THE UNIVERSITY OF RHODE ISLAND

Pharmaceutical Sciences-BS
120 Credits Total

2018-2019 Catalog Year
Effective Fall 2018
Class of 2022

ABOUT THE PHARMACEUTICAL SCIENCE BS DEGREE:

The four-year program offers students a solid foundation in the basic sciences and expertise within the pharmaceutical and biomedical sciences. It is designed to provide educational and training experiences that prepare students for careers in the pharmaceutical, consumer product, and biomedical industries. Graduates of the B.S.P.S. program will be qualified to seek a diverse range of career options that include: research and development, manufacturing, product marketing, sales, quality, and administrative positions within the pharmaceutical industry; research and regulatory oversight careers within government agencies; and research and teaching positions in academia. As a prelude to many of these career opportunities, the program prepares students for graduate studies in the expanding fields of pharmaceutical and biomedical sciences.

GENERAL EDUCATION GUIDELINES: General education is 40 credits. Each of the twelve 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 towards the 40 credit total. At least one course must be a Grand Challenge (G). No more than twelve credits can have the same course code (note- HPR courses may have more than 12 credits). General education courses may also be used to meet requirements of the major or minor when appropriate.

General Education Credit Count				
At least 40 cr., no more than 12 credits with the same course code. (Note: Not all boxes need to be filled to add to 40 credits)				
Course	**Cr.**		**Course**	**Cr.**
COM100	3			
WRT106	3			
ECN201	3			
CHM101	3			
BIO101	3			
BIO 103	1			
MTH103 (n/a if placed MTH 131)	3			
MTH131	3			
			Total Gen Ed credits	≥ 40

General Education Outcome Audit	
	Course
KNOWLEDGE	
A1. STEM CHM101, MTH 103, MTH131	BIO101
A2. Social & Behavioral Sciences	ECN201
A3. Humanities	
A4. Arts & Design	
COMPETENCIES	
B1. Write effectively	WRT106
B2. Communicate effectively	COM100
B3. Mathematical, statistical, or computational strategies	MTH103/131
B4. Information literacy	WRT106
RESPONSIBILITIES	
C1. Civic knowledge & responsibilities	
C2. Global responsibilities	
C3. Diversity and inclusion	
INTEGRATE & APPLY	
D1. Ability to synthesize	
GRAND CHALLENGE	
G. Check that at least one course of your 40 credits is an approved "G" course	

THE UNIVERSITY OF RHODE ISLAND

Pharmaceutical Sciences-BS FALL 18-SPRING 19
120 Credits Total Class of 2022

Basic Non-Science Requirements (*these courses also fulfill general education requirements)	**Course**	**Grade**	**Cr**
Careers in Pharmaceutical Science	BPS 250		1
Communication *B2	COM 100		3
Microeconomics *A2	ECN 201		3
Research Writing *B1, B4	WRT 106		3
Introduction to URI	URI 101		1

Basic Science /Math Requirements	**Course**	**Grade**	**Cr**
General Chemistry I *A1	CHM 101		3
General Chemistry I Lab	CHM 102		1
General Chemistry II	CHM 112		3
General Chemistry II Lab	CHM 114		1
Organic Chemistry Lab	CHM 226		2
Organic Chemistry I	CHM 227		3
Organic Chemistry II	CHM 228		3
General Biology *A1	BIO 101		3
General Biology Lab	BIO 103		1
Human Anatomy & Physiology I	BIO 220		3
Human Anatomy and Physiology I lab	BIO 221		1
Human Anatomy and Physiology II	BIO 222		3
Human Anatomy and Physiology II lab	BIO 223		1
Microbiology	CMB 201		4
Biochemistry	CMB 311		3
Intro to Statistics	STA 308		4
Calculus *A1, B3	MTH131 or 141		3/4

* Course approved for General Education

Major Requirements			
3rd Year- 1st Semester	**Course**	**Grade**	**Cr.**
Dosage I	BPS 301		2
Pharmaceutics II	BPS 315		4
Medicinal Chemistry	BPS 313		2
Intro to Pharmaceutical Research	BPS 345		3
Pharmacology I	BPS 401		3
General Education Course	Record on Page 1		3-4

