

PREMEDICAL, PREDENTAL, AND PREVETERINARY STUDIES

Program Overview

Rider University offers students with baccalaureate degrees the opportunity to take the undergraduate science course prerequisites for medical, dental, veterinary or graduate school. Students may apply through Continuing Education Programs Admissions (<https://www.rider.edu/academics/colleges-schools/college-liberal-arts-sciences/continuing-education/pre-medical-vet-dental/>).

Curriculum Overview

This program is highly individualized. Students work closely with the Premedical Studies advisor to develop a plan of study that will meet their educational goals. In addition to basic core prerequisites, the program offers the opportunity to take courses in advanced biology, biochemistry, chemistry, and behavioral neurosciences to enhance students' academic profiles and to help them prepare to succeed in rigorous professional or graduate school curricula.

Contact

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Program Requirements

Applicants must complete a Post-baccalaureate Premedical Studies application form, submit official transcripts from all higher education institutions attended, and complete an application (<https://www.rider.edu/admissions/apply/continuing-education/>) to the Continuing Education Program Admissions.

Applicants must meet the following criteria to gain admission to the Post-baccalaureate Premedical Studies Program:

- a baccalaureate degree from an accredited college or university;
- a 3.25 cumulative undergraduate GPA.

Applications are reviewed and approved by the Continuing Education Program Admissions and the chair of the Premedical Studies Committee.

Code	Title	Credits
Complete the following courses:		
BIO 115 & 115L	Principles of Biology I and Principles of Biology I Lab	4
BIO 260 & 260L	Principles of Biology: Evolution, Diversity, and Biology of Cells and Principle of Biology: Cells Lab	4
BCH 325	Biochemistry	3
CHE 120 & CHE 121	Principles of Chemistry and Principles of Chemistry Lab	4
CHE 122 & CHE 123	Intro to Chemical Systems and Quantitative Methods Lab	4

CHE 211 & 211L	Organic Chemistry I and Organic Chemistry I Lab	4
CHE 214 & 214L	Organic Chemistry II and Organic Chemistry II Lab	4
PHY 100 & 100L	Principles of Physics I and Principles of Physics I Lab ¹	4
PHY 101 & 101L	Principles of Physics II and Principles of Physics II Lab	4

¹ MTH 105 is a prerequisite for PHY 100/PHY 100L.

Courses and Descriptions

BIO 115 Principles of Biology I 4 Credits

An introductory biology course focusing on major themes of biology: what is life?; Cells as fundamental structure and functional unit of life; information transmission, storage and retrieval; Diversity and unity of life explained by evolution. Three hours of lecture and one three-hour lab per week.

Corequisite(s): BIO 115L.

BIO 115L Principles of Biology I Lab 0 Credits

This lab is a co-requisite and must be taken with the corresponding course.

Corequisite(s): BIO 115.

BIO 260 Principles of Biology: Evolution, Diversity, and Biology of Cells 4 Credits

Lectures and labs focus on basic cell biology. Cell diversity and function, genetics and biotechnology are emphasized. Three hours of lecture and one three-hour lab per week. Prerequisite(s): BIO 115/115L and BIO 116/116L or BIO 115, BIO 117, (BNS 118 or BNS 275).

Corequisite(s): BIO 260L.

BIO 260L Principle of Biology: Cells Lab 0 Credits

This lab is a co-requisite and must be taken with the corresponding course.

Corequisite(s): BIO 260.

BCH 325 Biochemistry 3 Credits

Outlines the chemistry and biological function of carbohydrates, proteins, lipids, nucleic acids, vitamins, and enzymes, and introduces enzyme kinetics and biological energetics. Degradative metabolic pathways of carbohydrates and lipids, and their controlled interrelationships are discussed in detail.

Prerequisite(s): CHE 122, CHE 214 with a minimum grade of D.

