare: Optimization, Quality Assurance (QA), Risk Management, Training	SLAVIK TABAKOV
11:50	Radiation Quantities and Units	FRANCO MILANO
12:40	Lunch	
14:00	Overview of Radiation Protection (RP) in Diagnostic Radiology (DR)	MAGDALENA STOEVA
14:45	Coffee break	
15:30	Preparation and moving into Leonardo da Vinci Building (Budinich Hall)	

College Ceremony - Kastler Lecture Hall (AGH) (16:00-19:00)

time	title	presenter
16:00	Opening & Ceremony	LUCIANO BERTOCCHI ATISH DABHOLKAR SLAVIK TABAKOV
17:00	Welcome Reception	

Tuesday 06 September 2022

notitle - Kastler Lecture Hall (AGH) (09:00-17:00)

time	title	presenter
09:00	Contemporary X-ray tubes and generators 1	SLAVIK TABAKOV
09:50	Contemporary X-ray tubes and generators 2	SLAVIK TABAKOV
10:40	Coffee break	
11:00	International framework of RP first part	MAGDALENA STOEVA
11:50	Fundamentals of Dosimetry in Diagnostic radiology	FRANCO MILANO
12:40	Lunch	
14:00	International framework of RP second part	MAGDALENA STOEVA
14:50	Coffee break	
15:10	Patients' Radiation Protection	MAGDALENA STOEVA
16:10	Characteristics of Medical Images that Determine Visibility of Body Structure and Clinical Conditions	PERRY SPRAWLS

Wednesday 07 September 2022

notitle - Kastler Lecture Hall (AGH) (09:00-16:50)

time	title	presenter
09:00	Digital Radiography image parameters – MTF, SNR, NPS, NEQ, DQE	SLAVIK TABAKOV
09:50	Computed Radiography detectors 1	SLAVIK TABAKOV
10:40	Coffee break	
11:00	Computed Radiography detectors 2	SLAVIK TABAKOV
11:50	Occupational Radiation Protection	MAGDALENA STOEVA
12:40	Lunch	
14:00	Practical implementation of QA/QC programs	MAGDALENA STOEVA
14:50	Coffee break	
15:10	Digital Image Structure, Characteristics, and Effects of Visibility and Clinical Applications	PERRY SPRAWLS
16:00	Medical Imaging Procedure Optimization and the Expanding Role of Medical Physicists	PERRY SPRAWLS

Thursday 08 September 2022

notitle - Kastler Lecture Hall (AGH) (09:00-17:00)

time	title	presenter
09:00	Classical and Digital Fluoroscopic imaging systems	SLAVIK TABAKOV
09:50	Computed Tomography (CT) image formation	SLAVIK TABAKOV
10:40	Coffee break	
11:00	MDCT	PAOLA BREGANT
11:50	Overview of Computed Tomography Quality Control	PAOLA BREGANT
12:40	Lunch	
14:00	New methods and protocols for Computed Tomography (Cardiac CT, etc)	PAOLA BREGANT
14:50	Coffee break	
15:10	The Learning and Teaching Process Applied to Medical Physics	PERRY SPRAWLS
16:10	Medical Physics Education Models and Methods	PERRY SPRAWLS

Friday 09 September 2022

notitle - Kastler Lecture Hall (AGH) (09:00-17:00)

time	title	presenter
09:00	Computed Tomography (CT) Optimization	PAOLA BREGANT
09:50	Protocols and Code of Practice in Diagnostic Radiology – 1 Tips on Dose Reference Levels	FRANCO MILANO
10:40	Coffee break	
11:00	Protocols and Code of Practice in Diagnostic Radiology – 2 Uncertainties and Errors Propagation	FRANCO MILANO
11:50	Medical Physics e-Learning and using of Moodle	SLAVIK TABAKOV
12:40	Lunch	
14:00	Using the free LMS software Moodle for building Medical Physics on-line modules and MSc programmes	VASSILKA TABAKOVA
14:50	Coffee break	
15:10	Discussion of posters “Medical Physics Education and Training” from different countries	RENATO PADOVANI
16:10	Medical Physics Education and Training session at ICTP - Feedback	RENATO PADOVANI

