

ONLINE

ESTRO  
SCHOOL  
2021

## Physics for Modern Radiotherapy

27 September 2021 - 1 October 2021 | Online

### New concept

Innovative online course with a blended learning approach where pre-recorded lectures, practical exercises (homework) and web-based interactive sessions and feedback are combined.

### Target group

The course is primarily aimed at:

- Trainees in radiation oncology or radiation physics
  - Radiation oncologists and medical physicists early in their career
- The course is also suitable for
- Clinicians and physicists that are eager to update their knowledge on physics and technical aspects of radiotherapy.
  - Dosimetrists and radiation technologists having a strong interest in the application of physics and technology in radiotherapy.
  - PhD students in radiation therapy or physics.

### Course aim

- Provide knowledge and understanding of physics relevant to modern clinical radiotherapy
- Provide comprehensive overviews of imaging and volume concepts in radiotherapy
- Discuss modern dose delivery techniques, such as IMRT, rotational therapy (VMAT, helical tomotherapy), S(B)RT, IGRT, adaptive therapy (ART), particle therapy and brachytherapy
- Discuss safety issues in lectures on commissioning and QA/QC, radiation protection, in vivo dosimetry and induction of secondary tumours.

### Learning outcomes

By the end of this course participants should be able to:

Discuss and select modern treatment techniques based on their pros and cons

Select physics and technical measures that enhance effective and safe application of radiation therapy.

### Course content

- IMRT/VMAT - physics aspects, clinical application and impact
- Stereotactic radiotherapy (cranial and extra-cranial)
- Rotational therapy (VMAT, helical tomotherapy)
- Particle therapy (electrons, protons, ions)
- Volumes in external beam radiotherapy
- Imaging for GTV definition
- Imaging for treatment preparation and planning
- PTV margin calculation
- IGRT (equipment for in-room imaging, set-up correction strategies, clinical examples)
- Adaptive radiotherapy
- Dose prescription and plan evaluation
- Field junctions (how, when, and alternatives)
- Commissioning and Quality Assurance/ Control of equipment and software
- Brachytherapy
- Radiobiology in the clinic
- Implementing patient-specific dosimetric QA
- Radiation Protection and risk analysis
- Induction of secondary tumours.

### Specific for clinicians:

- Basic radiation physics
- Dose calculation: principles and application in the TPS
- Radiotherapy equipment
- Physics of advanced radiotherapy.

### Specific for physicists:

- Reference and non-reference dosimetry
- Modern dose calculation algorithms
- QA for advanced delivery techniques
- Oncologic concepts.

### ROADMAP

- ◆ RADIO THERAPY TREATMENT PLANNING AND DELIVERY
- RADIATION ONCOLOGIST, OTHER SPECIALIST

### COURSE DIRECTOR

Eduard Gershkevitch (EE)

### TEACHERS

Marion Essers (NL)  
Shaista Hafeez (UK)  
Tom Depuydt (BE)  
Michael Gubanski (SE)  
Milan Tomsej (BE)  
Stephanie Peeters (NL)  
Louise Murray (UK)

### PROJECT MANAGER

Karolina Kowalska, ESTRO Office (BE)  
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### WORKING SCHEDULE

Monday 27 September:  
14:00 – 18:15  
Tuesday 28 September:  
14:00 – 18:30  
Wednesday 29 September:  
14:00 – 18:30  
Thursday 30 September:  
14:00 – 18:30  
Friday 1 October  
14:00 – 18:00

### LANGUAGE

The course is conducted in English.  
No simultaneous translation will be provided.

### COURSE ORGANISATION

For any further information, contact ESTRO:  
Karolina Kowalska  
kkowalska@estro.org  
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### TECHNICAL EXHIBITION

Companies interested in exhibition opportunities during this teaching course should contact Karolina Kowalska, Project Manager  
kkowalska@estro.org  
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### Clinical case discussions:

The participants are invited to prepare treatment plans for selected clinical cases (homework), based on case descriptions and CT scans as provided prior to the course. During the course, the plans are discussed regarding selected treatment techniques, planning solutions, constraints and objectives, choice of margins, protocols for image guidance, QA, etc, guided by a clinician and physicist teacher.

### Prerequisites:

The participants are invited to prepare the homework for the clinical case discussions (above).

### Teaching methods

The course includes:

- Pre-recorded Lectures (available prior to the start of the course; details will be provided in the beginning of August)
- Live Webinars
- Interactive Discussion Session

### Key words

Physics and technology in radiotherapy, modern treatment techniques

## PARTICIPANTS SHOULD REGISTER ONLINE [HERE](#)

These pages offer the guarantee of secured online payments.

The system will seamlessly redirect you to the secured website of OGONE (see [www.ogone.be](http://www.ogone.be) for more details) to settle your registration fee.

If online registration is not possible, please contact us:  
ESTRO OFFICE: [education@estro.org](mailto:education@estro.org)

### Registration fees

Please check the registration deadline date on our website

	STANDARD RATE	DESK RATE
In-training members *	€ 350	€ 600
Members	€ 400	€ 600
Non members	€ 500	€ 600

REDUCED FEES are available for ESTRO members working in economically less competitive countries. Check the eligible countries and the selection criteria on the website [HERE](#)

**ESTRO GOES GREEN** Please note that the course material will be available online. No printed course book will be provided during the courses.

### Advance registration and payment are required.

#### On-site registration will not be available.

Since the number of participants is limited, late registrants are advised to contact the ESTRO office before payment, to inquire about availability of places. Access to homework and/or course material will become available upon receipt of full payment.

### Insurance and cancellation

The organiser does not accept liability for individual medical, travel or personal insurance. Participants are strongly advised to take out their own personal insurance policies.

In case an unforeseen event would force ESTRO to cancel the meeting, the Society will reimburse the participants fully the registration fees. ESTRO will not be responsible for the refund of travel and accommodation costs.

In case of cancellation, full refund of the registration fee minus 15% for administrative costs may be obtained up to three months before the course and 50% of the fee up to one month before the course. No refund will be made if the cancellation request is postmarked less than one month before the start of the course.

