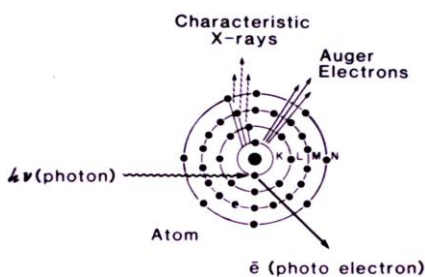


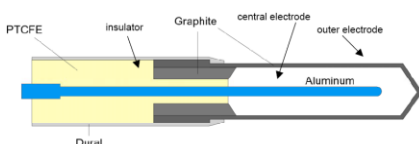
# Practical Dosimetry for Radiotherapy

A practical and comprehensive course on dosimetry in radiotherapy.

Quality assurance is one of the foundations of radiotherapy practice. Due to a growing complexity of medical irradiation equipment, performing dosimetry is not always trivial. Therefore knowledge and expertise in dosimetry is of major importance to medical physics practitioners.



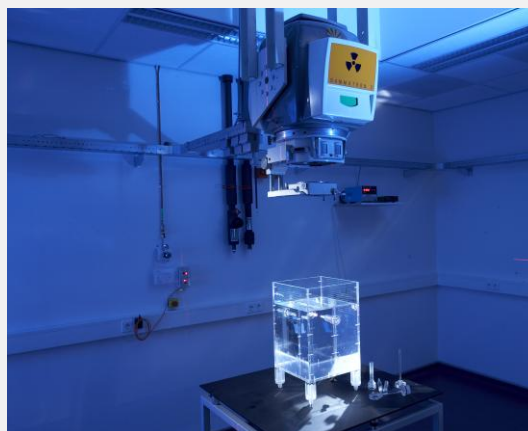
## Interaction processes



## General concepts



## Primary standards in dosimetry



## Contents and purpose

The complete course will deal with both dosimetry for external beam radiotherapy and brachytherapy. Apart from the complete course, a program dedicated either to dosimetry for teletherapy (TT) or brachytherapy (BT) can be attended. Additional modules are dedicated to performing practical assignments and reviewing their results.

The general basis of the course consists of a theoretical foundation, translated to a practical methodology for using absolute dosimetry in daily practice and dealing with uncertainties. The general modules take place during the first day and are included in the complete program as well as in the dedicated programs, TT and BT:

- G1. Interaction of ionising radiation with matter;
- G2. Dosimetric concepts and quantities;
- G3. Absolute dosimetry: general aspects;
- G4. Primary standards in dosimetry.



## Brachytherapy dosimetry

### Duration of the course

|   |        |
|---|--------|
| Full program:                           | 3 days |
| Teletherapy program:                    | 2 days |
| Brachytherapy program:<br>(9:30- 16:30) | 2 days |

This course can also be organized as an in-company course.

### Certificate

The participants will receive a certificate of attendance.

### Location

VSL – Dutch Metrology Institute  
Thijssseweg 11  
2629 JA Delft

### Information & registration

Web site: [www.vsl.nl](http://www.vsl.nl)  
Marion de Niet: [mdniet@vsl.nl](mailto:mdniet@vsl.nl)

### VSL B.V.

Thijssseweg 11  
2629 JA Delft  
P.O.Box 654  
2600 AR Delft  
The Netherlands

T +31 (0)15 269 15 00  
F +31 (0)15 261 29 71  
E [info@vsl.nl](mailto:info@vsl.nl)  
I [www.vsl.nl](http://www.vsl.nl)



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Accreditation  
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Calibration &  
Measurement  
Capabilities  
[www.bipm.org/kcdb](http://www.bipm.org/kcdb)

Two course modules and a practical assignment deal with dosimetry in external beam radiotherapy, teletherapy:

- T1. Dosimetry protocols for external beam therapy;
- T2. Relative dosimetry for external beam therapy;
- TP. Practical assignment for external beam therapy.

Two course modules and a practical assignment deal with dosimetry in brachytherapy:

- B1. Dosimetry for brachytherapy;
- B2. Dosimetry protocols for brachytherapy;
- BP. Practical assignment for brachytherapy.

The course has been developed at VSL in cooperation with medical physicists and engineers in the field of radiotherapy.

### Objectives

After completion of the course, the participant will be able to:

- understand dosimetric concepts from a theoretical point of view;
- apply absolute dosimetry in practice;
- autonomously set-up a measurement program;
- apply codes of practice in radiotherapy;
- evaluate dosimetric results based on their uncertainties;
- understand the principles of primary standards and traceability.

### Course schedules

The complete course consists of two days of theory in which the general (G), the teletherapy (T) and the brachytherapy (B) modules are treated. The practical assignment for participants in the complete course is scheduled to take half a day and can either be performed at VSL or at the participant's institute. The course will be completed at VSL by a plenary review of the assignments. This allows participants to learn from their fellow participant's experiences.

Participants may choose to follow a dedicated two day program in which, together with the general module (G), either teletherapy dosimetry (T) or brachytherapy dosimetry (B) is treated. The practical assignment and review will then take place at VSL during a morning or afternoon session.

### Target group

The course is suitable for participants with a bachelor's degree or higher in a technical discipline and is given at post-bachelor's / academic level. It will help the participant to increase his/hers expertise in using dosimetric concepts in practice. The course is beneficial for both starting and more experienced medical physicists, dosimetrists and medical engineers working in radiotherapy departments or standards laboratories.

### Teachers

The course lectures are given by a team of professional experts and scientists from VSL with years of experience in the practical application of standard dosimetry both in relation to calibrations, uncertainties and international traceability.

### Language

The course material is in English. The course will also be given in English unless all the attending participants are native Dutch speakers.