

**Pre-Med Program**  
**College of Humanities and Sciences**  
**Virginia Commonwealth University**

VCU offers a pre-med program for students who are interested in attending medical school. You may choose any major at the University and must complete all required courses for both the major and medical school. The following requirements apply to all medical schools in Virginia and most medical schools in the country:

**ENGLISH- Two Semesters.** One to include grammar and composition.

ENGL 101: The Craft of Writing (3 credits)

Introduction to the principles and practices of critical reading, analysis, writing, and rhetoric; introduction to the use of outside sources.

ENGL 200: The Craft of Writing with Research (3 credits)

**Prerequisite:** ENGL 101 and 24 credits (sophomore standing)

Intensive study of the principles and practices of critical reading, analysis and writing; methods and criteria for finding and evaluating information from a variety of printed and electronics sources; appropriate ways to use and document outside evidence in academic writing. (Should be taken after a literature course.)

**MATH- Two Semesters.**

MATH 151: Precalculus Mathematics (4 credits)

**Prerequisite:** MATH 141 or satisfactory score on the math placement test.

Concepts and applications of algebra and trigonometry. Topics include graphics, transformations and inverses of functions; linear, exponential, logarithmic, power, polynomial, rational and trigonometric functions.

MATH 200: Calculus with Analytic Geometry (4 credits)

**Prerequisite:** MATH 151 or satisfactory score on the math placement test.

Limits, continuity, derivatives, differentials, antiderivatives and definite integrals. Applications of differentiation and integration. Selected topics in analytic geometry. Infinite series.

STATS 210: Basic Practice of Statistics (3 credits)

**Prerequisite:** MATH 141 or satisfactory score on math placement test.

**Note:** A placement test must be taken at VCU before you can register for a Math class unless you have an acceptable transfer class from another institution.

**BIOLOGICAL SCIENCES- Eight semester hours** including laboratories. This may be satisfied by general biology, general zoology, or botany. No more than half may be botany. The following four courses can be taken in any order:

BIOL 151: Introduction to Biological Science I (3 credits)

Principles of plant biology including cell biology, physiology and evolution of plant diversity on Earth. Designed for biology majors

BIOZ 151: Introduction to Biological Science Laboratory I (1 credit)

BIOL 152: Introduction to Biological Science II (3 credits)

Principles of animal biology including genetics, physiology and evolution of animal diversity on Earth. Designed for biology majors. **(Can be taken before BIOL 151)**

BIOZ 152: Introduction to Biological Science Laboratory II (1 credit)

**Recommended Courses for students taking the Medical College Admission Test**

BIOL 218: Cell Biology (3 credits)

**Prerequisites:** A “C” grade or better in BIOL 151,152, BIOZ 151 and BIOZ 152; CHEM 101 and CHEM 102.

An introductory study of the molecular biology of the cell including protein chemistry, genetic mechanisms and cellular metabolism.

BIOL 310: Genetics (3 credits)

**Prerequisite:** A “C” grade or better in BIOL 218.

The basic principles of molecular and genetics of plants, animals and microorganisms.

BIOL 311: Animal Physiology

**Prerequisite:** A “C” grade or better in BIOL 218.

Physiological principles of animal cells, tissues, and organs from the viewpoint of chemical and physical phenomena.

**CHEMISTRY- 8 Semester hours** including laboratories.

CHEM 101: General Chemistry I (3 credits)

**Prerequisite:** CHEM 100 or satisfactory score on CHEM placement test.

**Pre- or corequisite:** MATH 151

Fundamental principles and theories of chemistry, including qualitative analysis. **(Continuous course).**

CHEZ 101: General Chemistry Laboratory I (1 credit)

CHEM 102: General Chemistry II (3 credits)

Continuation of CHEM 101.

CHEZ 102: General Chemistry Laboratory II

**ORGANIC CHEMISTRY- 8 Semester hours** including laboratories.

CHEM 301: Organic Chemistry I (3 credits)

**Prerequisites:** CHEM 101-102 and CHEZ 101 & 102

A comprehensive survey of aliphatic and aromatic compounds with emphasis on their structure, properties, reactions, reaction mechanisms and stereochemistry.

**(Continuous course)**

CHEZ 301: Organic Chemistry Laboratory I (2 credits)

CHEM 302: Organic Chemistry II (3 credits)

Continuation of CHEM 301.

CHEZ 302: Organic Chemistry Laboratory II

**Recommended for Students taking the Medical College Admission Test:**

CHE 403: Biochemistry (3 credits)

**Prerequisites:** CHEM 101-102, CHEZ 101-102 and CHEM 301-302

A presentation of structural biochemistry, enzymology, biophysical techniques, bioenergetics and an introduction to intermediary metabolism.

**PHYSICS- 8 semester hours** including laboratories.

PHYS 201: General Physics (4)

**Prerequisites:** Math 151

Designed primarily for life-science majors. Basic Concepts of motion, waves and heat. (**Continuous course**)

PHYS 202: General Physics II (4 credits)

**Prerequisite:** PHYS 201

Basic concepts of electricity, magnetism, light and modern physics.

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PHYS 207: University Physics (5 credits)

**Corequisite:** Math 200

A vector and calculus-based introduction to the fundamental concepts of mechanics, heat and wave motion. (**Continuous course**).

PHYS 208: University Physics II (5 credits)

**Prerequisite:** PHYS 207. **Corequisite:** MATH 201

A vector and calculus based introduction to the fundamentals of electricity, magnetism and optics.

- Check with your advisor in your major to make sure you completing all major requirements in addition to medical school coursework. See the Pre-Health Science advisor for information on applying to medical school.
- Students should gain hands-on experience before applying to medical school. This can be accomplished by volunteering at local hospitals such as MCV hospitals, clinics or community agencies, shadowing” physicians during hospital rounds or in local doctor’s offices, volunteering in hospital-based activities, or participating in the Pre-Med club at VCU.