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University Registrar

College of Science
Department of Chemistry
Bachelor of Arts in Chemistry
Major in Chemistry
for students graduating in Calendar Year 2019 [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 1105-1106 [6] First-Year Writing	(3) _____, (3) _____
	& **ViEWS** requirement [7]	(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]	
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 2154	Analytical Chemistry for Majors	(4) _____
	CHEM 2164	Analytical Chemistry for Majors lab	(1) _____
	CHEM 2424	Descriptive Inorganic Chemistry	(3) _____
	CHEM 2565-2566 [1, 12]	Principles of Organic Chemistry	(3) _____, (3) _____
	CHEM 2545 -2546	Organic Chemistry lab	(1) _____, (1) _____
	CHEM 2984	Chemistry First-Year Experience	(1) _____
	CHEM 4615-4616 [13]	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, 14,15]	Elementary Calculus	(3) _____, (3) _____
	MATH 2024 [16]	Intermediate Calculus	(3) _____
III.	**Physics Courses** (8 credits)		
	PHYS 2205 [17] - 2206 [18]	General Physics	(3) _____, (3) _____
	PHYS 2215 [17] – 2216 [18]	General Physics Lab	(1) _____, (1) _____
IV.	**Technical Electives** (9 credits)		
	STAT or CS course [19]	Statistics or Computer Science elective	(3) _____
	CHEM 3xxx-4xxx [20, 21]	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**

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[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. Please note: Chemistry majors are expected to be "calculus ready" upon the start of their curriculum.

[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 2215 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 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.

[13] CHEM 3615 may be substituted for CHEM 4615.

[14] MATH 1225 may be substituted for MATH 1025.

[15] MATH 1226 (MATH 1225 prerequisite) may be substituted for MATH 1026.

[16] MATH 2204 (MATH 1226 prerequisite) may be substituted for MATH 2024.

[17] PHYS 2305 (MATH 1205 prerequisite) may be substituted for PHYS 2205 and PHYS 2215.

[18] PHYS 2306 (MATH 1206 prerequisite) may be substituted for PHYS 2206 and PHYS 2216.

[19] Any three-credit STAT or CS course, with the exceptions of CS 1004 and CS 1xxx, may satisfy STAT/CS requirement for chemistry degree.

[20] SBIO 3444 may be counted towards upper-level CHEM electives.

[21] 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 nor CS 1xxx)	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