

**PLEASE COMPLETE IN BLOCK CAPITALS**

Surname: ..... Forename: .....

Organisation: .....

Address: .....

Postcode: .....

Email: ..... Tel No: .....

*(Please provide your professional/academic email address)*

Background experience: .....

How did you hear about this course? ICR website  Recommendation

Other (please specify)  .....

I would like to enrol for the following Course(s) *(Please tick)*

PRICES EUROS	Course 1	Course 2	Course 3	Course 4	Course 5
Standard price	£560 €660	£560 €660	£195 €230	£560 €660	£735 €865
University & Hospital Staff & all Trainees	£445 €525	£445 €525	£160 €190	£445 €525	£590 €695
Full time Students *	£240 €285	£240 €285	£135 €160	£240 €285	£315 €370
Other	Please contact the Course Secretary if you do not fit into the categories above.				
Course 3 available at £135 (€160) if booked with any other FULL course. One or two day registration on Courses 4 & 5 is accepted and will be charged pro rata.					

Total Cost: £.....

**\*Full time Students** - please forward a letter on headed notepaper signed by your tutor with your application confirming that you are a full-time student.

**PAYMENT**

**Invoice** – please raise a Purchase Order to – The Institute of Cancer Research, 123 Old Brompton Rd, London, SW7 3RP. **PO Number:..... PLEASE CONFIRM YOUR CORRECT INVOICING ADDRESS AND EMAIL ADDRESS FOR INVOICE TO BE SENT.....**  
**OR**

**Bank Transfer Payment** – please contact [jessica.keegan@icr.ac.uk](mailto:jessica.keegan@icr.ac.uk) for details.

Do you wish to receive accommodation details? Yes  No

Do you have any dietary requirements? Yes  No

If 'Yes' please specify: .....

Do you require any special assistance? Yes  No

If 'Yes' please specify: .....

Are happy for your details to be passed onto the course(s) lecturers and other delegates attending the Physics of Medical Imaging Course(s) by way of an attendee list? Yes  No

**Please email this completed form to the course administrator:**

Jessica Keegan e-mail: [jessica.keegan@icr.ac.uk](mailto:jessica.keegan@icr.ac.uk)

Physics Department, The Royal Marsden NHS Foundation Trust, Downs Road, Sutton, Surrey. SM2 5PT UK Tel. +44 (0)20 8661 3075

# THE PHYSICS OF MEDICAL IMAGING

Course 1: Mon 17 – Wed 19 Oct 2022

Magnetic Resonance Imaging and Spectroscopy

Course 2: Tue 15 – Thu 17 Nov 2022

Ultrasound Imaging

Course 3: Tue 21 Feb 2023

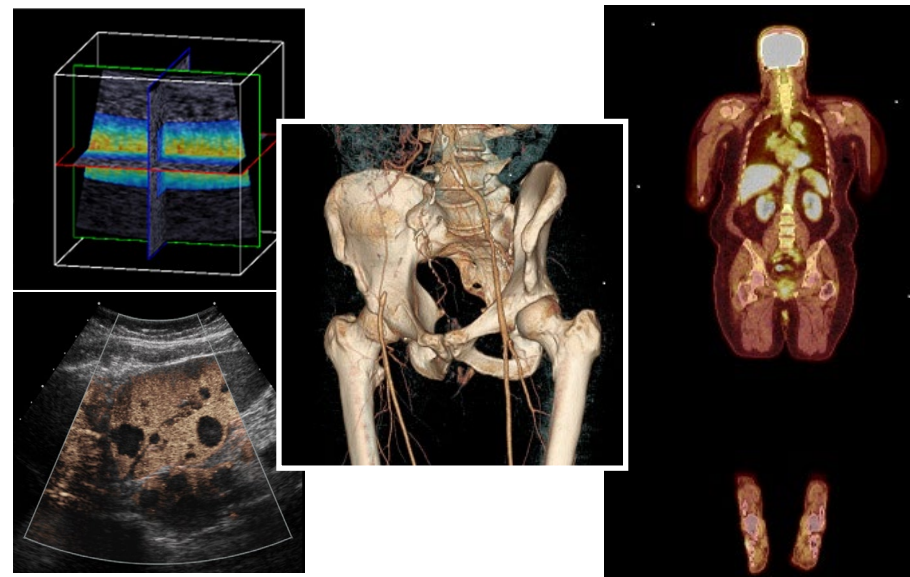
Image Theory, Perception and Processing

Course 4: Wed 22 – Fri 24 Feb 2023

Diagnostic Radiology and CT

Course 5: Tue 14 – Fri 17 Mar 2023

Nuclear Medicine



The Joint Department of Physics  
The Institute of Cancer Research and  
The Royal Marsden NHS Foundation Trust

[http://www.icr.ac.uk/medical\\_imaging\\_course](http://www.icr.ac.uk/medical_imaging_course)

## PROGRAMME DESCRIPTION

The programme provides the necessary physics background that underpins day-to-day medical imaging physics activities. It is aimed primarily at new entrants to the profession, but should be of benefit to post-graduate students, post-doctoral research workers, physicist-managers, representatives of allied commercial organisations and anyone wishing to deepen or re-establish their understanding of the physics of medical imaging.

The faculty is composed mainly of physicists, many of whom are internationally renowned for their expertise. A selection of key talks delivered by clinicians and other scientists provides the necessary broader scientific and clinical perspective. Overviews of specialised or research related topics, such as MR Spectroscopy are given. There are many opportunities for informal discussions and there will be visits to the Department of Nuclear Medicine, Ultrasound, X-ray and Computed Tomography and the MR Units of The Royal Marsden NHS Foundation Trust and / or the research labs of the Institute of Cancer Research.

