

# HEALTH SCIENCES, CERTIFICATE IN (POST-BACCALAUREATE UNDERGRADUATE CERTIFICATE)

The post-baccalaureate undergraduate Certificate in Health Sciences is designed for students who hold a baccalaureate degree in a non-science area and wish to pursue their undergraduate pre-health sciences requirements at VCU. The program is intended for students who have few or none of the prerequisites they need to enter doctoral-level programs in physical therapy, pharmacy, dentistry, medicine, osteopathic medicine, optometry or veterinary sciences. This program challenges students to complete more intensive science and math course work than the basic prerequisites and maintain at least a 3.0 cumulative GPA. The certificate program assists students in becoming more competitive for admission into graduate-level programs in the health sciences, but it does not guarantee admission into any program.

Those students completing the certificate are expected to achieve competency in introductory and more advanced-level science courses and will be granted opportunities to gain health care experience. Students can learn about health care program admissions requirements and strengthen their credentials through advising, student-run club activities and seminars.

Depending on the types of courses students complete before entering the program, the certificate can take one to three years to complete with either full- or part-time study. Students are advised on how to progress based on prior math and science course work, work and family constraints, and other factors that could affect the time frame to completion. The certificate program requires the completion of minimal competencies and a core curriculum.

Before beginning the core curriculum, students must show minimum competency by completing or transferring in equivalent courses with minimum grades of B for the following:

Course	Title	Hours
MATH 151	Precalculus Mathematics	4
BIOL 151 & BIOZ 151	Introduction to Biological Sciences I and Introduction to Biological Science Laboratory I	4
BIOL 152 & BIOZ 152	Introduction to Biological Sciences II and Introduction to Biological Science Laboratory II	4
CHEM 101 & CHEZ 101	General Chemistry I and General Chemistry Laboratory I	4
CHEM 102 & CHEZ 102	General Chemistry II and General Chemistry Laboratory II	4

Students must have completed all chemistry courses within five years of the time they begin the program in order to apply them toward the minimum competency requirement.

The academic requirements to complete the core portion of the program are as follows: a minimum of 25 credit hours (comprising at least six courses) in mathematics, statistics, chemistry, biology or physics. All program core courses must be at the 200 level or above. At least three of the courses in the core must have a laboratory.

A maximum of 11 credit hours can be transferred toward the core curriculum of the certificate program. Students must have earned a minimum grade of B in all course work accepted for transfer, which must come from an accredited institution. Students should consult with the pre-health sciences advisers to determine the most appropriate courses to meet their educational and career goals.

Courses will be selected from the following lists:

Course	Title	Hours
<b>Math and statistics</b>		
MATH 200	Calculus with Analytic Geometry I	4
STAT 210	Basic Practice of Statistics	3
STAT 314	Applications of Statistics	4
<b>Biology</b>		
BIOL 205	Basic Human Anatomy	4
BIOL 209 or BIOL 303	Medical Microbiology Microbiology	3
BIOL 300	Cellular and Molecular Biology	3
BIOL 308	Vertebrate Histology	4
BIOL 310 & BIOZ 310	Genetics and Laboratory in Genetics	5
BIOL 402	Comparative Vertebrate Anatomy	5
BIOL/FRSC 438	Forensic Molecular Biology	3
BIOL 445	Neurobiology and Behavior	4
BIOL 455	Immunology	3
BIOL 524	Endocrinology	3
BIOL 530	Introduction to Human Genetics	3
BIOL 540	Fundamentals of Molecular Genetics	3
PHIS 206 or BIOL 411	Human Physiology Physiology	3
<b>Chemistry</b>		
CHEM 301 & CHEZ 301	Organic Chemistry and Organic Chemistry Laboratory I	5
CHEM 302 & CHEZ 302	Organic Chemistry and Organic Chemistry Laboratory II	5
CHEM 303 & CHEZ 303	Physical Chemistry and Physical Chemistry Laboratory I	5
CHEM 304 & CHEZ 304	Physical Chemistry and Physical Chemistry Laboratory II	5
CHEM 305	Physical Chemistry for the Life Sciences	3
CHEM 309 & CHEZ 309	Quantitative Analysis and Quantitative Analysis Laboratory	5
CHEM/MEDC 310	Medicinal Chemistry and Drug Design	3
CHEM 320	Inorganic Chemistry I	3
CHEM 403	Biochemistry I	3
CHEM 404	Biochemistry II	3
<b>Physics</b>		
PHYS 201	General Physics I (includes laboratory)	4
PHYS 202	General Physics II (includes laboratory)	4
PHYS 207	University Physics I (includes laboratory)	5
PHYS 208	University Physics II (includes laboratory)	5

**The minimum total of credit hours required for this certificate is 25.**

While matriculating all students must maintain a minimum cumulative GPA of 3.0. Courses may not be repeated after gaining admission into the certificate program. Failure to maintain the minimum GPA will result in formal dismissal from the certificate program.

Students accepted into the program must also commit to at least 50 hours of volunteer service in the VCU Medical Center Volunteer Program or a private health care setting. Volunteer hours must be documented and submitted to the Office of Pre-professional Health Advising at the time application is submitted for graduation.

Admission to the post-baccalaureate health sciences certificate program is based on students' academic achievement in their baccalaureate programs and whether the certificate program will help them achieve their professional goals. The program accepts students to start in the fall and spring semesters. Application deadlines are the same for transfer students applying to the university. The program is not offered to students pursuing entry into undergraduate- or master's-level health professions programs, nor is it open to those pursuing pre-health course work as part of their undergraduate concentrations at VCU.