

# MILLERSVILLE UNIVERSITY

Student Name:

Student I.D. #:

DEGREE: BS

MAJOR: CHEM

OPTION: 3+ 4 PRE-PHARM

**MAJOR REQUIREMENTS FOR A BS  
DEGREE IN  
CHEMISTRY**

Total credit hours required: 120 minimum

## **REQUIREMENTS AND POLICIES FOR THE BS CHEMISTRY MAJOR, 3+4 PRE-PHARMACY OPTION**

### **A. Policies for Admission to the Major**

1. New students (freshmen and transfers) must be admitted to the Chemistry major by the Office of Admissions upon admission to the University.
2. Admission into the Chemistry major from other departments is upon approval of the chairperson of the Chemistry Department.
3. Non-degree and continuing education students must be admitted to the Chemistry major by the Office of Admissions.

### **B. Policies for Retention in the Major**

1. University requirements for retention.
2. The student is required to maintain an overall 3.00 grade point average and a science 3.00 grade point average. If not, it is recommended that courses be repeated to meet the requirement or that there be a change of major.
3. Chemistry majors are required to have a 2.00 grade or better in Chemistry courses required for the major at the 100 and 200 level before proceeding to a new course for which it is a prerequisite. (Currently, these courses include: CHEM 111, 112, 231, 232, 251, and 265).

### **C. Policies for Completion of the Major**

1. Completion of all University curricular requirements.
2. Completion of this degree is dependent on student admission to a 4-year Pharm. D. degree program and successful completion of the first year pharmacy program coursework.
3. Students who do not successfully complete the first year coursework in a pharmacy program will have to change their option in the Chemistry degree and complete the requirements for that degree program at Millersville University.

**Note to the Student:** *This form is provided as a guide. It is your responsibility to consult regularly with your advisor to be aware of changes and curriculum details which are not incorporated on this form.*

## MAJOR SEQUENCE AND DEGREE REQUIREMENTS

Major: **BS CHEMISTRY**  
 Option: **3 + 4 PRE-PHARMACY**  
 Major Field Requirements: **37.0 Credits**  
 Other Requirements: **64.0 Credits**

When applicable, up to six of the **REQUIRED RELATED** courses may be credited toward the Liberal Arts Core subject to normal distribution rules.

Course	No.	Short Title	C.H.	Grade	Course	No.	Short Title	C.H.	Grade
<b>REQUIRED CHEMISTRY COURSES (33.0 Credits)</b>					<b>REQUIRED RELATED (28.0 credits)</b>				
CHEM	111	Intro Chemistry I	4.0	_____	<b>Mathematics (15.0 credits)</b>				
CHEM	112	Intro Chemistry II	4.0	_____	MATH	161	Calculus I	4.0	_____
CHEM	231	Organic Chem I	4.0	_____	MATH	211	Calculus II	4.0	_____
CHEM	232	Organic Chem II	4.0	_____	MATH	311	Calculus III	4.0	_____
CHEM	251	Inorganic Chem I	3.0	_____	MATH	235	Survey of Statistics	3.0	_____
CHEM	265	Quant Analysis	4.0	_____	<b>Physics (10.0 credits)</b>				
CHEM	341	Physical Chem I	4.0	_____	PHYS	231	Physics I with Calc	5.0	_____
CHEM	342	Physical Chem II	4.0	_____	PHYS	232	Physics II with Calc	5.0	_____
CHEM	487	Seminar in Chem I	0.5	_____	<b>Biology (3.0 credits)*</b>				
CHEM	488	Seminar in Chem II	0.5	_____	BIOL	100	General Biology	3.0	_____
CHEM	498	Research	1.0	_____					
<b>CHEMISTRY ELECTIVES (4.0 Credits)</b>									
CHEM	300	Co-op in Chem	3.0	_____					
CHEM	375	Environmental Chem	4.0	_____					
CHEM	381	Polymer Chemistry I	4.0	_____					
CHEM	391	Advanced Lab I	1.0	_____					
CHEM	392	Advanced Lab II	1.0	_____					
CHEM	435	Advanced Organic Chem	3.0	_____					
CHEM	452	Inorganic Chem II	3.0	_____					
CHEM	465	Analytical Chem	4.0	_____					
CHEM	486	Topics in Chemistry	1-4	_____					
CHEM	489	Department Honors	1-3	_____					
CHEM	498	Independent Study	1-3	_____					
CHEM	499	Department Honors	1-3	_____					
<b>1<sup>st</sup> Year Pharmacy School COURSES (19.0)</b>									
_____	_____	_____	_____	_____					
_____	_____	_____	_____	_____					
_____	_____	_____	_____	_____					
_____	_____	_____	_____	_____					

\***Note:** grade requirement (B- or better)

**BACHELOR OF SCIENCE IN CHEMISTRY  
3 + 4 PRE-PHARMACY OPTION  
RECOMMENDED PROGRAM**

**FIRST SEMESTER**

CHEM	111	Intro Chem I.	4.0
UNIV	103	Chemistry Freshman Seminar	3.0
MATH	161	Calculus I	4.0
ENGL	110	English Composition	3.0
MATH	235	Survey of Statistics	<u>3.0</u>
		<i>Total S.H.</i>	17.0

**SECOND SEMESTER**

CHEM	112	Intro Chem II	4.0
MATH	211	Calculus II	4.0
COMM	100	Fund. Of Speech	3.0
CHEM	251	Inorganic I	3.0
_____	_____	Humanities Course #1	<u>3.0</u>
		<i>Total S.H.</i>	17.0

**THIRD SEMESTER**

CHEM	231	Organic I	4.0
PHYS	231	Physics I	5.0
MATH	311	Calculus III	4.0
CHEM	_____	Chemistry Elective	<u>4.0</u>
		<i>Total S.H.</i>	17.0

**FOURTH SEMESTER**

CHEM	232	Organic II	4.0
PHYS	232	Physics II	5.0
CHEM	265	Quant. Analysis	4.0
CHEM	498	Intro to Research (Req)	1.0
_____	_____	Soc. Science Course #1	<u>3.0</u>
		<i>Total S.H.</i>	17.0

**FIFTH SEMESTER**

CHEM	341	Physical Chem I	4.0
CHEM	487	Seminar in Chem I	0.5
_____	_____	Humanities Course #2	3.0
_____	_____	Soc. Science Course #2	3.0
_____	_____	Perspectives and Diversity Course	3.0
WELL	175	Wellness	<u>3.0</u>
		<i>Total S.H.</i>	16.5

**SIXTH SEMESTER**

CHEM	342	Physical Chem II	4.0
CHEM	488	Seminar in Chem II	0.5
ENGL	3XX	Advanced Writing	3.0
_____	_____	General Biology	3.0
BIOL	100	Humanities Course #3	3.0
_____	_____	Soc. Science Course #3	<u>3.0</u>
		<i>Total S.H.</i>	16.5

**PHARMACY SCHOOL (19.0)**

**SEVENTH SEMESTER**

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**EIGHTH SEMESTER**

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**COMMENTS, NOTES OR RECOMMENDATIONS:**

1. Students must successfully complete the above courses with a minimum of "C" for each course, an overall GPA of 3.0, a science GPA of 3.0 (on a 4.0 scale), and adhere to all University policies.
2. To satisfy the three W courses requirement, one of the GenEd courses needs to be a writing course.
3. Courses in Psychology, Sociology, Economics, and Ethics are strongly recommended.