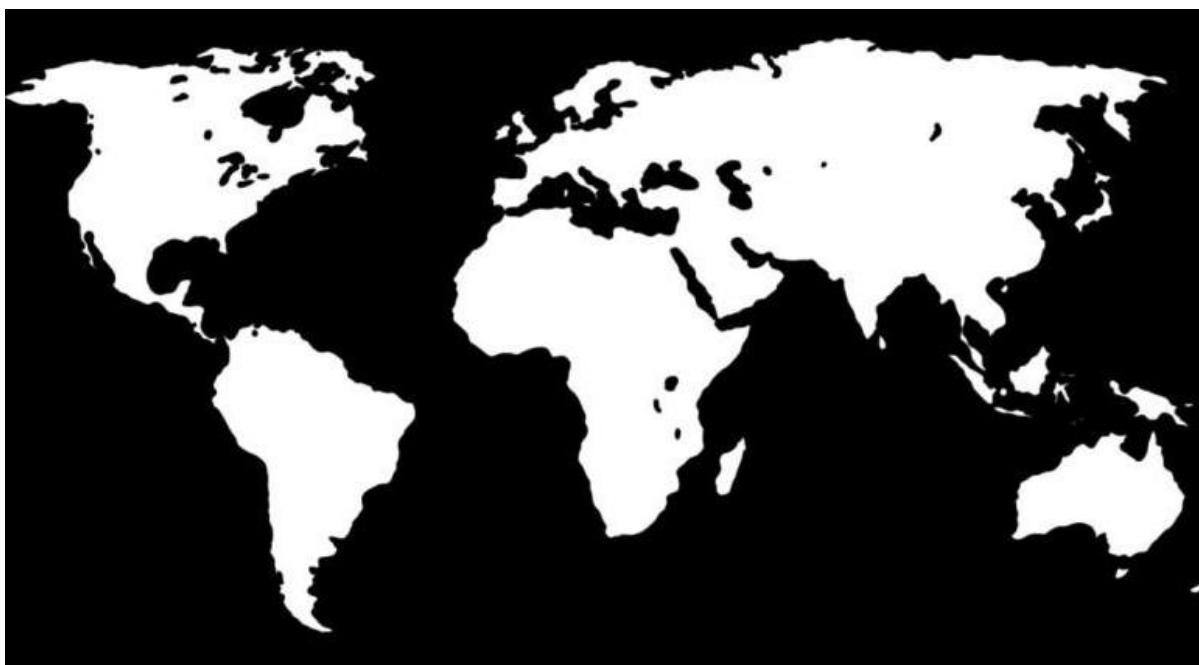


GLOBAL REPOSITORY OF UNIVERSITIES FOR THE BACHELOR'S DEGREE IN THE PROFESSION OF RADIOGRAPHER



Spanish Society of Radiographers (SEGRA)

With the assistance of:



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INTRODUCTION

The repository presented here constitutes a broad, albeit limited, sample of universities, encompassing institutions across the five inhabited continents. This sample has been designed as a representative fraction of universities and equivalent educational centers offering officially recognized and legally established programs that provide access to the profession of Radiographer. This is without prejudice to any additional nationally mandated examinations legally required for the acquisition of accreditation or licensure, as stipulated by the applicable legislation of individual states.

For this sample, the definition of Radiographer provided by the following entities has been considered:

- ESCO¹ (European Skills, Competences, Qualifications, and Occupations) of the European Commission
- ISCO² (International Classification of Occupations)
- EFRS³ (European Federation of Radiographer Societies)
- ISRRT⁴ (International Society of Radiographers & Radiological Technologist)

It has been observed that the four definitions presented are consistent with one another and unequivocally represent the same profession, which is defined (EFRS, 2011)³ as follows:

Radiographers are experts in medical imaging and radiotherapy who:

- *Are professionally responsible for the physical and psychosocial well-being of patients before, during, and after examinations or therapies.*
- *Play an active role in the justification and optimization of medical imaging and radiotherapy procedures.*
- *Are key figures in ensuring the radiological safety of patients and third parties, in accordance with the principle of "As Low As Reasonably Achievable" (ALARA) and relevant legislation".*

Distinguishing within this definition, according to the field of specialization:

Diagnostic Radiographers (Medical Imaging): *They are responsible for the preparation and execution of safe and accurate imaging examinations and their post-*

processing, using a wide range of sophisticated X-ray equipment and techniques. In many European countries, these techniques also include the use of:

- *High-frequency sound = Ultrasound*
- *High magnetic fields = Magnetic Resonance Imaging (MRI)*
- *Radioactive tracers = Nuclear Medicine*

Therapeutic Radiographers (Radiotherapy): *They are responsible for the safe and precise preparation and application of high-energy radiation treatments, using a wide range of sophisticated irradiation and imaging equipment and techniques. This includes:*

- *Optimizing patient positioning and performing individualized immobilization, as necessary.*
- *Using simulation to collect data/information to identify the target volume and organs at risk using appropriate imaging modalities.*
- *Treatment planning to achieve optimal dose distribution in the target volume and organs at risk.*
- *Verifying the treatment plan, patient setup, and daily verification of patient positioning.*
- *Irradiating the target volume.*

In accordance with the described definition, in Spain, the profession is referred to as: **"Técnico Superior en Diagnóstico por la Imagen y Medicina Nuclear"** (Medical Imaging Radiographers) and **"Técnico Superior en Radioterapia y Dosimetría"** (Therapeutic Radiographers).

This repository, presented as a sample, is not intended to encompass the entirety or majority of universities or equivalent educational institutions offering qualifications that provide access to a common profession.

Rather, it aims to serve as a small, **representative selection of universities that uniformly reflect the university-level training of the profession on a global scale.** These institutions maintain comparable standards in qualification levels and teaching quality, ensuring that the knowledge, skills, and competencies required by national authorities are met through appropriate education and training programs.

JUSTIFICATION

The justification for this repository is based on the following key aspects:

- I. There is no known document of similar characteristics where established programs for this profession can be consulted globally, categorized by states, through official university sources.
- II. The complexity of analyzing the programs established for the profession of Radiographer across different states involves challenges, including linguistic barriers and variations in national terminology in official languages. Therefore, to facilitate subsequent study and comparison of programs by any entity or organization, this document is considered both useful and relevant, providing a straightforward and efficient consultation tool.

METHODS

For the development of this global sample, the continental model established by the UN⁵ was considered, which excludes Antarctica as it is not an inhabited continent, as well as the division set by the regional groups of the Member States.

To define what is considered a university in this repository, the definition established by the RAE⁶ (Real Academia Española) has been adopted:

1. f. Institution of higher education comprising various faculties and conferring corresponding academic degrees. Depending on the era and country, it may include colleges, institutes, departments, research centers, professional schools, etc. Examples: University of Salamanca, popular universities.

Additionally, for greater precision, given the international scope of the sample, the provisions of Directive 2005/36/EC of the European Parliament and of the Council of 7 September 2005 on the recognition of professional qualifications⁷ were taken into account, particularly those established in Article 11, *Levels of Qualification*, sections (d) and (e):

(d) *A diploma certifying successful completion of a course of post-secondary study lasting at least three years but not more than four years, or of equivalent duration on a part-time basis, provided by a university or an institution of higher education or another establishment of the same level, as well as the professional training required, if applicable, in addition to the post-secondary course.*

(e) *A diploma certifying that the holder has successfully completed a post-secondary course of study of at least four years' duration, or of equivalent duration on a part-time basis, at a university or an establishment of higher education or another institution of equivalent level, and, where applicable, that they have successfully completed any professional training required in addition to the post-secondary course.*

For the sampling conducted, only primary sources of information freely accessible online were used.

No encryption tools or location-masking technologies were employed during the sampling process; instead, a conventional internet connection with an IP (*Internet Protocol*) and DNS (*Domain Name System*) based in Spain was used.

Three inclusion criteria were established for this repository:

- Universities and equivalent educational institutions must be located in one of the 193 UN member states.
- Universities and equivalent educational institutions must offer qualifications that provide access to the profession of *Radiographer* (in Medical Imaging and/or Radiotherapy), as defined by the established definitions and national legislation.
- Programs must involve 3 or more years of education and training and must be accessible via the official websites of the educational institutions or, failing that, the website of the legally competent ministry or equivalent body.

Exclusion criteria were also defined as follows:

- Universities and equivalent educational institutions whose training programs, while containing similar content, do not provide access to the profession of *Radiographer* in accordance with national legislation.

SECTION I - UNIVERSITIES IN WESTERN EUROPEAN STATES AND OTHER COUNTRIES

AUSTRALIA

Central Queensland University

<https://www.cqu.edu.au/courses/699913/bachelor-of-medical-imaging?audience=DOMESTIC>

Charles Sturt University

<https://study.csu.edu.au/courses/bachelor-medical-radiation-science>

Curtin University

<https://www.curtin.edu.au/study/offering/course-ug-bachelor-of-science-medical-radiation-science--b-scimrs/>

AUSTRIA

FH Campus Wien

<https://www.fh-campuswien.ac.at/studium-weiterbildung/studien-und-lehrgangsangebot/radiologietechnologie-bachelor.html>

Fachhochschule Wiener Neustadt

<https://www.fhwn.ac.at/studiengang/radiologietechnologie#top>

FH Gesundheitsberufe OÖ

<https://www.fh-gesundheitsberufe.at/bachelor-studiengang/radiologietechnologie/>

BELGIUM

Odesee de CO-HOGESCHOOL

<https://www.odisee.be/opleidingen/bachelor-medische-beeldvorming-en-radiotherapie>

Haute École Léonard de Vinci

<https://www.vinci.be/fr/formations/imagerie-medicale>

Karel de Grote Hogeschool

<https://www.kdg.be/opleidingen/bachelor-en-graduaatsopleidingen/medische-beeldvorming-en-radiotherapie#:~:text=De%20bacheloropleiding%20Medische%20Beeldvorming%20en,ultraso und%20voor%20echografie%20en%20bestralingsapparatuur>

CANADA

University of Alberta

<https://www.ualberta.ca/en/undergraduate-programs/bachelor-of-science-in-radiation-therapy-radiation-therapy.html>

