

# CHEMISTRY: COMPREHENSIVE CHEMISTRY OPTION

## Bachelor of Science (BS)

This is a guide based on the 2023-2024 Undergraduate Bulletin and is subject to change. The time it takes to earn a degree will vary based on several factors such as dual enrollment, remediation, and summer enrollment. Students will meet with an academic advisor each semester and use Degree Works to monitor their individual progress.

### CURRICULUM CHECKLIST

"Critical Courses" are **italicized and bolded**. Data shows that students who have completed this course in the first two years and have earned the noted grade are most likely to complete this program of study.

#### 83-87 hours required – no minor required

##### Required Courses:

- \_\_\_ **CH184 General Chemistry I Lab (1)**
- \_\_\_ **CH185 General Chemistry I (3)**
- \_\_\_ **CH186 General Chemistry II (3)**
- \_\_\_ CH187 General Chemistry II Lab (1)
- \_\_\_ CH195 Chemistry Seminar I (1)
- \_\_\_ CH271 Foundations of Analytical Chemistry (5)
- \_\_\_ CH295 Chemistry Seminar 2 (2)
- \_\_\_ CH306 Inorganic Chemistry (3)
- \_\_\_ CH360 Polymer Chemistry (1)
- \_\_\_ CH341 Found of Organic Chem (4)
- \_\_\_ CH342 Organic Chemistry Lab I (1)
- \_\_\_ CH495 Chemistry Seminar 3 (1)
- \_\_\_ CH531 Found of Biochemistry (3)

##### COMPREHENSIVE CHEMISTRY OPTION

- \_\_\_ CH343 Advanced Organic Chemistry (3)
- \_\_\_ CH Electives (300 level or higher): 3-4

##### Choose One of the Following Tracks:

###### American Chemical Society Certified Track

- \_\_\_ CH311 Foundations of Physical Chemistry (4)
- \_\_\_ CH312 Advanced Physical Chemistry (3)
- \_\_\_ CH313 Physical Chemistry Laboratory (3)
- \_\_\_ CH344 Organic Chemistry Laboratory II (2)
- \_\_\_ CH391 Undergraduate Research (1)\*
- \_\_\_ CH532 Advanced Biochemistry (2)
- \_\_\_ CH563 Advanced Inorganic Chemistry (5)
- \_\_\_ CH575 Chemical Instrumentation (4)

##### Additional Requirements

- \_\_\_ MA140 Analytic Geometry & Calculus I (5)
- \_\_\_ MA145 Analytic Geometry & Calculus II (4)
- \_\_\_ PH230 General Physics I (3)
- \_\_\_ PH231 General Physics II (3)

##### Computational Chemistry Track

- \_\_\_ CH412 Computational Chemistry (3)
- \_\_\_ CS101 Introduction to Computer Programming (3)
- \_\_\_ CS155 Computer Science I (4)
- \_\_\_ CS265 Computer Science II (4)
- \_\_\_ CS351 C & the POSIX Environment (4)
- \_\_\_ CS503 Fundamentals of Computing (3)
- \_\_\_ CSxxx 400-level elective (3)

##### Choose one course:

- \_\_\_ CH311 Foundations of Physical Chemistry (4)
- \_\_\_ CH312 Advanced Physical Chemistry (3)

##### Choose one course:

- \_\_\_ CS433 Introduction to Data Analytics (3)
- \_\_\_ CS445 Software Engineering I (3)

##### Additional Requirements

- \_\_\_ MA140 Analytic Geometry & Calculus I (5)
- \_\_\_ MA145 Analytic Geometry & Calculus II (4)
- \_\_\_ PH230 General Physics I (3)
- \_\_\_ PH231 General Physics II (3)

##### Choose one course:

- \_\_\_ MA345 Linear Algebra (3)
- \_\_\_ MA350 Differential Equations I (3)

##### Foundational Chemistry Track

- \_\_\_ CH344 Organic Chemistry Laboratory II (2)
- \_\_\_ Choose 9 hours of CH Electives (300-500 level) (9)

