



Online phase: **Sept. 20th – Nov. 14th 2021**

Time slot of online test (prerequisite to attend live online phase): Nov. 01st – Nov. 11th 2021

Topics of online phase:

a) Pre-recorded talks: **60 min. per recording**

Name	Topic	Lecturer
Recording 1	Technical Introduction to the online phase	Schäfer (HD)
Recording 2	Radiation Therapy in Thailand –Actual Situation	Chamchod, (CRA)
Recording 3	Radiation therapy in Germany and Heidelberg	Debus (HD)
Recording 4	Refresher CT Imaging	Sawall (HD)
Recording 5	Refresher MR Imaging	Gillmann (HD)
Recording 6	Refresher PET Imaging	Berker (HD)
Recording 7	PET-CT	Gillmann (HD) (30 min.)
Recording 8	PET-MR	Berker (HD) (30 min.)
Recording 9	Dual Energy CT	Sawall (HD)
Recording 10	Refresher: Intensity modulated Radiotherapy (IMRT) & Image Guided Radiation Therapy (IGRT) from a clinical perspective (including case introduction)	Held (HD)
Recording 11	Refresher Inverse planning & IMRT Dose Calculation, including task	Wahl (HD)
Recording 12	Introduction Target Volume delineation: PTV Concepts & ICRU Concepts	Held (HD)
Recording 13	IGRT Workflows: From Contouring to Treatment	Batista (HD)
Recording 14	IGRT Treatment planning - Overview	Batista (HD)
Recording 15	Overview Registration Methods & Stereotactic Methods	Jäkel (HD)
Recording 16	Cyberknife + Tomo + MR-Linac	Jäkel (HD)
Recording 17	EPID Technology & Dosimetry	Fuangrod (CRA)
Recording 18	Patient dosimetry	Liamsuwan (CRA)
Recording 19	Introduction to radiobiology - impact of fractionation	Karger (HD)



Name	Topic	Lecturer
Recording 20	Cone Beam CT (kV and MV Imaging)	Jäkel (HD)
Recording 21	Introduction Particle Therapy & Particle Therapy in Heidelberg	Jäkel (HD)
Recording 22	Practical Tutorial from Heidelberg	Batista & Regnery (HD)
Recording 23	Practical Tutorial from Thailand	Thongsawad & Dachaworakul (CRA)

b) Topics and Dates of Live Online Sessions

Please note: all times are indicated in ICT and CEST or CET (in brackets)

Session	Date (still pending)	Topic	Lecturer
Session 1	Tue. Oct. 19 th 2021, 15.00 – 17.00 (10.00 – 12.00 CEST)	IMRT Indications I and II: introduction and case discussion (prepared by participants), based on recording 10	Held (HD)
Session 2	Tue. Oct. 26 th 2021, 15.00 – 17.00 (10.00 – 12.00 CEST)	Online discussion of students' solution of recording 11	Wahl (HD)
Session 3	Wed. Oct. 27 th 2021, 15.00 – 17.00 (10.00 – 12.00 CEST)	The role of volume and tissue oxygenation in radiotherapy & The RBE in particle radiotherapy	Karger (HD)
Session 4	Nov. 02 nd 2021, 15.00 – 17.00 (9.00 – 11.00 CET)	CT for RT and Limitations of CT Imaging MR for RT and Limitations of MR Imaging	Gillmann (HD)
Session 5	Tue. Nov. 09 th 2021, 15.00 – 17.00 (9.00 – 11.00 CET)	Studying in Germany Introducing Heidelberg University Overview: Research area Heidelberg – Contributing institutes; Medical Physics in Heidelberg & Summary of Online Phase	Prakaikaew Thongtawepol, DAAD Thailand Nicoline Dorn, Heidelberg University Jäkel (HD)



Virtual Summer School 2021: Image Guided Radiation Therapy (IGRT) and Advanced Treatment Techniques

Live Online Phase: Nov. 15th – Nov. 19th 2021

Please note: all times are indicated in ICT and CET (in brackets)

