

# Online Advanced Course on Biomedical Imaging 2022

## COURSE AGENDA

### MARCH

All hours according to Lisbon time zone

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PT

2 p.m. - 2.30 p.m.  
**Opening Remarks.**

Maria Filomena Botelho  
& Francisco Caramelo

2.30 p.m. - 3.30 p.m.  
**Methods of Microscopic Imaging.**

Rui Oliveira

3.30 p.m. - 4.30 p.m.  
**Confocal Microscopy.**

Henrique Girão

**BREAK**

5 p.m. - 6 p.m.  
**Electronic Microscopy.**

Maria Fátima Martins

6 p.m. - 7 p.m.  
**Articles delivering & discussion about examination.**  
(reserved to individuals enrolled through the University of Coimbra)

Maria Filomena Botelho  
& Francisco Caramelo

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PT

2 p.m. - 3.00 p.m.  
**Conventional Radiology and Mammography. Physical Basis.**

Francisco Caramelo  
& Nuno Ferreira

3 p.m. - 4 p.m.  
**Conventional Radiology: Clinical Applications.**

Ruben Gaio

**BREAK**

4.30 p.m. - 5.30 p.m.  
**Mammography: Clinical Applications**

Manuela Gonçalo

5.30 p.m. - 6.30 p.m.  
**Interventional Radiology.**

Paulo Donato

6.30 p.m. - 7 p.m.  
**Q&A and Discussion.**

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PT

2 p.m. - 3.00 p.m.  
**OCT: Physical Basis.**

Rui Bernardes

3 p.m. - 4 p.m.  
**OCT: Applications.**

Rui Bernardes

**BREAK**

4.30 p.m. - 5.30 p.m.  
**Optical Imaging Physics.**

Miguel Morgado

5.30 p.m. - 6.30 p.m.  
**Optical Imaging Applications**

Mafalda Laranjo

6.30 p.m. - 7 p.m.  
**Q&A and Discussion**

### APRIL

1

PT

2 p.m. - 3.00 p.m.  
**CT: Physical Basis.**

Augusto Silva

3 p.m. - 4 p.m.  
**CT: Technical Updates for Clinical Applications.**

Filipe Caseiro Alves

**BREAK**

4.45 p.m. - 5.45 p.m.  
**Ultrasonography: Physical Basis.**

Francisco Caramelo

5.45 p.m. - 6.30 p.m.  
**Ultrasonography: Applications and Ultrasound Contrast.**

Pedro Belo Soares

6.30 p.m. - 7 p.m.  
**Q&A and Discussion.**

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EN

**UT MD ANDERSON CANCER CENTER SESSION ON PET**

2 p.m. - 3.00 p.m.  
**PET I. Basics.**

Osama Mawlawi

3 p.m. - 4.00 p.m.  
**PET II. Quality Assurance, Testing and Quantification.**

Osama Mawlawi

**BREAK**

4.30 p.m. - 6.00 p.m.  
**Advances in PET/CT Imaging**

Osama Mawlawi

6.00 p.m. - 6.30 p.m.  
**Q&A and Discussion.**

08

PT

2 p.m. - 3.00 p.m.  
**Gamma-camera and PET.**

Salomé Pires

3 p.m. - 4.30 p.m.  
**Reconstruction of Nuclear Medicine Images (SPECT and PET).**

Nuno Ferreira & Francisco Caramelo

**BREAK**

5.00 p.m. - 6.30 p.m.  
**Nuclear Medicine Applications.**

Paula Lapa

6.30 p.m. - 7 p.m.  
**Q&A and Discussion.**

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PT

2 p.m. - 3.30 p.m.  
**NMR Spectroscopy. The Basics.**

Rui Brito

**BREAK**

4 p.m. - 5 p.m.  
**RMN Spectroscopy Applications.**

Marco Alves

5 p.m. - 6 p.m.  
**Artificial Intelligence and Data Extraction in Biomedical Images.**

Barbara Oliveiros

6 p.m. - 7 p.m.  
**Q&A and Discussion.**

### MAY

6

PT

2 p.m. - 3.00 p.m.  
**Physics of MRI Imaging: Main pulse sequences and image artifacts.**

Rita Nunes

3 p.m. - 4 p.m.  
**MRI Contrast Agents. Biochemistry.**

Isabel Prata

**BREAK**

4.30 p.m. - 6 p.m.  
**Applications and Recent Trends in MRI.**

Filipe Caseiro Alves

6 p.m. - 7 p.m.  
**Q&A and Discussion.**

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PT

2 p.m. - 3.00 p.m.  
**Basis of Super-Resolution.**

Francisco Caramelo

3 p.m. - 4 p.m.  
**SPECT Animal Systems.**

Maria Filomena Botelho

**BREAK**

4.30 p.m. - 5.30 p.m.  
**PET Animal Systems.**

Ana Cristina Santos

5.30 p.m. - 6.30 p.m.  
**MRI Animal Systems.**

José Sereno

6.30 p.m. - 7 p.m.  
**Q&A and Discussion.**

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PT

EN

2 p.m. - 3.00 p.m.  
**Physical Basis of Radiotherapy (LINAC).**

Paulo César Simões

3 p.m. - 4 p.m.  
**Hadrontherapy.**

Paulo Crespo

**BREAK**

4.30 p.m. - 5.45 p.m.  
**Advances on Target Organs Delineation.**

Inês Nobre Góis

5.45 p.m. - 6.45 p.m.  
**Seminar: New Methods in Radiotherapy: MR-guided.**

Oliver Jäkel

6.45 p.m. - 7 p.m.  
**Q&A and Discussion.**

### JUNE

03

EN

**UT MD ANDERSON CANCER CENTER SESSION ON PROTON THERAPY**

2 p.m. - 2.45 p.m.  
**Principles and Practices of Proton Therapy.**

Falk Poenisch

2.45 p.m. - 3.30 p.m.  
**Image-guided Planning and Delivery of Proton Therapy.**

Thomas J. Whitaker

**BREAK**

4 p.m. - 5 p.m.  
**Seminar Towards Real-Time PGS Range Monitoring in Proton Therapy of Prostate Cancer.**

João Seco

5 p.m. - 6 p.m.  
**Presentation of UT Austin Portugal Projects:**

AT&PT - Automatic Treatment Planning for Proton Therapy (Radhe Mohan & Joana Dias)

TOF-PET for Proton Therapy (Stefaan Tavernier)

6 p.m. - 7 p.m.  
**Q&A and Discussion.**

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PT

Session reserved to attendees with ECTS Credits requested. Onsite Session

Biophysics Institute, iCBR, Faculty of Medicine

2 p.m. - 3.00 p.m.  
**Evaluation**

3 p.m. - 7 p.m.  
**Hands-On Session**

Margarida Abrantes  
& Salomé Pires