

Syllabus

Course	International Training Course for Medical physicist_1-week	Total hrs	14.00
Purpose	Understand the basic knowledge required for heavy ion and carbon-ion therapy, including HIMAC, accelerators, irradiation systems, dosimetry, treatment planning, QA, biological effects, motion management, and facility		
Objectives	1. Understand the background, current status, and overall clinical workflow of heavy ion therapy, including HIMAC and facility operations. 2. Understand particle therapy accelerators, irradiation methods, system configuration, and major equipment characteristics. 3. Understand particle-matter interactions and carbon-ion dosimetry, including ionization chamber theory and practical measurement methods. 4. Understand carbon-ion treatment planning workflows, imaging, margin/robustness handling, and treatment planning demonstration. 5. Understand QA, biological effects/models, motion management, and their roles in safe and effective carbon-ion therapy.		
Lecture #	Contents	Instructional method	
B-1	Introduction to Heavy Ion Therapy	Lecture and video	
B-2	Overview of HIMAC	Lecture	
B-3	Particle Therapy Accelerators	Lecture	
B-4	Irradiation System Equipment	Lecture	
B-5	Interaction of Particle Beams with Matter	Lecture	
B-6	Dosimetry 1 (Theory)	Lecture	
B-7	Dosimetry 2 (Measurement System)	Lecture	
B-8	Carbon-Ion Treatment Planning	Lecture	
B-9	Carbon-Ion Treatment Planning Demonstration	Observation	
B-10	Commissioning	Lecture	
B-11	QA (Quality Assurance)	Lecture	
B-12	Biological Effects of Carbon-Ion Beams	Lecture	
B-13	Motion Management	Lecture	
B-14	Facility Tour	Tour	
	Conclusion		
Remarks	1. Participants must follow the instructions below. ①Participants are strictly prohibited from performing any clinical procedures,or other medical interventions. ②Clinical observation is allowed only when the patient has given consent. 2. Participants can attend activities as follows: • Treatment planning • QA observation 3. The training content will be implemented in a way that ensures the trainingobjectives can be achieved.		