Monday 12 September 2022

notitle - Kastler Lecture Hall (AGH) (09:00-17:00)

time	title	presenter
09:00	Basic Safety Standards (BSS) Requirements for Medical Exposures	MAGDALENA STOEVA
09:50	Radiation Protection Programmes Implementation	MAGDALENA STOEVA
10:40	Coffee break	
11:00	DR Quality Control: Evaluating X-ray generator performance	SLAVIK TABAKOV (IOMP, KING'S COLLEGE LONDON, UK), MAGDALENA STOEVA (MEDICAL UNIVERSITY PLOVDIV, BULGARIA)
11:50	DR Quality Control: Assessment of Fluoroscopic image quality	SLAVIK TABAKOV (IOMP, KING'S COLLEGE LONDON, UK), MAGDALENA STOEVA (MEDICAL UNIVERSITY PLOVDIV, BULGARIA)
12:40	Lunch	
14:00	DR Quality Control COMPUTER SESSION - Informatic Laboratory (X-ray tube and generator QC)	SLAVIK TABAKOV (IOMP, KING'S COLLEGE LONDON, UK), MAGDALENA STOEVA (MEDICAL UNIVERSITY PLOVDIV, BULGARIA)
14:50	Coffee break	
15:10	DR Quality Control: COMPUTER SESSION - Informatic Laboratory (X-ray tube and generator QC)	SLAVIK TABAKOV (IOMP, KING'S COLLEGE LONDON, UK), MAGDALENA STOEVA (MEDICAL UNIVERSITY PLOVDIV, BULGARIA)
16:10	DR Quality Control: COMPUTER SESSION - Informatic Laboratory (X-ray tube and generator QC)	SLAVIK TABAKOV (IOMP, KING'S COLLEGE LONDON, UK), MAGDALENA STOEVA (MEDICAL UNIVERSITY PLOVDIV, BULGARIA)

Tuesday 13 September 2022

notitle - Kastler Lecture Hall (AGH) (09:00-17:00)

time	title	presenter
09:00	Hospital Information Systems	MAGDALENA STOEVA
09:50	PACS and DICOM	MAGDALENA STOEVA
10:40	Group photo & Coffee	
11:00	Installation Shielding in DR and CT (with calculations and examples)	MAGDALENA STOEVA
11:50	Implementation of Bonn Call-for-Action	MAGDALENA STOEVA
12:40	Lunch	
14:00	DR Quality Control COMPUTER SESSION - Informatic Laboratory (contrast/detail)	SLAVIK TABAKOV (IOMP, KING'S COLLEGE LONDON, UK), MAGDALENA STOEVA (MEDICAL UNIVERSITY PLOVDIV, BULGARIA)
14:50	Coffee break	
15:10	DR Quality Control COMPUTER SESSION - Informatic Laboratory (contrast/detail)	SLAVIK TABAKOV (IOMP, KING'S COLLEGE LONDON, UK), MAGDALENA STOEVA (MEDICAL UNIVERSITY PLOVDIV, BULGARIA)
16:10	DR Quality Control COMPUTER SESSION - Informatic Laboratory (contrast/detail)	SLAVIK TABAKOV (IOMP, KING'S COLLEGE LONDON, UK), MAGDALENA STOEVA (MEDICAL UNIVERSITY PLOVDIV, BULGARIA)

Wednesday 14 September 2022

- Kastler Lecture Hall (AGH) (09:00-17:00)

time	title	presenter
09:00	Noise in Medical Imaging Mammography (Film-Screen/Digital)	FRANCO MILANO
09:50	Advanced Mammography applications (Tomosynthesis & Contrast enhanced Digital Mammography)	FRANCO MILANO
10:40	Coffee break	
11:00	Medical Radiation and Pregnancy	FRANCO MILANO
11:50	Test objects in Diagnostic Imaging	FRANCO MILANO
12:40	Lunch	
14:00	HOSPITAL PRACTICAL 1 (CT + MAMMO)	PAOLA BREGANT

Thursday 15 September 2022

- Kastler Lecture Hall (AGH) (09:00-17:00)

time	title	presenter
09:00	Dose Optimization in Radiology and Fluoroscopy	FRANCO MILANO
09:50	Radiation Dose and Image Quality in Dentistry and CBCT	FRANCO MILANO
10:40	Coffee break	
11:00	Principles of monitoring and setting of procedures	MAGDALENA STOEVA
11:50	Examples of patients doses in interventional cardiology	MAGDALENA STOEVA
12:40	Lunch	
14:00	HOSPITAL PRACTICAL 2 (CT + MAMMO)	PAOLA BREGANT

