



**MASTER • extra-occupational**

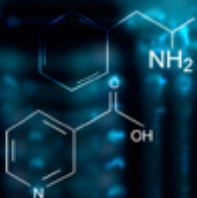
[fhwn.ac.at/mmtec](http://fhwn.ac.at/mmtec)

**FACHHOCHSCHULE  
WIENER NEUSTADT**

University of Applied Sciences – Austria

# MedTech – Functional Imaging, Conventional & Ion Radiotherapy

start  
now!



# Spot on!

## About the programme

# Medicine meets technology – a powerful combination!

**MedTech – Functional imaging, conventional and ion radiotherapy is the first course of its kind and remains a unique study programme in Europe.**

**Medicine and technology have long been thought of as two discrete disciplines with a close connection.**

Our MedTech Master's degree programme aims to bridge this gap, providing graduates with profound expertise where technology meets medicine, specifically in the fields of medical imaging and radiotherapy.

Functional imaging, conventional radiotherapy and in particular ion radiotherapy are considered as three of the most innovative and evolving fields within modern medicine. Individuals with an integral view covering physical and medical principles, their technical realisation as well as preclinical and clinical aspects are indeed very rare. In an increasingly complex world, leaders and decision-makers who are able to think

outside the box are needed. Our Master's degree programme offers you the ability to serve a much sought-after specialist working across these two unique, though very much intertwined, disciplines.

### HIGHLIGHTS:

- **For students with technical or medical background**
- **Job opportunities in various fields**
- **Part-time with distance learning**
- **International focus**



**Preclinical Imaging**  
Research Facility

### NEXT STEP: DREAM JOB!

- **Ion Radiotherapy Centres**
- **Industry**
- **Private and public health services institutions with functional imaging**
- **Radiotherapy Clinics**
- **Research and Development in preclinical and clinical research fields**
- **Self-employment**



**Ing. Dr. Markus Zeilinger, BSc MSc MBA**  
Head of Programme





**Advanced  
Radiotherapy**  
CT-based therapy planning

## Course in depth

## Course content & focus

You will be trained and educated as highly skilled experts, bridging the gap between physical, technical and medical aspects, contributing to morphological and molecular imaging and to advanced radiation therapy techniques as well as biotechnology and bio data sciences.

Workshops dedicated to preclinical imaging and radiotherapy held on site will complement held on site will complement and strengthen your skills. The exams will also take place during these attendance phases, two times per semester.



## About your career

## Career options

**You will acquire in-depth knowledge of the fundamentals** as well as specific expertise in the areas of functional and molecular imaging and advanced radiation therapy, driven by our own research activities and that of our academic partners. Highly qualified and experienced staff will provide the entire spectrum of knowledge.

Depending on the individual combination of previous education, professional experience and the contents of this study, alumni have numerous job opportunities in various fields.

**“Specialists with an integral view of both medicine and technology are in high demand.”**

Ing. Dr. Markus Zeilinger, BSc MSc MBA, – Head of Programme

### GOOD 2 KNOW:

Several PhD programmes  
at national & international  
Universities allow you to  
continue your scientific  
career.

Practical  
& future  
oriented



# Curriculum

## TOP SPECIALISATION

**Preclinical molecular imaging and specific biomedical image quantification methods are useful tools to foster the understanding of specific (patho-)physiological conditions and biological processes.** The combination of morphological, functional and molecular imaging techniques allows a thorough insight into a variety of diseases and provides the fundamental basis for personalized medicine and patient-tailored treatment.

### Research Infrastructure:

- micro-CT
- micro-PET
- micro-SPECT
- micro-UHF-MRI
- Imaging Laboratories
- Image Post-processing Laboratories

Hands on –  
your turn!



## Research & Development

**Preclinical, multimodal imaging techniques have become increasingly important in revealing specific information** of the systems biology of tumors, increasing the knowledge of radiobiological aspects and helping to facilitate the integration in the field of radiation therapy planning, verification and treatment monitoring.

The aim of the current project is the integration, establishment and verification of preclinical multimodal imaging for the use and evaluation of molecular imaging in radiation therapy, as well as for basic and applied biomedical research in the field of radiooncology, radiobiology and medical physics. Find more information: [fhwn.ac.at/en/pibe](https://fhwn.ac.at/en/pibe)

### 1<sup>st</sup> semester ECTS 30

Electronic Media Communication	1
Self Management	1
Applied Mathematics	6
Biochemistry	4
IT Fundamentals	4
Advanced Radiotherapy Technology and Devices	3
Radiation Biology	1
Radiation and Nuclear Physics	3
Radiopharmacy	3
Functional Imaging Technology and Devices 1	4

### 2<sup>nd</sup> semester ECTS 30

Medical Statistics	2
Physiology and Pathology for Functional Imaging	3
Medical IT 1	2
Biosignal Processing	2
Treatment Planning Techniques for Advanced Radiotherapy	4
Dosimetry 1	3
Radiation Protection Basics	1
Functional Imaging Technology and Devices 2	4
Applied Functional Imaging	3
Image Processing Algorithms and Visualization 1	4
Accelerator Technology	2

### 3<sup>rd</sup> semester ECTS 30

Leadership and Knowledge Management	1
Project Management	2
Medical IT 2	3
Fundamentals of Health Economics	1
Scientific Methodology	2
Molecular Imaging	2
Image Processing Algorithms and Visualization 2	4
Positioning and Verification	3
Dosimetry 2	3
Hands-on Ion Radiotherapy Planning	3
Indications for Ion Radiotherapy	2
Treatment Planning Techniques for Ion Radiotherapy	4

### 4<sup>th</sup> semester ECTS 30

Master Thesis	28
Master Tutorial	2

### GOOD 2 KNOW:

MedTech is directly associated with the Competence Centre for Preclinical Imaging and Biomedical Engineering



TECHNOLOGY  
MEETS MEDICINE



Scan QR-Code &  
start Podcast!

## Study insights

“MedTech **makes it possible** to give natural science  
a new and **credible perspective**.”

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**Claudia Schmidt**  
Student

Videos &  
Podcasts!



**Academic degree**  
Master of Science in  
Engineering

**MSc**

ECTS:

**120**



**Language:**  
**English**



**Study start:**

September

Preparatory courses:

End of February



**Study places per  
year**

**30**



**Duration:**

**4**

Semesters



**Location:**

**Campus**

**Wiener Neustadt**

Online study programme with  
distance-learning



## Admission

1. Apply here  
[onlinebewerbung.fhwn.ac.at](https://onlinebewerbung.fhwn.ac.at)
2. Invitation to an online or a personal  
interview with the Head of Programme
3. Final decision based on the interview, the  
personal statement & successfully passed  
preparatory courses

## Requirements

- Detailed info at [fhwn.ac.at/mmtec](https://fhwn.ac.at/mmtec)
- Graduates of Bachelor, Master, Diploma or  
PhD studies in health sciences
- Graduates of Bachelor, Master, Diploma or  
PhD studies in technical sciences of  
accredited universities

## Happy 2 help!

**Birgit Prudic**

Study Services

[birgit.prudic@fhwn.ac.at](mailto:birgit.prudic@fhwn.ac.at)

+43 5 0421 1 208

News about the campus & your study  
programme: [fhwn.ac.at/mmtec](https://fhwn.ac.at/mmtec)



Check us out!

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**Klimabeitrag**

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