**The programme consists of five separate courses. Each course is repeated annually. Registration on this form will be accepted for any combination of courses 1, 2, 3, 4 and 5. Cost (see back page for details) includes lunches and light refreshments and (with courses 2-5 only) a copy of Webb's Physics of Medical Imaging (2<sup>nd</sup> Edition, published 2012).**

Details of all courses in the series are available on our website:  
[http://www.icr.ac.uk/medical\\_imaging\\_course](http://www.icr.ac.uk/medical_imaging_course)

## PROVISIONAL SYLLABUS

### COURSE 1 – Magnetic Resonance Imaging and Spectroscopy (3 days)

The Magnetic Resonance Imaging & Spectroscopy module is offered as a stand-alone training course, introducing methods and applications of biomedical Magnetic Resonance Imaging and Spectroscopy.

This is a CPD course approved by IPPEM.

Course Organiser: Dr S Doran, Tel: 020 8661 3718, email: [simon.doran@icr.ac.uk](mailto:simon.doran@icr.ac.uk)  
Course Administrator: Mrs J Keegan, Tel: 020 8661 3075, e-mail: [jessica.keegan@icr.ac.uk](mailto:jessica.keegan@icr.ac.uk)

### COURSE 2 – Ultrasound Imaging (3 days)

Fundamentals of ultrasound and its interaction with tissues; Acoustic fields, transducers and beam formation; Physical and engineering principles of ultrasound imaging, Doppler, microbubble contrast and elastography; Bioeffects and safety principles, Assurance of quality and acoustic safety of ultrasound diagnostic devices, Fields of medical application and research.

This course has been accredited by EBAMP as CPD event for Medical Physicists at EQF Level 7 and awarded 26 CPD credit points.

Course Organiser: Mr M O'Leary, Tel: 020 3437 6341, e-mail: [mark.oleary@icr.ac.uk](mailto:mark.oleary@icr.ac.uk)  
Course Administrator: Mrs J Keegan, Tel: 020 8661 3075, email: [jessica.keegan@icr.ac.uk](mailto:jessica.keegan@icr.ac.uk)

Front cover pictures: Top Left: Coloured elasticity image overlayed on a 3D B mode; Bottom Left: image of liver tumours with ultrasound contrast agent overlayed on normal B mode; Centre: volume-rendered bifemoral CT angiogram; Right: coronal slice of total body <sup>18</sup>F<sup>18</sup>FDG PET/CT scan.

### COURSE 3 – Image Theory, Perception and Processing (1 day)

Formal mathematics of medical imaging; Perception and interpretation of medical images; Image processing and display techniques.

Course Organiser: Dr E Castellano, Tel: 020 7808 2514, e-mail: [elly.castellano@rmh.nhs.uk](mailto:elly.castellano@rmh.nhs.uk)  
Course Administrator: Mrs J Keegan, Tel: 020 8661 3075, email: [jessica.keegan@icr.ac.uk](mailto:jessica.keegan@icr.ac.uk)

### COURSE 4 – Diagnostic Radiology and CT (3 days)

Review of the x-ray and CT imaging chains; Digital Image receptors; Multislice CT design and performance; PACS; Quality control; System optimisation in clinical practice; Advances in x-ray and CT imaging.

Course Organiser: Dr E Castellano, Tel: 020 7808 2514, e-mail: [elly.castellano@rmh.nhs.uk](mailto:elly.castellano@rmh.nhs.uk)  
Course Administrator: Mrs J Keegan, Tel: 020 8661 3075, email: [jessica.keegan@icr.ac.uk](mailto:jessica.keegan@icr.ac.uk)

### COURSE 5 – Nuclear Medicine (4 days)

This will consist of four one day courses that may be attended separately or in any combination.

1. Radionuclides and radiation protection
2. Physics of gamma camera and SPECT imaging
3. Physics of PET/CT
4. Internal dosimetry for molecular radiotherapy.

Topics covered include radiopharmacy, basic and advanced physics of molecular imaging and clinical applications.

Course Organiser: Dr I Murray, Tel: 020 8661 3715, e-mail: [ian.murray@icr.ac.uk](mailto:ian.murray@icr.ac.uk)  
Course Administrator: Mrs J Keegan, Tel: 020 8661 3075, email: [jessica.keegan@icr.ac.uk](mailto:jessica.keegan@icr.ac.uk)

## VENUE

Courses 1, 2 & 5 are held on the Sutton campus of The Royal Marsden Hospital and Institute of Cancer Research. Courses 3 & 4 are held on the Chelsea campus: <http://www.icr.ac.uk/contacts>

**It may be possible to attend these courses virtually through online attendance. Please contact Jessica Keegan, Course Administrator, if you are interested in this option.**

**Please note – in person attendance on courses is enriched by interaction with speakers and other delegates, as well as small group tutorials and demonstrations on some courses. Online attendance may not offer the same course experience.**

*We use personal information for the purposes of course administration – which includes management of your course registration, processing your payment, communication of course joining information, certificates, post course materials and feedback questionnaire. We also use your contact information to keep you informed of other courses we offer which may be of interest to you. For further information on how we use your personal information, please check our privacy policy at [www.icr.ac.uk/legal/privacy](http://www.icr.ac.uk/legal/privacy) or contact [dataprotectionofficer@icr.ac.uk](mailto:dataprotectionofficer@icr.ac.uk).*