

FEATURES

- › **Postgraduate distance learning programs** delivered in English, accredited by the accreditation institute ACQUIN and terminating with a Master of Science degree (MSc) or Postgraduate study certificates (PGCerts).
- › **Flexible online and on-site programs** of study including workshops and internships at the leading-edge medical facilities DKFZ, HIT, the world's prototype ion beam facility, and Heidelberg University Hospital.
- › **Meet pioneering experts** with longstanding experience in IMRT, Ion Beam scanning and treatment planning as well as radiobiological modeling.
- › **Promising new career prospects** for APMR graduates in teaching, research or care services in medical centers, national laboratories, academic institutions, governmental regulatory agencies, and in medical and nuclear industrial facilities.

FACTS

- › **Program duration:**
MSc study track: 4 semesters
PG short study track: 3 Modules (approx. 1 year)
PG full study track: 6 Modules (approx. 1,5 years)
- › **Fees:**
MSc track regular 4-semester course: € 16,426
PG short study track: € 2,600 per module, in total € 7,800
PG full study track: € 2,500 per module, in total € 15,000
- › **Program start MSc study track:**
October of every academic year
- › **Program start PG study tracks:** any time of the year
- › **Maximum number of participants:** 20
- › **MSc Application deadline:** July 15 (later applications may be accepted depending on number of participants)

**Interested? Why not give us a call at +49 (0)6221 54-7812
or send an email to apmr@uni-hd.de**

PROGRAM LEADERS



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Accredited by
ACQUIN



MASTER ONLINE

ADVANCED PHYSICAL METHODS IN RADIOTHERAPY

Postgraduate,
distance learning programs
in Medical Physics at
Heidelberg University, Germany

ID:9714, Medienzentrum Universitätsklinikum Heidelberg



Medical Faculty Heidelberg

dkfz.

HIT
Heidelberg Ion-Beam Therapy Centre

PROGRAM DESCRIPTION

Introduction

The Master Online and the newly offered Postgraduate (PG) study tracks in “Advanced Physical Methods in Radiotherapy” (APMR) at the top-ranking University of Heidelberg are unique postgraduate distance learning programs delivered in English in the field of medical physics. Designed to keep up with new innovations and developments, these programs are the result of a long-term collaboration between the widely acclaimed German Cancer Research Center (DKFZ), the distinguished Heidelberg University Hospital and the new state of the art heavy ion facility, Heidelberg Ion-Beam Therapy Center (HIT).

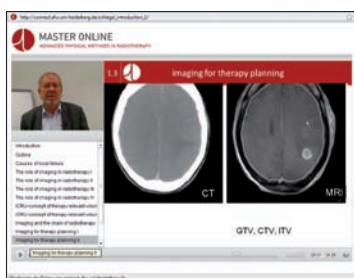
What else makes our program so unique?

Advanced technology in clinical practice plays an increasing role in the optimum care and treatment of cancer patients. Unlike any other program, APMR offers students advanced practical training at cutting edge radiotherapy facilities in Heidelberg reinforced by rigorous, theoretical online instruction from 60+ internationally based teaching staff and prominent experts in the disciplines of radiology, radio oncology, radiation safety and medical physics.

Graduates of APMR will be equipped with the specialized technical skills underpinned by a solid theoretical grounding in advanced cancer treatment techniques such as intensity modulated and image guided radiotherapy (IMRT, IGRT) and proton and heavy ion therapy. A shortage of specialists worldwide is already reality and this is where APMR can contribute to filling the widening gap.

Mode of study

The APMR distance learning programs are tailored to fit the adult learner’s busy schedule! They are delivered predominantly online (80%) with periodic workshops and internships in Heidelberg at modern radiotherapy units and HIT facility (20%). By making effective use of online technology students have access to a flexible and supportive virtual learning and teaching environment. Web discussion activities and online seminars foster collegiate communication and collaboration with teaching experts and peers at times that suit students’ individual needs.

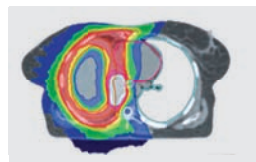


MODULES OF STUDY



M 1 Anatomy and Imaging for Radiotherapy

Introduction | Anatomy for Physicists | Imaging | Virtual Anatomy | Diagnostic Radiology | Workshop



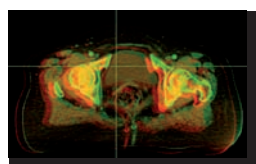
M 2 Intensity Modulated Radiotherapy

Introduction IMRT | IMRT in Clinical Routine | Advanced Application Techniques | Workshop



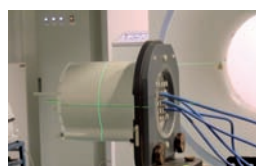
M 3 Ion Therapy

Introduction | Physical Principles | Beam Generation and Application | Radiation Biology | Treatment Planning | Clinical Application of Ion Therapy | Seminar



M 4 Image Guided Radiotherapy and Adaptive Radiotherapy

Introduction | IGRT Techniques (physics) | Clinical Application IGRT (medicine) | Moving Target volumes and Adaptive Radiotherapy | Workshop



M 5 Advanced Dosimetry and Quality Assurance

Introduction | Dosimetric Principles | Dosimetry for Advanced Radiotherapy Techniques | Quality Assurance | Workshop

MP Internships

Treatment Planning | IMRT | ART | Ion Therapy | Dosimetry and QA

MT Master’s Thesis

Topic to be selected from modules 1 - 5.

PROGRAM STRUCTURE

Semester	Modules	ECTS Credits
1	Attendance phase (1.5 days)	M 2 Intensity Modulated Radiotherapy (IMRT)
	M 1 Anatomy and Imaging for Radiotherapy	
	Attendance phase (1.5 days)	
2	M 3 Ion Therapy	M 4 Image Guided Radiotherapy (IGRT) and Adaptive Radiotherapy (ART)
	Attendance phase M2, M3 (4 days)	
3	M 5 Advanced Dosimetry and Quality Assurance (QA)	M P 4 Internships
	Attendance phase M4, M5 (4 days)	
	Attendance phase (7-14 days)	
4	M T Master’s Thesis	30
		Σ 75
MSc Pre-requisites	<ul style="list-style-type: none"> Degree of higher or further education institute (Bachelor, Diploma, Master) Proof of at least two years of professional experience following the first degree or proof of an employment contract for a minimum of two years at APMR program start Competency in medical physics subject to scrutiny by submission panel 	45
PG Certs Pre-requisites	<ul style="list-style-type: none"> Please refer to APMR homepage for further information 	
		Σ 120