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	November 2022	March 2023	Both Weeks
Lectures & workshops	£750.00	£750.00	£1250.00
External PhD Students (Proof Required*)	£400.00*	£400.00*	£600.00*
Individual weekdays:	£190.00 per day	£190.00 per day	-----

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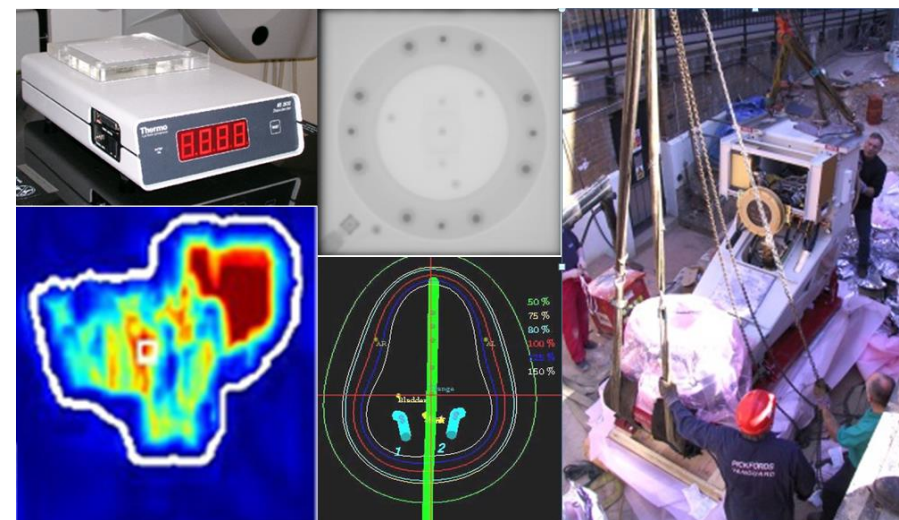
Cheryl Taylor
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Faculty

Dr. M Ahmed, Dr. N Almeida Costa, Dr. A Backshall, Dr. C Baker, Dr. J Bedford, Dr. D Bernstein, Dr. S Bhide, Ms. M Bidmead, Mr P Bownes, Dr. E Castellano, Mr. M Clark, Dr. V Cosgrove, Professor R Dale, Dr. P Downes, Dr. A Dunlop, Dr. A Dumbill, Dr. V Hansen, Dr. B Hin, Professor R Huddart, Mr. M James, Mr. D King, Professor C Kirisits, Dr. E Kousi, Dr. S Lalondrelle, Dr. H Manderville, Professor P Mayles, Dr. H McNair, Dr. D McQuaid, Mr. A Mitchell, Mr R Moore, Dr. I Murray, Professor A. Nahum, Mrs. O Naismith, Dr. S Nill, Dr. H Palmans, Dr. H Porter, Dr. A Ranger, Dr. K Roberts, Dr. N Somaiah, Mr. J Talbot, Dr. A Taylor, Dr. M Thomas, Dr. R Thomas, Mr. R Trouncer, Professor M van Herk, & Professor F Verhaegen.

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A Course in Radiotherapy Physics

8 – 12 November 2022

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

7 - 11 March 2023

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

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

Day One: Imaging for Radiotherapy (Tuesday 8th November 2022)

*Radiotherapy & Cancer
MR Imaging for Radiotherapy Planning
PET Imaging for Radiotherapy Planning
CT & CBCT for Radiotherapy Planning
Photon Interaction Mechanisms
Treatment Planning Margins; ICRU 50, 62 and 83
Charged Particle Interactions*

Day Two: Fundamentals (Wednesday 9th November 2022)

*Applications of Monte Carlo Methods
Fundamental Principles of Dosimetry I
Fundamental Principles of Dosimetry II
Ionisation Chamber Design and Measurements
Characteristics and Calculations for Photon Beams
Photon Beam Algorithms
Radiotherapy for Oesophageal and Liver Cancer*

Day Three: Treatment Planning (Thursday 10th November 2022)

*Radiotherapy for Breast Cancer: Current and Future Practice
Intensity Modulated Radiotherapy Algorithms (IMRT)
Adaptive Pathway
Inverse Treatment Planning for IMRT & VMAT
Stereotactic Body Radiotherapy (SBRT) for Lung Tumours
Radiotherapy with Protons
Radiotherapy of the Head and Neck
Evaluation Tools in Treatment Planning*

Day Four: Patient Specific Dosimetry (Friday 11th November 2022)

*Electron Beam Therapy in Clinical Practice
Large Field Techniques in Radiotherapy
Treatment Planning 'Air Space'
Prostate Cancer: EXBRT Techniques & Trials
Independent Verification for IMRT
Adaptive Radiotherapy for Bladder Cancer in Clinical Practice
Quality Control in Treatment Planning
Practical Implementation of New Techniques in clinic.*

Day One: Accelerators (Tuesday 7th March 2023)

*Medical Electron Linear Accelerators
Production of a Clinical Beam
Multileaf Collimators: Characteristics and Commissioning
Accuracy and Quality in Radiotherapy: An Overview
Extremes I: kV X-ray Units
Quality Control of Linacs
Fractionation & Iso-effect & Gaps in Radiotherapy*

Day Two: Radiobiology (Wednesday 8th March 2023)

*Introduction to Cell Biology
Tumour Cell Radiobiology
Radiobiology of Normal Tissues
Extremes II: Cyberknife
Extremes III: Tomotherapy
Modelling the probability of Tumour Control (TCP)
Practical use of Radiobiology in Treatment Planning*

Day Three: Brachytherapy (Thursday 9th March 2023)

*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
Clinical Indication for Brachytherapy*

Day Four: Verification Imaging (Friday 10th March 2023)

*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
IT Essentials in Radiotherapy
Radiation Protection in Radiotherapy
MR Linacs*