##### Choose one course:

- \_\_\_ CH311 Foundations of Physical Chemistry (4)
- \_\_\_ CH312 Advanced Physical Chemistry (3)
- \_\_\_ CH575 Chemical Instrumentation (4)

##### Additional requirements:

###### Mathematics – 5-6 hours

- \_\_\_ MA140 Analytic Geometry & Calculus I (5)
- \_\_\_ OR
- \_\_\_ MA139 Applied Calculus (3)
- \_\_\_ AND
- \_\_\_ MA223 Elementary Probability and Statistics (3)
- \_\_\_ OR
- \_\_\_ MA345 Linear Algebra (3)
- \_\_\_ OR
- \_\_\_ CS101 Introduction to Computer Programming (3)

###### Physics – 10 hours

- \_\_\_ PH120 Introductory Physics I (5)
- \_\_\_ AND
- \_\_\_ PH121 Introductory Physics II (5)
- \_\_\_ OR
- \_\_\_ PH230 General Physics I (5)
- \_\_\_ AND
- \_\_\_ PH231 General Physics II (5)

\*Note: Completion of undergraduate research in the major is required. The departmental advisor should be consulted for information about this requirement.

##### General Education Requirements – some

requirements may be fulfilled by coursework in major program

- Social and Behavioral Sciences – 6 hours
- Constitution Requirement – 3 hours
- Written Communication – 6 hours
- Oral Communication – 3 hours
- Natural Sciences – 7 hours (from two disciplines, one to include a lab)
- Mathematics – 3 hours
- Humanities & Fine Arts – 9 hours (from at least two disciplines)
- Additional requirements – 5 hours (to include UI100 for native students)
- Civics examination



# 2023-2024 degree map



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### SAMPLE FOUR-YEAR PLAN

	Fall Semester		Spring Semester	
	Course #	Hrs	Course #	Hrs
FIRST YEAR	UI100	1	CH186	3
	EN100	3	CH187	1
	CH184	1	Track course	3-4
	CH185	3	General Education	3
	CH195	1	General Education	3
	Required Math course	3-5		
	General Education	3		
	<b>Total</b>	<b>14-15</b>	<b>Total</b>	<b>13-14</b>
	Milestone: maintain 2.0 cumulative GPA			
SECOND YEAR	CH271/071	5	CH295	2
	CH341	4	CH343	3
	CH342	1	Required Physics course	5
	Required Physics course	5	Track course	2-4
			General Education	3
	<b>Total</b>	<b>15</b>	<b>Total</b>	<b>15-17</b>
	Milestone: maintain 2.0 cumulative GPA			
	(summer courses are encouraged to avoid semesters exceeding 15 hours)			
THIRD YEAR	CH306	3	Track course	3-4
	CH360	1	Track course	3-4
	Track course	3-4	Track course or Elective	3-4
	Track course	3-4	General Education	3
	General Education	3	General Education	3
	General Education	3		
	<b>Total</b>	<b>16-18</b>	<b>Total</b>	<b>15-18</b>
	Milestone: maintain 2.0 cumulative GPA			
FOURTH YEAR	CH531	3	CH495	1
	General Education	3	Chemistry Electives	3-4
	Track course or Elective	3-4	Track course or Elective	3-4
	Track course or Elective	3-4	Track course or Elective	3-4
	Track course or Elective	3-4	Track course or Elective	3-4
	<b>Total</b>	<b>15-18</b>	<b>Total</b>	<b>13-17</b>
	Milestone: maintain 2.0 cumulative GPA			

A "Milestone" signifies a significant stage for a student in the completion of a degree.

**Degree requirements for all students:** a minimum of 120 credit hours, completion of the General Education program, and completion of 39 senior division hours (300-599). Refer to the Undergraduate Bulletin or Degree Works for additional graduation requirements for your program.

A minimum 2.00 GPA in the major and overall are required to graduate with a BS degree.

Revised  
5/4/2023

# 2023-2024 degree map

