BACHELOR OF SCIENCE IN RADIOLOGIC SCIENCES

Program Contact: Alicia Giaimo (Alicia.Giaimo@quinnipiac.edu)
203-582-3814

Radiographers are essential members of the healthcare team. Their knowledge of radiation protection, physics and biology, as well as technical procedures, allows them to deliver the safest and highest quality patient care through the use of multiple imaging modalities. In the evolving world of medicine, high technology imaging has become multifaceted, both in modalities and operationally.

To prepare students for careers in radiography, Quinnipiac University’s Department of Diagnostic Imaging offers a BS in Radiologic Sciences. The program offers didactic, laboratory and clinical training in diverse aspects of radiography including patient care, radiation safety, image production and procedures for the student who is motivated to become a member of the imaging profession. Students complete the program in a three-year accelerated format.

The first year of the bachelor’s degree program consists of University Curriculum studies. The component of the program accredited by the Joint Review Committee on Education in Radiologic Technology begins in the second year of study. During the second and third years, the students concentrate on didactic radiography classes and laboratory sessions on campus and clinical education at multiple clinical education centers. The curriculum is structured so students can apply the knowledge and skills developed in the classroom and laboratory to the care of patients in the clinical setting. Beginning in the spring semester of the sophomore year and continuing throughout the program, didactic and clinical courses are taken simultaneously to provide the opportunity for immediate application and reinforcement.

At the end of the third year, students are eligible for graduation with a bachelor’s degree in Radiologic Sciences, and are board-eligible for the American Registry of Radiologic Technologists (ARRT) certification examination. Students would be eligible to apply for one of two advanced studies options here at Quinnipiac University. Options within the Diagnostic Imaging Department include the two-year MHS Radiologist Assistant (http://catalog.qu.edu/graduate-studies/health-sciences/radiologist-assistant-mhs/) program and the one-year MHS Advanced Medical Imaging and Leadership (http://catalog.qu.edu/graduate-studies/health-sciences/advanced-medical-imaging-and-leadership-program/) program.

BS in Radiologic Sciences Curriculum

The designated Radiologic Sciences 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.

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Year</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIO 101</td>
<td>General Biology I</td>
<td>4</td>
</tr>
<tr>
<td>&amp; 101L</td>
<td>and General Biology Lab 1</td>
<td></td>
</tr>
<tr>
<td>EN 101</td>
<td>Introduction to Academic Reading and Writing 2</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spring Semester</td>
<td></td>
<td></td>
</tr>
<tr>
<td>FYS 101</td>
<td>First-Year Seminar</td>
<td>3</td>
</tr>
<tr>
<td>MA 275</td>
<td>Biostatistics 3</td>
<td>3</td>
</tr>
<tr>
<td>CHE 101 or</td>
<td>Fundamentals of General, Organic and Biological Chemistry 3</td>
<td></td>
</tr>
<tr>
<td>or PHY 101</td>
<td>or Elements of Physics</td>
<td></td>
</tr>
<tr>
<td>CHE 101L or</td>
<td>Fundamentals of General, Organic and Biological Chemistry 1</td>
<td></td>
</tr>
<tr>
<td>or PHY 101L</td>
<td>or Elements of Physics</td>
<td></td>
</tr>
<tr>
<td>RS 100</td>
<td>Fundamentals of Diagnostic Imaging</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

Second Year

Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 211 &amp; 211L</td>
<td>Human Anatomy and Physiology I and Human Anatomy and Physiology Lab I</td>
<td>4</td>
</tr>
<tr>
<td>UC Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>RS 241 &amp; 241L</td>
<td>Radiographic Image Production and Evaluation and Lab I</td>
<td>4</td>
</tr>
<tr>
<td>RS 212 &amp; 212L</td>
<td>Radiographic Procedures I and Laboratory Practicum I</td>
<td>4</td>
</tr>
<tr>
<td>UC Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>16</td>
</tr>
</tbody>
</table>

