THE UNIVERSITY OF RHODE ISLAND
COLLEGE OF PHARMACY

Avedisian Hall | 7 Greenhouse Rd, Kingston, RI 02881

Biomedical and Pharmaceutical Sciences - BS
Pre-Health Pathway

2026-27 Catalog year
120 credits total

Program Overview

The four-year Bachelor of Science in Biomedical and Pharmaceutical Sciences provides students with a strong foundation in the biological, chemical, biomedical, and pharmaceutical sciences, preparing them for medical school, other health profession programs, graduate education, and careers in biomedical and pharmaceutical research. Through a rigorous and interdisciplinary curriculum, students develop scientific knowledge, critical thinking, and problem-solving skills needed for success in professional and scientific settings.

This curriculum guides students through the academic coursework and experiential opportunities that support competitiveness for admission to medical school and other health profession programs. Preparation for these pathways extends beyond the classroom and includes patient-care simulation experiences, community engagement, research involvement, leadership development, and MCAT preparation. Students should work closely with academic and pre-health advisors to develop individualized plans aligned with their career goals and professional school requirements.

In addition, the program equips graduates with the knowledge and skills needed for advanced study and careers in biomedical research, the pharmaceutical industry, biotechnology, public health, and other science- and healthcare-related fields.

General Education Requirements

General education is 40 credits. Each of the 12 outcomes (A1-D1) must be met by at least 3 credits. A single course may meet more than one outcome but cannot be double counted toward the 40-credit total. At least one course must be a Grand Challenge (G). No more than 12 credits can have the same course code (except for HPR courses). General education courses may also be used to meet the requirement of the major or minor when appropriate.

General Education Credit Count

At least 40 credits with no more than 12 credits with the same course code. *Required courses for the major and pre-health pathway are prefilled.*

Course	Credit	Grade	Course	Credit	Grade
BIO 110/101	3		PHY 185	1+	
BIO 102	3+		PHY 186	1+	
BIO 103	1		PSY 113	3+	
BIO 104	1+		SOC 224	3+	
CHM 101	3		WRT 106	3	
COM 100	3		WRT/ENG	3+	
MTH 103	3 or 0				
MTH 131/141	3				
PHY 111	3+				
PHY 112	3+				
Total Gen Ed credits (met by requirements: 37-40) + additional prerequisite for medical school applications					

General Education Outcome Audit

Each outcome must be met by at least 3 credits.

Outcome	Course
Knowledge	
A1. STEM	CHM 101
A2. Social & Behavioral Sciences	SOC 224
A3. Humanities	
A4. Arts & Design	
Competencies	
B1. Write effectively	WRT 106/104
B2. Communicate effectively	COM 100
B3. Mathematical, statistical or computational	MTH 131
B4. Information literacy	WRT 106/104
Responsibilities	
C1. Civic knowledge & responsibilities	COM 100
C2. Global responsibilities	
C3. Diversity & inclusion	SOC 224
Integrate & Apply	
D1. Ability to synthesize	
Grand Challenge	
G. Grand Challenge	

Pre-Requisites to the Major

Basic Non-Science Requirements

Course	Credits	Grade
BPS 250: Careers in Pharmaceutical Sciences	1	
COM 100: Communication Fundamentals	3*	
URI 101: Academic Success	1	
WRT 106: Research Writing	3*	

Basic Science and Math Requirements

Course	Credits	Grade	QPA
BIO 110: Fundamentals of Biology (or BIO 101)	3*		
BIO 103: General Biology Lab	1*		
BIO 220: Human Anatomy & Physiology I	3		
BIO 221: Human Anatomy & Physiology I lab	1		
BIO 222: Human Anatomy & Physiology II	3		
BIO 223: Human Anatomy & Physiology II lab	1		
CHM 101: General Chemistry I	3*		
CHM 102: General Chemistry I lab	1		
CHM 112: General Chemistry II	3		
CHM 114: General Chemistry II lab	1		
CHM 226: Organic Chemistry lab	2		
CHM 227: Organic Chemistry I	3		
CHM 228: Organic Chemistry II	3		
CMB 201: Medical Microbiology (or CMB 211)	3		
CMB 202: Medical Microbiology lab	1		
CMB 311: Introductory Biochemistry	3		
MTH 103: Applied Precalculus (or placement)	3* or 0		
MTH 131: Applied Calculus I (or MTH 141)	3*		
STA 308: Statistics (or STA 307 or STA 409)	4		
*Approved General Education credit	**Pre-professional QPA of 2.3 or higher**		

BPS Progression

BPS students transfer from University Candidate (UC) status to the College of Pharmacy (PHARM) following the semester in which they complete the science and mathematics prerequisite courses. For off-sequence students, transfer to PHARM may be considered before completion of CHM 228, CMB 311, or STA 308, on a case-by-case basis.

Admission to PHARM requires a minimum 2.30 GPA in the prerequisite science and math course and an overall cumulative GPA of 2.00 or higher. Students who do not meet these requirements will not be admitted to the major.