University of Prince Edward Island

<https://www.upei.ca/programs/bachelor-applied-science-radiography>

University of New Brunswick

<https://www.unb.ca/academics/programs/health-sciences/radiography.html>

DENMARK

UCL University College in Denmark – Lillebaelt

<https://www.ucl.dk/uddannelser/radiograf>

University College of Northern Denmark – UCN

<https://www.ucn.dk/uddannelser/radiograf/fag-og-opbygning#at-menu>

Copenhagen University of Applied Sciences

<https://www.kp.dk/uddannelser/radiograf/>

FINLAND

Metropolia University of Applied Sciences

<https://www.metropolia.fi/fi/opiskelu-metropoliassa/amk-tutkinnot/rontgenhoitaja>

Oulu University of Applied Sciences

<https://opetussuunnitelmat.oamk.fi/68096/fi/68089/68135/1219>

Savonia University of Applied Sciences

<https://www.savonia.fi/opiskele-tutkinto/tutkinnot-ja-hakeminen/amk-ja-yamk-tutkinnot-tarjonta/rontgenhoitaja-amk-paivatoteutus/>

FRANCE

Faculté de médecine, maïeutique et sciences de la santé - Université de Strasbourg - lycée Jean Rostand

<https://www.lycee-jean-rostand.fr/index.php/formations/autres/dts-imrt>

Centre de Formation de l'AP-HP Institut de formation de manipulateurs d'électroradiologie médicale

<https://cfdc.aphp.fr/ifmem/#etudes>

Lycée Pierre-Gilles de Gennes - Ecole nationale de chimie, physique et biologie

<https://encpb.org/index.php/nos-formations/dts/dts>

GERMANY

Universitätsklinikum Essen - Schule für Medizinische Technologie in der Radiologie

<https://bildungsakademie.ume.de/gesundheitsfachschulen/schule-fuer-medizinische-technologie-in-der-radiologie/>

Universitätsklinikum Düsseldorf - Heinrich-Heine-Universität Düsseldorf

<https://www.uniklinik-duesseldorf.de/ausbildung-karriere/ausbildungen/fachbereich-mta/die-ausbildung-zurum-mta>

Otto-von-Guericke-Universität - Medizinische Fakultät Universitätsklinikum Magdeburg A.ö.R - Ausbildungszentrum für Gesundheitsfachberufe

<https://www.azg.ovgu.de/Ausbildungsberufe.html>

GREECE

University of western Attica - Department of Radiology and Radiation Therapy at TEI of Athens

<http://www.xr.teiath.gr/articles.php?id=69635&lang=en>

ICELAND

University of Iceland

<https://www.hi.is/geislafraedi>

IRELAND

Trinity College Dublin

<https://www.tcd.ie/courses/undergraduate/courses/radiation-therapy/>

University College Dublin

<https://www.ucd.ie/medicine/studywithus/undergraduate/radiography/>

ISRAEL

Bar-Ilan University

<https://www.biu.ac.il/field-of-study/tracks/12694>

University of Haifa

<https://www.haifa.ac.il/2022/05/02/bsc-medical-imaging/?lang=en>

Science and Law Academic Center - in Hod Hasharon

<https://mishpat.ac.il/%D7%AA%D7%95%D7%90%D7%A8-%D7%A8%D7%90%D7%A9%D7%95%D7%9F-b-sc-%D7%91%D7%93%D7%99%D7%9E%D7%95%D7%AA-%D7%A8%D7%A4%D7%95%D7%90%D7%99%D7%AA/>

ITALY

Università di Bologna

<https://www.unibo.it/it/studiare/lauree-e-lauree-magistrali-a-ciclo-unico/corso/2024/6063>

Università degli Studi di Milano

<https://www.unimi.it/it/corsi/laurea-triennale/tecniche-di-radiologia-medica-immagini-e-radioterapia>

Università Politecnica delle Marche

https://www.univpm.it/Entra/Offerta_formativa_1/Offerta_formativa_2/Corso_di_laurea_triennale_in_Tecniche_di_Radiologia_Medica_per_Immagini_e_Radioterapia_1

LUXEMBOURG

University of Luxembourg - Ecole Nationale de Santé du Luxembourg

<https://www.ltps.lu/offre-scolaire/atm-de-radiologie.html>

MALTA

University of Malta

<https://www.um.edu.mt/courses/overview/ubschrdtft-2024-5-o/>

NETHERLANDS

Inholland University of Applied Sciences

<https://www.inholland.nl/opleidingen/medisch-beeldvormende-en-radiotherapeutische-technieken-voltijd/>

Fontys University of Applied Sciences

<https://www.fontys.nl/en/Study-at-Fontys/Programmes/Medical-Imaging-and-Radiation-Therapy-MIRT.htm>

Hanze University of Applied Sciences

<https://www.hanze.nl/nl/opleidingen/voltijd/bachelor/medisch-beeldvormende-en-radiotherapeutische-technieken>

NEW ZEALAND

University of Auckland

<https://www.auckland.ac.nz/en/study/study-options/find-a-study-option/Medicalimaging.html>

University of Otago

<https://www.otago.ac.nz/study/qualifications/brt>

Lincoln University

<https://www.lincoln.ac.uk/course/raddgcub/>

NORWAY

Western Norway University of Applied Sciences

<https://www.hvl.no/en/studies-at-hvl/study-programmes/radiography/>

University of South-Eastern Norway

<https://www.usn.no/studier/bachelor-i-radiografi/>

Oslo Metropolitan University

<https://www.oslomet.no/studier/hv/radiografi>

PORTUGAL

Escola Superior de Tecnologia da Saúde de Coimbra - Instituto Politécnico de Coimbra

<https://www.ipc.pt/oferta-formativa/licenciatura-em-imagem-medica-e-radioterapia/>

Escola Superior de Tecnologia da Saúde de Lisboa - Instituto Politécnico de Lisboa

<https://www.estesl.ipl.pt/estudar/licenciaturas/imagem-medica-e-radioterapia>

University of Aveiro

<https://www.ua.pt/pt/curso/406>

SWEDEN

University of Gothenburg

<https://www.gu.se/studera/hitta-utbildning/rontgensjukskoterskeprogrammet-v1rts>

Lund University

<https://www.lu.se/lubas/i-uoh-lu-VGRRS>

Karolinska Institutet

<https://utbildning.ki.se/program/1rs13-rontgensjukskoterskeprogrammet>

SWITZERLAND

University of Applied Sciences and Arts of Western Switzerland - Geneva School of Health (HEdS - Geneva)

<https://www.hesge.ch/heds/formation/bachelor/technique-radiologie-medicale>

University of Applied Sciences and Arts of Western Switzerland - HESAV - Vaud School of Health

<https://hesav.ch/formation/technique-en-radiologie-medicale/>

UNITED KINGDOM OF GREAT BRITAIN AND NORTHERN IRELAND

University of Salford

<https://www.salford.ac.uk/courses/undergraduate/diagnostic-radiography>

Ulster University

<https://www.ulster.ac.uk/courses/202526/diagnostic-radiography-imaging-36054>

City, University of London

<https://www.city.ac.uk/prospective-students/courses/undergraduate/radiography-radiotherapy-and-oncology>

UNITED STATES OF AMERICA

University of Texas - MD Anderson Cancer Center

<https://www.mdanderson.org/education-training/degree-granting-schools/school-of-health-professions/academics/diagnostic-imaging/curriculum.html>

University of South Alabama

<https://www.southalabama.edu/colleges/alliedhealth/radiologicsciences/general-radiography-advanced-modality.html>

University of Iowa - Carver College of Medicine

<https://medicine.uiowa.edu/radsci/>

Universidad Central del Caribe

<https://www.uccaribe.edu/mitp/bsdi/>

CONCLUSIONS OF SECTION I

Of the 29 member states of the Western European and other states regional group, **60 universities and equivalent educational institutions** meeting the established criteria were identified and included in this repository. These institutions **correspond to 23 out of the 29 states in the group (79.3%, n=29)**.

Regarding the 6 states that do not meet the inclusion criteria and are therefore not included:

- Four are microstates⁸ (*Andorra, San Marino, Liechtenstein, and Monaco*) that do not have established programs. Professionals in these countries hold recognized qualifications obtained in other states.
- The other two excluded states, for not meeting the inclusion criteria, are **Turkey and Spain**.

In the case of Turkey (which has been considered solely within this regional group), the programs identified in universities are offered as short-cycle university degrees (Associate degrees) lasting two years and comprising 120 ECTS (ISCED 5). Examples include:

Ataturk University

[https://obs.atauni.edu.tr/moduller/dbp/eobs/birimDetay/1324/T%C4%B1bbi%20G%C3%B6r%C3%BCnt%C3%BCleme%20Teknikleri%20Program%C4%B1%20\(1324\)?](https://obs.atauni.edu.tr/moduller/dbp/eobs/birimDetay/1324/T%C4%B1bbi%20G%C3%B6r%C3%BCnt%C3%BCleme%20Teknikleri%20Program%C4%B1%20(1324)?)

Marmara University

<https://meobs.marmara.edu.tr/ProgramTanitim/saglik-hizmetleri-meslek-yuksekokulu/tibbi-goruntuleme-teknikleri-122-156-0>

Turkish programs appear to align with various reports from the European Education and Culture Executive Agency (EACEA)^{9,10,11} and the Eurydice network of the European Commission¹², which highlight Turkey's still limited adherence to the Bologna Process and the European Higher Education Area (EHEA) system, which consists of three levels (Bachelor's, Master's, and Doctorate). Despite this, the reports also acknowledge the significant efforts made by Turkey in recent years to adapt to the EHEA.

In any case, it is found that while Turkish programs diverge from the standard of the regional group, they are framed within the university context, meeting established university quality standards, with expert faculty members who are academics and researchers.

In the case of **Spain**, the established short-cycle programs, while within higher education, are classified as **NON-UNIVERSITY** postsecondary education programs, lasting two years and comprising 120 ECTS. These are vocational training programs, outside the university sector, and cannot guarantee the established university quality criteria found in the rest of the countries in the group, including expert, academic, or research faculty.

In both Turkey and Spain, the qualification obtained does not grant access to advanced formal university-level training programs (EQF level 7, Master's) that would lead to specialization in a particular field of knowledge.

Regarding other programs of note in this regional group, we highlight those in **Germany** and the **United States of America**.

Concerning German programs, we find that they meet the established criteria, particularly considering Article 11d of Directive 2005/36/EC. These programs, lasting three years and offering 180 ECTS, are mainly provided at institutions affiliated with university hospitals, in collaboration with German universities.

In these same institutions, with identical duration and structure, programs in other fields (e.g., Nursing, Physiotherapy, Podiatry, Occupational Therapy, and Speech Therapy) are also offered.