3rd Year-2nd Semester			
Pharmacokinetics	BPS 306		2
Drug Metabolism	BPS 325		2
Pharmacology II	BPS 402		3
cGMP Processes	BPS 425		3
Formulations and Manufacturing Lab	BPS 443		2
BSPS Professional Elective or General Education Course *Suggested course: BPS 498*	See Page 5 or Record on Page 1		3-4
4th Year- 1st Semester			
Pharmacogenetics/genomics	BPS 442		3
Techniques Lab	BPS 451		4
General Education Course or BSPS Professional elective (optional)	See Page 5 or Record on Page 1		3-4
BSPS Professional Electives	See Pre-Approved Electives Page 5		3
General Education Courses	Record on Page 1		3-4
4th Year- 2nd Semester			
BSPS Professional Elective *Suggested course:* BPS 445	See Pre-Approved Electives Page 5		3
BSPS Professional Elective *Suggested course:* BPS 446	See Pre-Approved Electives Page 5		3
BSPS Professional Elective	See Pre-Approved Electives on Page 5		3
General Education Course	Record on Page 1		3-4
General Education Course (optional)	Record on Page 1		3-4

BSPS Professional Electives (12 credits required) **Course slots and options listed above**			
Suggested Course Code	**Substituted Course Code**	**Grade**	**Cr.**
BPS 445			
BPS 446			
BPS 498			
BSPS Prof. Elect. Choice			

** Students have the option to tailor their academic program to prepare them for the specific career paths that they choose by taking 12 credits of BSPS pre-approved professional electives. (see page 4) At least 6 of the 12 credits of Professional Electives credits must be under BPS, PHP, or PHC course codes

BSPS Progression, Retention and Graduation Requirements

B.S.P.S. students request transfer from University College for Academic Success to the College of Pharmacy during the semester in which they are enrolled to complete all science and mathematics pre-requisite courses (BIO 101, 103, 220, 221, 222, 223; CHM 101, 102, 112, 114, , 227, and 228; CMB 201 and 311; MTH 131 or 141; and STA 308 or 307). Transfer requests will be reviewed and acted upon after grades are posted for the enrolled courses.

Only those students having an equal or greater than 2.30 grade point average in the required pre-requisite courses (BIO 101, 103, 220, 221, 222, 223; CHM 101, 102, 112, 114, , 227, and 228; CMB 201 and 311; MTH 131 or 141; and STA 308 or 307), and an overall cumulative grade point average of 2.00 or above, will be admitted to the College of Pharmacy for the B.S. Pharmaceutical Sciences degree. Applicants not meeting the criteria will not be considered for admission to the college.

Pre-Approved BSPS Professional Electives

In College of Pharmacy

BPS 311 (2) Foundations of Human Disease I (Fall)
BPS 352 (3) Personal Cosmetics (Allabadidi)
BPS 426x (3) cGMP Environmental Risks, Control and Monitoring, Spring
BPS 436 (3) Psychotropic Drugs and Therapy (in Providence, Dr. Chichester, Spring).
BPS 445 (3) Natural Products and Biotech Drugs (Spring, currently Dr. Rowley teaches)
BPS 446 (3) Biotechnology, Biologics, and Biosimilar Drugs, Spring, BPS 442 is pre-requisite.
BPS 450 (3) Practical Tools for Molecular Sequence Analysis, Fall (via Cell & Molecular Biology Dept).
BPS 455 (3) Protein Molecular Modeling for Biomedical Sciences (Dr. King. Fall)
BPS 497/498 (up to 6 credits total counted toward BSPS electives, Special Problems in BPS, independent study with a faculty. Fall, Spring. 6 credit max also includes ITR 301/302/303 and HPR 401/402.
BPS 530 (3) Advanced Drug Metabolism (seniors only, good grade in BPS 325, Spring, odd years only)
BPS 533 (3) Medicinal Plants, Dr. Seeram, Fall (BSPS and PharmD, juniors and seniors).
BPS 542 (3) Bioinformatics I, Spring (project course, with computer sciences, cell & molecular biology).
BPS 546 (3) Advanced Toxicology (spring, Dr. Slitt, not every year, graduate course but ok for seniors)

PHC 502 (3) Drug Development, Fall, graduate course but ok for seniors (not juniors!).
PHC 520 (1-3 cr) Pharmaceutical Sciences Journal Club, can retake for max of 4 credits, different topics

PHP 405 (4) Epidemiology in Health Care (permission numbers for BSPS, juniors/seniors, Fall, Spring)
PHP 422 (3) Biostatistics II, (Katenka, Fall)
PHP 535X (3) Meta analysis (pre-PHP 540)
PHP 540 (3) Principles, Methods, and Applications of Epidemiology (graduate class, seniors, Fall)
PHP 550 (3) Pharmacoepidemiology (pre-PHP 540 or PHP 405), Spring, Fall
PHP 575X (3) Causal Inference (pre-PHP 540)
PHP 580 (3) Pharmacoeconomic Analysis, Spring, graduate class, seniors
PHP 585X (3) Measurement in Health Outcome (pre-PHP 540)
PHP 685 Pharmacoeconomic Methods (pre-PHP 580 and instructor permission)

