

# Department of Medical Imaging and Radiological Technology

## Introduction

### History

Department of Medical Imaging and Radiological Technology (MIRT) of Yuanpei University was accredited by the Ministry of Education in 1965, and started to admit undergraduate students in 1965. After that, a graduate program (Master of Medical Imaging and Radiological Technology) was approved in 2002. Currently, the department has nearly 440 students. The success story of the Department already spans for more than five decades. Today, the MIRT is the first of Taiwan's foremost organizations of vocational education on Medical Imaging and Radiological Technology.

### Features

#### Curriculum

The curriculum content is multidisciplinary, incorporating studies in following categories: the basic sciences group, the radiology group, the medical imaging group, the radiological diagnosis group, the radiological therapy group, the nuclear medicine group, and clinical internship. In order to comply with practical training protocol, the Department has been aggressively recruiting preeminent teaching hospitals and healthcare organizations all around Taiwan as practical training sites for MIRT students. The research projects would not only enhance the quality of teaching and learning, but also benefit health policy making at varying levels via the significant findings and recommendations. For the master's program, the MIRT aims to cultivate the quality assurance and quality control personnel of radiological technology, medical images storage and transmission management personnel, radiation safety management personnel as well as teachers and basic research personnel of radiation

technology.

## **Faculty**

The faculty and staff in the department maintain diverse medical imaging and radiological technology interests, and they are also good at their skill sets with these technologies. In 2013 academic year, there are 14 full-time faculty members including 1 professor, 4 associate professors, 4 assistant professors, 4 tutors, and 1 employee in Department of MIRT.

## **Facilities**

Major equipments in Department of MIRT are: 6 medical X-ray machines, computed radiography system, 6 medical ultrasound scanners, 2 gamma cameras, auto gamma counter, high performance liquid chromatography and mass spectrometry, X-ray simulator, Cobalt-60 unit for radiation therapy, 152 Ci Cs-137 standard source for calibration, mini picture archiving and communication system, IBM, RS16000UNIX, and Paravision 2.6V workstation, magnetic resonance imaging processing software, and stereotactic radio-surgery system.

## **Career Development**

In order to meet the nation's need of modernization, our goal is to equip MIRT students with practical skills and decent knowledge in Medical Imaging and Radiological Technology, so that they will be able to contribute to Taiwan's clinical organizations and systems. Furthermore, they will become one of the significant segments of our nation's development and make contributions to the people.

## **Degrees Offered**

■Bachelor ■Master

# Mission & Objectives

## Educational Objectives

Program	Objectives
<b>Undergraduate</b>	<ol style="list-style-type: none"> <li>1. Cultivating professionals of medical imaging and radiological technology that equally emphasize theories and practice.</li> <li>2. Understanding the concept of nuclear medicine, radiation therapy, radiation protection and image processing technique and theory both diagnosis and treatment of medical radiologists.</li> <li>3. Cultivating information technology, communication, and teamwork abilities.</li> <li>4. Cultivating the global view and to understand the difference of multi-cultures.</li> </ol>
<b>Graduate</b>	<ol style="list-style-type: none"> <li>1. Ability to cultivate innovation, think independently, and solve problems.</li> <li>2. Ability to cultivate communication and expansion of international view.</li> <li>3. Handling the modern professional knowledge and ability of medical imaging and radiological technology.</li> </ol>

## Core Competences

Program	Competences
<b>Undergraduate</b>	<ol style="list-style-type: none"> <li>1. Possess the theoretical foundation of professional management.</li> <li>2. Possess the ability of teamwork, analysis, and solving problems.</li> <li>3. Possess the global awareness of multi-cultures.</li> <li>4. Possess the ability to think independently.</li> <li>5. Grasp the latest development trend of relevant issues of medical imaging and radiological technology.</li> </ol>
<b>Graduate</b>	<ol style="list-style-type: none"> <li>1. Possess knowledge and ability of medical imaging and radiological technology profession.</li> <li>2. Possess ability to analyze and solve problems.</li> </ol>

3. Possess international view of medical imaging and radiological technology.
4. Possess innovating application ability of medical imaging and radiological technology profession.
5. Possess research ability of medical imaging and radiological technology new knowledge.