Friday 16 September 2022

notitle - Kastler Lecture Hall (AGH) (09:00-17:00)

time	title	presenter
09:00	Management of Digital Imaging in Contemporary Healthcare	SLAVIK TABAKOV
09:50	Specifications of Medical Imaging Equipment	SLAVIK TABAKOV
10:40	Coffee break	
11:00	Introduction to Radiation Protection Audit	RENATO PADOVANI
11:50	Digital Radiography Detectors Quality Control 1	PAOLA BREGANT
12:40	Lunch	
14:00	Digital Radiography Detectors Quality Control 2	PAOLA BREGANT
14:50	Coffee break	
15:10	Radiation Exposure for CR/DR What, Why, Where, How? -1	ANTONY SEIBERT
16:10	Radiation Exposure for CR/DR What, Why, Where, How?- 2	ANTONY SEIBERT

Monday 19 September 2022

notitle - Kastler Lecture Hall (AGH) (09:00-17:00)

time	title	presenter
09:00	Magnetic resonance (MR) basic physics and signal generation	JOHN OSHINSKI
09:50	Magnetic resonance imaging (MRI) systems and hardware	JOHN OSHINSKI
10:40	Coffee break	
11:00	Radiation detectors and measurement	SAMEER VIJAY TIPNIS
11:50	Characteristics of radionuclides for imaging	SAMEER VIJAY TIPNIS
12:40	Lunch	
14:00	The MR imaging process – spatial localization I	JOHN OSHINSKI
14:50	Coffee break	
15:10	The MR imaging process – spatial localization II	JOHN OSHINSKI
16:10	Principles of Ultrasound Imaging Quality control	SAMEER VIJAY TIPNIS

Tuesday 20 September 2022

- Kastler Lecture Hall (AGH) (09:00-17:00)

time	title	presenter
09:00	The MR imaging methods – pulse sequences	JOHN OSHINSKI
09:50	Spatial characteristics, image detail, noise, and contrast	JOHN OSHINSKI
10:40	Coffee break	
11:00	Gamma camera function and imaging	SAMEER VIJAY TIPNIS
11:50	Gamma camera image quality characteristics	SAMEER VIJAY TIPNIS
12:40	Lunch	
14:00	NM PRACTICAL 1	PAOLA BREGANT

Wednesday 21 September 2022

- Kastler Lecture Hall (AGH) (09:00-17:00)

time	title	presenter
09:00	MR Angiography and Diffusion Imaging	JOHN OSHINSKI
09:50	MR I Artifacts and Related Problems	JOHN OSHINSKI
10:40	Coffee break	
11:00	Evaluating gamma camera performance and quality control	SAMEER VIJAY TIPNIS
11:50	Radionuclide tomographic imaging (SPECT)	SAMEER VIJAY TIPNIS
12:40	Lunch	
14:00	NM PRACTICAL 2	PAOLA BREGANT

Thursday 22 September 2022

notitle - Kastler Lecture Hall (AGH) (09:00-17:00)

time	title	presenter
09:00	Fundamental of MR safety	JOHN OSHINSKI
09:50	Radionuclide tomographic imaging (PET)	SAMEER VIJAY TIPNIS
10:40	Coffee break	
11:00	Evaluation of SPECT and non-imaging systems	SAMEER VIJAY TIPNIS
11:50	Radionuclide dose considerations	SAMEER VIJAY TIPNIS
12:40	Lunch	
14:00	Nuclear medicine imaging procedures	SAMEER VIJAY TIPNIS
14:50	Coffee break	
15:10	Artefacts in NM and PET imaging	SAMEER VIJAY TIPNIS
16:10	Radiation Protection in Nuclear Medicine	SAMEER VIJAY TIPNIS

Friday 23 September 2022

notitle - Kastler Lecture Hall (AGH) (09:00-12:35)

time	title	presenter
09:00	Big Data and Radiomics in Diagnostic Imaging	FRANCO MILANO
09:50	Machine Learning in Diagnostic Imaging	FRANCO MILANO
10:40	Coffee break	
11:00	Interventional Radiological Equipment – selection and installation	RENATO PADOVANI
11:50	Feedback session of the College & Closing Remarks	LUCIANO BERTOCCHI