

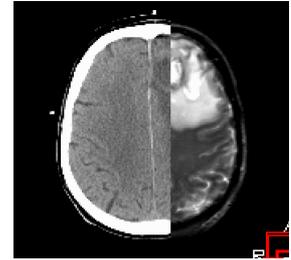
## Hands-on course

### *Image-Guided Radiation Therapy*

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

**Dates:** 15-JUNE-2010 – 19-JUNE-2010

**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.



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## 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 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 course is part of the MSc course *Radiation Oncology in Europe*. 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.

## 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 various RT departments of the Erasmus MC, NKI-AVL, RISO and VUmc. These afternoon sessions are given in

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cooperation with experts from the RT departments on various systems. The possibilities of image fusion will be explored during a workshop guided by Marcel van Herk. Furthermore 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 together with the research group Medical Technology of INHU. The course director is Iain Bruinvis and the other organisers are Ben Mijnheer, 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. The course will be held in the English language.

### **Practical data**

The hands-on course of five days starts with an introductory session on Tuesday 15-JUNE-2010 at 09:00 h at the School of Health, INHU ([www.inholland.nl](http://www.inholland.nl)) in Haarlem. The course will end on Saturday 19-JUNE-2010 at 15:30 h. Teaching sessions and practical exercises will take place at various locations: INHU in Haarlem, Erasmus MC ([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 17-MAY-2010 (maximum number of participants 30). After registration an invoice will be sent for the fee of € 700. This fee includes course material, coffee, lunches and a welcome party.

### **Further information**

For more information about the course please contact Iain Bruinvis (e-mail [Iain.Bruinvis@inholland.nl](mailto:Iain.Bruinvis@inholland.nl) phone +31-647462133) 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: Linda Halsema, INHolland University of Applied Sciences, School of Health, Bijdorplan 15, 2015 CE Haarlem, The Netherlands. E-mail: [Linda.Halsema@inholland.nl](mailto:Linda.Halsema@inholland.nl), telefoon: 023-5412812