

B.A. Degree in Chemistry

Emphasis in Mathematical 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 |
| Math | 261 | Calculus I ¹ | 4 | |
| Math | 260 | Computer Calculus | 1 | |
| ENGL | 101 | English Composition ² | 4 | 1B |
| CMST | 100 | Speech Communication ² | 3 | 1A |
| Total Credits | | | 16 | |

| SPRING | | | | DC |
|------------------------|-----|----------------------------------|----|----|
| Chem | 210 | Gen Chem II (lab) | 4 | |
| Math | 262 | Calculus II | 4 | |
| Phil | 110 | Practical Reasoning ² | 3 | 2 |
| Hlth | 122 | Personal Health/Wellness | 1 | |
| Electives ³ | | | 3 | |
| Total Credits | | | 15 | |

| FALL | | SOPHOMORE YEAR | |
|------------------------|-----|----------------------------|----|
| Chem | 350 | Organic Chem I | 3 |
| Chem | 355 | Organic Chem Lab I | 1 |
| Math | 323 | Multivariable Vector Calc. | 4 |
| Electives ³ | | | 7 |
| Total Credits | | | 15 |

| SPRING | | | |
|------------------------|-----|-----------------------|----|
| Chem | 360 | Organic Chem II | 3 |
| Chem | 365 | Organic Chem Lab II | 1 |
| Chem | 380 | Analytical Chem (lab) | 4 |
| Electives ³ | | | 7 |
| Total Credits | | | 15 |

| FALL | | JUNIOR YEAR | |
|------------------------|-----|-------------------------------|----|
| Chem | 300 | Inorganic Chem I ⁵ | 3 |
| PHYS | 200 | Physics I ⁴ | 4 |
| Electives ³ | | | 8 |
| Total Credits | | | 15 |

| SPRING | | JUNIOR YEAR | |
|------------------------|-----|----------------------------|----|
| Math | 234 | Probability and Statistics | 4 |
| PHYS | 201 | Physics II | 4 |
| Electives ³ | | | 7 |
| Total Credits | | | 15 |

| FALL | | SENIOR YEAR | |
|------------------------|-----|----------------------------------|----|
| Chem | 450 | Physical Chem I ⁵ | 3 |
| Chem | 455 | Physical Chem Lab I ⁵ | 1 |
| Electives ³ | | | 11 |
| Total Credits | | | 30 |

| SPRING | | SENIOR YEAR | |
|------------------------|-----|---------------------|----|
| Chem | 498 | Chemistry Seminar | 1 |
| ENGL | 387 | Tech Report Writing | 4 |
| Electives ³ | | | 10 |
| Total Credits | | | 30 |

¹ ACT math scores or a mathematics placement exam is needed to inform whether a student can begin directly in calculus or a different math class.

² These are standard Dragon Core courses, but others can be taken in their place.

³ In considering electives, keep in mind that elective courses must cover Dragon Core requirements, as well as restricted electives in the areas of math and chemistry.

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

⁵ 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).



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Curriculum Planning

| <u>Dragon Core Checksheet</u> | | | |
|---|---|-------|---------|
| <u>Foundation Four</u> | | | |
| | | Grade | Credits |
| 1A | Oral Communication | _____ | W? |
| 1B | Written Communication (W) | _____ | |
| 2 | Critical Thinking | _____ | |
| 3 | Mathematics/Symbolic | _____ | |
| <u>Inner Cluster Electives & Middle Cluster – Competency Areas 3-7, seven courses total</u> | | | |
| | | Grade | Credits |
| 3 | Mathematical/Symbolic Systems (optional) | | |
| | 3I or 3M | _____ | |
| 4 | Natural Sciences (One Lab Class Required) | | |
| | 4I or 4M | _____ | |
| 5 | History and the Social Sciences | | |
| | 5I or 5M | _____ | |
| 6 | Humanities | | |
| | 6I or 6M | _____ | |
| 7 | Human Diversity | | |
| | 7I or 7M | _____ | |
| <u>Outer Cluster – Competency Areas 8-10, three courses total</u> | | | |
| | | Grade | Credits |
| 8 | Global Perspective | _____ | |
| 9 | Ethical and Civic Responsibility | _____ | |
| 10 | People and the Environment | _____ | |
| Total Dragon Core Credits: | | | |
| (Minimum 14 courses and 42 credits) | | | |
| <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> | 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 | |
| <u>Requirements</u> | 18 credits 9 ≥300 | | | |
| CHEM 365 | Organic Chem Lab II | Sp | 1 | |
| CHEM 450 | Physical Chem I | F | 3 | |
| CHEM 455 | Physical Chem Lab I | F | 1 | |
| MATH 260 | Computer Calc | F/Sp | 1 | |
| MATH 261 | Calculus I | F/Sp | 4 | |
| MATH 262 | Calculus II | F/Sp | 4 | |
| MATH 323 | Multivar./Vector Calculus | F/Sp | 4 | |
| <u>Restricted Electives</u> | 13 credits 13 ≥300 | | | |
| CHEM | CHEM Elective | | 4 | |
| MATH | MATH Electives | | 6 | |
| CHEM/PHYS/ BIOL/MATH/ CSIS | Elective | | 3 | |
| <u>Related Requirements</u> | 12 credits 4 ≥300 | | | |
| ENGL 387 | Tech Report Writing | F/Sp | 4 | |
| PHYS 200/200L | General Physics I | F | 4 | |
| PHYS 201/201L | General Physics II | Sp | 4 | |