These German institutions and their training programs, though considered by the German authorities as *Ausbildung* (vocational training) under their legislation, meet university quality standards, with expert faculty, academic staff, and researchers. They present all the characteristics typically found in university faculties offering established programs in the countries of the regional group.

Given the characteristics of the programs and training institutions, it is noteworthy that while the qualification level attained is level 5 according to the European Qualifications Framework (EQF), the vast majority of European Union states, which also offer established level 6 EQF programs (Bachelor's), have applied automatic recognition of qualifications for German Radiographers who have requested it, without compensatory measures.

This can be verified in the European Commission's Regulated Professions Database¹³, which makes it evident that the competent authorities of the member states consider the qualification obtained by German Radiographers to be equivalent (Table 1).

Overall Statistics (Establishment)

Country of Qualification	(+) Automatic recognition of professional experience ('crafts')	(+) Positive Automatic General System (no compensation measures imposed)	(+) Positive after aptitude test (general system)	(+) Positive after adaptation period (general system)	(-) Negative Automatic General System and professional experience ('crafts')	(-) Negative after aptitude test (general system)	(0) Appeal	(0) Undergoing adaptation period	(0) Being examined	Decisions Taken by Host Country	(+) Total Positive	(-) Total Negative	(0) Total Neutral
Germany	26	333	8	41	12	2	1	11	88	522	408	14	100
Total for All Countries	26	333	8	41	12	2	1	11	88	522	408	14	100
Total EU	26	333	8	41	12	2	1	11	88	522	408	14	100
Total EFTA	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 1. Extracted from: Regulated Professions Database. Overall Statistics (Establishment). Decisions Taken by Host Country. COUNTRY OF QUALIFICATION: Germany. PROFESSION: Radiographer/Radiotherapist. Directorate-General for Internal Market, Industry, Entrepreneurship and SMEs. European Commission. November, 2024

Additionally, it should be noted that for German graduates, after several years of accredited professional experience, the competent German authority recognizes their Radiographers (*MTR, Medizinischer Technologe für Radiologie*) as having level 6 EQF (Bachelor's degree level) and access to the next level of formal education (level 7 EQF, Master's).

Regarding the **United States of America**, we find that it is a Federal Republic, where each of the fifty states has the authority to establish their own requirements for training programs within their jurisdiction. While this leads to a variety of education and training programs, based on federal legislation, which requires a minimum of two years of training and the passing of national exams, it has been observed that in most states, modular university programs have been established, consisting of two years of common training, followed by specific courses in particular fields of knowledge, as well as clinical internships in accredited centers.

In conclusion, we observe that most of the established programs in the United States of America are three to four years in duration, within the university framework, regardless of the national and state eligibility exams that must be passed in order to practice the profession.

In summary, if we exclude the microstates of the mentioned group, we find that 92% (n=25) of the states in the regional group meet the established criteria.

SECTION II: UNIVERSITIES IN EASTERN EUROPEAN STATES

ALBANIA

UNIVERSITETI I MJEKESISE TIRANE

<http://umed.edu.al/university-event/fakultetet/fakulteti-i-shkencave-mjekesore-teknike/programet-e-studimit-2/>

Western Balkans University

<https://wbu.edu.al/public/sq/program/imaging-technician>

Universiteti ALDENT

<https://ual.edu.al/ual.edu.al/teknike-imazheri-dhe-radioterapi/>

BOSNIA Y HERZEGOVINA

Univerzitet u Sarajevu - Fakultet zdravstvenih studija

<https://www.fzs.unsa.ba/studijski-program-radioloske-tehnologije>

Univerziteta u Travniku - Farmaceutsko-zdravstveni fakultet

<https://fzf.edu.ba/smjerovi/radiologija/>

University of Banja Luka - Medical Faculty

<https://med.unibl.org/diplomski-studiji-i-ciklus/>

BULGARY

Medical University – Pleven

<https://www.mu-pleven.bg/index.php/en/specialties-en/radiology-technician>

Medical University – Plovdiv

<https://mu-plovdiv.bg/fakulteti/medicinski-kolezh/spetsialnosti/rentgenov-laborant/>

CROATIA

Zdravstveno veleučilište u Zagrebu

<https://www.zvu.hr/studij-radioloske-tehnologije/>

University of Split - University Department of Health Studies

<https://ozs.unist.hr/hr/sozs-nastava/sveucilisni-prijediplomski-studiji/radioloska-tehnologija>

CZECHIA

Czech Technical University in Prague

<https://www.fbmi.cvut.cz/student/studium-informace?section=ra>

Faculty of Health Care Studies - University of West Bohemia Pilsen

<https://www.fzs.zcu.cz/cs/Admission/Bachelor-studies/>

Faculty of Health and Social Sciences of the University of South Bohemia (FHSS USB)

<https://www.zsf.jcu.cz/cz/prijimaci-zkousky/studijni-programy/studijni-program?program=2674>

ESTONIA

Tartu College of Health Care

<https://www.nooruse.ee/oppimine/rakenduskorgharidus/radioloogiatehnik/>

HUNGARY

University of Pécs - Faculty of Health Sciences

<https://pte.hu/hu/felveteli/kepzes/radiografia-specializacio-orvosi-diagnosztikai-analitikus-alapszak>

University of Miskolc - Faculty of Health Sciences

http://ek.uni-miskolc.hu/?page_id=356

LATVIA

University of Latvia - Faculty of Medicine

<https://www.lu.lv/studijas/studiju-programmas/bakalaura-limena-studijas/radiografija/>

LITHUANIA

Klaipėda University

<https://www.ku.lt/lt/bakalauro-studijos-2/sveikatos-mokslai/radiologija>

Kauno kolegija Higher Education Institution - Faculty of Medicine

<https://www.kaunokolegija.lt/studiju-programos/radiologija/>

Vilnius University of Applied Sciences - Faculty of Health Care

<https://www.viko.lt/studentams/studiju-programos-lietuviskai/radiologija/>

NORTH MACEDONIA

Ss. Cyril and Methodius University in Skopje - Faculty of Medicine

<https://ukim.edu.mk/studii/studiski-programi/prv-ciklus/medicinski-fakultet-studiski-programi-i-ciklus/>

“St. Kliment Ohridski” University in Bitola - Higher Medical School

https://vmsb.uklo.edu.mk/studii-1-ciklus/?_gl=1%2A1qcdcm%2A_ga%2AMTU0MzYzNzM1NS4xNzMwNzE0NDk2%2A_ga_J59BXLGNJT%2AMTczMDcxNDQ5Ni4xLjEuMTczMDcxNDUwMS4wLjAuMA..

POLAND

Medical University of Gdańsk

<https://rekrutacja.gumed.edu.pl/1267.html>

Medical University of Warsaw

<https://www.wum.edu.pl/kierunek/kierunek-elektrodiagnostyka>

Jagiellonian University Medical College

<https://ze.wnz.cm.uj.edu.pl/studia/>

REPUPLIC OF MOLDOVA

Nicolae Testemitanu State University of Medicine and Pharmacy

<https://medicina1.usmf.md/ro/specialitati-facultatea-de-medicina-nr-1/tehnologie-radiologica-studii-de-licenta-4-ani>

ROMANIA

"Iuliu Hațieganu" University of Medicine and Pharmacy - Cluj-Napoca

<https://umfcluj.ro/programe-de-studii/licenta/>

Universitatea de Medicina si Farmacie Craiova

<https://www.umfcv.ro/ro/educatie/facultati/medicina/program-de-studiu-medicina/radiologie-si-imagistica>

SERBIA

University in Novi Sad - Faculty of Medicine

https://www.mf.uns.ac.rs/Obraz_Prog.php?Skracenica=OSSRT&Godina=3&NastavniPlan=2023

SLOVAKIA

University of Presov - Faculty of Health Care

<https://www.unipo.sk/en/faculty-of-health-care/departments/DTDHC/rt/>

Katolíckej univerzity v Ružomberku - Fakulta zdravotníctva

<https://www.ku.sk/fakulty-katolickej-univerzity/fakulta-zdravotnictva/studium/o-studiu/studijne-programy/bakalarske-studijne-programy-bc-studium/radiologicka-technika.html>

Slovenská zdravotnícka univerzita v Bratislave

<https://eszu.sk/radiologicka-technika/>

SLOVENIA

University of Ljubljana, Faculty of Health Sciences

<https://www.zf.uni-lj.si/si/studenti/studijski-programi/1-stopnja/1-stopnja-radioloska-tehnologija>

P. Stradins Medical College - University of Latvia

<https://www.psk.lu.lv/studiju-iespejas/studiju-programmas/radiologa-asistents>

CONCLUSIONS OF SECTION II

Of the 23 states that make up the Eastern Europe regional group, **a total of 34 universities and equivalent educational institutions, corresponding to 16 states in the group (69.56%, n=23)**, have been included in this repository for meeting the established criteria.

Among the 7 states that do not have established training programs that meet the criteria (Montenegro, Armenia, Azerbaijan, Belarus, the Russian Federation, Georgia, and Ukraine), we find two clearly differentiated cases:

- On one hand, we have the Russian Federation and some states where there has historically been a greater influence from the Soviet Union, and later the Russian Federation, on their education systems and programs. This is the case of Belarus, Ukraine, Armenia, Azerbaijan, and Georgia.

It is important to note that **in the Russian Federation, there is no professional title for Radiographer**, and thus no established program for the profession. The role is mainly carried out by doctors as part of their responsibilities and functions, and by other professionals without specific and regulated qualifications to perform these duties; this same situation applies to the aforementioned countries with greater Russian influence.

- On the other hand, we have the state of **Montenegro**, which, although it does not have an established program in its universities, regulates the profession, and **its Radiographers are trained in neighboring countries**, primarily in

Serbian universities. Since Montenegro's separation in 2006, its qualifications have been recognized for the practice of the profession in Montenegro.

Therefore, excluding Montenegro, as its professionals are trained in universities in other states, we conclude that 72.72% (n=22) of the states in the Eastern Europe group have established programs that meet the inclusion criteria.

