

# B.A. Degree in Chemistry

## Emphasis in Chemical Physics

The following is a sample schedule to help students plan their coursework. These are suggestions and the schedule is flexible. In addition to fulfilling the courses specifically required for this chemistry degree, it is important that students also fulfill Dragon Core requirements and normal graduation requirements (at least 120 total credits, at least 40 upper/division credits [300/400 level], and a GPA of at least 2.0.)

FALL		FRESHMAN YEAR		DC
Chem	150	Gen Chem I (lab)	4	4IL
ENGL	101	English Composition <sup>1</sup>	4	1B
Math	261	Calculus I <sup>2</sup>	4	
CMST	100	Speech Communication <sup>1</sup>	3	1A
Hlth	122	Personal Health/Wellness	1	
Total Credits			16	

SPRING				DC
Chem	210	Gen Chem II (lab)	4	
Math	262	Calculus II <sup>3</sup>	4	
Phil	110	Practical Reasoning <sup>1</sup>	3	2
Electives <sup>4</sup>			3	
Total Credits			14	

FALL		SOPHOMORE YEAR		
Chem	350	Organic Chem I	3	
Chem	355	Organic Chem Lab I	1	
PHYS	200	Physics I <sup>5</sup>	4	4I
Electives <sup>4</sup>			7	
Total Credits			15	

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

FALL		JUNIOR/SENIOR YEARS		
Chem	450	Physical Chem I <sup>6</sup>	3	
Chem	455	Physical Chem Lab I <sup>6</sup>	1	
Chem	300	Inorganic Chem I	3	
PHYS	202	Physics III	4	
Electives <sup>4</sup>			19	
Total Credits			30	

SPRING		JUNIOR/SENIOR Years		
Chem	460	Physical Chem II (even yrs) <sup>6</sup>	3	
Chem	465	Physical Chem Lab II <sup>6</sup>	1	
Chem	498	Chemistry Seminar	1	
ENGL	387	Tech Report Writing	4	
Electives <sup>4</sup>			21	
Total Credits			30	

<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 can begin directly in calculus or a different math class.

<sup>3</sup> Math 234 or 244 can be taken in addition to Calculus II. Taking Math 234 or 244 enables Calculus I to satisfy Dragon Core competency 3 (Foundation Four) and the statistics class would then additionally satisfy Dragon Core 3M.

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

<sup>5</sup> Calculus I (Math 261) is a prerequisite for Physics 200/201.

<sup>6</sup> Physical Chemistry I is offered every fall, but Physical Chemistry II is only offered during the spring of even-numbered years.

### Curriculum Planning

<u>Dragon Core Checksheet</u>			
<u>Foundation Four</u>			
		Grade	Credits W?
1A	Oral Communication	_____	_____
1B	Written Communication (W)	_____	_____
2	Critical Thinking	_____	_____
3	Mathematics/Symbolic	_____	_____
<u>Inner Cluster Electives &amp; Middle Cluster – Competency Areas 3-7, seven courses total</u>			
		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	_____	_____
<u>Outer Cluster – Competency Areas 8-10, three courses total</u>			
		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>			
<u>Writing Intensive Requirements</u>			
W 1 (1B)		_____	_____
W 2 (MC or OC)		_____	_____
W 3 (MC or OC, 300-400 level)		_____	_____
W 4 (Major, 300-400 level)	ENGL 387	_____	_____
W 5 (any W course, 200-400 level)		_____	_____

<u>Core Requirements</u>		When Offered	Credits	Grade
	23 credits			
	15 $\geq$ 300			
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	
<u>Requirements</u>	12 credits			
	9 $\geq$ 300			
CHEM 365	Organic Chem Lab II	Sp	1	
CHEM 450	Physical Chem I	F	3	
CHEM 455	Physical Chem Lab I	F	1	
CHEM 460	Physical Chem II	Sp (even years)	3	
CHEM 465	Physical Chem Lab II	Sp (even years)	1	
PHYS 202	General Physics III	F	3	
<u>Restricted Electives</u>	13 credits			
	13 $\geq$ 300			
Physics $\geq$ 300	Physics Electives		9	
CHEM/PHYS/ BIOL/MATH/ CSIS $\geq$ 300	Electives		4	
<u>Related Requirements</u>	20 credits			
	4 $\geq$ 300			
ENGL 387	Tech Report Writing	F/Sp	4	
MATH 261	Calculus I	F/Sp	4	
MATH 262	Calculus II	F/Sp	4	
PHYS 200/200L or 160+160L	Physics I	F	4	
PHYS 201/201L or 161+161L	Physics II	Sp	4	