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	MARCH 2017	NOVEMBER 2017	Both Weeks
Lectures & practicals	£750.00	£750.00	£1250.00
External PhD Students (Proof Required*)	£400.00*	£400.00*	£700.00*
Individual weekdays:	£180.00 per day	£180.00 per day	-----

Hands on session on Saturday morning end around 1pm.

www.icr.ac.uk/studying-at-the-icr/opportunities-for-clinicians/radiotherapy-and-imaging-training-courses.

Course administrator.

Mrs Cheryl Taylor

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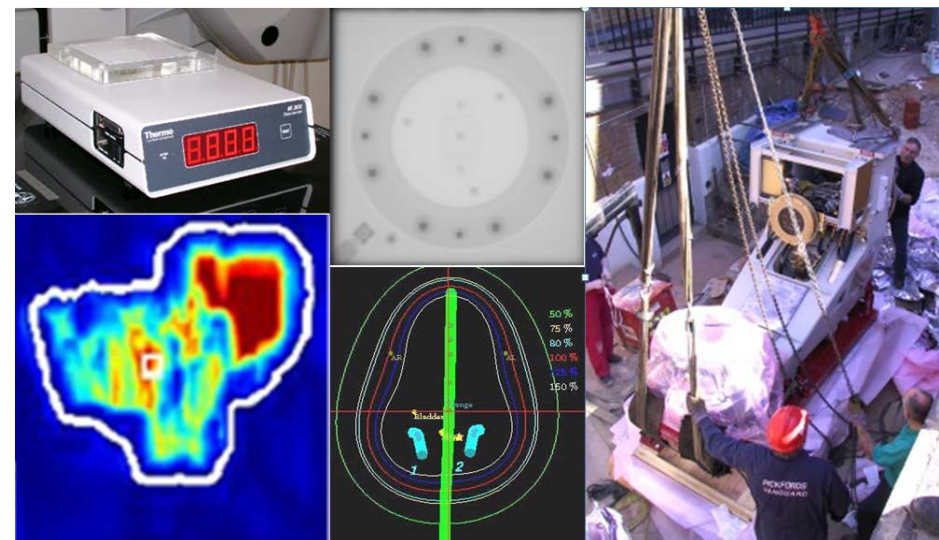
Fax: +44 (0) 208 643 3812

Key to external lecturers

Dr. H Bainbridge, Dr. J Bedford, Ms. M Bidmead, Mrs. I Blasaik-Wal, Mr. P Bownes, Dr E Castellano, Mrs. H Chejcka-Szczgielska, Dr. V Cosgrove, Professor R Dale, Dr. E Donovan, Dr. G Flux, Dr. A Garton, Dr. S Guildford, Dr. S Hafeez, Dr. V Hansen, Dr. I Hanson, Dr. E Harris, Dr. M Hawkins, Mr. M James, Ms. C Jones, Dr. T Jordan, Mr. D King, Dr. A Kirby, Professor C Kirisits, Dr. S Lalondrelle, Professor P Mayles, Dr. H McNair, Mrs. C Meehan, Mr. R Moore, Dr. I Murray, Professor A Nahum, Mrs. O Naismith, Dr. K Newbold, Dr. S Nill, Professor U Oelfke, Dr. H Porter, Professor C Rowbottom, Dr. M Schmidt, Mr. G Smyth, Dr. C South, Dr. A Taylor, Dr. M Thomas, Mr. J Thurston, Mr. R Trouncer, Profesor M van Herk, & Professor F Verhaegen.

The ROYAL MARSDEN
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ICR The Institute of
Cancer Research



A Course in Radiotherapy Physics

7 – 11 March 2017

Accelerator Design, Radiobiology and Quality Assurance, Brachytherapy and Radiotherapy Verification Imaging (Chelsea Site)

7 – 11 November 2017

Radiation Dosimetry, Imaging for Radiotherapy, Treatment Planning and Patient Specific Dosimetry (Sutton Site)

This course has been accredited per week by:

**EFOMP
RCR**

**CPD 29 Credits
CPD 27 Credits**

This course provides a practical and theoretical background to Radiotherapy with its main focus on Radiotherapy Physics aspects.

