

RER

Residency in Radiology and Imaging

(Edition 2013)

First Semester

Code	Name	CL	L	U	CA	HT	UDC
ME4140	Clinical Ethics	1.5	0	6	1.5	6	1.8
ME4142	Quality Health Care	1.5	0	6	1.5	6	1.8
ME4205	Radiology and Image I	3	0	12	3	12	3.5
ME4206	Medical Care in Radiology and Image I	0	60	12	3	60	3.5
		6	60	36	9	84	10.6

Second Semester

Code	Name	CL	L	U	CA	HT	UDC
ME4141	Health Sciences Education	1.5	0	6	1.5	6	1.8
ME4143	Research and Innovation Methods	1.5	0	6	1.5	6	1.8
ME4207	Radiology and Image II	1.5	0	6	1.5	6	1.8
ME4208	Medical Care in Radiology and Image II	0	60	12	3	60	3.5
ME4209	Advanced Physics	1.5	0	6	1.5	6	1.8
		6	60	36	9	84	10.7

Third Semester

Code	Name	CL	L	U	CA	HT	UDC
ME4144	Thesis Project I	3	0	12	3	12	0
ME4210	Radiology and Image III	3	0	12	3	12	3.5
ME4211	Medical Care in Radiology and Image III	0	60	12	3	60	3.5
		6	60	36	9	84	7

Fourth Semester

Code	Name	CL	L	U	CA	HT	UDC
ME4212	Radiology and Image IV	3	0	12	3	12	3.5
ME4213	Medical Care in Radiology and Image IV	0	60	12	3	60	3.5
ME5190	Thesis Project II	3	0	12	3	12	
		6	60	36	9	84	7

Fifth Semester

Code	Name	CL	L	U	CA	HT	UDC
ME5258	Radiology and Image V	3	0	12	3	12	3.5
ME5259	Medical Care in Radiology and Image V	0	60	12	3	60	
		3	60	24	6	72	3.5

Sixth Semester

Code	Name	CL	L	U	CA	HT	UDC
ME5260	Radiology and Image VI	3	0	12	3	12	3.5
ME5261	Medical Care in Radiology and Image VI	0	60	12	3	60	
		3	60	24	6	72	3.5

Seventh Semester

Code	Name	CL	L	U	CA	HT	UDC
ME5191	Elective Specialty I	0	30	6	1.5	30	
ME5262	Radiology and Image VII	3	0	12	3	12	3.5
ME5263	Medical Care in Radiology and Image VII	0	30	6	1.5	30	
		3	60	24	6	72	3.5

Eighth Semester

Code	Name	CL	L	U	CA	HT	UDC
ME5192	Elective Specialty II	0	30	6	1.5	30	
ME5264	Radiology and Image VIII	3	0	12	3	12	3.5
ME5265	Medical Care in Radiology and Image VIII	0	30	6	1.5	30	
ME5266	Thesis Defense	0	0	1	.3	0	
		3	60	25	6.3	72	3.5

Academic credits

- CL** The letter "CL" indicates the number of class-hours per week.
- L** The letter "L" indicates the number of laboratory-hours per week.
- U** The letter "U" represents the equivalent time in courses lasting 15 weeks (semester) and 12 weeks (trimester), of weekly work that the student dedicates to the course to meet its objectives. They include the "class hours", as well as the time dedicated to the student's independent work.
- CA** The letters "CA" represents the number of semester credit hour of the course.
- HT** Total hours
- UDC** Load Units

Program and Learning Outcomes

General Program Objectives

The aim of the Residency in Radiology and Imaging of Tecnológico de Monterrey is to train exceptional Radiologists, who attend to the health requirements of patients, according to the highest quality and safety standards, in both inpatient and outpatient settings. It also seeks to prepare individuals with integrity and a humanistic outlook in their clinical, teaching and research practice, while strictly adhering to ethical principles and the standards of professional practice. Radiologists who graduate from this institution are outstanding leaders in both local and international settings and remain at the forefront of their specialty, generating healthcare models based on research and innovation that enable them to compete in a globalized economy.

Learning Outcomes

On completing the program, students will be able to:

- Recognize the health needs of patients, family members and society in general, as well those of medical and third-party payer institutions.
- Perform their medical practice taking into consideration the risks/benefit , costs/benefit , environmental and legal medical aspects of their professional tasks, within the framework of medical ethics.
- Investigate problems related to their professional practice in multidisciplinary teams and use the findings obtained to solve them.
- Communicate effectively and respectfully with patients, family members and other healthcare professionals.

Target Audience

This program is aimed at graduates of the Physician and Surgeon degrees from Mexican and international universities recognized by Tecnológico de Monterrey, whose academic performance is outstanding, who display leadership skills, an interest in serving as educators and researchers, and a psychological profile that can adapt to change and innovation.

In order to be admitted to the Residency in Radiology of the School of Medicine and Health Sciences of Tecnológico de Monterrey, applicants must satisfactorily meet the graduate admission requirements stipulated by ITESM and the Mexican Ministry of Health.

Program Outcomes

Justification

Nowadays, all health institutions are unable to meet the demand for Radiology and Imaging specialists trained to work successfully in this context. Apart from the lack of available qualified specialists there are very few institutions that offer this type of graduate training. This was one of the reasons for the creation of the Residency in Diagnostic Radiology at the Hospital San José de Monterrey in 1976, and as one of the medical residencies of Tecnológico de Monterrey since 1983. At present, this Multicentric Program operates in conjunction with the Nuevo León State Ministry of Health.

