

# DUAL-DEGREE BS/MHS IN ADVANCED MEDICAL IMAGING AND LEADERSHIP (3+1)

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The Dual-Degree program consists of two distinct degrees: the Bachelor of Science in Radiologic Sciences and the Master of Health Science in Advanced Medical Imaging and Leadership.

The Bachelor of Science in Radiologic Sciences is a three-year degree. The mission of the Radiologic Sciences program at Quinnipiac University is to develop students' technical and interpersonal communication skills through a logical sequence of didactic, laboratory and clinical experiences. The program offers multiple clinical assignments to provide maximum exposure to diversified radiographic procedures and imaging protocols. In addition, the program prepares graduates to be competent in the art and science of radiography. Graduates of the Radiologic Sciences program will meet the needs of the community as competent and highly qualified professionals. The program prepares students, upon successful completion of all didactic and clinical work, for career entry and the ability to pursue advanced study in the Advanced Medical Imaging and Leadership program.

The Advanced Medical Imaging and Leadership program is an interprofessional program. The integrated curriculum features core business discipline courses, guided health management courses, and advanced imaging modalities in three distinct pathways: magnetic resonance imaging (MRI), computed tomography (CT) and women's imaging (WI). Graduates of the MHS-AMIL program will be prepared to become advanced imaging professionals possessing the foundational education necessary for future entry-level leadership and managerial roles within their respective radiology healthcare organizations.

## Dual-Degree BS/MHS in Advanced Medical Imaging and Leadership Curriculum

The designated Advanced Medical Imaging (3+1) course curriculum is subject to modification as deemed necessary to maintain a high-quality educational experience. The Academic Standing and Progression Committee recommendations regarding student progression, discipline or dismissal will be considered on a case-by-case basis.

Course	Title	Credits
<b>First Year</b>		
<b>Fall Semester</b>		
EN 101	Introduction to Academic Reading and Writing <sup>1</sup>	3
FYS 101	First-Year Seminar	3
MA 275	Biostatistics <sup>1</sup>	3
CHE 101 or PHY 101	Fundamentals of General, Organic and Biological Chemistry I <sup>2</sup> or Elements of Physics	3

CHE 101L or PHY 101L	Fundamentals of General, Organic and Biological Chemistry I Lab or Elements of Physics Lab	1
RS 100	Fundamentals of Diagnostic Imaging	1
UC Elective		3
<b>Credits</b>		<b>17</b>
<b>Spring Semester</b>		
BIO 103	Concepts in Human Biology	3
EN 102	Academic Writing and Research <sup>1</sup>	3
RS 101	Introduction to Diagnostic Imaging	3
HSC 202	Medical Terminology	2
UC Elective <sup>3</sup>		3
UC Elective		3
<b>Credits</b>		<b>17</b>
<b>Summer Semester</b>		
UC Elective		3
UC Elective		3
<b>Credits</b>		<b>6</b>
<b>Second Year</b>		
<b>Fall Semester</b>		
BIO 211 & 211L	Human Anatomy and Physiology I and Human Anatomy and Physiology Lab I	4
RS 241 & 241L	Radiographic Image Production and Evaluation and Radiographic Image Production and Evaluation Lab I	4
RS 212 & 212L	Radiographic Procedures I and Laboratory Practicum I	4
UC Elective		3
UC Elective		3
<b>Credits</b>		<b>18</b>
<b>Spring Semester</b>		
BIO 212 & 212L	Human Anatomy and Physiology II and Human Anatomy and Physiology II Lab	4
RS 222 & 222L	Radiographic Procedures II and Laboratory Practicum II	5
RS 242 & 242L	Radiographic Image Production and Evaluation II and Radiological Processing and Exposure Lab	4
RS 250	Radiologic Clinical Education I	2
RS 297 & 297L	Methods of Patient Care and Methods of Patient Care Lab	3
<b>Credits</b>		<b>18</b>
<b>Summer Semester</b>		
RS 253	Radiologic Clinical Education II	4
UC Elective		3
<b>Credits</b>		<b>7</b>
<b>Third Year</b>		
<b>Fall Semester</b>		
RS 201	Human Anatomy Imaging I	1
RS 260	Radiographic Physics and Instrumentation	3
RS 232 & 232L	Radiographic Procedures III and Laboratory Practicum III	5