Major Requirements

Core BPS Coursework

Course		Credits	Semester offered	Grade
BPS 301	Pharmaceutics I: Biopharmaceutics	2	Fall	
BPS 306	Essential Pharmacokinetic Concepts	2	Spring	
BPS 313	Principles of Medicinal Chemistry	2	Fall	
BPS 315	Pharmaceutics II	4	Fall	
BPS 325	Human Drug Metabolism	2	Spring	
BPS 345	Introduction to Pharmaceutical Research	3	Fall/Spring	
BPS 401	Pharmaceutical Pharmacology I	3	Fall	
BPS 402	Pharmaceutical Pharmacology II	3	Spring	
BPS 425	GMPs in the Manufacture of Pharmaceuticals	3	Spring	
BPS 443	Formulation and Manufacturing Lab	2	Spring	
BPS 446	Biotechnology, Biologics, and Biosimilars	3	Spring	
BPS 451	Techniques in Medicinal Chemistry and Molecular Biology lab	4	Fall	

Experiential Education

Students must complete at least 6 credits (or 260 hours) of experiential education. 1 credit = 3.33 hours/week for 13 weeks or equivalent hours during J-term or Summer sessions. Students must complete a learning contract prior to enrolling in experiential education.

Course		Credits	Credits completed	Grade
BPS 497/498	Special Problems	1-5		
BPS 460	Pharmaceutical Sciences Internship/Field Experience	0, 3, 6, 9, or 12		

Professional Electives

Students may customize their academic program by completing 18 credits of approved professional electives (300-level or higher) aligned with their career goals. At least 9 credits must be from BPS, PHP, or PHC courses. Professional electives may also fulfill requirements for a minor, second major, general education, honors project, or experiential education.

Course code (300+)	Course name	Credits	Grade
BPS/PHP/PHC			
BPS/PHP/PHC			
BPS/PHP/PHC			
BIO 341	Principles of Cell Biology (recommended for pre-health)	3	
BIO 352	General Genetics (fulfills BIO minor)	4	

Total Credit Count

Students must complete a minimum of 120 total credits. General electives may be taken as necessary to reach the final credit count.

Proposed Semester Sequence for Pre-Health Professional Students

Fall	Spring	BPS Milestones	Pre-Health Milestones
Year One			
BIO 110* and 103*, 3+1 cr	BIO 102* and 104*, 3+1 cr	○ Complete BIO, CHM, & MTH pre-reqs ○ Pre-Professional GPA ≥ 2.30 ○ Complete ≥ 29 cr.	○ Aim for a GPA ≥ 3.6 ○ Gen ed can include SOC224 or PSY113 ○ Attend a pre-health 101 info session ○ Investigate research opportunities, direct patient care/clinical experience
CHM 101* and 102, 3+1 cr	CHM 112 and 114, 3+1 cr		
MTH 103*, 3 cr; or choice Gen	MTH 131*, 3 cr		
COM 100*, 3 cr	WRT 106*, 3 cr		
URI 101, 1 cr			
(15 cr. Total, 13 gen ed)	(14 cr. Total, 10 gen ed)		
Year Two			
BIO 220 and 221, 3+1 cr	BIO 222 and 223, 3+1 cr	○ Complete BIO, CHM, CMB, STA pre-reqs ○ Pre-Professional GPA ≥ 2.30 ○ Complete ≥ 60 cr. ○ Meet progression standards for move from UC to BPS	○ Aim for a GPA ≥ 3.6 ○ Gen ed can include SOC224, PSY113, or 2nd WRT choice ○ Get involved in service, CFRP, shadowing ○ Start research and direct patient care/clinical experience
CHM 227, 3 cr	CHM 228, 3 cr		
CMB 201 and 202, 3+1 cr	CHM 226, 2 cr		
BPS 250, 1 cr	STA 308 (or 307 or 409), 4 cr		
PHY 111* and 185*, 3+1 cr	CMB 311, 3 cr		
(16 cr. Total, 4 gen ed)	(16 cr. Total)		
Year Three			

BPS 301, 2 cr	BPS 306, 2 cr	○ Advanced knowledge of pharmacology, medicinal chemistry, pharmacokinetics, and pharmaceutics.
		○ Knowledge of laboratory methods, biologic medications, and choice specialty areas
		○ Maintain Professional GPA ≥ 2.3, Cumulative GPA ≥ 2.0
			○ Aim for a GPA ≥ 3.6
			○ Prof elective can include BIO 352 and/or BIO 341
			○ Finish coursework for entrance exams
			○ If applying in junior year,
			  ○ complete pre-health requirements by first semester
			  ○ take MCAT spring semester

BPS 313, 2 cr	BPS 325, 2 cr		
BPS 315, 4 cr	BPS 425, 3 cr		
BPS 345, 3 cr	BPS 443, 2 cr		
PHY 112* and 186*, 3+1 cr	Prof Elective/*Gen Ed choice, 3 cr		
	Prof Elective/*Gen Ed choice, 3 cr		
(15 cr. Total, 4 gen ed)	(15 cr. Total)		
Year Four			
BPS 401, 3 cr	BPS 402, 3 cr	○ Advanced knowledge of pharmacology, medicinal chemistry, pharmacokinetics, and pharmaceutics. ○ Knowledge of laboratory methods, biologic medications, and choice specialty areas ○ Maintain Professional GPA ≥ 2.3, Cumulative GPA ≥ 2.0 ○ Complete ≥ 120 credits for graduation	
BPS 451*, 4 cr	BPS 446, 3 cr		
Prof Elective/*Gen Ed choice, 3 cr	Prof Elective/*Gen Ed choice, 3 cr		
Professional Elective, 3 cr	Professional Elective, 3 cr		
Professional Elective, 3 cr	Professional Elective, 3 cr		
(16 cr. Total)	(15 cr. Total)		