

MedTech

Master

Engineering

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We do.

FH



Wiener Neustadt

University of Applied Sciences Wiener Neustadt
Business. Engineering. Health Studies. Security. Sport

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we do.

professional

practical

international



IMPRESSUM

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MedTech

MedTech – Functional Imaging, Conventional and Ion Radiotherapy. Our 2 year international MedTech Master's Degree programme offers a functional understanding and technical knowledge of the major areas within the fields of functional imaging and radiotherapy. Our course is the first of its kind in Europe.

Functional imaging and in particular radiotherapy are considered two of the most innovative and developing areas within technology and medicine. Individuals with a technical background who can act as interface between these specialist fields are indeed very rare. Our Master's Degree programme offers you the ability to serve as one of these much sought-after specialists working across these two unique though very much entwining disciplines.

Graduates will acquire an in-depth knowledge of both fundamentals and specific expertise within both functional imaging and radiotherapy. Highly qualified and experienced staff will cover the complete spectrum of knowledge relevant to the modern workplace in this field. This ranges from the physical processes involved in image generation and biological interpretation to physical effects and biological consequences.

Both specific and methodical skills, inter- and multidisciplinary qualifications characterize this Master's Degree programme. Students will be trained to develop a more lateral form of thinking, a necessity in work of this kind. This enables graduates to recognize individual objectives more specifically in relation to one another and thus prove more effective in technical, medical, biological and economical environments. Lectures in the fields of economics, radiation protection and personal development also make up the remainder of the study programme.

**“Curiosity is the
beginning of all
understanding.”**

Platon

A woman with dark hair, wearing a blue and white plaid shirt over a black top and blue jeans, is crouching and pointing her right index finger towards the camera. She has a slight smile and is looking directly at the viewer. The background is a plain, light-colored wall.

Short Facts

Length of study	4 semesters
Organisational form	Part-time with distance learning
Degree awarded	Master of Science in Engineering (M.Sc.)
Pre-requisites	Graduates of technical Bachelor, Master, Diploma or PhD studies of accredited Universities AND Graduates of Bachelor programmes in Health Sciences or equivalent in the field of nuclear medicine, radiological diagnostics, or radiation therapy.
Language	English
ECTS	120
Study start	September; start of summer school: end of June
Degree Programme Leader	Priv.-Doz. Dr. Wolfgang Recheis

**A unique study
programme in Europe!**

Get to know your study programme!

Medicine and technology have long been thought of as two discrete and distinct disciplines with a strong connection. The MedTech Master's degree programme aims to bridge this gap thus providing graduates with a profound expertise where technology meets medicine and more specifically in the fields of radiology and radiotherapy.

In an increasingly complex world, leaders and decision makers are needed who are able to think outside the box.

HIGHLIGHTS.

- > For students with technical and/or medical background
- > Part-time with distance learning
- > Taught exclusively in English
- > Job opportunities in various fields
- > Make your PhD!

Bridging the gap between the discrete disciplines of medicine and technology

„Established in 2009, this is a new and innovative programme. In this time, we have already received much positive feedback from the industrial sector as well as health care institutions that are showing an increasing demand for graduates with a background similar to what MedTech offers. Moreover, many of our students are already employed and the companies or health care institutes encourage them to study the MedTech programme.“

Siemens, Bayer Healthcare, Agfa, Leading Health Care Institutes

CAREER OPPORTUNITIES

Depending on the applicant's previous education and professional experience coupled with the expertise that MedTech provides throughout the course of the study programme, graduates have numerous job opportunities in various fields:

- > Institutions of private and public health services with functional imaging
- > Ion Radiotherapy Centres
- > Radiotherapy Clinics
- > Industry
- > Research and Development
- > Self-employment



Top-Assets.



Priv.-Doz. Dr. Wolfgang Recheis
Degree Programme Leader

//. For engineers and graduates with medical background

This study programme combines technical and physical aspects of functional imaging and therapy planning with its applications in a medical environment. Therefore the education is focused on both lectures and practical sessions that bridge the gap between these disciplines. Students from a technical background learn the thinking of medical oriented problems and vice versa, thus allowing both an understanding and appreciation of the issues from the other side. This results in much broader communication skills and understanding in this multidisciplinary field.