SECTION III: UNIVERSITIES IN ASIAN AND PACIFIC STATES

AFGHANISTAN

Ferdowsi Institute of Health Sciences

<https://ferdowsi.edu.af/departments/%d8%b1%d8%a7%d8%af%db%8c%d9%88%d9%84%d9%88%da%98%db%8c/>

Moraa Educational Complex

<https://www.moraa.edu.af/radiology/#1550384622591-3b2c0a57-2d1e>

BAHREIN

University of Bahrain - College of Health and Sports Sciences

<https://chss.uob.edu.bh/undergraduate/b-sc-in-radiologic-technology-diagnostic/?lang=ar>

BANGLADESH

Bangladesh University of Health Sciences - Faculty of Health Engineering & Technology

<https://buhs.ac.bd/bsc-in-radiology-and-imaging-technology-hons/>

Saic College of Medical Science & Technology

<https://saicmedical.edu.bd/bsc-in-radiology-imaging/>

BHUTAN

Khesar Gyalpo University of Medical Sciences of Bhutan

<https://www.kgumsb.edu.bt/wp-content/uploads/2022/12/final-academic-regulation.pdf>

CAMBODIA

International University, Phnom Penh - Cambodia - Faculty of Nursing Sciences

<https://www.iu.edu.kh/back/en/faculties/faculty-of-nursing-sciences/>

CHINA

Capital Medical University - Yenching School of Medicine

<https://yjmc.ccmu.edu.cn/xbxx/yxyxxx/index.htm>

Yangtze University - School of Medicine

<https://med.yangtzeu.edu.cn/info/1083/1044.htm>

Shanghai University of Medicine & Health Sciences

<http://sumhs.admissions.cn/course/view/20408-Medical%20Imaging%20Techniques>

CYPRUS

European University Cyprus

https://euc.ac.cy/en/programs/bachelor-radiologic-technology-radiotherapy/?_gl=1*1b2bsd4*_up*MQ..*_ga*MjAwMTcyNTg2NS4xNzI0MTUxNzg3*_ga_99G0G2Y74G*MTcyNDE1MTc4Ni4xLjEuMTcyNDE1MTc5OC4wLjAuMA

FIJI

Fiji National University - College of Medicine, Nursing & Health Sciences

<https://www.fnu.ac.fj/college-of-medicine/programme-listing/>

INDIA

University College of Medical Sciences (UCMS), University of Delhi

<https://www.ucms.ac.in/courses/bscradio>

Guru Nanak Institute of Medical Technology

<https://www.gurunanakinstitute.com/courses/b-voc-in-radiology-medical-imaging-technology/>

Mangalayatan University - Institute Of Nursing and Paramedical Sciences

<https://www.mangalayatan.in/paramedical-course-admission-bmlt-lab-bsc-optometry-medical-radiology-and-imaging-technology/bsc-rmit-course.php>

INDONESIA

Aisyiyah University Yogyakarta - Faculty of Health Sciences

<https://radiologi.unisayogya.ac.id/>

Yogyakarta National Health College

<https://gunabangsa.ac.id/index.php/diploma-tiga-radiologi/>

Health Polytechnic of Semarang

https://jtrr.poltekkes-smg.ac.id/?page_id=113

IRAN (ISLAMIC REPUBLIC OF IRAN)

Kashan University of Medical Sciences and Health Services - Faculty of paramedicine

<https://paramedicine.kaums.ac.ir/%D8%A8%D8%B1%D9%86%D8%A7%D9%85%D9%87-%D8%B1%DB%8C%D8%B2%DB%8C-%D8%AF%D8%B1%D8%B3%DB%8C>

Hamadan University of Medical Sciences - Faculty of Paramedicine

<https://paramed.umsha.ac.ir/sar>

Gonabad University of Medical Sciences - Faculty of Paramedicine

<https://paramed.gmu.ac.ir/pages/1728400192327>

IRAQ

Cihan University-Erbil - College of Health Technology

<https://cihanuniversity.edu.iq/%d9%82%d8%b3%d9%85-%d8%aa%d9%82%d9%86%d9%8a%d8%a7%d8%aa-%d8%a7%d9%84%d8%aa%d8%b5%d9%88%d9%8a%d8%b1-%d8%a7%d9%84%d8%a5%d8%b4%d8%b9%d8%a7%d8%b9%d9%8a/>

Al-Turath University - College of Medical and Health Technologies

<https://uoturath.edu.iq/en/department-of-radiology-and-imaging-techniques/>

Al-Ayen Iraqi University - College of Health and Medical Technologies

https://en.alayen.edu.iq/college_departments/index/8/00/27

JAPAN

Fukushima Medical University - School of Health Sciences

<https://fmu-hs.jp/radiological.html>

Fujita Health University - School of Medical Sciences

<https://www.fujita-hu.ac.jp/en/faculty/index.html>

Kobe Tokiwa University

https://www.kobe-tokiwa.ac.jp/univ/section/radiological_technology/

JORDAN

Al Hussein Bin Talal University - Princess Aisha Bint Al Hussein College of Nursing and Health Sciences

<http://www.ahu.edu.jo/CollDeptAr.aspx?type=1&id=515>

Al-Isra University - Faculty Of Allied Medical Sciences

<https://www.iu.edu.jo/index.php/ar/radiographic/courses-radiographic-technology-iu>

KUWAIT

Kuwait University - College of Allied Medical Sciences

<https://ahs.ku.edu.kw/ar/academics/study-programs>

LAO PEOPLE'S DEMOCRATIC REPUBLIC

University of Health Sciences, Laos

https://www.uhs.edu.la/faculty_list.html

https://rtm.org.la/wp-content/uploads/2024/02/9th_HSD_book-ENG_printed.pdf

LEBANON

Université La Sagesse, Achrafieh - Lebanon - Faculty of Public Health

<https://www.uls.edu.lb/academics/public-health/#FPHUndergraduatePrograms>

American University of Beirut - Faculty of Health Sciences

<https://aub.edu.lb/fhs/Pages/BS-Medical-Imaging-Sciences.aspx>

Lebanese University - Faculty of Public Health

<https://www.ul.edu.lb/faculte/departement.aspx?facultyId=14&departmentId=267>

MALAYSIA

Universiti Sultan Zainal Abidin - Faculty of Health Sciences

https://fsk.unisza.edu.my/index.php?option=com_content&view=article&id=109&Itemid=238

International Islamic University Malaysia - Kulliyyah of Allied Health Sciences

<https://kulliyyah.iium.edu.my/kaahs/bachelor-of-medical-imaging/>

Universiti Kebangsaan Malaysia - Faculty of Health Sciences

<https://www.ukm.my/fsk/sarjanamuda-pengimejan-diagnostik-dan-radioterapi-dengan-kepujian/>

MONGOLIA

National University of Medical Sciences - National School of Medical Sciences

<https://mnums.edu.mn/en/bachelor/>

MYANMAR

University of Medical Technology, Yangon

<http://www.umty.gov.mm/MITD/content/page/undergraduate>

University of Health Sciences, Management and Technology

<https://sml.edu.mm/courses/bachelors-degree-in-medical-imaging-technology-bsc-mit/>

NEPAL

Tribhuvan University - Institute of Medicine

<https://tu.edu.np/pages/institute-of-medicine-11>

Kathmandu University - School of Medical Sciences

<https://kusms.edu.np/bachelor-of-science-in-medical-imaging-technology-b-sc-mit/>

OMAN

Oman college of Health Sciences

<https://moh-hei.edu.om/web/institute-of-health-sciences/bsc-in-medical-imaging>

PAKISTAN

University of Health Sciences - Lahore - Shalamar School of Allied Health sciences

<https://ssahs.edu.pk/medical-imaging-technology-mit/>

Professional Institute of Health Sciences (TPIHS), Mardan

<https://tpihs.edu.pk/course/bs-radiology-technology/>

Sarhad University of Science & Information Technology, Peshawar - Comwave Institute

<https://www.comwave.edu.pk/programs-bachelor-of-science-in-radiology-technology>

PAPUA NEW GUINEA

University of Papua New Guinea - School of Medicine & Health Sciences

<https://www.upng.ac.pg/index.php/smhs-programs-courses/smhs-undergraduate-programs?view=article&id=204:bachelor-of-medical-imaging-science-bmis&catid=122>

PHILIPPINES

Arellano University - College of Radiologic Technology

<https://www.arellano.edu.ph/undergrad/college-radiologic-technology/>

DMMC Institute of Health Sciences - School of Allied Medicine

<https://dmmcihs.edu.ph/18/school-of-allied-medicine/>

Lyceum Institute of Technology, the forerunner of LPU-Laguna - SCHOOL OF HEALTH SCIENCES

<https://lpulaguna.edu.ph/academics/college-of-allied-medicine-cam/bs-radiologic-technology/>

QATAR

University of Doha for Science and Technology - College of Health Sciences

<https://www.udst.edu.qa/academic/our-colleges/college-health-sciences/our-programs/bachelor-science-medical-radiography-bsc>

REPUBLIC OF KOREA

Dongnam Health University

<https://www.dongnam.ac.kr/eng/1963/subview.do>

Gachon University - COLLEGE OF HEALTH SCIENCE

<https://www.gachon.ac.kr/sites/Rad/index.do>

Daejeon Health Sciences College

<https://www.hit.ac.kr/radiation/main>

SAUDI ARABIA

Jeddah University - College of Applied Medical Sciences

<https://fams.uj.edu.sa/ar?programId=67>

King Saud bin Abdulaziz University for Health Sciences

<https://www.ksau-hs.edu.sa/English/Colleges/COAMS/Riyadh/Pages/Academics/Undergraduate%20Programs/Radiological%20Sciences/Overview.aspx>

King Saud University - College of Applied Medical Sciences

<https://cams.ksu.edu.sa/ar/RadiologicalSciences>

SINGAPORE

Singapore Institute of Technology

<https://www.singaporetech.edu.sg/undergraduate-programmes/diagnostic-radiography>

SIRIA (ARAB REPUBLIC OF SIRIA)

Damascus University - College of Health Sciences

<https://damascusuniversity.edu.sy/fhs/?lang=1&set=3&id=821>

SRI LANKA

University of Peradeniya - Faculty of Allied Health Sciences

https://ahs.pdn.ac.lk/dept_and_unit/Rad/index

University of Colombo - Faculty of Science

<https://science.cmb.ac.lk/academic/undergraduate-programs/honours-general-degrees/bsc-honours-in-medical-imaging-technology/>

THAILAND

Mahidol University - Faculty of Medical Technology

<https://mt.mahidol.ac.th/academic-programs/bsc/bsc-rt/>

Chiang Mai University - Faculty of Medical Technology

https://www.cmu.ac.th/th/Faculty/course_detail/5828e5ce-92fb-4a2b-a824-3ae779dccd10

