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Chemistry with Pre-Professional Option

The ACS Certified Chemistry Major is the basic degree designed for students seeking careers in the chemical industry, or careers in law, government, journalism, business, etc., that would benefit from a strong background in the physical sciences and mathematics. Many B.S. graduates go on to M.S. or Ph.D. studies.

Students can apply for scholarships available from the Department of Chemistry and the Department of Polymers and Coatings. See

<http://www.ndsu.edu/finaid/scholarship/scholarship.html>

Graduates completing the standard program for the B.S. Degree in Chemistry are certified by the American Chemical Society. The curriculum for the Polymers and Coatings Option adds specialized courses to the standard program. The curriculum for the Biochemistry Option adds biological sciences courses and substitutes some upper division chemistry courses with advanced biochemistry courses. These two curricula also lead to the ACS Certified B.S. degree in Chemistry.

This option is designed for students interested in medical, dental, optometry, or veterinary professional school, but who wish to have an alternative career path to careers in industry, law, government, journalism, business, etc., that would benefit from a strong background in the physical sciences and mathematics. This option also provides excellent preparation for graduate study in biochemistry, biotechnology, and molecular biology.

ACS Certification can be earned by choosing Chem 471, 429, and either Bioc 461 or Chem 432/432L as electives.



Recommended Curriculum - Chemistry with Coatings Option

B.S. in Chemistry, Pre-Professional Option		Credits	
First Year		F	S
Biol. 150, 151	General Biology	3	3
Biol. 150L, 151L	General Biology Laboratory	1	1
Chem 150, 151	Principles of Chemistry I, II	3	3
Chem 160, 161	Principles of Chemistry I, II Labs	1	1
Engl. 110, 120	College Composition I, II	3	3
Comm. 110	Fundamentals of Public Speaking		3
Math 165, 166	Calculus I, II	4	4
Univ. 189	Skills for Academic Success	1	
		16	18
Second Year			
Chem 341, 342	Organic Chemistry I, II	3	3
Chem 353, 354	Organic Chemistry I, II Majors Labs	1	2
Math 128	Introduction to Linear Algebra	1	
Math 259**, 266	Calculus III, Intro. to Differential Eq.	3	3
Phys 251, 252	University Physics I, II	4	4
Phys 251L, 252L	University Physics Laboratory I, II	1	1
Gen. Ed., Electives*	Wellness, General Ed. Elective	2	3
		15	16
Third Year			
Chem 431, 431L	Analytical Chemistry I and Laboratory	5	
Chem 364, 365	Physical Chemistry I, II	4	4
Chem 380	Chemistry Junior Seminar		1
Micr. 350, 350L	Microbiology I and Laboratory	4	
Gen. Ed. Electives*	General Education Electives	0	9
		13	14
Fourth Year			
Chem 425	Inorganic Chemistry	3	
Bioc 460	Found. of Biochem. and Molec. Biol. I	4	
Biol. 220, 221	Human Anatomy and Physiology	3	3
Biol. 220L, 221L	Human Anatomy Laboratory	1	1
Chem 491	Chemistry Senior Seminar		2
Electives	Electives	3	3
Gen. Ed. Electives*	General Education Electives		6
		14	15
SAMPLE CURRICULUM TOTAL		121	

*Electives must include 18 credits in humanities and social sciences; six of these must be in humanities/fine arts, and six in social sciences. In addition, three credits must have a global perspective and three must be in the cultural diversity category.

**MATH 265 may be substituted for MATH 259.