

List of Courses

A. General Education Courses

30 credits

- **Social Sciences and Humanities Courses**

9 credits

Take required courses for 7 credits as follows:

		Number of Credits (lecture-lab-self-learning)
MUGE 100	General Education for Human Development	3(3-0-6)
SHHU 161	Group Dynamics and Teamwork	2(2-0-4)
SHHU 166	Human and Society in the Digital World	2(2-0-4)
SHHU 155	Medical Ethics	2(2-0-4)

- **Communication and Language Courses**

12 credits

		Number of Credits (lecture-lab-self-learning)
LATH 100	Art of Using Thai Language in Communication	3 (2-2-5)
LAEN 103	English Level 1	3 (2-2-5)*
LAEN 104	English Level 2	3 (2-2-5)*
LAEN 105	English Level 3	3 (2-2-5)*
LAEN 106	English Level 4	3 (2-2-5)*
LAEN 266	English for Health Science	3 (3-0-6)

* Take English courses at least 6 credits (2 courses) by considering level of students' English skill

- **Sciences and Mathematics Courses**

7 credits

		Number of Credits (lecture-lab-self-learning)
SCGE 132	Decision Making Using Principles of Statistics	2(2-0-4)
SCGE 133	Data Science for All	2(2-0-4)
SCGE141	Integrative Science	3(3-0-6)

Or allow students to choose additional courses from the general education category, specifically in the Science and Mathematics group, offered at Mahidol University, with the approval of their academic advisor and in accordance with Mahidol University's regulations.

• **General Elective Courses**

2 credits

Number of Credits
(lecture-lab-self-learning)

EGID 102	New Product Development	3(3-0-6)
SHHU 168	Human Relations and Self Development	2(2-0-4)
SHHU 171	Cultures and Medicine	2(2-0-4)
SHSS 186	The approach of Administration and Management for New Generation	2(2-0-4)
SHED 133	Marketeer for a Small Business	2(2-0-4)

Or allow students to choose additional courses from the general education category, including humanities, social sciences, health, and recreation courses offered at Mahidol University, with the approval of their academic advisor and in accordance with Mahidol University's regulations.

B. Common Core Courses

33 credits

Number of Credits
(lecture-lab-self-learning)

SCCH 102	General Chemistry	3(3-0-6)
SCCH 119	Chemistry Laboratory	1(0-3-1)
SCCH 125	Basic Organic Chemistry	3(3-0-6)
SCBI 124	General Biology I	2(2-0-4)
SCPY 110	General Physics Laboratory	1(0-3-1)
SCPY 155	Basic Physics for Health Science	2(2-0-4)
SCPY 156	Physics for Health Science	3(3-0-6)
SCPY 107	Electronics	2(2-0-4)
SCMA 111	Calculus	2(2-0-4)
SCMA 177	Introduction to Fourier Methods for Differential Equations	3(3-0-6)
SCMA 182	Statistics for Health Science	2(2-0-4)
SCAN 211	General Human Anatomy	3(2-3-5)
SCBC 206	General Biochemistry	3(3-0-6)
SCPS 202	Basic Physiology	3(2-3-5)

C. Professional Courses

79 credits

C.1 Professional Core Courses

26 credits

Number of Credits
(lecture-lab-self-learning)

MTRD 171	Introduction to Radiological Technology	1(1-0-2)
MTRD 271	Radiation Physics	2(2-0-4)
MTRD 273	Radiation Protection	2(2-0-4)
MTRD 274	Radiation Dosimetry	2(2-0-4)
MTRD 275	Transformative Learning for Radiological Technologist	2(2-0-4)
MTRD 281	Information and Communication Technology for Radiological Technologist	3(3-0-6)
MTRD 284	Medical Image Processing	2(1-3-3)
MTRD 374	Patient Care and Radiological Service Management	2(1-3-3)
MTRD 376	Research Methodology and Seminars in Radiological Technology	1(1-0-2)
MTRD 381	Pathology	3(3-0-6)
MTRD 471	Radiobiology	2(2-0-4)
MTRD 477	Senior Project	1(0-6-3)
MTRD 481	Law for Radiological Technology	1(1-0-2)
MTRD 482	Moral and Code of Ethics in Radiological Technology	1(0-3-1)
MTRD 483	Radiation Safety Management in Radiology	1(1-0-2)