College of Medical Science, Prince of Chulabhorn Royal Academy - Faculty of Health Science Technology

<https://hst.pccms.ac.th/rt/%e0%b8%ab%e0%b8%a5%e0%b8%b1%e0%b8%81%e0%b8%aa%e0%b8%b9%e0%b8%95%e0%b8%a3/>

UNITED ARAB EMIRATES

Gulf Medical University - Ajman

<https://gmu.ac.ae/college-of-health-sciences/medical-imaging-sciences-bsc-mis/>

Higher Colleges of Technology

<https://hct.ac.ae/en/majors/medical-imaging-science/>

University of Sharjah - College of Health Sciences

<https://www.sharjah.ac.ae/en/Academics/Degree/Undergraduate/Medical-Diagnostic-Imaging>

VIETNAM

University of Medicine and Pharmacy Ho Chi Minh City - FACULTY OF NURSING - MEDICAL TECHNOLOGY

<https://ump.edu.vn/khoa-don-vi/cac-khoa/24>

Can Tho University of Medicine and Pharmacy - Faculty Of Nursing And Medical Technology

<https://engtdhydct.ctump.edu.vn/undergraduate-programs.html>

YEMEN (REPUBLIC OF YEMEN)

University of Science and Technology Yemen - College of Medicine and Health Sciences

<https://ust.edu/faculty-of-medicine-and-health-sciences/bachelor-of-radiography-and-medical-imaging/>

Sana'a University - College of Applied Medical Sciences

<https://su.edu.ye/cams/en/bachelor/radiology-medical-diagnostic-imaging/>

CONCLUSIONS OF SECTION III

Of the 54 members of the regional group of states from Asia and the Pacific (excluding Turkey, already included in the Western European states group and other states), **a total of 71 universities from 35 of the 54 states, 64.8% (n=54)**, have been included in this repository for meeting the established criteria.

Among the states not included in this repository, due to not meeting the inclusion criteria, we find four different cases:

- Microstates in Polynesia and the Pacific without an established program, whose Radiographers are trained at universities in states of the region (Fiji, Papua New Guinea, Indonesia, and New Zealand) or other states, as regulated by their national regulations.

This is a group of 13 states: **Brunei Darussalam, Marshall Islands, Solomon Islands, Kiribati, Maldives, Federated States of Micronesia, Nauru, Palau, Samoa, Timor-Leste, Tonga, Tuvalu, and Vanuatu.**

Within this group, two cases should be noted: Brunei Darussalam, where a degree obtained from one of the 22 United Kingdom universities recognized

by the Ministry of Health of Brunei and the Raja Isteri Pengiran Anak Saleha Hospital, Bandar Seri Begawan, is required:

<https://www.moh.gov.bn/SitePages/Radiographer.aspx>

On the other hand, in the Maldives, a university degree recognized by the state is required to practice the profession.

<https://health.gov.mv/storage/uploads/3qIk8LYX/jgugsycu.pdf>

- States that do not have an established program due to having training and education models similar to the one established in the Russian Federation, where the profession of Radiographer is not regulated; these states include: **Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan.**
- Regarding the **Democratic People's Republic of Korea** (North Korea), no data could be gathered for this repository, so it has been considered statistically that the state does not have an established program or regulated profession.
- Finally, as a unique case in the group, we have the state of **Turkmenistan, which has a 2-year vocational training program:**

Ashgabat Secondary Medical School named after I. Gandhi

<https://igandilukmancylyk.edu.tm/?/HABARLAR/&page=habar&habar=511>

After analyzing the states in the regional group that do not have an established education and training program for the profession of Radiographer, excluding the microstates where a university degree is required, according to the established inclusion criteria, we find that: 85.3% of the states in the regional group (n=41) have education and training programs of 3 or more years that meet the established criteria.

SECTION IV: UNIVERSITIES IN STATES OF LATIN AMERICA AND THE CARIBBEAN

ARGENTINA

Universidad Favaloro - Facultad de Ciencias Médicas

<https://www.favaloro.edu.ar/licenciatura-en-produccion-de-bioimagenes-preguntas-frecuentes/>

Universidad del Aconcagua - Facultad de Ciencias Médicas

<https://www.uda.edu.ar/index.php/licenciatura-en-produccion-de-bioimagenes>

Universidad Abierta Interamericana - Facultad de Medicina y Ciencias de la Salud

<https://uai.edu.ar/facultades/medicina-y-ciencias-de-la-salud/licenciatura-en-producci%C3%B3n-de-bioim%C3%A1genes/>

BOLIVIA (PLURINATIONAL STATE OF BOLIVIA)

Universidad Mayor Real y Pontificia de San Francisco Xavier de Chuquisaca -
Facultad de Ciencias Tecnológicas de la Salud

<https://tecnologicasalud.usfx.bo/bio-imagenologia/plan-de-estudios-bio-imagenologia/>

Universidad Mayor de San Andrés - Facultad de Medicina, Enfermería, Nutrición y
Tecnología Médica

<https://tecmed.umsa.bo/radiologia>

BRASIL

Universidade Nove de Julho

<https://www.uninove.br/cursos/graduacao/presencial/tecnologia-em-radiologia>

Centro Universitário Arthur Sá Earp Neto - Faculdade de Medicina de Petrópolis

<https://www.unifase-rj.edu.br/tecnologo/radiologia>

Faculdade de Ciências Médicas da Santa Casa de São Paulo - Fundação Arnaldo Vieira de Carvalho (FAVC)

<https://fcmsantacasasp.edu.br/vemprasanta/graduacao/tecnologia-radiologia/>

CHILE

Universidad de Chile - Facultad de Medicina

<https://medicina.uchile.cl/carreras/5017/tecnologia-medica>

Pontificia Universidad Católica de Valparaíso - Facultad de Ciencias

<https://www.pucv.cl/pucv/pregrado/tecnologia-medica>

Universidad Austral de Chile - Facultad de Medicina

<https://medicina.uach.cl/tecnologia-medica-pregrado/>

COLOMBIA

Universidad Mariana

<https://www.umariana.edu.co/tec-radiodiagnostico-radioterapia.html>

Fundación Universitaria del Área Andina - Facultad de Ciencias de la Salud y del Deporte

<https://www.areandina.edu.co/tecnologia/bogota/radiologia-e-imagenes-diagnostics>

Fundación Universitaria de Ciencias de la Salud - Facultad de Tecnologías en Salud

https://www.fucsalud.edu.co/pregrado/carreras_tecnologicas/Radiologia-e-imagenes-diagnostics

COSTA RICA

Universidad de Costa Rica - Facultad de Medicina - Escuela de Tecnologías en Salud

<https://feriavocacional.ucr.ac.cr/imagenologia-diagnostics-y-terapeutica/>

CUBA

Universidad de Ciencias Médicas de La Habana - Facultad de Tecnología de la Salud

<https://ucmh.sld.cu/estudios-academicos-autofinanciados-pregrado/>

Universidad de Ciencias Médicas Ciego de Ávila - Facultad de Ciencias Médicas de Morón

https://www.universidad.cav.sld.cu/?page_id=352

ECUADOR

Universidad Metropolitana del Ecuador - Facultad de Salud y Cultura Física

<https://umet.edu.ec/imagenologia-y-radiologia-umet/>

Universidad de Cuenca - Facultad de Ciencias Médicas

<https://www.ucuenca.edu.ec/carreras/imagenologia-y-radiologia/>

Universidad Central del Ecuador - Facultad de Ciencias Médicas

<https://www.uce.edu.ec/web/fcm>

EL SALVADOR

Universidad de El Salvador - Facultad de medicina

<https://sites.google.com/ues.edu.sv/aafmed/pregrado/radiolog%C3%ADa-pregado>

Universidad Dr. Andrés Bello - Facultad de Ciencias de la Salud

<https://www.unab.edu.sv/facultades/ciencias-de-la-salud/licenciatura-en-radiologia-e-imagenes/>

GUATEMALA

Universidad Galileo - Facultad de Ciencias de la Salud

<https://www.galileo.edu/facisa/carrera/licenciatura-produccion-imagenes-diagnosticas/>

GUYANA

University of Guyana - Faculty of Health Sciences

<https://uog.edu.gy/srms/departments/257/programmes/997/details>

HAITI

State University of Haiti - Henry Christophe Campus

<https://www.chcl.ueh.edu.ht/index.php>

<https://ueh.edu.ht/wp-content/uploads/2021/07/Circulaire-portant-creation-des-Corps-Universitaires-au-Campus-Henry-Christophe-de-IUEH-a-Limonade.pdf>

JAMAICA

University of the West Indies Mona, Jamaica - Faculty of Medical Sciences

<https://www.mona.uwi.edu/fms/bachelor-science-diagnostic-imaging>

MEXICO

Universidad Autónoma de Sinaloa - Facultad de Medicina

https://medicina.uas.edu.mx/?page_id=747

Universidad de Monterrey

<https://www.udem.edu.mx/es/ciencias-de-la-salud/programas/radiologia-e-imagen#profiles>

Instituto Nórdico Universitario

<https://nordico.edu.mx/radiologia/>

NICARAGUA

Universidad Nacional Autónoma de Nicaragua-León

https://www.unanleon.edu.ni/admision/?_gl=1*13n695s*_ga*MTk1NDUwODAxMS4xNzZMzMDUyMDg2*_ga_J04TQWE3S7*MTczMzA1MjA4NS4xLjEuMTczMzA1Mjk1Ni4yNy4wLjA

PANAMA

Universidad de Panamá - Facultad de Medicina

<https://facmedicina.up.ac.pa/licenciaturas>

Universidad Especializada de las Américas - Facultad de Ciencias Médicas y Clínicas

<https://www.udelas.ac.pa/en/facultades/facultad-de-ciencias-medicas-y-clinicas/ofertas-academicas/licenciatura-en-radiologia-medica/>

Universidad Metropolitana de Educación, Ciencia y Tecnología - Facultad de Ciencias de la Salud

<https://umecit.edu.pa/grado-licenciaturas/facultad-de-ciencias-de-la-salud/licenciatura-en-radiologia-e-imagenes-medicas-prov/>

