

B.S. IN CHEMISTRY
2009-10
College of Humanities and Sciences General Education Requirements

NAME _____

1. Writing : Complete each course.	Credits	Grade
UNIV 111 Focused Inquiry I		
UNIV 112 Focused Inquiry II (C grade or better required)		
ENGL 200 or academic research writing course (C grade or better required; must complete 24 credits before enrolling)		

2. Mathematics & Statistics: Take each of the following courses.	Credits	Grade
MATH 151 Precalculus	4	
MATH 200 Calculus with Analytic Geometry I	4	
MATH 201 Calculus II with Analytic Geometry II	4	
STAT 210 Basic Practice of Statistics	3	

3. Human, Social, and Political Behavior: Choose one course.	Credits	Grade
ANTH/INTL 103 Introduction to Anthropology		
ECON 101/INTL 102 Introduction to Political Economy		
HUMS 300 Great Questions of the Social Sciences		
POLI 103 U.S. Government		
PSYC 101 Introduction to Psychology (4 credits)		
SOCY 101 General Sociology		
Course Taken		

4. Science and Technology: Choose one course.	Credits	Grade
BIOL 101 Biological Concepts (3 or 4 credits)		
BIOL/ENVS 103 Environmental Science (4 credits)		
CHEM 110 Chemistry and Society		
FRSC 202 Crime and Science		
INSC 201 Energy! (prerequisite: MATH 131, STAT 208 or higher level MATH or STAT)		
PHYS 103 Elementary Astronomy		
Course Taken		

5. Diverse and Global Communities: Choose one course.	Credits	Grade
INTL 101 Human Societies and Globalization		
MASC/INTL 151 Global Communication		
POLI/INTL 105 International Relations		
RELS 108 Human Spirituality		
WMNS 201 Introduction to Women's Studies		
Course Taken		

6. Literature and Civilization: Choose one course.	Credits	Grade
ENGL 215 Readings in Literature		
HIST 201 The Art of Historical Detection		
HUMS 250 Reading Film		
PHIL 201 Critical Thinking About Moral Problems		
WRLD 203 Cultural Texts and Contexts		
WRLD 230 Introduction to World Cinema		
Course Taken		

7. General Education Electives: Choose any 2 additional courses from boxes 3, 4, 5, or 6 (must be from two different boxes).	Credits	Grade
Course Taken		
Course Taken		

8. General Education Modules: Complete each.	Credits	Grade
Experiencing the Fine Arts: successfully complete one course from the School of the Arts (1-3 credits)		
HUMS 202 Choices in a Consumer Society	1	

9. Foreign Language: Must demonstrate competency through the 102 level by previous high school background or placement test or courses below.	Credits	Grade
101 level		
102 level		

10. Senior Capstone: taken in major as a senior (after at least 85 credits)	Credits	Grade
CHEM 398 Professional Practices and Perspectives Seminar (fulfilled by major)		

 Has VCCS Associate Degree _____

Chemistry Concentrations (choose one)

The Department of Chemistry offers five concentrations for completing the Bachelor of Science in Chemistry; Professional Chemist/Professional Chemist with Honors (49 CHEM credits and 21 collateral), Biochemistry (43 CHEM credits and 27-29 collateral), and Chemical Modeling (44 CHEM credits and 27 collateral).

r)

Chemical Science: 37 CHEM credits and 16 collateral credits

PHYS 207-208 University Physics OR PHYS 201-202 General Physics

Approved chemistry electives (three credits minimum) selected from the following courses or any CHEM 500 level class for which prerequisites have been met:

- CHEZ304L Physical Chemistry II Lab
- CHEM/BIOC 403 or 404 Biochemistry I or II
- CHEM 406 Inorganic Chemistry II
- CHEZ 406L Inorganic Chemistry Lab II
- CHEM 409 Instrumental Analysis
- CHEZ 409L Instrumental Analysis Lab
- CHEM 492 Independent study
- CHEM 493 Chemistry Internship
- CHEM 510 Atomic and Molecular Structure
- CHEM/MEDC 310 Medicinal Chemistry and Drug Design
- CHEM/EGRC 306 Industrial Applications of Inorganic Chemistry

Professional Chemist: 49 CHEM credits and 21 collateral credits

PHYS 207-208 University Physics I & II

MATH 307 Multivariate Calculus

CHEZ 304L Physical Chemistry Laboratory

Approved chemistry electives; 13 credit minimum including at least two credits of laboratory selected from the following courses or any CHEM 500-level class for which the prerequisites have been met:

- CHEM 306 Industrial Applications of Inorganic Chemistry
- CHEM 310 Medicinal Chemistry and Drug Design
- CHEM 403 Biochemistry
- CHEM 404 Advanced Topics in Biochemistry
- CHEM 406 Inorganic Chemistry
- CHEZ 406L Inorganic Chemistry II Lab
- CHEM 409 Instrumental Analysis
- CHEZ 409L Instrumental Analysis Lab
- CHEM 492 Independent Study
- CHEM 493 Chemistry Internship
- CHEM 510 Atomic and Molecular Structure

Professional Chemist with Honors: 49 credits and 21 credits

of collateral requirements

PHYS 207-208 University Physics I&II

MATH 307 Multivariate Calculus

CHEZ 304L Physical Chemistry

CHEM 492 Independent Study (minimum 2 credits in junior year)

3 credits minimum selected during junior year from:

- CHEM/BIOC 403 Biochemistry I
- CHEM/BIOC 404 Biochemistry II
- CHEM/MEDC310 Medicinal Chemistry and Drug Design
- CHEM/EGRC 306 Industrial Applications of Inorganic Chemistry

3 credits minimum selected during senior year from:

- CHEM 401 Synthetic and Qualitative Organic Chemistry
- CHEM/BIOC 504 Biochemistry I
- CHEM/BIOC 404 Biochemistry II
- CHEM/MEDC 310 Medicinal Chemistry and Drug Design
- CHEM/EGRC306 Industrial Applications of Organic Chemistry
- CHEM 406 Inorganic Chemistry
- CHEZ 406L Inorganic Chemistry Lab II
- CHEM 409 Instrumental Analysis
- CHEZ 409L Instrumental Analysis Lab
- CHEM493 Chemistry Internship
- CHEM 510 Atomic and Molecular Structure

Biochemistry: 43 credits in chemistry and 27-29 credits of collateral requirements

PHYS 207-208 University Physics I&II OR PHYS201-202 General Physics I & II

BIOL 218 Cell Biology OR BIOL 314 Intro to Molecular Biology

CHEM/BIOC 403, 404 Biochemistry I & II

Approved elective (three credit minimum) selected from:

- BIO 310 Genetics (note: prerequisite is BIOL 218)
- CHEM/MEDC 310 Medicinal Chemistry and Drug Design
- CHEM 406 Inorganic Chemistry II
- CHEM 409 Instrumental Analysis
- CHEZ 409L Instrumental Analysis Lab
- CHEM 492 Independent Study.

Chemical Modeling: 44 credits in chemistry and 27 credits of collateral requirements

CHEZ 304L Physical Chemistry Lab 11

CMSC 245 Intro to Programming Using C++ OR CMSC255 Structured Programming (JAVA)

PHYS 207-208 University Physics I & II

MATH 310 Linear Algebra OR MATH 302 Numerical Calculus

MATH 307 Multivariate Calculus

CHEM/MEDC 310 Medicinal Chemistry and Drug Design

Approved elective (three credit minimum) selected from:

- STAT 321 Introduction to Statistical Computing
- (note: prerequisite is STAT 212 and MATH 211)
- MATH 301 Differential Equations
- MATH 327 Mathematical Modeling
- CHEM 492 Independent Study (computational chemistry project)
- CHEM 510 Atomic and Molecular Structure
- MEDC 541 Intro to Molecular Modeling.