//. Preliminary Summer School

To ensure a smooth entry into the course, a summer school is offered during the summer break before the beginning of the first semester. The specifics of the summer school will depend on previous knowledge and experience in each of the following disciplines: mathematics, physics, IT, anatomy, physiology and pathology. This allows all applicants to ensure the full range of ECTS points for all disciplines necessary for entry to the programme. The summer school is primarily eLearning and will conclude with workshop sessions over several days at the University in Wiener Neustadt.

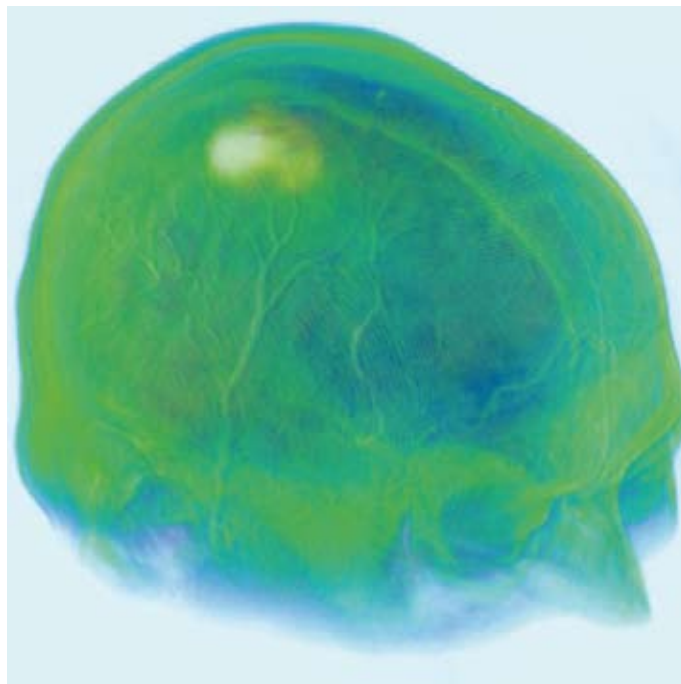
//. National and international cooperation

Lectures and hands-on experience will be in cooperation with experts and equipment from:

- > EBG MedAustron (www.ebgmedaustron.at)
- > MedAustron-Research (www.medastron-research.at)
- > Medical University Innsbruck, Department of Radiology
- > Medical University of Vienna, Vienna General Hospital (AKH Wien) – Radiopharmaceutical Sciences, Department of Nuclear Medicine
- > Medical University of Vienna, Vienna General Hospital (AKH Wien) – Department of Radiation Oncology
- > Regional Hospital (LK Wiener Neustadt)
- > Varian Medical Systems
- > Siemens Austria
- > Paul Scherrer Institute (PSI), Switzerland

//. Make your PhD

MedTech offers 120 ECTS points and follows the Bologna criteria. Currently there is one PhD program that will allow you to continue your study and scientific work: „Image guided diagnosis and therapy“ at the Medical University Innsbruck.



Feedback from students.

"The mix of nationalities and educational background of the students allows for improving soft skills required in a global market on the fly. For me as an engineer in medical image computing MedTech provides a unique opportunity of diving deeply into the field of radiation therapy, covering both conventional as well as emerging techniques. I especially like the integral view covering the underlying physical principles, their technical realization, as well as clinical aspects. Several hands-on workshops and tutorials in small groups on diverse topics ranging from decontamination of radioactive materials to treatment planning complement the theoretical education. Lectures on functional imaging techniques complete this outstanding curriculum."

Dr. Dieter Hönigmann

"I am working in a Radiotherapy department, and have a solid background in computer science. This course gave me the unique opportunity to combine these interests.

One thing which is very important for me, and which I definitely appreciated, was the competence of the lecturers who are all specialists in their specific subject area."