PARAGUAY

Universidad Hispano Guaraní

<https://uhg.edu.py/grado/licenciatura-en-radiologia/>

Universidad Autónoma del Sur - Facultad de Ciencias de la Salud

<https://unasur.edu.py/radiologia/>

Universidad La Paz - Facultad de Ciencias de la Salud

<https://www.universidadlapaz.edu.py/radiologia-e-imagenes>

PERU

Universidad Peruana Cayetano Heredia

<https://cayetano.edu.pe/pregrado/carreras/radiologia/>

Universidad Peruana Los Andes - Facultad de Ciencias de la Salud

<https://www.upla.edu.pe/tecnologia-medica-especialidad-de-radiologia/>

Universidad de Chiclayo - Facultad de Ciencias de la Salud

<https://www.udch.edu.pe/web/esc.php?p=esctecnmedicaradio>

DOMINICAN REPUBLIC

Universidad Autónoma de Santo Domingo - Facultad de Ciencias de la Salud

<https://soft.uasd.edu.do/PensumGrado/?periodoV=999999&programa=P-IMAG&plan=000014&nivel=GR>

Instituto Superior Especializado en Imágenes Médicas

<https://inesimed.edu.do/licenciatura-en-imagenes-medicas-modalidad-presencial/>

Universidad Católica Santo Domingo - Facultad de Ciencias de la Salud

<https://web1.ucsd.edu.do/en/ciencia-de-la-salud/imagenes-medicas/>

TRINIDAD AND TOBAGO

College of Science, Technology and Applied Arts of Trinidad and Tobago - School of Nursing, Health and Medical Technologies

<https://www.costaatt.edu.tt/course/bsc-radiography/>

URUGUAY

Universidad de la República - Facultad de Medicina

<https://udelar.edu.uy/portal/2019/04/licenciatura-en-imagenologia/>

Universidad de la Empresa - Facultad de Ciencias de la Salud

<https://ude.edu.uy/facultad-de-ciencias-de-la-salud/licenciatura-en-imagenologia/>

VENEZUELA (BOLIVARIAN REPUBLIC OF VENEZUELA)

Universidad de Los Andes Venezuela - Facultad de Medicina

<http://www.ula.ve/estudios/carreras/nucleos/merida/medicina/tecnico-superior-radiologo>

Universidad de Carabobo - Facultad de Ciencias de la Salud

<http://www.fcs.uc.edu.ve/index.php/plan-de-estudio-y-perfiles/>

Universidad Arturo Michelena

<https://uam.edu.ve/pregrado/tsu-en-imagenologia>

CONCLUSIONS OF SECTION IV

Of the 33 members of the regional group of Latin America and the Caribbean, **a total of 48 universities from 22 of the 33 states (66.6%, n=33)** have been included in this repository for meeting the established criteria.

Among the states of the group not included in this repository due to not meeting the inclusion criteria, we find two different cases:

- Caribbean microstates without an established program, where Radiographers are trained in universities from other states in the region, as regulated by their national regulations.

This group consists of 9 states: **Antigua and Barbuda, Barbados, Belize, Dominica, Grenada, Saint Kitts and Nevis, Saint Vincent and the Grenadines, Saint Lucia, and Suriname.**

- States with established university programs but that do not meet the inclusion criteria due to being short-cycle programs, with a duration of less than 3 years. This is the case of the **Bahamas and Honduras.**

In the case of the Bahamas, it has a 2-year study program, leading to an *Associate in Applied Science Degree*:

Nassau Community College - State University of New York System

https://collegecatalog.ncc.edu/current/programs/allied_health_sciences/radiation_therapy_technology_aas.html/programsandcourses/academic_departments/alliedhealthsciences/radiationtherapy/

In the case of Honduras, the short-cycle program offered at its universities has a duration of 2 and a half years:

Universidad Nacional Autónoma de Honduras - Facultad de Ciencias Médicas

<https://dcbi.unah.edu.hn/docencia/carreras/carrera-de-radiotecnologias-grado-asociado/>

After analyzing the states of the regional group, if we exclude those states that do not have an established training and education program (microstates and those where a university degree of 3 or more years from other states is required), according to the inclusion criteria, we find that: 91.6% of the states in the regional group (n=24) have education and training programs of 3 or more years that meet the established criteria.

SECTION V: UNIVERSITIES IN AFRICAN STATES

ANGOLA

Instituto Superior Politécnico Jean Piaget de Benguela

<https://www.ipiagetbenguela.org/licenciaturas/rad/index.php>

Instituto Superior Politécnico Alvorecer da Juventude

<https://www.ispaj.net/cursos.ver.php?cid=9&tit=radiologia>

ARGELIA

l'Institut National Pédagogique de la Formation Paramédicale (INPFP)

<https://www.infp.dz/?Licence-Professionalisante,542>

BENIN

University of Abomey-Calavi

<https://uac.bj/formation/offre-de-formation/licence/licence-a-linstitut-national-medico-sanitaire-inmes/>

University of Benin ICTU/CRPU

<https://bmedsci.uniben.edu/brief-history-of-bmed-sci/#departments>

BURKINA FASO

l'école nationale de santé publique

https://www.fonction-publique.gov.bf/fileadmin/user_upload/storage/23-08-2021-D24-DECRET_N_2006-463-TOES_Sante_OK_.doc

BURUNDI

Institut National de Santé Publique

<https://insp.bi/wp-content/uploads/2021/07/Brochure-INSP-1.pdf>

CAMEROON

Institut Universitaire des Sciences et Techniques de Yaounde - Institut Supérieur des Sciences de la Santé et du Para-Medical

https://www.issty.net/hnd_med techno.html

CENTRAL AFRICAN REPUBLIC

Université de Bangui - Faculté des sciences de la santé

<https://www.univ-bangui.org/sciences-de-la-sante/>

COTE D'IVOIRE

Institut Supérieur d'Ingénierie et de Santé

<http://www.isis-university.tech/licence-imagerie-medicale-et-instrumentation.php>

DEMOCRATIC REPUBLIC OF CONGO

Institut Supérieur des Techniques Médicales de Goma - ISTM Goma

<https://istmgoma.ac.cd/notre-departement-et-ou-option/imagerie-medicale-6>

Higher Institute of Medical Techniques of Kolwezi - ISTM Kolwezi

<https://istm-kzi.org/imagerie-medicale/>

Institut Supérieur des Techniques Médicales - ISTM Kinshasa

<https://www.istm-kinshasa.ac.cd/cycle-lmd>

DJIBOUTI

Institut Supérieur des Sciences de la Santé (ISSS)

<https://www.issd.dj/index.php/blog/technicien-d-imagerie-medicale#:~:text=La%20formation%20se%20d%C3%A9roule%20sur,%C2%ABGrade%20licence%20%C2%BB%20est%20d%C3%A9livr%C3%A9.&text=Les%20formes%20et%20contenus%20de,ad%C3%A9quation%20avec%20les%20principes%20p%C3%A9dagogiques.>

EGYPT

Pharos University in Alexandria - Faculty of Applied Health Sciences Technology

<https://www.pua.edu.eg/applied-health-sciences-technology/study-program-2/radiological-sciences-and-medical-imaging-technology-study-program/#1574758198920-b511d12f-ac0e>

Misr University for Science and Technology - Faculty of Applied Health Sciences Technology <https://must.edu.eg/academics/college-of-applied-health-science-technology/>

Galala University - Field of Applied Health Sciences Technology

<https://www.gu.edu.eg/study-plan/technology-of-radiology-medical-imaging-program/>

ESWATINI (SWAZILAND)

Swaziland Christian University - Faculty of Health Sciences

<https://emcu.ac.sz/bsc-in-radiography/>

ETHIOPIA

Addis Ababa University - School of Medicine

https://www.aau.edu.et/offices/v_president-office/office-of-the-academic-vise-president/undergraduate-programs-office/undergraduate-programs/college-of-health-sciences/medical-radio-logic-technology/

Mekelle University - College of Health Sciences

<https://www.mu.edu.et/index.php/undergraduate-programs/college-of-health-sciences-undergraduate-programs/medical-radiologic-technology>

Hawassa University - College of Medicine and Health Sciences

<https://www.hu.edu.et/index.php/programs-med/undergraduate-med>

GHANA

University of Cape Coast - School of Allied Health Sciences

<https://dmist.ucc.edu.gh/>

University of Ghana - School of Biomedical & Allied Health Sciences

<https://www.ug.edu.gh/programme-catalogue?tid=18&title=>

University of Health and Allied Sciences - School of Allied Health Sciences

<https://uhas.edu.gh/uhas/index.php/courses/bachelor-diagnostic-imaging-radiography>

GUINEA

Université Kofi Annan de Guinée - Ecole Supérieure des Sciences et Techniques de la Santé (ESSTS)

<https://ukaguinee.org/ecole-superieure-des-sciences-et-techniques-de-la-sante-essts/>

GUINEA-BISSAU

Escola Nacional de Saúde

<https://quanef-gb.com/institutes/show/49#course225>

KENYA

Kenya Medical Training College Nairobi - Faculty of Diagnostic Sciences

<https://kmtc.ac.ke/departments-of-radiography-and-imaging-medical-imaging-sciences/>

LIBYA

University of Zawia - College of Medical Technology

<https://zu.edu.ly/department/medical-tech-RAD201>

Sebha University - Faculty of Medical Technology

<https://sebhau.edu.ly/medtech/courses-3/>

University of Tripoli - College of Medical Technology

<https://uot.edu.ly/medt/trd/>

MADAGASCAR

University of Antananarivo - Faculty of Medicine Antananarivo

<https://facmedtananarive.org/cms/>

MALAWI

Malawi University of Science and Technology - Academy of Medical Sciences

<https://www.must.ac.mw/programs/bsc-in-medical-imaging-diagnostic-radiography/details>

MOROCCO

Université Mohammed VI des Sciences et de la Santé - Faculté Mohammed VI des Sciences Infirmières et Professions de la Santé

<https://um6ss.ma/faculte-des-sciences-et-techniques-de-sante-3/>

Université Internationale de Casablanca - Faculté des Sciences de la Santé

<https://www.uic.ac.ma/formation/technicien-en-imagerie-medicale/>

École Supérieure des Sciences de la Santé

<https://esss.ac.ma/radiologie-medicale.html#/>

MAURITANIA

Ecole Nationale Supérieure des Sciences de la Santé

<https://www.ensss.mr/licence/>

MAURITIUS

Public Service Commission and Disciplined Forces Service Commission

<https://psc.govmu.org/psc/?p=5536>

MOZAMBIQUE

Instituto Superior de Ciências de Saúde

<https://www.iscisa.ac.mz/index.php>

<https://iscisa.ac.mz/images/Edital%20ISCISA/Edital%202025%20Atualizao.pdf>

NAMIBIA

University of Namibia - Faculty of Health Sciences & Veterinary Medicine

<https://www.unam.edu.na/prospectuses#fhsvm>

NIGER

Abdou Moumouni University - Faculty of Health Sciences

<https://www.uam.edu.ne/fss.php>

Mariam Abacha American University of Niger - Faculty of Health Sciences

<https://maaun.edu.ne/undergraduate/>

NIGERIA

University on the Niger Umunya - Faculty of Allied Health Sciences

<https://uniniger.edu.ng/academics/departments-and-degree-programs/>

Nnamdi Azikiwe University - Faculty of Health Science and Technology

<https://hst.unizik.edu.ng/departments/radiography/radiography-course-description/>

