

Pharmaceutical Manufacturing and Formulation Minor

Department of Biomedical and Pharmaceutical Sciences

Pharmaceutical science involves a broad range of scientific disciplines critical to the discovery and development of new drugs and therapeutics. A minor in pharmaceutical manufacturing and formulation will provide engineering major students the opportunity to gain an introduction into this field, with the potential to enhance their career opportunities in pharmaceutical manufacturing and formulation sciences.

The pharmaceutical manufacturing and formulation minor is comprised of a minimum of 18 credit hours, at least half of which must be earned at URI, including 9 credits in "Pharmaceutical Manufacturing and Formulation Fundamentals" and 9 credits in "Supporting Courses" from the approved list below.

Students declaring this minor must earn a minimum grade point average of 2.00 in courses counted towards the minor. Students will need to complete the pharmaceutical manufacturing and formulation minor form and have it signed by the minor coordinator, Dr. Roberta King (rking@uri.edu). Students are responsible for meeting the prerequisite requirements for individual courses, as applicable. Permission numbers for BPS-coded courses will be provided by the minor coordinator.

The required courses (BPS301, 315, 425) are typically taken in the student's junior year of chemical engineering curriculum. To receive permission numbers for enrollment, fill out this form and present to the minor coordinator for signature and permission numbers. The supporting courses are typically taken the student's junior and senior year.

Pharmaceutical Manufacturing and Formulation Fundamentals (9 credits):

<u>Code</u>	<u>Description</u>	<u>Credits</u>
BPS 301	Dosage Forms I (Fall term, every year)	2
BPS 315	Pharmaceutics II (Fall term, every year)	4
BPS 425	GMPs in the Manufacture of Pharmaceutical Products (Spring term)	3

Supporting Courses* (9 credits):

BPS 443	Formulation and Manufacturing Lab (Spring term, every year)	2
BPS 446	Biotech/Biologics/Biosimilars (Spring term, every year)	3
BPS 426	cGMP Risks, Control, Monitoring (term offering varies)	3
BPS 352	Personal Cosmetics (term offering varies)	3
CHE/BPS 540	Advanced Drug Delivery Systems (term offering varies)	3
CHE/BPS 550	Bionanotechnology (term offering varies)	3
BPS 497/8**	Independent Study	3
CHE 491/2**	Independent Study	3

* For CHE students, 6 credits of the supporting courses need to be CHE coded courses to fulfill the Professional Elective requirements for your degree.

** Students must get permission from the minor coordinator prior to undertaking independent study research with a BPS or CHE faculty member.

*** It is recommended that CHE students take CMB 311 rather than CHM 228.

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- Interested students may declare a “**Minor in Pharmaceutical Manufacturing and Formulation**” field of study, which will be listed on the student’s academic record after graduation. Requirements of the minor are satisfied by completing 18 credit hours from the approved course list. A minimum GPA of 2.00 must be earned in these courses. At least one-half of the credits must be earned at the University of Rhode Island.
- The following application must be filed in the Engineering Academic & Student Affairs Office as soon as courses are selected and approved by the Pharmaceutical Science minor coordinator (Dr. Roberta King (rking@uri.edu)). Permission numbers for BPS coded courses will be provided by the minor coordinator upon approval of this form.

Student Name: _____

Student ID Number: _____

Major: _____ Chemical Engineering _____

Intended Graduation Date (mm/yy): _____

Name of Minor: Pharmaceutical Manufacturing and Formulation

Course Number	Course Title	Credit	Grade	Semester and year	Enrollment Permission number
BPS 301	Pharmaceutics I: Biopharmaceutics	2		Fall	
BPS 315	Pharmaceutics II	4		Fall	
BPS 425	GMPs in the Manufacture of Pharmaceutical Products	3		Spring	
*9 cr of supporting courses					
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*					
*					
*					
TOTAL CREDITS		18			

Pharmaceutical Manufacturing and Formulation Minor Coordinator’s Signature

Date

Engineering Assistant/Associate Dean’s Signature

Date

Posted on e-campus Date:

***Supporting Courses** (9 credits from list):

BPS 443 Formulation and Manufacturing Lab	2
BPS 446 Biotech/Biologics/Biosimilars	3
BPS 426 cGMP Risks, Control, Monitoring	3
BPS 352 Personal Cosmetics	3
CHE/BPS 540 Advanced Drug Delivery Systems	3
CHE/BPS 550 Bionanotechnology	3
BPS 497/8** Independent Study (Special Problems)	3
CHE 491/2** Independent Study	3

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