RS 254	Radiologic Clinical Education III Education IV	3
RS 318	Pathology for Imaging Sciences	3
RS 414	Research: Analysis and Critique (DMS 414)	3
<b>Credits</b>		<b>18</b>

<b>J-term</b>		
UC Elective		3
<b>Credits</b>		<b>3</b>

**Spring Semester**

RS 202	Human Anatomy Imaging II	1
RS 215	Radiation Safety and Protection	3
RS 255	Radiologic Clinical Education IV	3
RS 290 & 290L	Advanced Radiographic Procedures IV and Laboratory Practicum	4
RS 499	Capstone (DMS 499)	3
UC Elective		3
<b>Credits</b>		<b>17</b>

**Total Credits** **121**

<sup>1</sup> Initial placement in the English and mathematics courses is determined by placement examination and an evaluation of high school units presented. The minimum mathematics requirement is MA 275 or its equivalent.

<sup>2</sup> Associated lab is required for both Chemistry and Physics. CHE 110 or PHY 110 with lab are acceptable to fulfill the requirement. Students may take in the fall or spring of their first year.

<sup>3</sup> If taking Chemistry or Physics in the spring, this UC elective should be taken in the fall semester.

**Computed Tomography**

Course	Title	Credits
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**Fourth Year****Summer Semester**

AMI 523	Advanced Sectional Anatomy	3
AMI 538 & 538L	Introduction to CT Scanning and Computed Tomography Lab I	4
MBA 601	Foundations for Decision Making	1
OL 601	Foundations of Organizational Behavior and Leadership (Students interested in earning MBA should take MBA 625 instead)	3
OL 610 or OL 650	Crucial Conversations as Leaders (Students interested in earning MBA should take MBA 615 instead of OL 610 or OL 650) or Leading Organizational Change	3
<b>Credits</b>		<b>14</b>

**Fall Semester**

AMI 537	Computed Tomography Clinical I	2
AMI 570	Capstone I	1
HM 600	Foundations of Health Care Management	3
HM 621	Quality Management in Health Care Facilities	3
<b>Credits</b>		<b>9</b>

**Spring Semester**

AMI 539	Computed Tomography Clinical II	2
AMI 560	Pathology for CT and MRI Technologists	3
AMI 575	Capstone II	3

HM 660	Human Resource Management in Health Care Administration	3
HM 664	Financial Management in Health Care Organizations	3
<b>Credits</b>		<b>14</b>

**Total Credits** **37**

**Magnetic Resonance Imaging**

Course	Title	Credits
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**Fourth Year****Summer Semester**

AMI 523	Advanced Sectional Anatomy	3
AMI 515 & 515L	Introduction to Magnetic Resonance Imaging and Magnetic Resonance Imaging Principles I - Lab Practicum	4
MBA 601	Foundations for Decision Making	1
OL 601	Foundations of Organizational Behavior and Leadership (Students interested in earning MBA should take MBA 625 instead)	3
OL 610 or OL 650	Crucial Conversations as Leaders (Students interested in earning MBA should take MBA 615 instead of OL 610 or OL 650) or Leading Organizational Change	3
<b>Credits</b>		<b>14</b>

**Fall Semester**

AMI 516 & 516L	Advanced MRI Principles and Imaging and Magnetic Resonance Imaging Principles II - Lab Practicum	4
AMI 517	Magnetic Resonance Imaging Clinical I	2
AMI 570	Capstone I	1
HM 600	Foundations of Health Care Management	3
HM 621	Quality Management in Health Care Facilities	3
<b>Credits</b>		<b>13</b>

**Spring Semester**

AMI 518	Magnetic Resonance Imaging Clinical II	2
AMI 560	Pathology for CT and MRI Technologists	3
AMI 575	Capstone II	3
HM 660	Human Resource Management in Health Care Administration	3
HM 664	Financial Management in Health Care Organizations	3
<b>Credits</b>		<b>14</b>

**Total Credits** **41**

**Women's Imaging**

Course	Title	Credits
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**Fourth Year****Summer Semester**