University of Nigeria - Faculty of Health Sciences

<https://www.unn.edu.ng/academics/faculties/health-science-and-technology/medical-radiography-and-radiological-sciences/>

UNITED REPUBLIC OF TANZANIA

Muhimbili University of Health and Allied Sciences - School of Diagnostic Medicine

<https://muhas.ac.tz/diagnostic-medicine-school/>

Catholic University of Health and Allied Sciences - Institute of Health and Allied Sciences

<http://www.bugando.ac.tz/programmes.php#diploma>

RWANDA

University of Rwanda - College of Medicine and Health Sciences

<https://cmhs.ur.ac.rw/spip.php?rubrique163>

https://ur.ac.rw/IMG/pdf/cmhs_entry_requirement_2023.pdf

SÃO TOMÉ AND PRÍNCIPE

Universidade de São Tomé e Príncipe - Instituto Superior de Ciências da Saúde Vítor Sá Machado

<https://www.ustp-edu-st.com/licenciaturas>

SENEGAL

Cheikh Anta Diop University - Faculty of Medicine, Pharmacy and Odontology

<https://repformations.ucad.sn/details-formation/882>

SOMALIA

University of Health Sciences, Bosaso - Faculty of Radiological Sciences and Medical Imaging

<https://uohs.edu.so/course/faculty-of-radiological-sciences-medical-imaging/>

SOUTH AFRICA

University of Johannesburg - Faculty of Health Sciences

<https://www.uj.ac.za/faculties/health-sciences/departments-2/medical-imaging-and-radiation-sciences-radiography/undergraduate-programmes/>

Durban University of Technology - Faculty of Health Sciences

https://www.dut.ac.za/faculty/health_sciences/radiography/

Cape Peninsula University of Technology - Faculty of Health and Wellness Sciences

https://www.cput.ac.za/academic/faculties/healthwellness/departments/medical_imaging

SOUTH SUDAN

Ayii University

https://ayiiuniversity.edu.ss/general_courses.php

SUDAN

National College for Medical and Technical Studies - Faculty of Radiography and Medical Imaging

<https://www.nu.edu.sd/Faculties.php?cid=MTE=>

Alzaiem Alazhari University - Faculty of Radiology and Medical Imaging

<https://radiological.aau.edu.sd/programmes/113>

Elrazi University - Faculty of Radiography

<https://elrazi.edu.sd/radiography/>

TUNISIA

Université Monastir - Ecole Supérieure des Sciences et Techniques de la Santé de Monastir

<https://um.rnu.tn/fr/formations/formation-lmd/licence/imagerie-m%C3%A9dicale-et-radioth%C3%A9rapie-esstsm/>

Université de Sfax - Ecole Supérieure des Sciences et Techniques de la Santé de Sfax

<https://www.esstssfax.org/fra/pages/254/imagerie-medicale-et-radiotherapie->

UGANDA

Makerere University - College of Health Sciences

<https://courses.mak.ac.ug/programmes/bachelor-science-medical-radiography>

Kampala International University - School of Allied Health Sciences

<https://www.kiu.ac.ug/academic-programmes.php?i=340&n=bachelor-of-science-in-medical-radiography-and-imaging-technology§ion=overview>

ISBAT University - Faculty of Health Sciences

<https://isbatuniversity.ac.ug/bachelor-of-medical-imaging-technology-bmit-1/>

ZAMBIA

University of Zambia - School of Health Sciences

<https://www.unza.zm/academics/undergraduate/bachelor-of-science-radiography-diagnostic/therapeutic>

ZIMBABWE

University Of Zimbabwe - Faculty Of Medicine And Health Science

<https://www.uz.ac.zw/index.php/chs-programmes>

Harare Institute of Technology - School of Allied Health Sciences

<https://www.hit.ac.zw/bachelor-of-technology-honours-in-radiography/>

CONCLUSIONS OF SECTION V

Of the 54 member states of the regional group in Africa, **65 universities** have been included in this repository for meeting the established criteria, **corresponding to 39 of the 54 states, or 72.2% (n=54).**

Of the states in the group not included in this repository for failing to meet the inclusion criteria, we find four different cases:

- Microstates without an established program, where Radiographers are trained in universities in other states in the region or other countries. This group consists of 3 states: **Cape Verde, Comoras, and Seychelles.**
- States with established university programs but failing to meet the inclusion criteria because they are **short-cycle programs** (less than 3 years). Two cases have been identified in the region: **Gambia and Eritrea**, which provide 2-year university programs leading to a Technician Diploma. Two cases have been identified in the region: Gambia and Eritrea, which offer 2-year university programs leading to a *Technician Diploma*.

University Of The Gambia

<https://www.utg.edu.gm/apply-for-technician-diploma-in-different-disciplines/>

Asmara College of Health Sciences (Eritrea Minintry of Information)

http://50.7.16.234/hadas-eritrea/eritrea_profile_01072015.pdf

- States without an established program, but where the profession is regulated, requiring a university degree, validated by at least 3 years of education and training. This group consists of the following states: **Botswana and Sierra Leone.**

- States without an established program and where the profession is not regulated. This group consists of the following states: **Chad, Congo, Gabon, Equatorial Guinea, Lesotho, Liberia, Mali, and Togo.**

After analyzing the states within the regional group, and excluding those that do not have an established program of education and training (microstates and those where a university degree of 3 or more years from other states is required), according to the inclusion criteria, we find that: 79.5% of the states in the regional group (n=49) have education and training programs of 3 or more years that meet the established criteria.

FINAL CONCLUSIONS

During the preparation of this global repository, the high homogeneity of the Radiographer profession has been observed, revolving around the model of university training of 3 or more years, constituting a health profession according to national legislation.

For the frequency analysis by states, the authors have chosen to present both the net results and the data excluding microstates and those that, although not microstates, require a university degree of 3 or more years of education and training from other states in order to practice the profession.

This is because these states, which do not have an established program but do require one, act as outliers on the global data. Without stratification, the implementation of the 3 or more years training model in professionals, both at the regional and global level, would be underestimated.

This decision by the authors to present the data both with and without considering the mentioned states should be understood from the perspective that, for various reasons, not all states have the same means and resources to implement the Radiographer training program at the university level with programs of 3 or more years, just as they may not for other health professions or fields.

Given the above considerations, the following global data is presented (Figure 1), with **n=193** (global data) and (Figure 2) **n=161** (excluding microstates and other referred states).

According to the global data, we have:

135 states (n=193), 69.94%, have established education and training programs of 3 or more years in university-level institutions or equivalents.

32 states (n=193), 16.58%, are microstates or other states where their professionals are trained in universities of other states with programs of 3 or more years of education and training.

19 states (n=193), 9.84%, are states where no education and training program or regulation on the profession has been identified.

5 states (n=193), 2.59%, have university programs shorter than 3 years (Associate degree/Diploma degree) as a short-cycle university program. These are the states of: **Turkey, Bahamas, Honduras, Gambia, and Eritrea.**

2 states (n=193), 1.03%, have professional training programs lasting 2 years. These are the states of **Spain and Turkmenistan.**

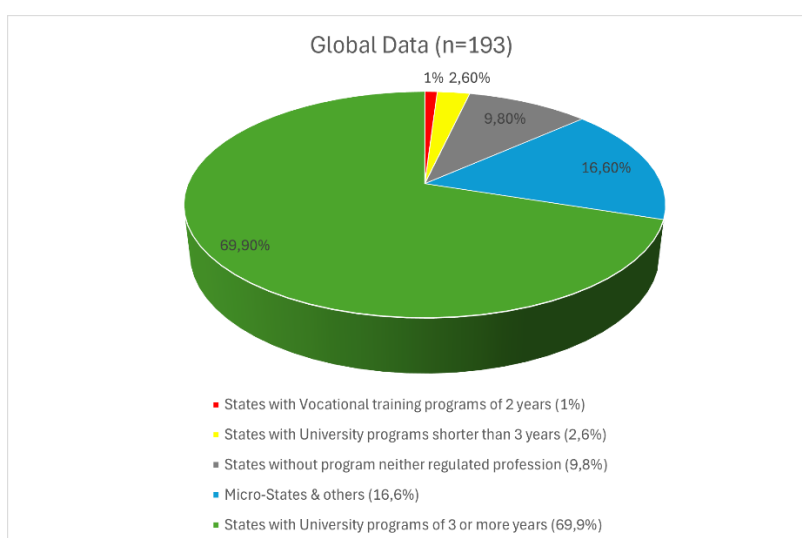


FIGURE 1. Distribution of states according to Education and Training programs for Radiographers (n=193).

Excluding the analysis of microstates and other referred states (Figure 2), we have:

135 states (n=161), 83.85%, have established education and training programs of 3 or more years in university-level institutions or equivalents.

19 states (n=161), 11.80%, are states where no education and training program or regulation on the profession has been identified.