Spring Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>BIO 212 &amp; 212L</td>
<td>Human Anatomy and Physiology II and Human Anatomy and Physiology Lab II</td>
<td>4</td>
</tr>
<tr>
<td>RS 222 &amp; 222L</td>
<td>Radiographic Procedures II and Laboratory Practicum II</td>
<td>5</td>
</tr>
<tr>
<td>RS 242 &amp; 242L</td>
<td>Radiographic Image Production and Evaluation and Lab II</td>
<td>4</td>
</tr>
<tr>
<td>RS 250</td>
<td>Radiologic Clinical Education I</td>
<td>2</td>
</tr>
<tr>
<td>RS 297 &amp; 297L</td>
<td>Methods of Patient Care and Methods of Patient Care Lab</td>
<td>3</td>
</tr>
<tr>
<td>UC Elective</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>18</td>
</tr>
</tbody>
</table>

Third Year

Fall Semester

<table>
<thead>
<tr>
<th>Course</th>
<th>Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS 201</td>
<td>Human Anatomy Imaging I</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>7</td>
</tr>
</tbody>
</table>

Bachelor of Science in Radiologic Sciences
Upon completion of the BS in Radiologic Sciences program, students will demonstrate the following competencies:

**Goal:** The 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 Radiologic Sciences coursework.

**Goal:** 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 related to a case study.

**Goal:** The 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:** The 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.

**Mission Statement**

The Quinnipiac University Radiologic Sciences 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 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 will prepare students for career entry and the ability to pursue advanced study.

Candidates applying for admission to the Radiologic Sciences program are required to have at least three years of high school college preparatory mathematics and one year of biology. One year of anatomy and physiology and one year of general chemistry or physics is recommended. In addition, the scores of the SAT or the ACT are an important consideration. Related healthcare experience is highly desirable. Prospective candidates also must satisfy general Quinnipiac University Admission Requirements (http://catalog.qu.edu/general-information/admissions/).

**Policies**

In addition to the general policies of Quinnipiac University, such as due process and academic honesty, the following apply to students enrolled in the Radiologic Sciences program.
Progression in the Program
The Radiologic Sciences Program has both GPA and final course grade requirements.

A cumulative GPA of 2.5 and a programmatic GPA of 3.0 must be maintained each semester. Final course grades of D or F in an RS course are unacceptable. Programmatic GPA calculation and final course grade requirements begin with RS 100 and include all RS coursework thereafter.

Any student who does not maintain GPA requirements or earns a grade of D or F in any RS course will be referred to the Diagnostic Imaging Department’s Academic Progression and Retention Committee (APRC) for review. Students who fail to meet the minimum cumulative university GPA requirement of 2.5 and/or the minimum programmatic GPA requirement of 3.0 will be subject to sanctions up to and including program dismissal. Students who earn a final course grade of D or F for any RS course will be subject to program dismissal.

Transportation
Multiple clinical education centers are used throughout the professional component of the program. Students are responsible for their own transportation to and from these sites.

Summer Study
All students are required to perform one clinical assignment during the summer semester, second year (RS 253). This clinical practicum is performed during summer sessions I and II and may be performed only at a clinical affiliation currently approved by the Joint Review Committee on Education in Radiologic Technology (JRCERT) for the program.

Technical Standards
The Radiologic Sciences program is a rigorous program that places specific demands on its students. As stated in the mission of the program, graduates of the program will meet the needs of the community as efficient and highly qualified professionals.

The technical qualifications set forth by the American Registry of Radiologic Technologists combined with the program’s views provides a guide to the essential qualities necessary to pursue a career in radiologic sciences as well as meet the expectations of the programs accrediting body (Joint Review Committee on Education of Radiologic Technologists: JRCERT).

Students in the program will be required to verify their understanding and compliance with the technical standards, or their belief that with reasonable accommodations these standards can be met, through reading, signing and returning the form to the program director.

Transfer Admissions
Internal and external transfer candidates are evaluated on a space-available, competitive basis.

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 him/her 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 clinical fieldwork sites may require an additional yearly 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.