C.2 Professional Specialized Courses

38 credits

Diagnostic Radiology Courses

MTRD 272	Instrumentation in Diagnostic Radiology	1(1-0-2)
MTRD 282	Radiographic Photography and Exposure Technique	2(1-3-3)
MTRD 283	Quality Control in Diagnostic Radiology	2(1-2-3)
MTRD 371	Principle of General Radiography	1(1-0-2)
MTRD 372	General Radiography	3(1-6-4)
MTRD 373	Radiopathology and Image Interpretation	2(2-0-4)
MTRD 377	Sectional Radiological Imaging	2(2-0-4)
MTRD 378	Contrasted Radiological Procedures	2(2-0-4)
MTRD 379	Introduction to Medical Mammography and Ultrasonography	1(1-0-2)
MTRD 382	Computed Tomography for Radiological Technologist	2(2-0-4)

MTRD 383	Magnetic Resonance Imaging for Radiological Technologist	2(2-0-4)
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Nuclear Medicine Courses

MTRD 385	Instrumentation in Nuclear Medicine	3(2-2-5)
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MTRD 386	Nuclear Medicine	3(3-0-6)
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MTRD 387	Imaging Technique and Quality Control of Instrumentation in Nuclear Medicine	3(2-2-5)
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Radiation Therapy Courses

MTRD 472	Instrumentation in Radiotherapy	2(2-0-4)
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MTRD 473	Radiation Dosimetry and Treatment Technique in Radiotherapy	3(3-0-6)
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MTRD 474	Radiotherapeutic Technique and Clinical Application for Upper Body	2(2-0-4)
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MTRD 475	Radiotherapeutic Technique and Clinical Application for Lower Body	2(2-0-4)
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E. Clinical practice

15 credits

Number of Credits
(lecture-lab-self-learning)

MTRD 375	Clinical Practice in General Radiographic Technique	3(0-18-3)
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MTRD 384	Clinical practice in Special Radiographic Technique	3(0-18-3)
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MTRD 388	Clinical Practice in Nuclear Medicine	3(0-18-3)
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MTRD 476	Clinical Practice in Radiotherapy	3(0-18-3)
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MTRD 484	Integrative Knowledge and Professional Skills in Radiological Technology	3(0-18-3)
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F. Professional elective course

Number of Credits
(lecture-lab-self-learning)

MTRD 291	Basic Molecular Technique and Its Application in Radiological Technology	1(1-0-2)
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MTRD 292	Introduction to Python Programming for Radiological Technologists	1(1-0-2)
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MTRD 293	Nuclear Technology and Its Application	2(1-2-3)
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MTRD 391	Innovation in Radiology	2(2-0-4)
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MTRD 392	Application of Artificial Intelligence in Radiological Technology	2(2-0-4)
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MTRD 491	Application of Database System in Radiological Technology	2(2-0-4)
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MTRD 492 Molecular Technology and Applications in Medical Imaging 2(2-0-4)
and Radiation Therapy

Study Plan

Year 1 Semester 1		
Code	Courses	Number of Credits (lecture-lab-self-learning)
MUGE 100	General Education for Human Development	3 (3-0-6)
LAEN 103/105	English Level 1 / English Level 3	3 (2-2-5)
LATH 100	Art of Using Thai Language in Communication	0 (0-0-0)
SHHU 161	Group Dynamics and Teamwork	2 (2-0-4)
SCCH 102	General Chemistry	3 (3-0-6)
SCPY 155	Basic Physics for Health Science	2 (2-0-4)
SCMA 111	Calculus	2 (2-0-4)
SCBI 124	General Biology I	2 (2-0-4)
MTRD 171	Introduction to Radiological Technology	1 (1-0-2)
XXXXxxx	Elective Course in General Education	2
	Total	<u>20</u> credits

Year 1 Semester 2		
Code	Courses	Number of Credits (lecture-lab-self-learning)
LAEN 104/106	English Level 2 / English Level 4	3 (2-2-5)
LATH 100	Art of Using Thai Language in Communication	3 (2-2-5)
SCGE 141	Integrative Science	3 (3-0-6)
SCCH 119	Chemistry Laboratory	1 (0-3-1)
SCCH 125	Basic Organic Chemistry	3 (3-0-6)
SCPY 107	Electronics	2 (2-0-4)
SCPY 156	Physics for Health Science	3 (3-0-6)

SCPY 110	General Physics Laboratory	1 (0-3-1)
SCMA 177	Introduction to Fourier Methods for Differential Equations	3 (3-0-6)
	Total	<u>22</u> credits