Knowledge of the theory and procedures of this specialty, as well as the technology and diversity of new imaging methods, make our residency one of the most dynamic in medicine. The Residency in Radiology is a four-year academic program, thus ensuring the nationally and internationally competitive quality of our graduates.

This program is continuously being updated and maintains a balance between the latest and the basic knowledge of this specialty, so that graduates will be able to work, modify and innovate in any healthcare system. The operative programs and evaluation methods are constantly adjusted so as to be congruent with the program in the diverse hospitals of our Multicentric Program, which also teaches, monitors and assesses the attitudes, values and behavior of our students in accordance with the Mission 2015 of Tecnológico de Monterrey.

Program objectives

The aim of the Residency in Radiology and Imaging of Tecnológico de Monterrey is to train exceptional Radiologists, who attend to the health requirements of patients, according to the highest quality and safety standards, in both inpatient and outpatient settings. It also seeks to prepare individuals with integrity and a humanistic outlook in their clinical, teaching and research practice, while strictly adhering to ethical principles and the standards of professional practice. Radiologists who graduate from this institution are outstanding leaders in both local and international settings and remain at the forefront of their specialty, generating healthcare models based on research and innovation that enable them to compete in a globalized economy.

Learning Outcomes

Radiologists who graduate from this program will be able to:

- Recognize the health needs of patients, family members and society in general, as well those of medical and third-party payer institutions.
- Perform their medical practice taking into consideration the risks/benefits, costs/benefits, environmental and legal medical aspects of their professional tasks, within the framework of medical ethics.
- Investigate problems related to their professional practice in multidisciplinary teams and use the findings obtained to solve them.
- Communicate effectively and respectfully with patients, family members and other healthcare professionals.

Target audience

This program targets academically outstanding Physicians and Surgeons who graduated from national and international universities that are recognized by Tecnológico de Monterrey, who have leadership capabilities, an interest in being educators and researchers, and a psychological profile for adaptation to change and innovation.

For admission to the Residency in Radiology of the School of Medicine and Health Sciences of Tecnológico de Monterrey, candidates must satisfactorily meet all the graduate admissions requirements of Tecnológico de Monterrey and of the Ministry of Health.

Research areas

Study and application of interventional diagnostic and therapeutic procedures for the treatment of cardiovascular diseases. In this line of research, associate professors seek to integrate vascular therapeutic procedures and intervention for the treatment of cardiovascular diseases, implementing advanced diagnostics and therapeutics, as well as the development of new treatments and care algorithms. By having subspecialist professors in interventional radiology in our faculty, as well as professors with training in vascular imaging.

Study and application of interventional diagnostic and therapeutic procedures for the treatment of oncological, chronic degenerative and metabolic diseases. This line of research seeks to integrate advanced diagnostics and therapeutic procedures for oncological, chronic-degenerative and metabolic diseases. Associate professors share a special interest in the area, devoting specific time to advanced diagnostic studies and interventional therapeutic procedures. A faculty member dedicates her time exclusively to diagnosing breast cancer. Some of our professors actively participate in the Oncology "Tumor board" and develop the field of chemo embolization and regional loco ablation in Tec Salud Hospitals.

Study and application of methods for quality and safety management in diagnostic and therapeutic radiology. Currently, Radiology requires from its professionals a solid knowledge of the risks of use and exposure to radiation. The radiological protection research line focuses on exploring methods and procedures that demonstrate an optimal balance between the quality of the images, the effectiveness of the diagnostic information that the Radiologist obtains from them, and the radiation dose necessary to acquire them. In this line of research, associate professors have a special interest in the area, devoting specific time to the analysis of the images obtained with the current protocols in the departments of radiology and hemodynamics, as well as of the dosimetry to develop mechanisms of dose reduction and development of low dose protocols.

Campus that offer this program

Campus	Number of periods offered	From	Closed for new students
Monterrey	Complete	Resid Espec Mar-Aug 2013	

Last update: 04/December/2012

Graduate Requirements

To obtain a specialty degree, a master's degree or Ph. D. degree at Tecnológico de Monterrey, students are required to:

1. Have completely finished the undergraduate cycle prior to passing the first course in the curriculum of the specialty, master program, medical residency, or doctoral program.
2. Have fulfilled, in compliance with existing standards, the academic prerequisites of the corresponding program, through proficiency tests or the corresponding remedial courses.
3. Have obtained a bachelor degree—with the antecedent of high school or its equivalent—that is equivalent to those offered by Tecnológico de Monterrey.
4. Have covered all the courses in the given curriculum, either by passing the courses at Tecnológico de Monterrey or by obtaining revalidation or equivalence agreements—in compliance with the standards—corresponding to part of the courses taken at other institutions, and passed the remaining courses at Tecnológico de Monterrey. Courses taken at foreign universities with which there are agreements are considered, for the effects of this article, as courses taken at Tecnológico de Monterrey, as long as they do not exceed a set percentage of the curriculum established by each graduate program.
5. In those curricula that so specify, to have prepared a research project or thesis that, having been defended before an academic committee, has been approved by said committee.
6. Have taken at least the equivalent of the second half of the corresponding curriculum at Tecnológico de Monterrey, in the case of students with revalidation or equivalence agreements at this level. Flexibility may be exercised in this standard in graduate programs that, under agreement, may be established jointly with other universities.