

## Erasmus-exchange course information 2010

Duration: January, February, March (13 weeks)

### Radiotherapy programme

Course unit code: *ERAS RT*

Theoretical Radiotherapy: 10 ECTS

- PBL-cases
  - oncology
  - radiobiology
  - radiotherapy techniques
- Radiotherapy physics
- Treatment Planning
- Image recognition
- Tutored presentations

Practical Radiotherapy: 8 ECTS (skillslab and clinical placement)

- practice (CT-)localization and Treatment Planning
  - from 3D conformal radiotherapy to direction IMRT
- practice exercise, tutored by students
- practice assignment
- practice feedback

Social programme: 2 ECTS (language, culture, etc.)

- including Erasmus-presentations

### Ultrasound programme

Course unit code: *ERAS US*

Theoretical ultrasound: 10 ECTS

- PBL-cases
  - anatomy
  - patho-physiology
  - scanning techniques
  - hardware and other imaging modalities
- ultrasound physics
- self-study
- image recognition
- tutored presentations

Practical ultrasound: 8 ECTS (skillslab and clinical placement)

- practice demonstration
  - aorta, IVC, liver, portal system, hepatic veins, gallbladder and bile-duct, pancreas, spleen, kidneys
- practice exercise, tutored by students
- practice assignment
- practice feedback
- practice ultrasound physics

Social programme: 2 ECTS (language, culture, etc.)

- including Erasmus-presentations



## **Curriculum ultrasound programme 2010**

### **INTRODUCTION**

This folder contains information about the objectives and work forms for the module ultrasound ERASMUS. It also contains information about the lecturers associated with the module. The module stretches over approximately 13 weeks, from January till March 2010. During this module the Dutch students will be given the opportunity to travel to foreign institutions that are taking part in the ERASMUS-programme.

The module description that follows is intended for incoming foreign ERASMUS students. The programme offered to exchange students abroad is considered equivalent in credit terms to the programme offered here. The module focuses on anatomy, pathology, physics and examination-skills, needed for basic ultrasound examination of the upper abdomen. Most lessons are accompanied by Dutch MBRT-students.

The module comprises 20 ECTS. 10 ECTS in theory, 8 ECTS in practical settings and 2 ECTS in social programme.

### **Information about the lecturers**

#### **Coordinator for ERASMUS-project**

Geert Plug, [geert.plug@inholland.nl](mailto:geert.plug@inholland.nl),

#### **Tutor / lecturers ultrasound:**

Geert Plug

Marieke Ballast

### **DESCRIPTION OF ULTRASOUND PROGRAMME**

#### **Objectives**

- have understanding of the normal anatomy and physiology of the organs and vascular systems in the upper abdomen
- develop scanning skills in order to evaluate organs and vascular systems in the upper abdomen by ultrasound and produce images of these
- be able to perform a basic ultrasound-examination in a given case
- recognize abnormal appearance of the organs and vascular systems in the upper abdomen
- have understanding of pathologic processes and their ultrasound appearances
- apply knowledge of ultrasound physics in practical examination
- further develop communicative en co-operative skills
- has insight into the role of the ultrasound-technician in relation to the organization of a radiology department

## **LEARNING METHODS/STUDENT PARTICIPATION**

The following learning methods will be used.

Problem based learning (PBL) which requires participation in:

- group meetings with problem tasks
- lectures
- role-play exercises and demonstrations
- individual study
- project and report writing in English
- oral presentations of the report in English

Skills lab training

- practical training on ultrasound equipment in the skills lab
- attending to lessons in other work fields, s.a. radiology, radiotherapy and nuclear medicine

Clinical placement (2 days)

- attending to ultrasound examinations
- performing basic examinations with ultrasound
- performing basic examinations in radiology

The intercultural, international composition of the class will be an important resource in the learning and work processes during the module. Lectures and seminars will be in English. Group work will also be conducted in English.

### **Mandatory studies**

In this module all of the sessions with lecturer are **mandatory**.

### **Absence from mandatory studies**

The group will keep count of absence from group meetings. After the last meeting in each situation a list will be handed to the group tutor. A student who has not been present at the mandatory learning sessions is responsible for handing a written suggestion as to how s/he will acquire imparted knowledge to the group tutor.

