

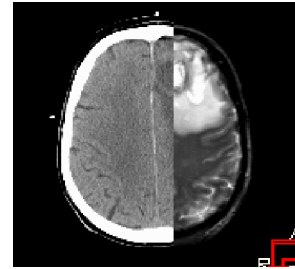
## Hands-on course

### *Image-Guided Radiation Therapy*

**Coordinators:** Ben Mijnheer, Emmy Lamers and Jelle Scheurleer

**Dates:** 26-MAY-2009 – 30-MAY-2009

**Venues:** INHolland University of Applied Sciences, Haarlem;  
Erasmus Medical Centre, Rotterdam;  
Netherlands Cancer Institute – Antoni van Leeuwenhoek Hospital, Amsterdam;  
Radiotherapeutic Institute RISO, Deventer;  
Vrije Universiteit medical centre, Amsterdam;  
THE NETHERLANDS.



---

## Introduction

The various and rapid developments in the field of 3D imaging techniques, treatment planning and treatment delivery have led to more accurate and optimal radiotherapy (RT) treatments. Image-Guided Radiation Therapy (IGRT) is an example of a recent innovation and has been or will be soon implemented in many RT clinics. During this course the RT professional will acquire the necessary knowledge and skills in the field of state-of-the-art *Image-Guided Radiation Therapy* with the focus on accurate treatment delivery. The IGRT course has been developed by the research group Medical Technology of INHolland University (INHU) of Applied Sciences, together with professionals from the RT departments of the Erasmus Medical Centre (Erasmus MC), the Netherlands Cancer Institute - Antoni van Leeuwenhoek Hospital (NKI-AVL), the Radiotherapeutic Institute RISO and the Vrije Universiteit medical centre (VUmc). This course is the core part of a comprehensive educational module IGRT, but can be followed separately. The course itself will be given in collaboration with a number of companies providing products in the field of IGRT. The aim is an intensive course with optimum interaction between students and teachers. Therefore the number of participants will be restricted to 30, including the students that follow the complete module.

## Target group and aims

This hands-on course is suitable for students with a bachelor's degree or higher who have some experience in using patient imaging in modern radiotherapy. Potential students include radiation therapy technologists (RTTs), medical physicists/radiation oncologists (in training) and medical engineers working in RT departments. RTTs, physicists or engineers working for companies producing RT products will also benefit from this course. We offer RT professionals a programme on the use of imaging in advanced radiotherapy that is complementary to their basic training. This module (course) is part of the MSc course *Radiation Oncology in Europe* and will become part of the *European Master Programme in Radiation Sciences for Oncology* (the Socrates *EMPIRION* project). After completion of the hands-on course the student will be able to:

- understand the principles of multi-modality patient imaging and apply them in RT;
- critically analyse the possibilities and limitations of image fusion software;
- understand the principles of IGRT, including the influence of technical, physical and clinical factors and apply them;
- appraise the recent developments of *in-room* IGRT;
- contribute to the further professional development of RT.

## **Contents**

Interactive teaching sessions, focused on situations in practice, are an important part of the course; various experts from renowned RT departments will share their experience in IGRT. The core parts of the course are hands-on sessions and demonstrations in the afternoons, carried out in the School of Health of INHU and in the RT departments of the Erasmus MC, NKI-AVL, RISO and VUmc. These afternoon sessions are given in cooperation with companies and experts from the RT departments on various systems. During the hands-on parts the possibilities of image fusion and IGRT will be explored. Participants will perform imaging studies, analyse data obtained using various advanced imaging systems such as 3D and 4D CT, cone-beam CT, image fusion and infrared tracking. In addition experienced users in the RT departments will give a number of practical demonstrations including the use of CyberKnife and TomoTherapy. Experts will elucidate the different IGRT approaches for head-and-neck, lung, breast and prostate cancer. In this way the participants of the course will gain experience and insight in IGRT techniques for various tumour sites.

## **Organisers and teachers**

This hands-on course is organised by the INHolland Academy ([www.inholland.nl/academy](http://www.inholland.nl/academy)) together with the research group Medical Technology ([www.inholland.nl/medicaltechnology](http://www.inholland.nl/medicaltechnology)) of INHU. The course director is Ben Mijnheer and the other local organisers are Emmy Lamers and Jelle Scheurleer. The teaching faculty consists of radiation oncologists, medical physicists, medical engineers and RTTs from the Erasmus MC, NKI-AVL, RISO and VUmc, as well as from other academic institutions. The course will be held in the English language.

## **Practical data**

The hands-on course starts with an introductory session on Tuesday afternoon 26-MAY-2009 at 14:00 h and will take place at the School of Health, INHU ([www.inholland.nl](http://www.inholland.nl)) in Haarlem. From 12:00 h onwards participants can register. The course will continue on Wednesday morning 27-MAY-2009 at 9:00 h and ends Saturday 30-MAY-2009 around 15:00 h. Teaching sessions and practical exercises will take place at various locations: INHU in Haarlem, Erasmus Medical Centre ([www.erasmusmc.nl](http://www.erasmusmc.nl)) in Rotterdam, RISO ([www.risoweb.nl](http://www.risoweb.nl)) in Deventer, VUmc ([www.vumc.nl](http://www.vumc.nl)) and NKI-AVL ([www.nki.nl](http://www.nki.nl)) in Amsterdam. Registration for the course should be done by e-mail to [Alexandra.vanZutphen@inholland.nl](mailto:Alexandra.vanZutphen@inholland.nl) before 20-APR-2009 (maximum number of participants 30). After registration an invoice will be sent for the fee of € 650. This fee includes course material, coffee, lunches and a welcome drink.

## **Further information**

For more information about the course please contact Ben Mijnheer (e-mail [Ben.Mijnheer@inholland.nl](mailto:Ben.Mijnheer@inholland.nl) phone +31-20-5122203), Emmy Lamers (e-mail [Emmy.Lamers@inholland.nl](mailto:Emmy.Lamers@inholland.nl) phone +31-20-5122197) or Jelle Scheurleer (e-mail [Jelle.Scheurleer@inholland.nl](mailto:Jelle.Scheurleer@inholland.nl) phone +31-615279629). For all practical information, including accommodation and public transport from Amsterdam railway station and airport to the course venues, please contact the secretariat of the course: Alexandra van Zutphen, INHolland University of Applied Sciences, School of Health, Bijdorplaan 15, 2015 CE Haarlem, The Netherlands. E-mail: [Alexandra.vanZutphen@inholland.nl](mailto:Alexandra.vanZutphen@inholland.nl), phone: +31-23-5412802.