AMI 534	Bone Densitometry	1
AMI 540	Principles of Mammography	3
AMI 541L	Mammography and Bone Densitometry Lab	2
MBA 601	Foundations for Decision Making	1
OL 601	Foundations of Organizational Behavior and Leadership (Students interested in earning MBA should take MBA 625 instead)	3

OL 610 or OL 650	Crucial Conversations as Leaders (Students interested in earning MBA should take MBA 615 instead of OL 610 or OL 650) or Leading Organizational Change	3
<b>Credits</b>		<b>13</b>
<b>Fall Semester</b>		
AMI 530	Mammography and Bone Densitometry Clinical I	2
AMI 545	Women's Health and Imaging	3
AMI 570	Capstone I	1
HM 600	Foundations of Health Care Management	3
HM 621	Quality Management in Health Care Facilities	3
<b>Credits</b>		<b>12</b>
<b>Spring Semester</b>		
AMI 531	Mammography and Bone Densitometry Clinical II	2
AMI 575	Capstone II	3
HM 660	Human Resource Management in Health Care Administration	3
HM 664	Financial Management in Health Care Organizations	3
<b>Credits</b>		<b>11</b>
<b>Total Credits</b>		<b>36</b>

## Student Learning Outcomes

Upon completion of the Bachelor of Science in Radiologic Sciences component of the AMIL (3+1) program, students will demonstrate the following competencies:

### Goal 1: Students will be clinically competent.

1. Clinically Knowledgeable: Apply skills and knowledge from foundational courses.
2. Procedurally Knowledgeable: Demonstrate growth in procedural knowledge from all RS coursework.

### Goal 2: Students will demonstrate effective communication skills.

1. Effective Communication: Execute interpersonal communication with patients.
2. Oral Proficiency: Demonstrate their ability to present clear and creative ideas related to a case study.

### Goal 3: Students will demonstrate critical thinking.

1. Critical Decision-Making: Demonstrate their ability to perform non-routine and routine procedures.
2. Image Analysis: Evaluate images for quality and diagnostic value.

### Goal 4: Students will grow and develop as highly qualified professionals.

1. Professional Ethics: Understand and apply ethical decision-making.
2. Professional Behaviors: Conduct themselves professionally.
3. Professional Research: Create a culminating capstone project.

### Goal 5: The program will continuously monitor and strive to sustain its effectiveness.

1. Completion Rate: Students who start the program will complete the program.

2. Employer Satisfaction: Employers will be satisfied with the education of the graduates of the program.
3. Graduate Satisfaction: Graduates will be satisfied with the education received from the program.
4. Employment Rate: Graduates of the program will become employed within six months of completion of the program.

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Upon completion of the Advanced Medical Imaging and Leadership program, students will demonstrate the following competencies:

### Goal 1: Students will be clinically competent.

1. Clinically Knowledgeable: Apply skills and knowledge from foundational courses.
2. Procedurally Knowledgeable: Demonstrate growth in procedural knowledge from all AMIL coursework.

### Goal 2: The students will demonstrate effective communication skills.

1. Effective Communication: Execute interpersonal communication with patients.
2. Oral Proficiency: Demonstrate their ability to present clear and creative ideas in a formal manner.

### Goal 3: Students will demonstrate critical thinking.

1. Critical Decision-Making: Demonstrate their ability to navigate typical and atypical clinical scenarios while performing non-routine and routine procedures.
2. Image Analysis: Evaluate images for quality and diagnostic value.

### Goal 4: Students will grow and develop as professionals.

1. Professionalism: Conduct themselves professionally and understand and apply ethical decision-making.
2. Professional Research: Create a culminating capstone project.

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Student Learning Outcomes for both components of the AMIL (3+1) program are designed to mirror one another. The AMIL (3+1) program represents a natural progression from undergraduate to graduate studies. Students in the graduate component of the program will expand upon the outcomes achieved in the BSRS component and will continue growing as Registered Radiologic Technologists and healthcare workers.

Quinnipiac University's Dual-Degree Radiologic Sciences and Advanced Medical Imaging and Leadership (3+1) program provides prospective students with the opportunity to obtain both bachelor's and master's degrees as well as certification in two radiographic modalities within a four-year time frame, a rarity among health science programs. Obtaining a master's degree in health science studies is a great benefit to students as the curriculum not only advances their knowledge within the radiologic field and specialty, but also delves into health policy and health administration, and prepares these students to take on leadership roles within healthcare departments.