From other Colleges and Departments (max of 6 credits outside of College of Pharmacy)

BIO 341 (3) Principles of Cell Biology (seats first to BIO majors)
BIO/CMB 352 (4) General Genetics (pre-req BIO101 and BIO102). Spring

BUS 315 (3) Legal Environment of Business, Spring (see business school for enrollment permissions)
BUS 341 (3) Organizational Behavior (pre-BUS minor); (see business school for enrollment permissions)
BUS 342 (3) Human Resources management (bus minor) (see business school for permissions)
BUS 365 (3) Marketing Principles. Spring, (see business school for permissions)

CHM 425 (2) Advanced Organic Chemistry lab (concurrent with chm427). Fall
CHM 427 (3) Intermediate Organic Chemistry, Dr. Levine, Fall

CMB 320 (3) Introduction to Computational Biology (Spring, pre MIC201 or CMB201)
CMB 333 (3) Immunology and Serology, (pre-req MIC201 or CMB201) Fall
CMB 334 (3) Virology, (pre-req MIC201 or CMB201), Spring
CMB 352 (4) General Genetics (pre-req BIO101 and BIO102). Spring
CMB 437 (3) Fundamentals of Molecular Biology (pre-req CMB 352 general genetics)
CMB 482 (3) Proteins & Enzymes (pre-req biochemistry BCH311 or CMB311)
CMB 435 (3) Introduction to Biology and Genetics of Cancer (Howlett, Fall)

By approval: other 300-level and above courses related to the major.

NOTE: These are courses that have been offered recently. No guarantee they will be offered every year: See each Department for schedule and permissions. (Updated February 23, 2018)

B.S in Pharmaceutical Sciences (2018-2019 Catalog)

Class of 2022

Requirements by Year

For course titles and pre-requisite information, please visit: uri.edu/catalog

Fall	Spring	Milestones
Year One		
CHM 101/102	CHM 112/114	Complete all CHM, MTH,and BIO course work w/C- or better
BIO 101/103	BIO 220/221	
MTH 103 or MTH 131	MTH 131 (or if completed, Gen Ed)	Pre-Professional GPA of 2.30
COM 100 or Gen Ed	WRT 106 or Gen Ed	Cumulative GPA of 2.0
URI 101	Gen Ed (optional)	Complete 30 cr.
(15-16 cr. total)	(14-18 cr. total)	

Year Two		
CHM 227	CHM 226 or BPS345	Meet progression standards for move from UC to College of Pharmacy
BIO 222/223	CHM 228	
CMB 201	CMB 311	Cumulative GPA of 2.0 or higher
ECN 201 or Gen Ed	STA 308 or 307	Pre-Professional GPA of 2.3 or higher
BPS 250	Gen Ed	Complete CHM, CMB, BIO, and STA coursework with C- or higher
(15-16 cr. total)	(15-17 cr. total)	Complete 60 cr.

Year Three		
BPS 301	BPS 325	Advanced knowledge of Pharmacology, Medicinal Chemistry, Pharmaceutics and Compounding
BPS 315	BPS 425	
BPS 313	BPS 443	
BPS 401	BPS 402	Maintain 2.3 cumulative GPA
BPS 345 or CHM 226	BPS 306	Complete all upper level BSPS coursework with a C- or higher
Gen Ed	BSPS Prof. Elective *Suggested BPS 498* or Gen Ed	Complete 90 cr.
(16-18 cr total)	(15-16 cr total)	

Year Four		
BPS 442	BSPS Prof. Elective *Suggested BPS 445*	Knowledge of Pharmacogenomics, Laboratory Methods, and Pharmakinetics
BPS 451	BSPS Prof. Elective *Suggested BPS 446*	
BSPS Professional Elective opt. or Gen Ed	BSPS Prof. Elective	
BSPS Professional Elective	Gen Ed	Maintain 2.3 cumulative GPA, C- or higher in all upper level BSPS coursework
Gen Ed	Gen Ed *optional*	
(16-17 cr total)	(12-17 cr. total)	2.0 GPA, complete 120 cr. for graduation

Note: This plan is not intended to be prescriptive. Credits in transfer, as well as summer or j-term coursework, may result in deviations from the above recommendations.