Year 2 Semesters 1

Code	Courses	Number of Credits (lecture-lab-self-learning)
LAEN 266	English for Health Science	3 (3-0-6)
SCGE 132	Decision Making Using Principles of Statistics	2 (2-0-4)
SHHU 166	Human and Society in the Digital World	2 (2-0-4)
SCAN 211	Basic Anatomy	3 (2-3-5)
SCBC 206	General Biochemistry	3 (3-0-6)
MTRD 271	Radiation Physics	2 (2-0-4)
MTRD 272	Instrumentation in Diagnostic Radiology	1 (1-0-2)
MTRD 273	Radiation Protection	2 (2-0-4)
MTRD 274	Radiation Dosimetry	2 (2-0-4)
MTRD 275	Transformative Learning for Radiological Technologist	2 (2-0-4)
	Total	<u>22</u> credits

Year 2 Semester 2

Code	Courses	Number of Credits (lecture-lab-self-learning)
SCGE 133	Data Science for All	2 (2-0-4)
SHHU 155	Medical Ethics	2 (2-0-4)
SCPS 202	Basic Physiology	3 (2-3-5)
SCMA 182	Statistics for Health Science	2 (2-0-4)
MTRD 281	Information and Communication Technology for Radiological Technologist	3 (3-0-6)

MTRD 282	Radiographic Photography and Exposure Technique	2 (1-3-3)
MTRD 283	Quality Control in Diagnostic Radiology	2 (1-2-3)
MTRD 284	Medical Image Processing	2 (1-3-3)
XXXXxxx	Elective/Professional Elective Courses	2
	Total	<u>20</u> credits

Year 3 Semester 1

Code	Courses	Number of Credits (lecture-lab-self-learning)
MTRD 371	Principle of General Radiography	1 (1-0-2)
MTRD 372	General Radiography	3 (1-6-4)
MTRD 373	Radiopathology and Image Interpretation	2 (2-0-4)
MTRD 374	Patient Care and Radiological Service Management	2 (1-3-3)
MTRD 375	Clinical Practice in General Radiographic Technique	3 (0-18-3)
MTRD 376	Research Methodology and Seminars in Radiological Technology	1 (1-0-2)*
MTRD 377	Sectional Radiological Imaging	2 (2-0-4)
MTRD 378	Contrasted Radiological Procedures	2 (2-0-4)
MTRD 379	Introduction to Medical Mammography and Ultrasonography	1 (1-0-2)
XXXXxxx	Elective/Professional Elective Courses	2
	Total	<u>19</u> credits

* It is a course that is taught continuously throughout both semesters and will be graded in the second semester.

Year 3 Semester 2

Code	Courses	Number of Credits (lecture-lab-self-learning)
MTRD 376	Research Methodology and Seminars in Radiological Technology	0 (0-0-0)*
MTRD 381	Pathology	3 (3-0-6)
MTRD 382	Computed Tomography for Radiological Technologist	2 (2-0-4)

MTRD 383	Magnetic Resonance Imaging for Radiological Technologist	2 (2-0-4)
MTRD 384	Clinical practice in Special Radiographic Technique	3 (0-18-3)
MTRD 385	Instrumentation in Nuclear Medicine	3 (2-2-5)
MTRD 386	Nuclear Medicine	3 (3-0-6)
MTRD 387	Imaging Technique and Quality Control of Instrumentation in Nuclear Medicine	3 (2-2-5)
MTRD 388	Clinical Practice in Nuclear Medicine	3 (0-18-3)
	Total	<u>22</u> credits

* It is a course that is taught continuously throughout both semesters and will be graded in the second semester.

Year 4 Semester 1

Code	Courses	Number of Credits (lecture-lab-self-learning)
MTRD 471	Radiobiology	2 (2-0-4)
MTRD 472	Instrumentation in Radiotherapy	2 (2-0-4)
MTRD 473	Radiation Dosimetry and Treatment Technique in Radiotherapy	3 (3-0-6)
MTRD 474	Radiotherapeutic Technique and Clinical Application for Upper Body	2 (2-0-4)
MTRD 475	Radiotherapeutic Technique and Clinical Application for Lower Body	2 (2-0-4)
MTRD 476	Clinical Practice in Radiotherapy	3 (0-18-3)
MTRD 477	Senior Project * Final assessment in 4 th year, 2 nd semester	0 (0-6-1)
	Total	<u>15</u> credits

Year 4 Semester 2

Code	Courses	Number of Credits (lecture-lab-self-learning)
MTRD 477	Senior Project * Final assessment in 4 th year, 2 nd semester	0 (0-0-0)
MTRD 481	Law for Radiological Technology	1 (1-0-2)
MTRD 482	Moral and Code of Ethics in Radiological Technology	1 (0-3-1)

MTRD 483	Radiation Safety Management in Radiology	1 (1-0-2)
MTRD 484	Integrative knowledge and professional skills in Radiological Technology (include comprehensive examination)	3 (0-18-3)
XXXXxxx	Elective/Professional Elective Courses	2
	Total	<u>8</u> credits

