

**College of Science
Department of Chemistry
Bachelor of Arts in Chemistry
Major in Chemistry
for students graduating in Calendar Year 2018^{1, 2, 3, 4, 5}**

PART 1: CURRICULUM FOR LIBERAL EDUCATION (CLE) REQUIREMENTS

(CLE requirements and approved courses are available online:

<http://www.cle.prov.vt.edu/guides/index.html>)

(credit hours in parentheses)

- I. Writing and Discourse** (Area 1: 6 credits + ViEWS)
ENGL 1105-1106⁶ First-Year Writing & ViEWS requirement⁷ (3) _____, (3) _____
(3) _____
- II. Ideas, Cultural Traditions, and Values** (Area 2: 6 credits required) (3) _____, (3) _____
- III. Society and Human Behavior** (Area 3: 6 credits required) (3) _____, (3) _____
- IV. Scientific Reasoning and Discovery** (Area 4)⁸ (3) _____, (3) _____
- V. Quantitative and Symbolic Reasoning** (Area 5)⁹
- VI. Creativity and Aesthetic Experience** (Area 6: 3 credits required) (3) _____
(Select from approved CLE courses; must be a three-credit course.)
- VII. Critical Issues in a Global Context** (Area 7: 3 credits required) (3) _____

PART 1: (CLE) credit hour requirement:

24 credits

PART 2: COLLEGE AND DEPARTMENT REQUIREMENTS

- I. Chemistry Courses** (35 credits)⁴
 - CHEM 1055-1056^{1, 6} General Chemistry for Majors (4) _____, (4) _____
 - CHEM 1065-1066^{6, 10, 11} General Chemistry for Majors lab (1) _____, (1) _____
 - CHEM 2154¹² Analytical Chemistry for Majors (4) _____
 - CHEM 2164¹³ Analytical Chemistry for Majors lab (1) _____
 - CHEM 2424 Descriptive Inorganic Chemistry (3) _____
 - CHEM 2565-2566^{1, 14} Principles of Organic Chemistry (3) _____, (3) _____
 - CHEM 2545 -2546 Organic Chemistry lab (1) _____, (1) _____
 - CHEM 2984 Chemistry First-Year Experience (1) _____
 - CHEM 4615-4616¹⁵ Physical Chemistry for Life Sciences (3) _____, (3) _____
 - CHEM 3625 Physical Chemistry lab (1) _____
 - CHEM 4014 Survey of Chemical Literature (1) _____
- II. Mathematics Courses** (9 credits)
 - MATH 1025-1026^{6, 16, 17} Elementary Calculus (3) _____, (3) _____
 - MATH 2024¹⁸ Intermediate Calculus (3) _____
- III. Physics Courses** (8 credits)
 - PHYS 2205¹⁹ - 2206²⁰ General Physics (3) _____, (3) _____
 - PHYS 2215¹⁹ - 2216²⁰ General Physics Lab (1) _____, (1) _____
- IV. Technical Electives** (9 credits)
 - STAT or CS course Statistics or Computer Science elective (3) _____
 - CHEM 3xxx-4xxx^{21, 22} CHEM/BCHM/CHE electives (3) _____, (3) _____
- V. FREE ELECTIVES** (sufficient to achieve 120 credit graduation requirement or more)
 - () _____ () _____ () _____ () _____
 - () _____ () _____ () _____ () _____

PART 2: College and department credit hour requirement:

96 credits

- ¹ MINIMUM GRADE REQUIREMENT: Chemistry majors must earn a grade of "C" (2.0) or better in CHEM 1055, 1056, and 2565.
 - If a chemistry major fails to earn a "C" (2.0) or better in CHEM 1055, the student must either retake this class (and earn the minimum grade) **or** take CHEM 1035-1036, *General Chemistry*, to remain in good standing for a chemistry degree. If the chemistry major elects to take CHEM 1035-1036, a minimum grade of "B" (3.0) is required in both in order to enroll in CHEM 2565 and progress towards the B.A. degree.
 - If a chemistry major fails to earn a "C" (2.0) or better in CHEM 2565, the student must either retake this class (and earn the minimum grade) **or** take CHEM 2535, *Organic Chemistry*, to remain in good standing for a chemistry degree. If the chemistry major elects to take CHEM 2535, a minimum grade of "B" (3.0) is required to count CHEM 2535 as CHEM 2565 for the CHEM degree.
- ² This checksheet has no hidden prerequisites, although some of the courses listed are prerequisites for other courses. Please see your advisor or consult the Undergraduate Course Catalog for more information.
- ³ Credit hours and GPA requirements: Graduation requires completion of a minimum of 120 credit hours with a GPA of 2.0 or greater for all hours attempted. In addition, students must have an in-major GPA of 2.0 or greater counting all required chemistry courses and chemistry electives. The in-major CHEM GPA excludes Introduction to Chemistry (CHEM 1015, 1016, 1025, 1026), Chemistry First-Year Experience, and Chemical Problem Solving Skills. No more than 6 hours of CHEM 2974, 4974, and 4994 will be included in a student's in-major GPA.
- ⁴ Effective Spring 2015, chemistry majors must maintain an in-major GPA of 2.0. If a chemistry major fails to meet this requirement for one academic term the student will be placed on Policy 91 (Satisfactory Progress Towards Degree) probation. Failure to meet the standard for two consecutive semesters will result in a Policy 91 suspension.
- ⁵ Language study requirement: The College of Science language requirement may be met by (1) completing 3 years of a single foreign or classical language in high school; (2) earning 6 semester hours of college-level foreign or classical language credit or American Sign Language; or (3) receiving credit-by-examination for a foreign or classical language or American Sign Language. (See the Undergraduate Catalog for more information.) Credits to satisfy the Language Study Requirement are in addition to the 120-credit graduation requirement.
- ⁶ For "satisfactory progress towards degree," these courses and their prerequisites must be completed by the time the student has attempted 72 hours.
- ⁷ CHEM 4014 satisfies part of the chemistry ViEWS (Visual Expression, Writing and Speaking) requirement. Chemistry B.A. majors may take three credits of Undergraduate Research, CHEM 4994(H), and make a poster presentation to satisfy the remaining ViEWS requirement within chemistry. Other options for satisfying ViEWS are pursuing a second major, taking ENGL 3764 Technical Writing, and taking COMM 2004 Public Speaking.
- ⁸ Fulfilled by PHYS 2205, 2206, 2215, and 2216 or by PHYS 2305-2306.
- ⁹ Fulfilled by MATH 1025-1026 or by MATH 1225-1226.
- ¹⁰ Prior credit for CHEM 1045 may be substituted for CHEM 1065.
- ¹¹ Prior credit for CHEM 1046 may be substituted for CHEM 1066.
- ¹² Effective Fall 2014, if a student has taken CHEM 2114 prior to adding a degree in chemistry, a minimum grade of "B" (3.0) or better is required in order to substitute CHEM 2114 as CHEM 2154.
- ¹³ Effective Fall 2014, if a student has taken CHEM 2124 prior to adding a degree in chemistry, a minimum grade of "B" (3.0) or better is required in order to substitute CHEM 2124 as CHEM 2164.
- ¹⁴ Effective Fall 2014, if a student has taken CHEM 2535 prior to adding a degree in chemistry, a minimum grade of "B" (3.0) or better is required in order to substitute CHEM 2535 as CHEM 2565.
- ¹⁵ CHEM 3615 may be substituted for CHEM 4615.
- ¹⁶ MATH 1016 or MATH 1205 or MATH 1225 may be substituted for MATH 1025.
- ¹⁷ MATH 2015 or MATH 1206 or MATH 1226 (MATH 1225 prerequisite) may be substituted for MATH 1026.
- ¹⁸ MATH 2204 (MATH 1226 prerequisite) OR MATH 2224 (MATH 1224 and MATH 1206 OR 2015 prerequisite) may be substituted for MATH 2024.
- ¹⁹ PHYS 2305 (MATH 1205 prerequisite) may be substituted for PHYS 2205 and PHYS 2215.
- ²⁰ PHYS 2306 (MATH 1206 prerequisite) may be substituted for PHYS 2206 and PHYS 2216.
- ²¹ SBIO 3444 may be counted towards upper-level CHEM electives.
- ²² A biochemistry or chemical engineering student should not double-count coursework required for that major towards the chemistry upper-level elective.

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RECOMMENDED SCHEDULE

First Year		Fall	Spring
CHEM 1055, 1056	General Chemistry for Majors	4	4
CHEM 1065, 1066	General Chemistry for Majors Lab	1	1
CHEM 2984	Chemistry First-Year Experience	1	-
ENGL 1105, 1106	First-Year Writing	3	3
MATH 1025, 1026	Elementary Calculus	3	3
	Electives	3	3
	Semester Total	15	14
Second Year			
CHEM 2154	Analytical Chemistry for Chem Majors	4	-
CHEM 2164	Analytical Chemistry for Chem Majors Lab	1	-
CHEM 2565, 2566	Principles of Organic Chemistry	3	3
CHEM 2545, 2546	Organic Chemistry Lab	1	1
CHEM 4014	Survey of the Chemical Literature	-	1
CHEM 2424	Descriptive Inorganic Chemistry	-	3
MATH 2024	Intermediate Calculus	3	-
PHYS 2205, 2206	General Physics	3	3
PHYS 2215, 2216	General Physics Lab	1	1
	Elective	-	3
	Semester Total	16	15
Third Year			
CHEM 4615, 4616	Physical Chemistry for Life Sciences	3	3
CHEM 3625	Physical Chemistry Lab	-	1
STAT or CS	Statistics or Computer Science (not CS 1004)	3	-
	Electives	9	11
	Semester Total	15	15
Fourth Year			
CHEM 4xxx, 4xxx	CHEM/BCHM/CHE Electives, 3000-level or higher	3	3
	Electives	12	12
	Semester Total	15	15