

# B.A. Degree in Chemistry

## Emphasis in Computational Chemistry

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
CSIS	152	Comp. Programming I	4	
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
Chem	210	Gen CHEM II (lab)	4	
CSIS	252	Comp. Programming II	4	
Phil	110	Practical Reasoning <sup>1</sup>	3	2
Electives <sup>3</sup>			3	
Total Credits			14	

FALL		SOPHOMORE YEAR	
CHEM	350	Organic Chem I	3
CHEM	355	Organic Chem Lab I	1
MATH	261	Calculus I <sup>2</sup>	4
Electives <sup>3</sup>			7
Total Credits			15

SPRING			
CHEM	360	Organic Chem II	3
CHEM	365	Organic Chem Lab II	1
MATH	262	Calculus II	4
CSIS	352	Advanced Programming	4
Electives <sup>3</sup>			3
Total Credits			15

FALL		JUNIOR YEAR	
CHEM	300	Inorganic Chem I <sup>5</sup>	3
PHYS	200	Physics I <sup>4</sup>	4
CHEM	400	Biochemistry I	3
CHEM	4055	Biochemistry Lab I	1
Electives <sup>3</sup>			4
Total Credits			15

SPRING		JUNIOR YEAR	
CHEM	380	Analytical Chem (lab)	4
PHYS	201	Physics II	4
Electives <sup>3</sup>			7
Total Credits			15

FALL		SENIOR YEAR	
CHEM	450	Physical Chem I <sup>5</sup>	3
CHEM	455	Physical Chem Lab I <sup>5</sup>	1
Electives <sup>3</sup>			11
Total Credits			30

SPRING		SENIOR YEAR	
CHEM	498	Chemistry Seminar	1
ENGL	387	Tech Report Writing	4
Electives <sup>3</sup>			10
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> In considering electives, keep in mind that elective courses must cover Dragon Core requirements, as well as restricted electives in the areas of CSIS and chemistry.

<sup>4</sup> Calculus I (Math 261) is a prerequisite for Physics 200/201.

<sup>5</sup> Inorganic Chemistry I and Physical Chemistry I are both offered every fall, but Inorganic Chemistry II and Physical Chemistry II are only offered during alternating springs. (Inorganic Chem II in odd-numbered years, Physical Chemistry II in 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)		Chem 405	
W 5 (any W course, 200-400 level)		ENGL 387	

<u>Core Requirements</u>	23 credits 15 $\geq$ 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	
<u>Requirements</u>	20 credits 12 $\geq$ 300			
CHEM 365	Organic Chem Lab II	Sp	1	
CHEM 400	Biochemistry I	F	3	
CHEM 405	Biochemistry Lab I	F	1	
CHEM 450	Physical Chem I	F	3	
CHEM 455	Physical Chem Lab I	F	1	
CSIS 152	Comp/Program I	F/Sp	4	
CSIS 252	Comp/Program II	F/Sp	4	
CSIS 352	Adv. Programming	Sp	3	
<u>Restricted Electives</u>	10 credits 10 $\geq$ 300			
CHEM	CHEM Elective		4	
CSIS	CSIS Elective		3	
CSIS	CSIS Elective		3	
<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	