

**B.A. Degree in Chemistry**  
**Emphasis in Biological Chemistry**  
**Pre-Pharmacy Orientation**

<http://www.mnstate.edu/jasperse/PrePharmacy/Pharmacy.html>

The following is a sample schedule for both completing pre-pharmacy requirements while also satisfying the requirements to graduate with a B.A. Degree in Chemistry with Emphasis in Biological Chemistry.

- The schedule is sufficiently general to cover the requirements of most all pharmacy schools.
- Many of the science classes are offered only in the fall or the spring, and many of these need to be taken in correct sequence in order to satisfy prerequisites.
- Exceptional students might take the PCAT (pharmacy college admissions test) during/before their junior year, and might be able to be admitted into pharmacy school after their junior year.

FALL	FRESHMAN YEAR			DC
BIOL 115	Organismal Biology (lab)	4	4IL	
Chem 150	Gen Chem I (lab)	4	4IL	
ENGL 101	English Composition <sup>1</sup>	4	1B	
CMST 100	Speech Communication <sup>1</sup>	3	1A	
Hlth 122	Personal Health/Wellness	1		
	Total Credits	16		

SPRING				DC
BIOL 111	Cell Biology (lab)	4		
Chem 210	Gen Chem II (lab)	4		
Math 142	Precalculus I <sup>2</sup>	4	3	
Phil 110	Practical Reasoning <sup>1</sup>	3	2	
	Total Credits	15		

FALL	SOPHOMORE YEAR			
Chem 350	Organic Chem I	3		
Chem 355	Organic Chem Lab I	1		
BIOL 323	Human Anatomy	4		
PHYS 200	Physics I <sup>5</sup>	4	4I	
	Elective	3		
	Total Credits	15		

SPRING				
Chem 360	Organic Chem II	3		
Chem 365	Organic Chem Lab II	1		
Chem 380	Analytical Chem (lab)	4		
PHYS 201	Physics II	4		
	Elective <sup>4</sup>	3		
	Total Credits	15		

FALL	JUNIOR YEAR			
BIOL 350	Microbiology	4		
Chem 400	Biochemistry I	3		
Chem 405	Biochemistry I Lab	1		
Chem 300	Inorganic Chem I	3		
	Elective	3		
	Total Credits	14		

SPRING				
BIOL 349	Human Physiology	4		
Chem 410	Biochemistry II	3		
Chem 415	Biochemistry II Lab	1		
Math 261	Calculus I	4		
	Electives	3		
	Total Credits	15		

FALL	SENIOR YEAR			
Chem 450	Physical Chem I	3		
Chem 455	Physical Chem Lab I	1		
BIOL 341	Genetics (lab)	4		
Math 262	Calculus II <sup>3</sup>	4		
	Elective	3		
	Total Credits	15		

SPRING				
Chem 498	Chemistry Seminar	1		
ENGL 387	Tech Report Writing	4		
	Electives	10		
	Total Credits	15		

<sup>1</sup> These are standard Dragon Core courses, but others can be taken in their place.

<sup>2</sup> ACS math scores or a mathematics placement exam is needed to inform whether a student should begin directly in calculus or in a different math class.

<sup>3</sup> Math 234 can be taken in addition to or instead of Calculus II.

<sup>4</sup> In considering electives, keep in mind that eventually at least 8 credits of Biology in the 300/400 level must be taken, and all of the Dragon Core requirements must be fulfilled.

<sup>5</sup> If a student has not taken Calculus, Physics 160/161 can be taken instead of Physics 200/201.

## Curriculum Planning

<b>Dragon Core Checksheet</b>			
<b>Foundation Four</b>			
		Grade	Credits W?
1A	Oral Communication	_____	
1B	Written Communication (W)	_____	
2	Critical Thinking	_____	
3	Mathematics/Symbolic	_____	
<b>Inner Cluster Electives &amp; Middle Cluster – Competency Areas 3-7, seven courses total</b>			
		Grade	Credits W?
3	Mathematical/Symbolic Systems (optional)		
3I or			
3M		_____	
4	Natural Sciences (One Lab Class Required)		
4I or			
4M		_____	
4I or			
4M			
5	History and the Social Sciences		
5I or			
5M		_____	
5I or			
5M			
6	Humanities		
6I or			
6M		_____	
6I or			
6M			
7	Human Diversity		
7I or			
7M		_____	
7I or			
7M		_____	
<b>Outer Cluster – Competency Areas 8-10, three courses total</b>			
		Grade	Credits W?
8	Global Perspective	_____	
9	Ethical and Civic Responsibility	_____	
10	People and the Environment	_____	
<b>Total Dragon Core Credits:</b>			
<b>(Minimum 14 courses and 42 credits)</b>			
<b>Writing Intensive Requirements</b>			
W 1 (1B)		_____	
W 2 (MC or OC)		_____	
W 3 (MC or OC, 300-400 level)		_____	
W 4 (Major, 300-400 level)		Chem 405	
W 5 (any W course, 200-400 level)		ENGL 387	

<b>Core Requirements</b>	23 credits 15 ≥300	When Offered	Credits	Grade
CHEM 150/150L	General Chemistry I	F/Sp/Sum	4	
CHEM 210/210L	General Chemistry II	F/Sum	4	
CHEM300	Inorganic Chem I	F	3	
CHEM 350	Organic Chem I	F	3	
CHEM 355	Organic Chem Lab I	F	1	
CHEM 360	Organic Chem II	Sp	3	
CHEM 380/380L	Analytical Chem I	Sp	4	
CHEM 498	Seminar	Sp	1	
<b>Requirements</b>	21 credits 17 ≥300			
CHEM 365	Organic Chem Lab II	Sp	1	
CHEM 400	Biochemistry I	F	3	
CHEM 405	Biochemistry Lab I	F	1	
CHEM 410	Biochemistry II	Sp	3	
CHEM 415	Biochemistry Lab II	Sp	1	
CHEM 450	Physical Chem I	F	3	
CHEM 455	Physical Chem Lab I	F	1	
BIOL 111/111L	Cell Biology	Sp	4	
BIOL 341/341L	Genetics	F	4	
<b>Restricted Electives</b>	12 credits 8 ≥300			
BIOL	Biology Elective		4	
BIOL ≥300	Biology Elective		4	
BIOL ≥300	Biology Elective		4	
<b>Related Requirements</b>	20 credits 4 ≥300			
ENGL 387	Tech Report Writing	F/Sp	4	
MATH 261	Calculus I	F/Sp	4	
MATH 262 or MATH 234	Calculus II or Probability/Statistics	F/Sp	4	
PHYS 200/200L or 160+160L	Physics I	F	4	
PHYS 201/201L or 161+161L	Physics II	Sp	4	