CHE 120 Principles of Chemistry 3 Credits

For students who have successfully completed one year of high school chemistry. This systematic study of the fundamental principles and concepts of chemistry covers atomic structure, bonding, stoichiometric relationships, including solution and oxidation-reduction reactions, and molecular structure. Three hours of lecture per week. Prerequisite(s): High school chemistry or CHE 100 is recommended before taking this course.

Corequisite(s): CHE 121.

CHE 121 Principles of Chemistry Lab 1 Credits

For students concurrently taking CHE 120. Experiments involve gravimetric, volumetric, and spectrophotometric quantitative analysis. One three-hour lab per week. Fall.

CHE 122 Intro to Chemical Systems 3 Credits

A continuation of CHE 120. For students majoring in the sciences but may be taken by others. Chemical systems in which the study of kinetics, thermodynamics, equilibrium, and radiochemistry are emphasized. Three hours of lecture per week. Prerequisite(s): CHE 120, MTH 105 or higher.

Corequisite(s): CHE 123.

CHE 123 Quantitative Methods Lab 1 Credits

Usually taken concurrently with CHE 122. Primarily for students majoring in the sciences. A number of quantitative classical and instrumental methods of analysis are used to determine thermodynamic properties and reaction mechanisms. One three-hour lab per week. Prerequisite(s): CHE 121.

Corequisite(s): CHE 122.

CHE 211 Organic Chemistry I 4 Credits

The structure, chemical properties, and methods of preparation of the more important classes of carbon compounds are studied, with an emphasis on the relationship of structure, stereochemistry, and conformation to chemical reactivity. The preparation and reactivity of organic functional groups is introduced. The use of infrared and nuclear magnetic resonance spectroscopy, and mass spectrometry for elucidating structures of organic molecules is discussed. Three hours of lecture and one three-hour lab per week. Prerequisite(s): CHE 120, CHE 121.

Corequisite(s): CHE 211L.

CHE 211L Organic Chemistry I Lab 0 Credits

This lab is a co-requisite and must be taken with the corresponding course.

Corequisite(s): CHE 211.

CHE 214 Organic Chemistry II 4 Credits

A continuation of Chemistry 211, emphasizing the mechanism of organic reactions, structural interpretations of properties, preparations, reactivity and identification of organic compounds. Three hours of lecture and one three-hour lab per week. Prerequisite(s): CHE 211.

Corequisite(s): CHE 214L.

CHE 214L Organic Chemistry II Lab 0 Credits

This lab is a co-requisite and must be taken with the corresponding course.

Corequisite(s): CHE 214.

MTH 105 Algebra and Trigonometry 4 Credits

The course is an in depth and rigorous study of functions and graphs, equations and inequalities, polynomial and rational functions, exponential, and logarithmic functions, basic trigonometric functions and their inverses, trigonometric identities.

Prerequisite(s): A mathematics SAT score of 570, departmental placement or MTH 100 with a grade of C or higher.

PHY 100 Principles of Physics I 3 Credits

Introductory noncalculus physics with applications for pre-professional, biology, and geological, environmental and marine sciences majors. Classical mechanics, energy, mechanical waves, fluid statics and dynamics, thermodynamics. Elements of modern physics are interwoven with those of classical physics from the beginning. Not open to chemistry, physics, or mathematics majors. Three hours of lecture per week. Prerequisite(s): MTH 105, MTH 210, MTH 211 or MTH 212.

Corequisite(s): PHY 100L.

PHY 100L Principles of Physics I Lab 1 Credits

For students concurrently taking PHY 100. One three-hour lab per week.

Corequisite(s): PHY 100.

PHY 101 Principles of Physics II 3 Credits

Continuation of Physics 100. Electrostatics, electricity, and magnetism; DC and AC circuits, physical and geometrical optics, introduction to elementary particle and quantum physics. Three hours of lecture per week. Prerequisite(s): PHY 100.

Corequisite(s): PHY 101L.

PHY 101L Principles of Physics II Lab 1 Credits

For students concurrently taking Physics 101. One three-hour lab per week.

Corequisite(s): PHY 101.