## **ASSESSMENT**

Study requirements:

- attending to mandatory classes with a satisfactory contribution
- all assignments are handed in
- presentations assessed to pass
- clinical placement passed
- practical and theoretical exams assessed to pass

## **LITERATURE**

Handed out:

- workbook ultrasound
- practical workbook

**Literature in library INHolland University of applied sciences Haarlem**

See workbook.

## Curriculum radiotherapy programme 2010

### INTRODUCTION

This folder contains information about the objectives and work forms for the module Radiotherapy ERASMUS. It also contains information about the lecturers associated with the module. The module stretches over 12 weeks, from January till March 2008. During this module the Dutch students will be given the opportunity to travel to foreign institutions that are taking part in the ERASMUS-programme.

The module description that follows is intended for incoming foreign ERASMUS students. The programme offered to exchange students abroad is considered equivalent in credit terms to the programme offered here. The module focuses on anatomy, oncology, physics, radiobiology, localization-skills and (conformal) Treatment Planning-skills. Most lessons are accompanied by Dutch MBRT-students.

The module comprises 20 ECTS. 10 ECTS in theory, 8 ECTS in patient-related practical settings and 2 ECTS in social programme.

#### **Tutor / lecturers Radiotherapy:**

Frank R. ten Wolde, [Frank.tenWolde@INHOLLAND.nl](mailto:Frank.tenWolde@INHOLLAND.nl) module coordinator  
Radiotherapy.

### DESCRIPTION OF RADIOTHERAPY PROGRAMME

#### **Objectives**

- To develop skills in localizing patient based cases with and without CT-scan independently in several tumor areas.
- To develop skills in producing an optimal 3 dimensional dose distribution for these patients.
- To explain why you have chosen this kind of localization method and treatment planning.
- To evaluate the products as well as the process of preparation the treatment of these patients.
- To further develop communicative en co-operative skills
- To gain insight into the role of the Radiotherapy-technician in relation to the organization of a radiotherapy department

#### **Learning outcomes**

- At the end of the unit, you should be able to localize patient based cases with or without CT-scan independently in several tumor areas.
- Be able to produce an optimal 3 D dose distribution.
- Be able to argue the choices you made.
- Be able to reflect on your products and your process.

### **General Issues in Radiotherapy:**

- Problem-based learning in team
- Localizing with and without CT-scan.
- 3 dimensional conformal Treatment Planning, using CT, BEV, MLC and DVH.
- Patient Care
- Combination of Radiotherapy and others therapies

### **Tumor areas:**

- Lung
- Pelvis
- Head and Neck
- Mamma

## **LEARNING METHODS/STUDENT PARTICIPATION**

The following learning methods will be used.

Problem based learning (PBL) which requires participation in:

- Group meetings with problem tasks
- Lectures
- Skills training with and without lecturer
- Individual study
- Project and report writing in English
- Oral presentations of the report in English

Skillslab training

- Practical training on Radiotherapy equipment in the skillslab
- Attending to lessons in other work fields, s.a. radiology, ultrasound and nuclear medicine

Clinical outplacement (1 to 2 weeks)

Each student will complete approximately 1 to 2 weeks of clinical placements and 10 weeks of practical placement in skills lab to include general radiotherapy

The intercultural, international composition of the class will be an important resource in the learning and work processes during the module. Lectures and seminars will be in English. Group work will also be conducted in English.

### **Mandatory studies**

In this module all of the sessions with lecturer are **mandatory**.

### **Absence from mandatory studies**

The group will keep count of absence from group meetings. After the last meeting in each situation a list will be handed to the group tutor. A student who has not been present at the mandatory learning sessions is responsible for handing a written suggestion as to how (s)he will acquire imparted knowledge to the group tutor.

## **ASSESSMENT**

Study requirements:

- Attending to mandatory classes with a satisfactory contribution
- Practical examination by marked tasks
- You are equipped with extensive knowledge to do a patient based localization.
- You are equipped with extensive knowledge to produce an optimal 3 dimensional isodose distribution.
- You are able to evaluate all stages of / in the procedures.
- Presentations assessed to pass
- Clinical placement passed
- Practical exam assessed to pass

## **LITERATURE**

Handed out:

- Study guide Radiotherapy
- Literature in the library INHolland University of applied sciences Haarlem