Surname:…………………………………………………………………………
Forename(s)……………………………………………………………………..
Organisation:……………………………………………………………………
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Purcha...
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 a workshop session on Saturday.

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

**Day One: Fundamentals (Tuesday 5th November 2019)**

- 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 6th November 2019)**

- 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 & CBCT for Radiotherapy Planning
- Quality Control in Treatment Planning

**Day Three: Treatment Planning (Thursday 7th November 2019)**

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

**Day Four: Patient Specific Dosimetry (Friday 8th November 2019)**

- 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
- Radiochromic Film Dosimetry
- Verification and Image based Dosimetry for IMRT
- In Vivo Dosimetry for Point Measurements
- Large Field Techniques in Radiotherapy
- Stereotactic Body Radiotherapy (SBRT) for lung tumours

**Cheese & Wine Evening**

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**Day One: Accelerators (Tuesday 3rd March 2020)**

- 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
- Extremes II: Cyberknife
- Extremes III: Tomotherapy
- Quality Control of Linacs

**Course Meal**

**Day Two: Radiobiology (Wednesday 4th March 2020)**

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

**Day Three: Brachytherapy (Thursday 5th March 2020)**

- 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 6th March 2020)**

- 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
- Radiation Protection in Radiotherapy
- MR Guided Radiation Therapy

**Cheese & Wine Evening**