The curriculum covers many aspects and each course includes hands-on practical session on Saturday,

Included in the full cost of the course are a set of lecture notes, a CD of the presentations, lunches, refreshments, cheese & wine and a course meal in a local restaurant.

Day One: Accelerators (Tuesday 7th March 2017)

*Medical Electron Linear Accelerators
Production of a Clinically Beam
Multileaf Collimators: Characteristics and Commissioning
Accuracy and Quality in Radiotherapy: An Overview
Extremes I: kV X-ray Units
Extremes II: Cyberknife
Extremes III: Tomotherapy & Gamma Knife
Accuracy and Quality Control of Linacs
Course Meal*

Day Two: Radiobiology (Wednesday 8th March 2017)

*Introduction to Cell Biology
Tumour Cell Radiobiology
Radiobiology of Normal Tissues
Fractionation & Iso-effect in Radiotherapy
Modelling the probability of Tumour Control (TCP)
Practical use of Radiobiology in Treatment Planning
Modelling Normal Tissue Complication Probability
Compensation & QA of Brachytherapy Sources*

Day Three: Brachytherapy (Thursday 9th March 2017)

*Calibration & QA of Brachytherapy
Intracavitary Dosimetry
The Radiobiology of Brachytherapy
Gynaecology Cancers
3D Image based Brachytherapy Planning
Transperineal Prostate Brachytherapy
Radiation Protection Issues in Brachytherapy
Radiation Protection in External Beam Radiotherapy*

Day Four: Verification Imaging (Friday 10th March 2017)

*Quality Assurance in Clinical Trials
Image Guidance in Radiotherapy: Accuracy, Frequency Dose
Image Handling in Radiotherapy
IGRT Techniques
Errors & Margins in Image Guided Radiation Therapy
EPID Imaging in Routine Practice, Dosimetry & Quality Control
Clinical Indication for Brachytherapy
MR Linacs
Cheese & Wine Evening*

Day One: Fundamentals (Tuesday 7th November 2017)

*Photon Interaction Mechanisms
Electron Interaction Mechanisms
Fundamental Principles of Dosimetry I
Fundamental Principles of Dosimetry II
Ionisation Chamber Design and Measurements
Characteristics and Calculations for Photon Beams
Radiotherapy and Cancer specific Lung Cancer
Practical Implementing of New Techniques
Course Meal*

Day Two: Imaging for Radiotherapy (Wednesday 8th November 2017)

*Applications of Monte-Carlo Methods
Treatment Planning Margins; ICRU 50, 62 and 83
MR Imaging for Radiotherapy Planning
PET Imaging for Radiotherapy Planning.
Photon Beam Algorithms
CT for Radiotherapy Planning
Quality Control in Treatment Planning*

Day Three: Treatment Planning (Thursday 9th November 2017)

*Evaluation Tools in Treatment Planning
Prostate Cancer: XBRT Techniques and Trials
Oesophageal and Liver Tumours
Intensity Modulated Radiotherapy Algorithms (IMRT)
Quality Control in Treatment Planning
Inverse Treatment Planning for IMRT & VMAT
Dosimetry for Molecular Radiotherapy
Electron Beam Therapy in Clinical Practice*

Day Four: Patient Specific Dosimetry (Friday 10th November 2017)

*Radiotherapy of the Head and Neck
Adaptive Radiotherapy for Bladder Cancer in Clinical Practice
Radiotherapy for Breast Cancer: Current and Future Practice
Radiotherapy with Protons and Heavy Ions
Radiochromic Film Dosimetry
Verification and Image based Dosimetry for IMRT
In Vivo Dosimetry for Point Measurements
Large Field Techniques in Radiotherapy
Cheese & Wine Evening*