Day 1 Mon. Nov. 15 th 2021 Targeting and Contouring		Day 2 Tue. Nov. 16 th 2021 IGRT scenarios & Treatment planning		Day 3 Wed. Nov. 17 th 2021 Applications	
15.00 – 15.30 (9.00 – 9.30)	Welcome and Introduction of lecturer and participants <i>Prof. Chirayu Auewarakul,</i> <i>Dr. Todsaporn Fuangrod (CRA) &</i> <i>Prof. Oliver Jäkel (HD)</i>				
15.30 – 16.15 (9.30 – 10.15)	Introduction of the Heidelberg Model of contouring <i>Robert Dodszuweit (HD)</i>	15.00 – 15.45 (9.00 – 9.45)	Automation for segmentation and planning <i>Dr. Andrea Schwahofer (HD)</i>	15.00 – 15.45 (9.00 – – 9.45)	Tomotherapy <i>PD Dr. Stefan Körber (HD)</i>
16.15 – 17.00 (10.15 – 11.00)	PTV concepts/contouring for different examples <i>Dr. Thomas Held (HD)</i>	15.45 – 16.30 (9.45 – 10.30)	Treatment Planning (3D vs. IMRT, robustness) <i>Robert Dodszuweit (HD)</i>	15.45 – 16.30 (9.45 – – 10.30)	Implementation of an electronical patient chart and digital workflows <i>Dr. Andrea Schwahofer (HD)</i>
17.00 – 17.15	Break	16.30 – 17.00	Break	16.30 – 17.00	Break
17.15 – 18.45 (11.15 – 12.45)	Discussion of selected entities <i>Dr. Tanja Eichkorn (HD)</i>	17.00 – 17.45 (11.00 – 11.45)	IGRT workflows overview <i>Dr. Vania Batista (HD)</i>	17.00 – 17.45 (11.00 – 11.45)	MR Linac – Concept and Devices <i>Prof. Oliver Jäkel (HD)</i>
		17.45 – 18.30 (11.45 – 12.30)	Planning process in the clinical routine (workflow, templates, clinical protocols, MCO) <i>Dr. Vania Batista (HD)</i>	17.45 – 18.30 (11.45 – 12.30)	MR Linac – Experience's from Heidelberg <i>Dr. Sebastian Klüter (HD)</i>
18:45 – 19.00 (12.45 – 13.00)	Wrap-up and conclusion	18.30 – 18.45	Break	18.30 – 18.45	Wrap-up and conclusion
		18.45 – 19.30 (12.45 – 13.30)	Dose Calculation Algorithms and the challenges <i>Dr. Andrea Schwahofer (HD)</i>		



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Day 4 Thu. Nov. 18 th 2021 ART and Practical Demonstrations		Day 5 Fri. Nov. 19 th 2021 Advanced Topics and Exam	
15.00 – 15.45 (9.00 – 9.45)	Advanced treatment planning algorithms – direct aperture optimization and VMAT <i>Dr. Andrea Schwahofer (HD)</i>	15.00 – 15.45 (9.00 – 9.45)	Treatment planning and clinical indications for Particle Therapy <i>Prof. Oliver Jäkel (HD)</i>
15.45 – 16.30 (9.45 – 10.30)	Adaptive RT workflows – the importance of imaging (special technical solutions – new hybrid devices) <i>Dr. Andrea Schwahofer (HD)</i>	15.45 – 16.30 (9.45 – 10.30)	IGRT in Particle Therapy <i>Prof. Oliver Jäkel (HD)</i>
16.30 – 17.00	Break	16.30 – 17.00	Break
17.00 – 17.45 (11.00 – 11.45)	Discussion and comparison of practical tutorials from PCCMS and Heidelberg <i>Dr. Sangutid Thongsawad, Kittipol Dachaworakul (CRA)</i> <i>Prof. Oliver Jäkel, Dr. Vania Batista, Dr. Andrea Schwahofer, Dr. Sebastian Regnery (HD)</i>	17.00 – 17.45 (11.00 – 11.45)	Wrap-Up and Course Revision <i>Prof. Oliver Jäkel (HD) & Dr. Todsaporn Fuangrod (CRA)</i>
17.45 – 18.30 (11.45 – 12.30)	Discussion round with the German speakers (interview the expert?) <i>Moderation: Dr. Todsaporn Fuangrod & Dr. Thiansin Liamsuwan (CRA)</i> <i>Prof. Oliver Jäkel, Dr. Vania Batista, Dr. Andrea Schwahofer, Dr. Sebastian Regnery (HD)</i>	17.45 – 18.00 (11.45 – 12.00)	Break
18.30 – 18.45	Wrap-up and conclusion	18.00 – 19.00 (12.00 – 13.00)	Exam and Closing <i>Prof. Oliver Jäkel (HD) & Dr. Todsaporn Fuangrod (CRA)</i>

Partners:

HIRO
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Subject to changes!