5 states (n=161), 3.10%, have university programs shorter than 3 years (Associate degree/Diploma degree) as a short-cycle university program. These are the states of: **Turkey, Bahamas, Honduras, Gambia, and Eritrea.**

2 states (n=161), 1.24%, have vocational training programs lasting 2 years. These are the states of: **Spain and Turkmenistan.**

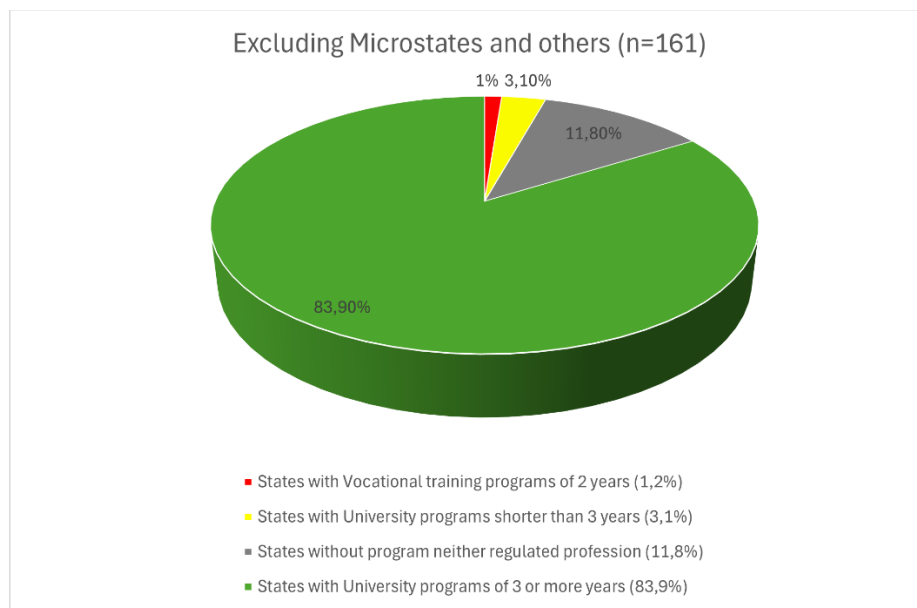


FIGURE 2. Distribution of states according to Education and Training programs for radiographers, excluding microstates and others (n=161).

For a better understanding of the geographical distribution of the training model provided by the states, a world map chart has been created, where the global results can be studied (Figure 3).

The following **conclusions and considerations** are highlighted based on the data collected in this repository:

- The **high homogeneity of the university degree model** in the Radiographer profession worldwide is confirmed.
- Cases of university education with short-cycle university degrees are exceptional.
- It has been observed that **Germany is the only state with 3-year training program** that meets the established criteria, **but within the professional training model**. Therefore, it does not fit within the internationally accepted university training model, and being a unique case, the authors believe this model should not be taken as a reference.
- It has been observed that a significant number of states with limited resources and educational and/or healthcare systems that still require considerable development have established the Radiographer profession with 3 or more years of university programs for the practice of the profession.
- It has been observed that no state, **except for Spain**, offers **online programs**.

- It is confirmed that **only Spain and Turkmenistan provide 2-year vocational training programs** for the practice of the profession.

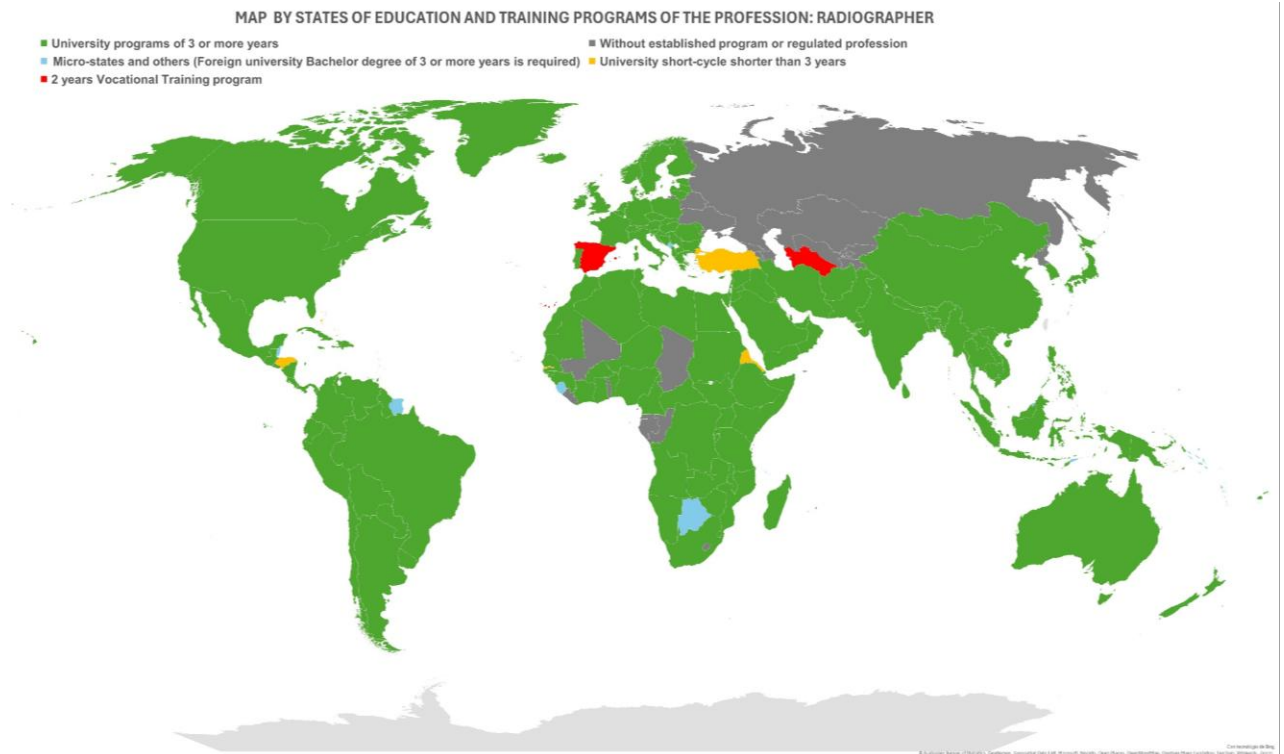


FIGURE 3. World map of Education and Training programs for Radiographers by state. **States with university programs of 3 or more years.** **States with 2-year of Vocational Training programs.** **States with university programs shorter than 3 years.** States without a regulated program or profession. **Microstates and others (foreign Bachelor degree with 3 or more years of education and training is required).**

STUDY LIMITATIONS

The authors acknowledge limitations due to the complexity of a study involving 193 states, where occasionally limited access to official data from educational institutions or regulatory bodies via the internet means that some data may not have been identified and therefore not reflected in this repository.

For these reasons, the authors cannot rule out the possibility that states where it has been described that the profession is not regulated may indeed have regulations, or that states where educational and training programs could not be identified may actually have such programs.

STATEMENTS

- The authors declare that, although not reflected in this repository, they have observed the existence of program duplication in some states, some of them with different duration and qualification levels.

This duplication of programs has only been observed in Poland, a unique case in its regional group, as well as in some states of the Latin America and Caribbean regional group.

In the case of the USA, we did not actually find a duplication of programs, but rather a variety of them, although, as previously described, the predominant model is the 3 to 4-year University Degree.

- The authors declare that, in their opinion, based on the data provided and international recommendations, there is a need for a change in the education and training model for Spanish Radiographers, towards a **University Bachelor's Degree in Medical Imaging and Radiotherapy**. This is motivated not only by reasons of educational harmonization but also by urgent concerns regarding **QUALITY, SAFETY, AND RADIATION PROTECTION**.
- The authors hope that this document will effectively assist researchers, entities, institutions, and regulatory bodies who find it useful, especially if it contributes to the harmonization of our profession, not only in Spain but globally.
- The authors will prepare a second edition of this repository within 2 years, where the data provided will be reviewed, expanded, and updated.
- The authors declare that they have no conflict of interest.

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- ¹ESCO. Radiographer description. Code 2269.8:
<https://esco.ec.europa.eu/en/classification/occupation?uri=http%3A%2F%2Fdata.europa.eu%2Fesco%2Foccupation%2F7639a601-6db0-41ed-9fb0-813d9b8beb05>
- ²ISCO. ISCO-08 Title. Medical Imaging and Therapeutic Equipment Technicians. ISCO 08 Code 3211. ISCO 88 Correspondence Code 3133: <https://ilostat.ilo.org/methods/concepts-and-definitions/classification-occupation/>
- ³EFRS. EFRS definition of a Radiographer, Approved by the EFRS General Assembly - November 2011: <https://api.efrs.eu/api/assets/posts/93>
- ⁴ISRRT. Radiographer / Radiological Technologist Definition Adopted by ISRRT Council: https://www.isrtr.org/wp-content/uploads/2023/07/ISRRT_radiographer_definition.pdf
- ⁵ONU. Standard country or area codes for statistical use (M49). Geographic Regions: <https://unstats.un.org/unsd/methodology/m49/>
- ⁶RAE. Definición de Universidad: <https://dle.rae.es/universidad>
- ⁷DIRECTIVA 2005/36/CE DEL PARLAMENTO EUROPEO Y DEL CONSEJO de 7 de septiembre de 2005 relativa al reconocimiento de cualificaciones profesionales: <https://www.boe.es/doue/2005/255/L00022-00142.pdf>
- ⁸Definición de “micro-estado”, Diccionario panhispánico del español jurídico: <https://dpej.rae.es/lema/micro-estado>
- ⁹The European Higher Education Area in 2020. Bologna Process Implementation Report. Education, Audiovisual and Culture Executive Agency. Publications Office of the European Union, 2020. ISBN: 978-92-9484-356-2
- ¹⁰European Commission/EACEA/Eurydice, 2020. Structural Indicators for Monitoring Education and Training Systems in Europe – 2020: Overview of major reforms since 2015. Eurydice Report. Luxembourg: Publications Office of the European Union.
- ¹¹European Commission / EACEA / Eurydice, 2024. The European Higher Education Area in 2024: Bologna Process Implementation Report. Luxembourg: Publications Office of the European Union. ISBN 978-92-9488-603-3.
- ¹²<https://eurydice.eacea.ec.europa.eu/national-education-systems/turkiye/overview>
- ¹³<https://ec.europa.eu/growth/tools-databases/regprof/professions/profession/1510>
- ¹⁴42 USC Ch. 107: CONSUMER-PATIENT RADIATION HEALTH AND SAFETY From Title 42—THE PUBLIC HEALTH AND WELFARE:
<https://uscode.house.gov/view.xhtml?path=/prelim@title42/chapter107&edition=prelim>
- ¹⁵Code of Federal Regulations (annual edition). AE 2.106/3:42/. October 1, 2023. Title 42 - Public Health Chapter I - PUBLIC HEALTH SERVICE, DEPARTMENT OF HEALTH AND HUMAN SERVICES Subchapter F - QUARANTINE, INSPECTION, LICENSING Part 75 - STANDARDS FOR THE ACCREDITATION OF EDUCATIONAL PROGRAMS FOR AND THE CREDENTIALING OF RADIOLOGIC PERSONNEL:
<https://www.govinfo.gov/content/pkg/CFR-2023-title42-vol1/pdf/CFR-2023-title42-vol1-part75.pdf>