Quinnipiac University's Dual-Degree BS/MHS in Advanced Medical Imaging and Leadership (3+1) program supports the mission statements of both Quinnipiac University and the School of Health Sciences and their commitment to excellence in education. The mission of the program is to develop each student's technical, professional and interpersonal communication skills through a logical and organized sequence of didactic, laboratory and clinical experiences. The program offers multiple clinical assignments to provide maximum exposure to advanced imaging modalities and associated protocols. In addition, the program prepares skilled graduates competent in the art and science of radiography, fluoroscopy and interventional procedures. Graduates of the Advanced Medical Imaging and Leadership program meet the needs of the community for highly qualified professionals, and the program prepares students for career entry and advanced study.

The Dual-Degree BS in Radiologic Sciences/MHS in Advanced Imaging and Leadership (3+1) program does not have a separate application process. Incoming first-year students admitted to the School of Health Sciences Radiologic Sciences BS who meet the dual-degree program criteria will be invited to enter the program. To be considered for this program, students must be ranked in the top 20 percent of their high school class, and must have a total SAT score (critical reading and math) of 1200 or higher, or an ACT composite score of 25 or higher.

Admission to the university is competitive, and applicants are expected to present a strong college prep program in high school. Prospective first-year students are strongly encouraged to file an application as early in the senior year as possible, and arrange to have first-quarter grades sent from their high school counselor as soon as they are available.

## Additional Program Costs

As a clinical education program, the Radiologic Sciences major requires some expenses that go beyond standard university tuition and fees:

1. **Clinical/Fieldwork Education Travel** (gas, parking, public transportation) – Students will have clinical rotation experiences that take them off campus. For these rotations, the student will typically be traveling two to three times per week. Clinic begins in the sophomore year and students are responsible for providing their own transportation. **Cost – variable.**
2. **Immunizations** – Consistent with the School of Health Sciences policy, all students must have a full battery of immunizations and in some cases titer affirmation of immunity for common diseases including but not limited to: MMR, HepB, varicella, polio, TDAP, TB and influenza. These must be documented prior to the start of clinical experiences during the sophomore year and must be maintained through the undergraduate education. **Cost – variable (please check with your insurance carrier).**
3. **Background Check** – All students must undergo an initial background check prior to the start of clinical/fieldwork experience.
  - a. Initial background check cost is \$63 for all domestic addresses for the past 7 years or \$158 for students who have resided in New York state in the last 7 years due to NY state surcharge.
  - b. Some students may be required to do an annual recheck one year after the initial background recheck. **Cost - \$32 per annual recheck.**
4. **Drug Screening** – All students must undergo a drug screening prior to the start of the main component of the program in the sophomore year. **Cost – approximately \$42.25.**
5. **Liability Insurance** – All students have liability insurance coverage through the university, free of charge, while performing required clinical activity. Students may choose to purchase additional coverage at their own expense.
6. **Exxat and APPROVE** – Students enrolled in professional programs must enroll in Exxat and APPROVE.
  - a. Exxat is the clinical tracking and assessment program used by the School of Health Sciences. **Cost – one-time payment of \$150 per student for the current major (students are responsible for this cost).**
  - b. APPROVE is the program within Exxat that tracks all student health and safety records, provides documentation to prospective clinical sites and provides notification of impending expiration dates. **Cost – \$35 for first year; \$10 per year thereafter.**

**Please note – All fees are subject to change.**

Accreditation information for the BSRS component of the AMIL 3+1 program included below per the JRCERT accreditation guidelines.

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The Radiologic Sciences program at Quinnipiac University is accredited by:

The Joint Review Committee on Education in Radiologic Technology (jrcert.org (<http://www.jrcert.org>))  
20 N. Wacker Drive, Suite 2850  
Chicago, IL 60606-3182

Phone: 312-704-5300

The program received an eight-year accreditation (the maximum available) in spring 2020. The re-accreditation process will commence in 2027 with submission of the self-study report to the JRCERT.