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.
RS 100. Fundamentals of Diagnostic Imaging. 1 Credit.
This course provides the student with a basic knowledge of the fundamentals of diagnostic imaging practice. Topics include defining diagnostic imaging as it relates to all imaging modalities, historical development of the profession, introduction to current and emerging practice arenas, and application of professional terminology. Students complete a self-study in medical terminology.
Offered: Every year, Fall

RS 101. Introduction to Diagnostic Imaging. 3 Credits.
Designed to provide an orientation to radiologic sciences, this course includes history, ethics and basic principles of radiation protections, medical and medicolegal terminology, as well as preclinical observation.
Prerequisites: Take RS 100.
Offered: Every year, Spring

RS 201. Human Anatomy Imaging I. 1 Credit.
This course presents in-depth consideration of human anatomy within systems located in the chest, abdomen and upper extremity of the body. Students discuss the structure and function of each anatomic component within each region. Conventional anatomic illustrations are correlated with their radiographic counterpart. The radiographic appearance of specific structures as demonstrated on conventional radiographic images is correlated to images obtained using other advanced imaging modalities such as computed tomography, magnetic resonance and sonography.
Prerequisites: Take BIO 212, BIO 212L, RS 222.
Corequisites: Take RS 232.
Offered: Every year, Fall

RS 202. Human Anatomy Imaging II. 1 Credit.
This course presents in-depth consideration of human anatomy within systems located in the head, neck, pelvis and lower extremity. For each region, students discuss the structure and function of each anatomic component. Conventional anatomic illustrations are correlated with their radiographic counterpart. The radiographic appearance of specific structures as demonstrated on conventional radiographic images is correlated to images obtained using other advanced imaging modalities such as computed tomography, magnetic resonance and sonography.
Prerequisites: Take RS 201.
Offered: Every year, Spring

RS 212. Radiographic Procedures I. 2 Credits.
This course introduces the student to the basic concepts, principles and applications of radiographic and radiologic procedures. Additional applications related to orthopaedic terminology, pathologies and procedures, trauma and patient-related modifications also are presented.
Prerequisites: Take RS 101, MA 275 and BIO 102.
Corequisites: Take RS 212L.
Offered: Every year, Fall

RS 212L. Laboratory Practicum I. 2 Credits.
This practicum develops preclinical competency in radiographic procedures studied in RS 212, as well as routine hospital procedures and radiographic tasks, basic radiographic analysis, patient management, communications and manipulation of imaging equipment.
Corequisites: Take RS 212.
Offered: Every year, Fall

RS 215. Radiation Safety and Protection. 3 Credits.
Students are introduced to the effects of ionizing radiation on biological systems at the molecular, cellular, organism, and community levels, with emphasis on medical implications and radiation protection.
Prerequisites: Take RS 260.
Offered: Every year, Spring

RS 222. Radiographic Procedures II. 3 Credits.
This course builds on the foundations developed in RS 212. This course provides continued integration and expansion on the concepts, principles and applications of radiographic and radiologic procedures.
Prerequisites: Take RS 212.
Corequisites: Take RS 222L.
Offered: Every year, Spring

RS 222L. Laboratory Practicum II. 2 Credits.
Designed to develop preclinical competency in radiographic procedures studied in RS 222, this practicum focuses on radiographic tasks, basic radiographic analysis, patient management, communications and manipulation of imaging equipment.
Prerequisites: Take RS 212.
Corequisites: Take RS 222.
Offered: Every year, Fall

RS 232. Radiographic Procedures III. 3 Credits.
This course provides continued integration and expansion on the concepts, principles and applications developed in RS 212 and RS 222.
Prerequisites: Take RS 222.
Corequisites: Take RS 232L.
Offered: Every year, Fall

RS 232L. Laboratory Practicum III. 2 Credits.
This practicum is designed to develop preclinical competency in routine hospital procedures and radiographic tasks, basic radiographic analysis, patient management, communications and manipulation of imaging equipment.
Prerequisites: Take RS 222.
Corequisites: Take RS 232.
Offered: Every year, Fall

RS 241. Radiographic Image Production and Evaluation. 3 Credits.
This course presents the basic principles, concepts and practical applications of radiographic image production and diagnostic quality. Topics include radiation production, description and proper selection of exposure factors, radiation protection, imaging media, imaging equipment and basic imaging formulas.
Prerequisites: Take RS 101, MA 275 and BIO 102.
Corequisites: Take RS 241L.
Offered: Every year, Fall

