

Online Advanced Course on Biomedical Imaging 2023

April 27 - June 2

COURSE AGENDA







Online Advanced Course on Biomedical Imaging 2023 COURSE AGENDA

All hours according to Lisbon time zone

APRIL

27 PT

- 2 p.m. Opening remarks | Maria Filomena Botelho & Francisco Caramelo
- 2.15 p.m. Methods of microscopic imaging | Rui Oliveira
- 3 p.m. Confocal microscopy | Henrique Girão
- Break -
 - 4.30 p.m. Electronic microscopy | Maria Fátima Martins
 - 5.30 p.m. Articles Submission and Examination | Maria Filomena Botelho & Francisco Caramelo (to attendees with ECTS Credits requested)

28 PT

- 2 p.m. Conventional radiology and mammography: Physical basis | <u>Francisco Caramelo</u>
 & <u>Nuno Ferreira</u>
- 3 p.m. Conventional radiology: Clinical applications | Ana Paula Borges
- Break -
 - 4.30 p.m. Mammography: Clinical applications | Ana Paula Borges
 - 5.30 p.m. Interventional radiology | Paulo Donato
 - 6.30 p.m. Q&A and Discussion

MAY

4 PT

- 2 p.m. OCT: physical basis | Rui Bernardes
- 3 p.m. OCT: applications | Rui Bernardes
- Break -
 - 4.30 p.m. Optical imaging physics | <u>Miguel Morgado</u>
 - 5.30 p.m. Optical imaging applications | Mafalda Laranjo
 - 6.30 p.m. Q&A and Discussion









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5 PT

- 2 p.m. CT: Physical basis | Augusto Silva
- 3 p.m. CT technical update for clinical applications | Filipe Caseiro Alves
- Break -
 - 4.30 p.m. Ultrasonography: Physical basis | Francisco Caramelo
 - 5.30 p.m. Ultrasonography: Applications and ultrasound contrast | Pedro Belo Soares
 - 6.30 p.m. Q&A and Discussion

PT 11

- 2 p.m. Gamma camera and PET | Salomé Pires
- 3 p.m. Reconstruction of nuclear medicine images (SPECT and PET) | Nuno Ferreira & Francisco Caramelo
- Break -
 - 5 p.m. Nuclear medicine applications | Paula Lapa
 - 6.30 p.m. Q&A and Discussion

ENG UT MD Anderson Cancer Center - Session on PET 12

- 2 p.m. PET I. Basis | Osama Mawlawi
- 3 p.m. PET II. Quality Assurance, Testing and Quantification | Osama Mawlawi
- Break -
 - 4 p.m. Advances in PET/CT Imaging | Osama Mawlawi
 - 6 p.m. Q&A and Discussion







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PT 18

- 2 p.m. RMN spectroscopy. Biochemical basis. | Rui Brito
- Break -
 - 4.30 p.m. RMN spectroscopy applications | Marco Alves
 - 5.30 Q&A and Discussion

PT 19

- 2 p.m. Physics of MRI imaging. Pulse sequence and main artifacts | <u>Rita Nunes</u>
- 3 p.m. MRI contrast agents. Biochemistry | <u>Isabel Prata</u>
- Break -
 - 4.30 p.m. Applications and recent trends in MRI | Filipe Caseiro Alves
 - 6 p.m. Q&A and Discussion

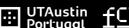
PT 25

- 2 p.m. Basis of Super-resolution | Francisco Caramelo
- 3 p.m. SPECT animal systems | Maria Filomena Botelho
- Break -
 - 4.30 p.m. PET animal systems | Ana Cristina Santos
 - 5.30 p.m. MRI animal systems | José Sereno
 - 6.30 p.m. Q&A and Discussion

26

- 2 p.m. Physical Basis of Radiotherapy (LINAC) | Paulo César Simões
- 3 p.m. Hadrontherapy | Paulo Crespo
- Break -
 - 4.30 p.m. Advances on target organs delineation and Clinical application | Inês Nobre Góis
 - 5.30 p.m. SEMINAR: New methods in Radiotherapy: MR-guided | Oliver Jäkel
- 6.30 p.m. Q&A and Discussion









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JUNE



University of Coimbra, School of Information, University of Texas at Austin, INESC TEC and UT MD Anderson Cancer Center - Session on Artificial intelligence and Data Science

- 2 p.m. Artificial intelligence and data extraction in biomedical images | <u>Bárbara</u>
 Oliveiros
- 3 p.m. Chest X-ray Imaging Diagnosis: Classification, Localization, and Interpretation | <u>Ying Ding</u>
- Break -
 - 4.30 p.m. Computer Vision and Machine Learning Challenges in Cancer Research | <u>Hélder Oliveira</u>
 - 5.30 p.m. Al to improve access to high-quality radiation therapy planning in low and middle-income countries | <u>Laurence Court</u>
 - 6.30 p.m. Q&A and Discussion
- 2 ENG UT MD Anderson Cancer Center, German Cancer Research Center and UT Austin Portugal Projects - Session on Proton Therapy
- 2 p.m. Principles and Practices of Proton Therapy | Falk Poenisch
- 2.45 p.m. Image-guided Planning and Delivery of Proton Therapy | <u>Thomas J.</u>
 <u>Whitaker</u>
- Break -
 - 4.15 p.m. Towards Real-Time PGS Range Monitoring in Proton Therapy of Prostate Cancer | <u>João Seco</u>
 - 5.15 p.m. Presentation of UT Austin Portugal Projects:
 - AT&PT Automatic Treatment Planning for Proton Therapy | Joana Dias
 - <u>TOF-PET</u> for Proton Therapy | <u>Stefaan Tavernier</u>
 - <u>THER-PBCT</u> Theranostic Strategy for Proton Boron Capture Therapy of Pancreatic Cancer | <u>Célia Fernandes</u>
 - 6.30 p.m. Q&A and Discussion









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16 PT

- 2 p.m. Evaluation
- 3 p.m. 7 p.m. Hands-on session: SPECT | Margarida Abrantes, Salomé Pires (Biophysics Institute, iCBR, Faculty of Medicine)



