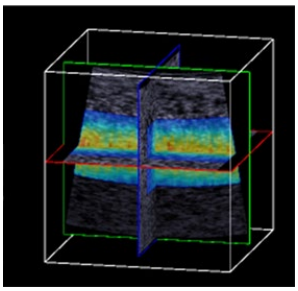
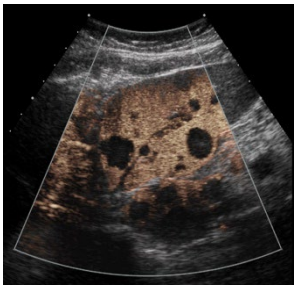
The ROYAL MARSDEN NHS Foundation Trust

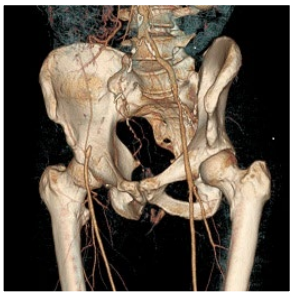
ICR The Institute of Cancer Research



THE PHYSICS OF MEDICAL IMAGING

Course 1: Mon 13–Wed 15 Oct 2025	**Magnetic Resonance Imaging and Spectroscopy**
Course 2: Tue 11-Thur 13 Nov 2025	**Ultrasound Imaging**
Course 3: Mon 23(PM)–Tue 24 Feb 2026	**Image Theory, Perception and Processing**
Course 4: Wed 25–Fri 27 Feb 2026	**Diagnostic Radiology and CT**
Course 5: Tue 10–Fri 13 Mar 2026	**Nuclear Medicine**





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

https://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 opportunities for informal discussions, and there may be chances to visit imaging modalities of The Royal Marsden NHS Foundation Trust and / or the research labs of the Institute of Cancer Research. There will be a visit to the MR Units as part of the MRI & Spectroscopy course.

The programme consists of five separate courses. Each course is repeated annually. Registration on this form will be accepted for any combination of courses. **All courses in the series are CPD courses approved by IPEM.**

IPEM Approved

PROVISIONAL SYLLABUS

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

Course Organiser: Dr S Doran

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.

COURSE 2 – Ultrasound Imaging (3 days) – Sutton campus

Course Organiser: Mr M O'Leary

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.

COURSE 3 – Image Theory, Perception and Processing (1.5 Days) – Chelsea campus

Course Organiser: Dr J Dormand

Formal mathematics of medical imaging; Perception and interpretation of medical images; Image processing and display techniques. Machine learning and AI imaging applications, including practical exercises.

COURSE 4 – Diagnostic Radiology and CT (3 days) – Chelsea campus

Course Organiser: Dr J Dormand

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 5 – Nuclear Medicine (4 days) – Sutton campus

Course Organiser: Dr I Murray

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.

Full details of all courses in the series and other Radiotherapy and Radiation Protection courses are available on our website: https://www.icr.ac.uk/medical_imaging_course

PLEASE COMPLETE IN BLOCK CAPITALS

Surname: …… Forename: ……

Job Title: ……Department:……

Organisation:……

Email: …… Tel No:……
(Please provide your professional/academic email address)

How did you hear about this course? ICR website ☐ Recommendation ☐ Other ☐ (please specify below)

……

I would like to register for the following course(s) *(Please tick)*

PRICES	**Course 1**		**Course 2**		**Course 3**		**Course 4**		**Course 5**	
Standard price	£640	☐	£640	☐	£320	☐	£640	☐	£840	☐
University & Hospital Staff & all Trainees	£510	☐	£510	☐	£255	☐	£510	☐	£675	☐
Full time Students *	£280	☐	£280	☐	£155	☐	£280	☐	£365	☐
One or two day registrations on Courses 4 & 5 are accepted and will be charged pro rata. Please contact the course administrator for details. **Please check website for registration closing date for each course.**										

Total Cost: £..... Cost includes lunches and light refreshments (we offer standard, vegetarian, vegan and gluten free options, please specify your preference in section below).

***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 DETAILS

Invoice – When submitting your application, please include a Purchase Order to – The Institute of Cancer Research, 123 Old Brompton Rd, London, SW7 3RP.

OR

Online Payment – Please contact relevant course administrator for details.

- *Do you wish to receive information about local accommodation?* **Yes** ☐ **No** ☐
- *Dietary Requirements:* **Standard** ☐ **Vegetarian** ☐ **Vegan** ☐ **Gluten Free** ☐
- *Do you have a food allergy?* **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** ☐

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 or contact dataprotectionofficer@icr.ac.uk .

Please email this completed form to the relevant course administrator:

Course 1: Mrs M Porter, Tel: 020 8661 3704, e-mail: melisa.porter@icr.ac.uk

Courses 2 - 5*: Mrs J Keegan,* Tel: 020 8661 3075, email: jessica.keegan@icr.ac.uk

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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 ^{18}FDG PET/CT scan.