

BIOLOGY - MEDICAL IMAGING SCIENCE—CARDIOVASCULAR SONOGRAPHY AND DIAGNOSTIC MEDICAL SONOGRAPHY SPECIALIZATION, JOINT-DEGREE PROGRAM, B.S.

The Bachelor of Science joint-degree programs in Medical Imaging Science—Cardiovascular Sonography and Medical Imaging Science—Diagnostic Medical Sonography with Rutgers University School of Health Professions qualifies students for certification examinations leading to professional licensures. Sonographers provide vital data to physicians and other practitioners to assist in the diagnosis, monitoring, and treatment of disease and maintenance of health. Medical Imaging Scientists employ complex instrumentation and procedures to perform their duties. Students interested in this field should have a strong interest in science, have the capacity to learn technical skills, work accurately and reliably when under pressure, and effectively communicate with others. Students must apply for acceptance to Rutgers University School of Health Professions by January 15 of the same year prior to their beginning a clinical program in the following autumn. Acceptance to the joint-degree program in Medical Imaging Science requires a minimum CGPA of 2.85.

Code	Title	Credits
Required Biology Courses		24
BIOL 130	Principles Biology I	4
BIOL 131	Principles Biology II	4
BIOL 230	Cell Biology	4
BIOL 236	Anatomy & Physiology I	4
BIOL 237	Anatomy & Physiology II	4
BIOL 303	Microbiology	4
Biology Elective Courses		8
Select Biology courses numbered higher than BIOL 230		
Required Chemistry Courses		18
CHEM 105	General Chemistry I Lecture	3
CHEM 1105	General Chemistry I Recitation/Laboratory	2
CHEM 106	General Chemistry II Lecture	3
CHEM 1106	General Chemistry II Recitation/Laboratory	2
CHEM 207	Organic Chemistry I	3
CHEM 2207	Organic Chemistry I Laboratory	1
Required Physics Course		3
PHYS 101	Basic Concepts of Physics	3
Required Math and Computer Science Courses		7
MATH 175	Enhanced Precalculus	4
INTD 180	Computers Tools for Science and Math	3
or MATH 140	Statistics I	

or PSYC 230	Statistics for Social Sciences	
Total Credits		55

- | CODE | TITLE | CREDITS |
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| <ol style="list-style-type: none"> Elective courses are selected from Biology courses numbered higher than BIOL 230. A minimum cumulative grade point average (CGPA) of 2.0 in BIOL 130 and BIOL 131 must be attained in order to enroll in advanced courses. Both BIOL 204 and BIOL 237 must be successfully completed in order to earn credit toward Biology Department requirements. CHEM 105/CHEM 1105 and CHEM 106/CHEM 1106 are prerequisites for all 300- and 400-level Biology courses. This course sequence is suggested to meet General Education Program requirements that are specific for this program and to facilitate the timely completion of all required courses at NJCU prior to beginning the clinical program at Rutgers, The State University of New Jersey. Some courses are part of the General Education Program and may be used to simultaneously satisfy a General Education Mode of Inquiry requirement. A minimum grade of "C" must be earned in each Biology, Chemistry, Physics and Mathematics course to satisfy Biology degree requirements. Application for admission to the Rutgers program should be filed by January 15 of the year in which the clinical training will begin. Acceptance to the Rutgers program requires a minimum 2.85 GPA. Students applying for transfer into the B.S. in Medical Imaging Sciences program are advised that NJCU has a seven-year statute of limitation for course acceptance. | | |

CODE	TITLE	CREDITS
Freshman		
Semester 1		
ENGL 101	English Composition I	4-6
or ESL 101	or English Composition I for English as a Second Language Students	
BIOL 130	Principles Biology I	4
MATH 175	Enhanced Precalculus ¹	4
General Education Tier I Course		3
Credits		15-17

Semester 2		
ENGL 102	English Composition II	4-6
or ESL 102	or	
BIOL 131	Principles Biology II	4
MATH 140	Statistics I ¹	3
or PSYC 230	or Statistics for Social Sciences	
General Education Tier I Course		3
Credits		14-16

Sophomore		
Semester 1		
BIOL 230	Cell Biology	4
BIOL 236	Anatomy & Physiology I ¹	4

CHEM 105	General Chemistry I Lecture	3
CHEM 1105	General Chemistry I Recitation/Laboratory	2
General Education Tier II Course		3
Credits		16
Semester 2		
BIOL 237	Anatomy & Physiology II	4
BIOL 303	Microbiology	4
CHEM 106	General Chemistry II Lecture	3
CHEM 1106	General Chemistry II Recitation/Laboratory	2
General Education Tier II Course		3
Credits		16
Junior		
Semester 1		
Biology Elective 2XX (above BIOL 230)		4
CHEM 207	Organic Chemistry I	3
CHEM 2207	Organic Chemistry I Laboratory	1
INTD 180	Computers Tools for Science and Math ¹	3
General Education Tier II Course		3
Credits		14
Semester 2		
Biology Elective 2XX (above BIOL 230)		4
PHYS 101	Basic Concepts of Physics	3
General Education Tier II Course		3
General Education Tier II Course		3
General Education Tier III Course		3
Credits		16
Senior		
Semester 1		
Clinical Courses Taken at Rutgers School of Health Professions		16
Credits		16
Semester 2		
Clinical Courses Taken at Rutgers School of Health Professions		16
Credits		16
Total Credits		123-127

¹ Courses are part of the General Education program and may be used to simultaneously satisfy a General Education Mode of Inquiry requirement.

Student Learning Outcomes

Upon completion of the Biology Medical Imaging Science program, students will be able to:

1. Demonstrate knowledge of the factual and theoretical basis of biology including mechanisms on the molecular, cellular, organismal, and systems levels.
2. Demonstrate understanding of scientific inquiry and explain how scientific knowledge is discovered and validated.
3. Apply quantitative knowledge and reasoning to describe or explain phenomena in their natural world.
4. Demonstrate knowledge of basic principles of chemistry and their application to understanding living systems.
5. Demonstrate preparedness to enter the Professional work force.