

COURSE TYPE 2B: TEACHING COURSE PARTICLE THERAPY, INCLUDING SPECIALIZED COURSE (ST5) for MEDICAL PHYSICS EXPERTS

(EN & DE, 33 TEACHING UNITS (TU); 1 TU = 45 min.)

The *Teaching Course Particle Therapy, including Specialized Course (ST5)¹ for Medical Physics Experts* is designed for **MPEs** who would like to get a deeper understanding of particle therapy and its clinical application as well as to gain the “Fachkunde Partikeltherapie”. The 18 teaching units (TUs) of the *Specialized Course Radiation Protection Particle Therapy (ST5)* relevant for the “Fachkunde Partikeltherapie” are marked with a *, the additional 15 TUs (not counted toward the “Fachkunde”) are marked in light red. The abbreviations “EN” and “DE” indicate the teaching language. The **online test** of the online phase is in English. The **online exam is in German** and covers all topics of the 18 TUs of the *Specialized Course* (marked with *). Participants are expected to have good German language proficiencies to successfully pass the exam.

ONLINE PHASE OCT. 14 – NOV. 24, 2024 (17 TUs)		ONLINE SESSIONS (7 TUs)	ATTENDANCE PHASE or LIVE ONLINE PHASE on ZOOM (9 TUs)	
Physical and technical basics of particle therapy (3 TU; EN)*	Introduction: clinical rationale for particles (1 TU; EN) <i>Prof. Dr. Dr. Jürgen Debus, Heidelberg</i>	MON. NOV. 25, 2024 3.30 – 4pm Online-ID-Check 4 – 5.30pm Advanced Radiobiology, part 2: task discussion (EN) <i>Prof. Dr. Christian Karger, Heidelberg</i>	THU. NOV. 28, 2024 12 – 12.30pm on-site registration 12.30 – 2pm Principles of Treatment Planning for Ion Beams II (EN)* <i>Prof. Dr. Oliver Jäkel, Heidelberg</i>	FRI. NOV. 29, 2024 8.30 – 10am Principles of Treatment Planning for Ion Beams III: Hands-on Planning (EN)* <i>Dr. Niklas Wahl, Heidelberg</i>
(1) Beam generation in PT	Clinical particle therapy: Liver & esophagus (1 TU; EN) <i>Dr. Semi Harrabi, Heidelberg</i>	5.30 – 6pm Break	2 – 2.30pm Break	<i>Dr. Amit Ben Anthony Bennan, Heidelberg</i>
(2) Particle therapy devices and facilities	Clinical particle therapy: Pancreatic and rectal cancer (1 TU; EN) <i>Dr. Semi Harrabi, Heidelberg</i>	6 – 7.30pm Case discussion: medicine & physics (EN) <i>Prof. Dr. Oliver Jäkel & Dr. Semi Harrabi, Heidelberg</i>	2.30 – 3.15pm Special aspects of stochastic radiation effects in PT (EN)*	10.15 – 11am Current technical developments in PT (EN)* <i>Prof. Dr. Oliver Jäkel, Heidelberg</i>
(3) Operating and security systems <i>Prof. Dr. Oliver Jäkel, Heidelberg</i>	Introduction: IGRT for particle therapy: techniques (1 TU; EN) <i>Prof. Dr. Oliver Jäkel, Heidelberg</i>	TUE. NOV. 26, 2024 4 – 4.45pm Adv. Organ Motion Management (EN) <i>Prof. Dr. Oliver Jäkel, Heidelberg</i>	(1) Neutrons (2) Heavy ions and light target fragments <i>Prof. Dr. Christian Karger, Heidelberg</i>	11.00 – 11.30am Break 11.30am – 12.30pm Principles of Treatment Planning for Ion Beams IV (EN)
Radiobiological basics of particle therapy (2 TU; EN)*	Adv. dosimetry and QA for particle therapy (1 TU; EN) <i>Prof. Dr. Oliver Jäkel, Heidelberg</i>	4.45 – 5pm Break	3.15 – 4pm Baulicher und organisatorischer Strahlenschutz (DE) <i>Dr. Stefan Scheloske, Heidelberg</i>	• Special radiooncological aspects <i>Dr. Semi Harrabi, Heidelberg</i>
(1) Special radiobiological aspects	Advanced Radiobiology, part 1 (incl. tasks (1 TU; EN)) <i>Prof. Dr. Christian Karger, Heidelberg</i>	5 – 6.30pm Pro Contra FLASH (EN) <i>Prof. Dr. Oliver Jäkel, Heidelberg & Dr. Jeannette Jansen, Lausanne</i>	4 – 4.30pm Break	12.30 – 1pm Break
(2) Special physical aspects	Case presentation: medicine (0,5 TU; EN) <i>Dr. Semi Harrabi, Heidelberg</i>		4.30 – 6pm Rechtliche Besonderheiten (DE) <i>Carolin Edel, Regierungspräsidium Karlsruhe</i>	1 – 2pm Course review and online exam (either online or on-site) about all topics marked with * (DE only!)
(3) Special risks <i>Prof. Dr. Christian Karger, Heidelberg</i>	Case presentation: physics (0,5 TU; EN) <i>Prof. Dr. Oliver Jäkel, Heidelberg</i>			<i>Dr. Katharina Seidensaal, Heidelberg</i>
Special aspects of QA and dosimetry (2 TU; EN)* <i>Prof. Dr. Oliver Jäkel, Heidelberg</i>	Introduction: FLASH Radiotherapy with Particles, incl. task (1 TU; EN) <i>Dr. Jeannette Jansen, Lausanne</i>			2 – ca. 3/3.30pm Guided tour at HIT (on-site, optional) <i>As of Mar. 15th 2024, subject to changes!</i>
Principles of Treatment Planning for Ion Beams I (2 TUs; EN):				
• Patient positioning and positioning devices				
• Patient and organ movements <i>Dr. Semi Harrabi, Heidelberg</i>				

¹Der Kurs dient zum Erwerb der Fachkunde gemäß Anlage 4 des **Richtlinienmoduls** zur StrlSchV „Erforderliche Fachkunden im Strahlenschutz für Medizinphysik-Experten (MPE)“ – Anforderungen an den Erwerb – vom 01.02.2021 und den Anforderungen der Richtlinie Strahlenschutz in der Medizin.

Venue of the attendance phase: see course website: www.dkfz.de/particle_course_en

Organizer:



Partners:

