CHEMISTRY 315000BS

Attention students who were admitted to this program prior to Fall 2015, please refer to the curriculum guide found on page 5. The curriculum guide below on this page is for students admitted to this program for Fall 2015 or later.

The following information has official approval of the **Department of Chemistry**, but is intended only as a supplemental guide. Official degree requirements are established at the time of transfer and admission to the degree-granting college. Students should refer to the Degree Auditing Reporting System (DARS) which is definitive for graduation requirements. *Completion of this degree within the identified time frame below is contingent upon many factors, including but not limited to: class availability, total number of required credits, work schedule, finances, family, course drops/withdrawals, successfully passing courses, prerequisites, among others.* The transfer process is completed through an appointment with your academic advisor.

Italicized courses fulfill General Education requirements. Unless a course is specified, refer to the General Education guide at http://www.uakron.edu/advising/docs/General_Education_Guide.pdf.

CURRICULUM GUIDE FOR STUDENTS ADMITTED TO THIS PROGRAM FOR FALL 2015 OR LATER:

1st Year	Fall Semester	Credit Hours	Prerequisites
	English Composition I Requirement (Note c)	3	Appropriate placement by Advisor
3150:151	Principles of Chemistry I Lecture	3	3450:145 (College Algebra) with C- or better
3150:152	Principles of Chemistry I Lab	1	3150:151prerequiste or corequisite
3450:149	Precalculus	4	3450:145 (College Algebra) or appropriate placement by advisor
7700:101	Beginning Language I **-OR-** American Sign Language I (Note b)	4 **or** 3	
	Physical Education/Wellness Requirement	1	
Total		**15-16**	

1st Year	Spring Semester		
	English Composition II Requirement (Note c)	3	3300:111 or equivalent
7700:102	Beginning Language II **-OR-** American Sign Language II (Note b)	4 **or** 3	Beginning Language I **or** 7700:101
3150:153	Principles of Chemistry II Lecture	3	3150:151
3150:154	Qualitative Analysis Lab	2	3150:152, prerequisite 3150:153, corequisite
3450:221	Analytical Geometry Calculus I	4	3450:149 with C- or better
Total		**15-16**	

2nd Year	Fall Semester		
3150:263	Organic Chemistry I Lecture	3	3150:153
3150:265	Organic Chemistry I Lab	2	3150:154, prerequisite; 3150:263, corequisite
7700:201	Intermediate Language I **-OR-** American Sign Language III	3	Beginning Language II **or** 7700:102
3450:222	Analytical Geometry Calculus II	4	3450:221 with C- or better
3650:291	Elementary Classical Physics I Lecture & Lab	4	3450:221 with C- or better
Total		**16**	

2nd Year	Spring Semester		
3150:264	Organic Chemistry II Lecture	3	3150:263
3150:266	Organic Chemistry II Lab	2	3150:265 corequisite
3450:223	Analytical Geometry Calculus III	4	3450:222 with C- or better
7700:202 7700:222	Intermediate Language II **-OR-** American Sign Language IV **- AND** Survey of Deaf Culture in America	3 **or** 3 2	Intermediate Language I **or** 7700:201 Sign Language students only
3650:292	Elementary Classical Physics II Lec and Lab	4	3650:291

	Speech/Oral Communication Requirement	3	
Total		**19-21**	

3rd Year	**Fall Semester**		
3150:313	Physical Chemistry Lecture I	3	3150:264, 3450:223, 3650:291
3150:380	Advanced Chemistry Lab I	2	3150:266
3150:423	Analytical Chemistry Lecture	3	3150:154 and 3150:263
3450:335	Introduction to Ordinary Differential Equations	3	3450:223 with C- or better
	Social Science Requirement	3	
Total		**14**	

3rd Year	**Spring Semester**		
3150:424	Analytic Chemistry II Lecture	3	3150:154 and 3150:263
3150:314	Physical Chemistry II Lecture	3	3150:264, 3450:335, 3650:292
3150:381	Advanced Laboratory II	2	3150:266, prerequisite 3150:314 and 3150:424, corequisites
3400:210 3400:221	*Humanities in the Western Tradition* ***-OR-*** *Humanities in the World Since 1300*	4	32 credits & 3300:112 or equivalent 32 credits & 3300:112 or equivalent
	Social Science Requirement	3	
Total		**15**	

4th Year	**Fall Semester**		
3150:472	Advanced Inorganic Chemistry Lecture	3	3150:314
3150:480	Advanced Laboratory III	2	3150:381
3150:3/4xx	Upper Level Chemistry Electives (Note a)	4	
	Humanities Requirement	3	3400:210 or 3400:221
Total		**12**	

4th Year	**Spring Semester**		
xxxx:3/4xx	Upper Level Electives	2	
3150:3/4xx	Upper Level Chemistry Electives (Note a)	3	
	Humanities Elective Requirement	3	
	Area Studies/Cultural Diversity Requirement	2	
	Area Studies/Cultural Diversity Requirement	2	
Total		**12**	

	Total Credits for Degree	**Min 120**	

ALERT: 1) By the end of your first 48 credit hours attempted, you must have completed your General Education English, Math, and Communications (Speech) requirements; 2) By the end of your first 48 credit hours attempted, you must have declared a major and transferred to (been accepted by) a degree granting college at The University of Akron.

Student must obtain a grade of C- or better in all required chemistry courses. If a grade of less than C- is obtained in a required chemistry course, the student must successfully repeat the course within a year.

Notes:

a. Students pursuing the Bachelors of Science in Chemistry must take at least 7 credits to fulfill the Upper Level Chemistry course requirements from:
3150:199 Intro to Seminar in Chemistry, 3150:399 Internship in Chemistry, 3150:401 Biochemistry Lecture I, 3150:402 Biochemistry Lecture II, 3150:463 Advanced Organic Chemistry, 3150:497 Honors Project in Chemistry, 3150:498 Special Topics: Chemistry, 3150:499 Research Problems, 3650:481 Methods of Mathematical Physics I, 9871:401 Intro to Elastomers, 9871:402 Intro to Plastics, and/or 9871:407 Polymer Science.

b. Demonstration of ability to use another language by completion of the second year of a foreign language or sign language is required. See your advisor for placement. Please note that all four semesters must be completed in the SAME language and it's recommended you begin your first language class as soon as possible.

c. For English Composition I, 3300:111 (English Composition I) or 3300:113 (African-American Language and Culture I) are the recommended classes to the meet the General Education English requirement. 2020:121 (English) fulfills the English Composition I requirement. For English Composition II, 3300:112 (English Composition II) or 3300:114 (African-American Language and Culture II) are the recommended classes to the meet the General Education English requirement. 2020:222 (Technical Report Writing) fulfills the English Composition II requirement.

A student who plans to enter the Cooperative Education Program in chemistry should plan to take the foreign language in the first two years. Completion of the second year of a foreign language or demonstrated equivalent competence is required.

Analytic Geometry-Calculus III (3450:223) is a requirement for the B.S. in Chemistry and the B.S. Polymer Option; however, Analytic Geometry-Calculus III is NOT required for a B.A. in Chemistry.

Students pursuing a B.A. in Chemistry can take either Elementary and Classical Physics I & II (3650: 291 & 292) -OR- Physics for Life Sciences I & II (3650:261 & 262).

Department of Chemistry (330) 972-8385
Department Chair: Dr. Kim Calvo, Knight Chemical Lab, Room 103A, (330) 972-6078

GENERAL INFORMATION: Chemistry is one of the physical sciences and deals with the nature and properties of matter. Some of the major functions of chemists are:

1. To determine the properties and composition of matter
2. To investigate the laws that govern the combination of atoms and molecules.
3. To prepare new materials and find practical uses for them.

Nearly one-half of all chemists are engaged in research and development. Nearly one-fourth are engaged in management and administration. Many chemists are also involved in teaching, sales, and consulting.

*The employment outlook for chemists is expected to be good in the next decade. Starting salary for an individual with a Bachelor of Science in Chemistry is in the $40,000 to $42,000 a year range. ***Source**: Chemical and Engineering News

The B.S. degree in chemistry is designed for a student intending to pursue graduate studies in chemistry or a related science or to pursue an industrial or governmental research career in chemistry. However, a person may wish to use a good chemical background for future work in fields that connect chemistry with other disciplines, e.g., technical sales, patent law, company management, and environmental sciences. Such a student needs, in addition to chemistry, courses in such topics as economics, business administration, chemical engineering, polymer science, biology, and statistics.

The student should be aware also that a good route to admission to medical, dental or other professional school is through a major in chemistry. A B.A. program in chemistry provides a unique background which should be attractive to medical schools in the selection process. In the B.A. program, the student can fulfill all of the prerequisites for medical school and still have a background which is somewhat biochemically-oriented. In addition the B.A. program can allow the student to be broadly educated in the humanities. Furthermore, should the student with a B.A. degree in chemistry eventually decide against a medical degree, his/her background will be adequate for application to most graduate schools in chemistry, biochemistry, pharmaceutical chemistry, material science, etc. The B.A. degree is not recommended for one wishing to pursue a research career in chemistry or biochemistry.

The present B.S. degree in chemistry requires 45 semester hours of chemistry courses. The B.A. program has fewer chemistry and math course requirements and includes more electives. In this way a graduate who is not research-oriented can still obtain a sound background.

PLACEMENT: A student is encouraged to check with his/her major department and with the Career Center, Student Union 211, regarding employment opportunities in the field.

COLLEGE OF ARTS & SCIENCES:
Degree requirements in Arts & Sciences include the demonstration of ability to use another language by completion of the second year of a foreign language or sign language and a minimum of 40 credits of 300/400 level courses (excluding workshops) consisting of either:

- Upper level (300/400) courses both in and outside the student's major
- Any courses outside the major department as specified in and approved by the student's major department chair (permission should be obtained prior to enrollment) except workshops

(3450:221, 222, 223, 235; 3650:291, 292 & Physics for Life Science will be counted towards the 40 credits)

TRANSFER TO COLLEGE OF ARTS & SCIENCES: Students should apply to the college upon the attainment of:

- ✓ a cumulative GPA of 2.0 or better (includes transfer coursework until 30 credits are earned at UA)
- ✓ a major GPA of 2.0 or better (includes transfer coursework until 30 credits are earned at UA)
- ✓ 30 credits completed including both required English composition courses and 3 credits of mathematics or statistics that meets the General Education requirement

Students can arrange inter-college transfers through an appointment with their academic advisor; advisor contact information is listed in “My Akron.”

CHEMISTRY 315000BS

Attention students who were admitted to this program prior to Fall 2015, please refer to the curriculum guide below on this page. The curriculum guide above is for students admitted to this program for Fall 2015 or later.

The following information has official approval of the **Department of Chemistry**, but is intended only as a supplemental guide. Official degree requirements are established at the time of transfer and admission to the degree-granting college. Students should refer to the Degree Auditing Reporting System (DARS) which is definitive for graduation requirements. *Completion of this degree within the identified time frame below is contingent upon many factors, including but not limited to: class availability, total number of required credits, work schedule, finances, family, course drops/withdrawals, successfully passing courses, prerequisites, among others.* The transfer process is completed through an appointment with your academic advisor.

Italicized courses fulfill General Education requirements. Unless a course is specified, refer to the General Education guide at http://www.uakron.edu/advising/docs/General_Education_Guide.pdf.

CURRICULUM GUIDE FOR STUDENTS ADMITTED TO THIS PROGRAM PRIOR TO FALL 2015:

1st Year	Fall Semester	Credit Hours	Prerequisites
	English Composition I Requirement (Note c)	3	Appropriate placement by Advisor
3150:151	Principles of Chemistry I Lecture	3	3450:145 (College Algebra) with C- or better
3150:152	Principles of Chemistry I Lab	1	3150:151prerequiste or corequisite
3450:149	Precalculus	4	3450:145 (College Algebra) or appropriate placement by advisor
7700:101	Beginning Language I **-OR-** American Sign Language I (Note b)	4 **or** 3	
	Physical Education/Wellness Requirement	1	
Total		**15-16**	

1st Year	Spring Semester		
	English Composition II Requirement (Note c)	3	3300:111 or equivalent
7700:102	Beginning Language II **-OR-** American Sign Language II (Note b)	4 **or** 3	Beginning Language I **or** 7700:101
3150:153	Principles of Chemistry II Lecture	3	3150:151
3150:154	Qualitative Analysis Lab	2	3150:152, prerequisite 3150:153, corequisite
3450:221	Analytical Geometry Calculus I	4	3450:149 with C- or better
Total		**15-16**	

2nd Year	Fall Semester		
3150:263	Organic Chemistry I Lecture	3	3150:153
3150:265	Organic Chemistry I Lab	2	3150:154, prerequisite; 3150:263, corequisite
7700:201	Intermediate Language I **-OR-** American Sign Language III	3	Beginning Language II **or** 7700:102
3450:222	Analytical Geometry Calculus II	4	3450:221 with C- or better
3650:291	Elementary Classical Physics I Lecture & Lab	4	3450:221 with C- or better
Total		**16**	

2nd Year	Spring Semester		
3150:264	Organic Chemistry II Lecture	3	3150:263
3150:266	Organic Chemistry II Lab	2	3150:265 corequisite
3450:223	Analytical Geometry Calculus III	4	3450:222 with C- or better
7700:202 7700:222	Intermediate Language II **-OR-** American Sign Language IV **- AND** Survey of Deaf Culture in America	3 **or** 3 2	Intermediate Language I **or** 7700:201 Sign Language students only
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	Speech/Oral Communication Requirement	3	
Total		**19-21**	

3rd Year	**Fall Semester**		
3150:313	Physical Chemistry Lecture I	3	3150:264, 3450:223, 3650:291
3150:380	Advanced Chemistry Lab I	2	3150:266
3150:423	Analytical Chemistry Lecture	3	3150:154 and 3150:263
3150:3/4xx	Upper Level Chemistry Electives (Note a)	2	
3450:335	Introduction to Ordinary Differential Equations	3	3450:223 with C- or better
	Social Science Requirement	3	
Total		**16**	

3rd Year	**Spring Semester**		
3150:424	Analytic Chemistry II Lecture	3	3150:154 and 3150:263
3150:3/4xx	Upper Level Chemistry Elective (Note a)	1	
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3150:381	Advanced Laboratory II	2	3150:266, prerequisite 3150:314 and 3150:424, corequisites
3400:210 3400:221	*Humanities in the Western Tradition* ***-OR-*** *Humanities in the World Since 1300*	4	32 credits & 3300:112 or equivalent 32 credits & 3300:112 or equivalent
	Social Science Requirement	3	
Total		**16**	

4th Year	**Fall Semester**		
3150:472	Advanced Inorganic Chemistry Lecture	3	3150:314
3150:480	Advanced Laboratory III	2	3150:381
3150:3/4xx	Upper Level Chemistry Electives (Note a)	3	
xxxx:3/4xx	Upper Level Electives	5	
	Humanities Requirement	3	3400:210 or 3400:221
Total		**16**	

4th Year	**Spring Semester**		
xxxx:3/4xx	Upper Level Electives	5	
3150:3/4xx	Upper Level Chemistry Electives (Note a)	2	
	Humanities Elective Requirement	3	
	Area Studies/Cultural Diversity Requirement	2	
	Area Studies/Cultural Diversity Requirement	2	
Total		**14**	

	Total Credits for Degree	**Min 128**	

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PLACEMENT: A student is encouraged to check with his/her major department and with the Career Center, Student Union 211, regarding employment opportunities in the field.

COLLEGE OF ARTS & SCIENCES:
Degree requirements in Arts & Sciences include the demonstration of ability to use another language by completion of the second year of a foreign language or sign language and a minimum of 47 credits of 300/400 level courses (excluding workshops and General Education courses) consisting of either:

- Upper level (300/400) courses both in and outside the student's major
- Any courses outside the major department as specified in and approved by the student's major department chair (permission should be obtained prior to enrollment) except workshops and General Education courses

(3450:221, 222, 223, 235; 3650:291, 292 & Physics for Life Science will be counted towards the 47 credits)

TRANSFER TO COLLEGE OF ARTS & SCIENCES: Students should apply to the college upon the attainment of:

- ✓ a cumulative GPA of 2.0 or better (includes transfer coursework until 30 credits are earned at UA)
- ✓ a major GPA of 2.0 or better (includes transfer coursework until 30 credits are earned at UA)
- ✓ 30 credits completed including both required English composition courses and 3 credits of mathematics or statistics that meets the General Education requirement

Students can arrange inter-college transfers through an appointment with their academic advisor; advisor contact information is listed in “My Akron.”