## Curriculum

### Undergraduate Program of Department of Medical Imaging and Radiological Technology, Yuanpei University (Academic Year 2014)

Year 1			
Required	Credits	Elective	Credits
Chinese Literature (I)	3		
English (I)	2		
Introduction to Computer Science	2		
Military Training (I)	0		
Labor Education (I)	0		
Physical Education (I)	0		
Chemistry (I)	2		
Biology (I)	2		
Experiment of Biology (I)	1		
University Physics (I)	2		
Experiment of Physics (I)	1		
Practical Training of Physics (I)	0		
Calculus (A) (I)	3		
Electric Circuits	2		
Introduction of Radiology Technology	1		
Analysis Experiment of Electric Circuits	1		
Chinese Literature (II)	3		
English (II)	2		
Military Training (II)	0		
Package Software	2		
Labor Education (II)	0		
Physical Education (II)	0		

Year 2			
Required	Credits	Elective	Credits
English (III)	2		
Web Design	2		
Physical Education (III)	0		
Sectional Anatomy	2		
Physiology	2		
The Experiment of Physiology	1		
The Physics of Radiology (I)	3		
Radiological Instrument	3		
Organic Chemistry	2		
Experiment of Radiological Instrument	1		
Modern Physics	3		
Statistics	2		
Laws and Regulation of Radiation	1		
English (IV)	2		
Physical Education (IV)	0		
Radiochemistry	2		
Instrument of Radiotherapy	2		
The Physic of Radiology(II)	3		
Health Physics	2		
Instrument of Nuclear Medicine	2		
Pathology and Experiments	2		
Diagnostic Sonography and Experiment	1		
Year 3			
Required	Credits	Elective	Credits
Radiobiology	2		
Radioimmunoassay	1		
The Physics of Radiotherapy	3		
Medical Radiography Technology (I)	2		
Experiments of Medical Radiography (I)	1		
Radiopharmacy	1		
Diagnostic Sonography and Experiments(II)	1		
Fundamentals of Magnetic Resonance	2		
Medical Physics	1		
Medical Image Processing and Transaction	2		
Biochemistry (I)	2		
English (V)	2		

Medical English	2		
Technology of Radiation Therapy	2		
Experiments of Radiotherapy Technology (II)	1		
Medical Radiography Technology (II)	2		
Experiments of Radiodiagnostic Technology (II)	1		
Nuclear Medicine Technology	2		
Experiments of Nuclear Medicine	1		
Computed Tomography Technology	2		
Technology of Magnetic Resonance	2		
Practice in Picture Archiving and Communication System	1		
Year 4			
Required	Credits	Elective	Credits
Practice in Radiotherapy Technology	3		
Practice in Diagnostic Radiology	7		
Practice for Diagnosis and Treatment	3		
Seminar	1		
Quality Management in Medical Image	2		
Quality Assurance of Radiotherapy	1		
Special Topics on Radiation Physics	2		
Special Topics on Radiological	2		
Quality Assurance of Nuclear Medicine	1		
Special Lecture of Basic Medicine	2		
Radiation Safety	2		
Special Topics on Medical Image	2		

Graduate Program of Department of Medical Imaging and Radiological  
Technology, Yuanpei University (Academic Year 2014)

Year 1

Required	Credits	Elective	Credits
Service Education(I)	0		
Chinese Literature and Thought(I)	2		
Practical English(I)	2		
Management	3		
Introduction to Health Services	3		
Human Biology	2		
Introduction to Health	3		
Mental Health	3		
Introduction to Preventive Medicine(I)	1		
Medical English	1		

Year 2

Required	Credits	Elective	Credits
Service Education(II)	0		
Chinese Literature and Thought(II)	2		
Practical English(II)	2		
Information Capability and Literacy	2		
Physiology	3		
Public Health	3		
Nutrition	3		

## Faculty and Staff

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## Research

The specialties of the research is divided into six areas: health policy and management, theory and practice of management, financial management of healthcare organizations, medical behavior and statistics, medical marketing and management, and the medical law. MIRT's faculty will actively solicit and apply for funding from health-related institutes, such as Ministry of Science and Technology (MOST), National Health Research Institutes (NHRI), Ministry of Health and Welfare (MOHW), and the Bureau of National Health Insurance (BNHI).