Ing. Harald Hentschl

For me as a person working in the field of radiation oncology, MedTech provides the possibility to deepen my knowledge about conventional radiotherapy as well as obtaining new information about the arising area of ion radiotherapy (keyword: MedAustron). The concept of e-learning (online presentations and virtual class rooms) allows to attend this extra-occupational study program independently where I am staying right now. This new form of knowledge transfer is consistent with the subject matter which is orientated on current developments in medicine as well. Furthermore I like that MedTech is exclusively taught in English, because it emphasizes the internationality of this study programme.

Andreas Riegler

APPLICATION PROCEDURE.

STEP 1.

Download and fill in the application form, attaching copies of all required documents, and send these to the University of Applied Sciences Wiener Neustadt.

STEP 2.

Students will then be ranked based on their application information

STEP 3.

Accepted students will receive confirmation via mail by mid-June at the latest, and be asked to sign an "Acceptance of study place" form which must be returned to the University.

STEP 4.

On the first day of classes, students will be asked to sign an educational contract.

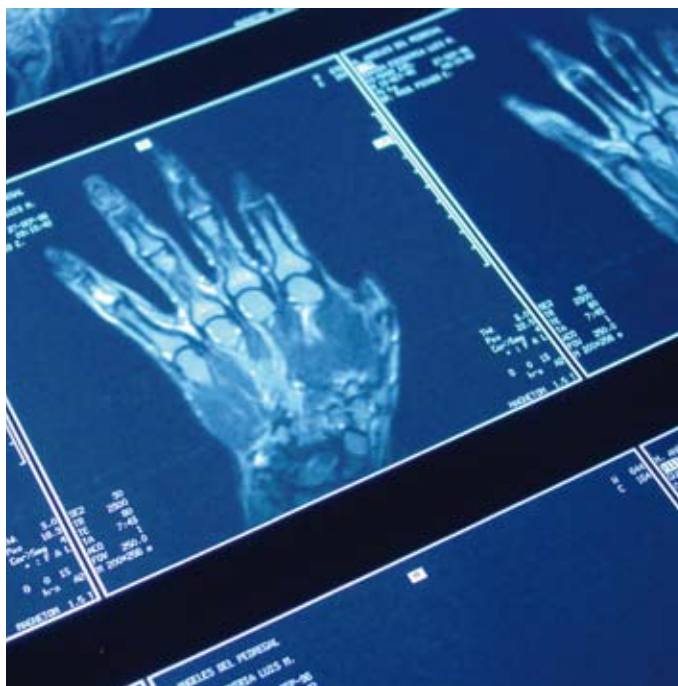
STEP 5.

Successful completion of the summer school is required to ensure the full range of ECTS points for all disciplines necessary for entry to the programme.

„GLAD TO HELP“ Student Advisory Service.

Birgit Prudic

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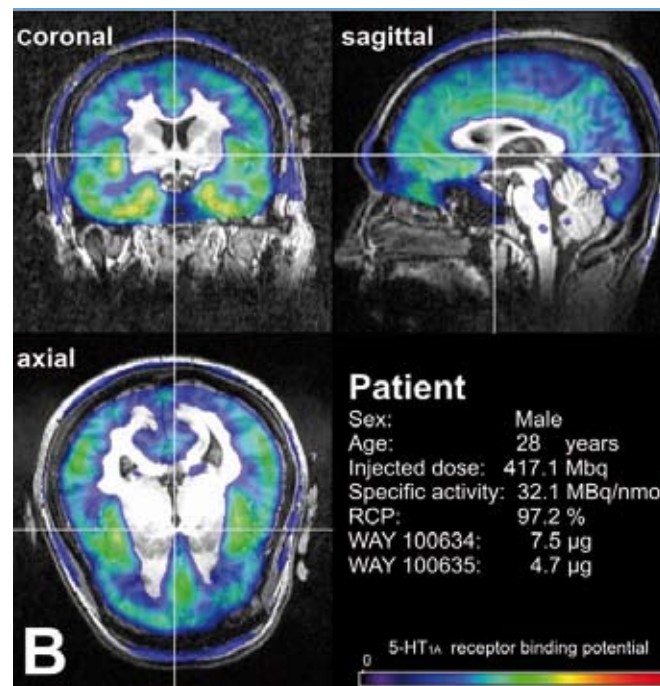
Curriculum.