RS 241L. Radiographic Image Production and Evaluation Lab I. 1 Credit.
The laboratory, which accompanies RS 241, is designed to demonstrate and reinforce the concepts and principles presented in class. (2 lab hrs.)
Corequisites: Take RS 241.
Offered: Every year, Fall

RS 242. Radiographic Image Production and Evaluation II. 3 Credits.
This course expands on the foundations developed in RS 241. Integration and application of these foundations includes the development of exposure charts, methods of image processing, and the causation and identification of image artifacts. The course also incorporates quality control concepts and testing, and introduces basic terminology and principles of quality control and digital imaging systems.
Prerequisites: Take RS 241.
Corequisites: Take RS 242L.
Offered: Every year, Spring

RS 242L. Radiological Processing and Exposure Lab. 1 Credit.
The laboratory, which accompanies RS 242, is designed to demonstrate and reinforce the concepts and principles presented in class. (2 lab hrs.)
Corequisites: Take RS 242.
Offered: Every year, Spring
<table>
<thead>
<tr>
<th>Course Code</th>
<th>Course Title</th>
<th>Credits</th>
<th>Offered</th>
<th>Prerequisites</th>
<th>Corequisites</th>
</tr>
</thead>
<tbody>
<tr>
<td>RS 250</td>
<td>Radiologic Clinical Education I</td>
<td>2</td>
<td>Every year, Spring</td>
<td>Take RS 212, RS 241</td>
<td>Take RS 222, RS 242</td>
</tr>
<tr>
<td>RS 253</td>
<td>Radiologic Clinical Education II</td>
<td>4</td>
<td>Every year, Summer</td>
<td>Take RS 250</td>
<td>Take RS 250</td>
</tr>
<tr>
<td>RS 254</td>
<td>Radiologic Clinical Education IV</td>
<td>3</td>
<td>Every year, Fall</td>
<td>Take RS 253</td>
<td>Take RS 232</td>
</tr>
<tr>
<td>RS 255</td>
<td>Radiologic Clinical Education</td>
<td>3</td>
<td>Every year, Fall</td>
<td>Take RS 254</td>
<td>Take RS 290</td>
</tr>
<tr>
<td>RS 260</td>
<td>Radiographic Physics and Instrumentation</td>
<td>3</td>
<td>Every year, Fall</td>
<td>Take RS 242</td>
<td>Take RS 290</td>
</tr>
<tr>
<td>RS 290</td>
<td>Advanced Radiographic Procedures IV</td>
<td>3</td>
<td>Every year, Fall</td>
<td>Take RS 232</td>
<td>Take RS 290L</td>
</tr>
<tr>
<td>RS 290L</td>
<td>Laboratory Practicum</td>
<td>1</td>
<td>Every year, Spring</td>
<td>Take RS 232</td>
<td>Take RS 290</td>
</tr>
<tr>
<td>RS 297</td>
<td>Methods of Patient Care</td>
<td>2</td>
<td>Every year, Spring</td>
<td>Take RS 297</td>
<td>Take RS 297L</td>
</tr>
<tr>
<td>RS 297L</td>
<td>Methods of Patient Care Lab.</td>
<td>1</td>
<td>Every year, Spring</td>
<td>Take RS 297</td>
<td>Take RS 297L</td>
</tr>
<tr>
<td>RS 318</td>
<td>Pathology for Imaging Sciences</td>
<td>3</td>
<td>Every year, Fall</td>
<td>Take RS 222, BIO 212</td>
<td>Take RS 297</td>
</tr>
<tr>
<td>RS 336</td>
<td>Pharmacology for the Radiographer</td>
<td>2</td>
<td>Every year, Fall</td>
<td>Take RS 222, BIO 212</td>
<td>Take RS 297</td>
</tr>
<tr>
<td>RS 414</td>
<td>Research: Analysis and Critique (DMS 414)</td>
<td>3</td>
<td>Every year, January Term</td>
<td>Take RS 101</td>
<td>Take RS 297</td>
</tr>
<tr>
<td>RS 499</td>
<td>Capstone (DMS 499)</td>
<td>3</td>
<td>Every year, Fall</td>
<td>Take RS 212, RS 242</td>
<td>Take RS 222, BIO 212</td>
</tr>
</tbody>
</table>