ECTS

1. SEMESTER		30
Applied Mathematics and Statistics		6
Conventional Radiotherapy Technology and Devices		2
Functional Imaging Technology and Devices		4
IT Fundamentals		4
New Media Communication		1
Physiology and Pathology for Funktional Imaging 1		3
Radiation and Nuclear Physics		3
Radiation Biology		1
Radioation Protection Basics		1
Radiation Protection for X-Ray Devices		1
Radioactive Pharmaceutics		3
Self Management		1
2. SEMESTER		30
Accelerator Technology		2
Biosignal Processing		2
Dosimetry 1		2
Functional Imaging Technology and Devices 2		4
Image Processing Algorithms 1		4
Image Processing and Visualization 1		1
Indications for Functional Imaging		2
Medical IT		2
Physiology and Pathology for Funktional Imaging 2		3
Radiation Protection for Radiotherapy		1
Radiation Protection in Nuclear Medicine		1
Scientific and Clinical Studies		2
Treatment Planning Techniques for Conventional Radiotherapy		4

ECTS

3. SEMESTER		30
Dosimetry 2		3
Electronic Patient Record		2
Image Processing Algorithms 2		2
Image Processing and Visualization		2
Indications for Ion Radiotherapy		2
Leadership and Knowledge Management		2
Marketing and Sales		2
Positioning and Verification		3
Practical Training Ion Radiotherapy		3
Process Engineering		2
Radiation Protection Laws and Standards		1
Specific Practices of Funktional Imaging		2
Treatment Planning Techniques for Ion Radiotherapy		4
4. SEMESTER		30
Master Thesis		28
Master Turtorial		2



Application Form > Master Degree Programme

I hereby register for the degree programme:

Application Deadline see: www.fhwn.ac.at/info

MedTech (Functional Imaging, Conventional and Ion Radiotherapy)

Personal Information

Surname	Title	First name	Nationality
Austrian social security number (if applicable)		Date of birth	Place of birth
Street, house number	Postal code + City	Country	
Mobile phone	Telephone	E-Mail	

My Education

- Completion of a related Bachelor degree programme or**
- Completion of an equivalent or higher degree programme**
- Completion of Bachelor degree programme at FHWN, Year, group: _____**

Military service completed:

- yes
- no

Degree programme	
University	
Relevant working experience	

GU	STN	Abschluss	Abschlussdatum	MoS							

Required Documents and Certificates (photocopies)

> Education

- > Diploma
- > Transcript of records
- > School leaving certificate

> Personal Information

- > CV (curriculum vitae)
- > Proof of citizenship
- > Birth certificate
- > Certification of university-level (higher education) course, etc.
- > School leaving certificate
- > Semester notes of your completed degree programme
- > Letter explaining why you should be admitted to the programme

The first 5 steps to success:

- 1 Fill in the application form, attaching copies of all required documents, and send to the FH Wiener Neustadt.
- 2 Students will then be ranked on application information.
- 3 Accepted students will receive confirmation via mail by mid June at the latest, and be asked to sign an „Acceptance of study place“ form which must be returned to the FH.
- 4 On the first day of classes, students will be asked to sign an educational contract.
- 5 Positiv graduation of the summer school.

I acknowledge...

...that attendance during the entire study programme is mandatory. This is a prerequisite for being admitted to examinations.

Statements which are not documented will not be taken into consideration. If I have not provided documentation, or if I have acquired further qualifications in the meantime, I will submit the documents without delay.

Tuition fees amount to 363.36 Euro per semester +
fee for the
Austrian National Union of Students (ÖH).

Date

Signature

www.fhwn.ac.at