Bachelor of Science

Chemistry with a Major in Chemical Forensic Science (BS)

Requirements

Lower-Division General Education

Written Communication (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#written)	6
Oral Communication (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#oral)	3
Mathematics (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#math)	3
Language and Culture (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#language)	0-6
Information Literacy and Research (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#information)	3
Human Behavior (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#behavior)	3
Human Creativity (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#creativity)	3
Interpreting the Past (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#interpret)	3
Literature (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#literature)	3
Philosophy and Ethics (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#philosophy)	3
The Nature of Science (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#nature)	8
Impact of Technology (http://catalog.odu.edu/undergraduate/requirements-undergraduate-degrees/#impact)	3

Written Communication: Grade of C or better required in both courses

Oral Communication: COMM 101R

Mathematics: STAT 130M required

Information Literacy and Research: satisfied in the major by CHEM 160G

Human Behavior: CRJS 215S required

Philosophy and Ethics: PHIL 345E recommended

The Nature of Science: PHYS 231N-PHYS 232N required

Impact of Technology: satisfied in the major by CHEM 320T

Upper-Division General Education

- Option A. Approved Disciplinary Minor (a minimum of 12 hours determined by the department), or second degree or second major.
- Option B: Interdisciplinary Minor (specifically 12 hours, 3 of which may be in the major)
- Option C. An approved Certification Program such as teaching licensure
- Option D. Two Upper-Division Courses from outside the College of Sciences and not required by the major (6 hours)

Requirements for Graduation

Requirements for graduation include the following:

- Minimum of 120 credit hours.
- Minimum of 30 credit hours overall and 12 credit hours of upper-level courses in the major program from Old Dominion University.
- Minimum overall cumulative grade point average of C (2.00) in all courses taken.
- Minimum overall cumulative grade point average of C (2.00) in all courses taken toward the major.
- Minimum overall cumulative grade point average of C (2.00) in all courses taken toward a minor.
- Completion of ENGL 110C, ENGL 211C or ENGL 231C, and the writing intensive (W) course in the major with a grade of C or better. The W course must be taken at Old Dominion University.
- Completion of Senior Assessment.

Chemistry Core

Required Courses		
CHEM 121N	Foundations of Chemistry I Lecture	3
CHEM 122N	Foundations of Chemistry I Laboratory	1
CHEM 123N	Foundations of Chemistry II Lecture	3
CHEM 124N	Foundations of Chemistry II Laboratory	1-2
or CHEM 125	Foundations of Chemistry II Lab with Introduction to Chemical Research	
CHEM 160G	Introduction to Chemistry and Biochemistry Research and Careers	3
CHEM 211	Organic Chemistry I Lecture	3
CHEM 212	Organic Chemistry I Laboratory	2
CHEM 213	Organic Chemistry II Lecture	3
CHEM 214	Organic Chemistry II Laboratory	2
or CHEM 216	Advanced Organic Chemistry Laboratory	
CHEM 321 & CHEM 322	Analytical Chemistry Lecture and Analytical Chemistry Laboratory	5
CHEM 331 & CHEM 332W	Physical Chemistry Lecture I and Experimental Physical Chemistry I *	5
CHEM 421 & CHEM 422	Instrumental Analysis Lecture and Instrumental Analysis Laboratory	6
CHEM 441	Biochemistry Lecture	3
Other Required Courses		
BIOL 121N & BIOL 122N	General Biology I and General Biology I Lab	4
BIOL 123N & BIOL 124N	General Biology II and General Biology II Lab	4
MATH 211	Calculus I	4
MATH 212	Calculus II	4
Total Credit Hours		**56-57**

* Grade of C or better required in "W" courses if using to meet the University Writing Requirement (minimum of 3 credits total in "W" coursework required).

Chemical Forensic Science Major

General Education		
Complete lower-division requirements		35-41
Complete upper-division requirements		6
Chemistry Core		
Complete chemistry core		56-57
Chemical Forensic Science Major		
CHEM 320T	Survey of Forensic Science	3
CHEM 325	Forensic Biochemistry and Microscopy with Laboratory	3
CHEM 359	Forensic Chemistry with Laboratory	3
CHEM 459	Advanced Forensic Chemistry and Crime Scene Investigation	3
CHEM 461	Forensic Professional Practice	3
CHEM 498	Independent Study	2-3

or CHEM 369	Chemistry Practicum	
CHEM 442W	Biochemistry Laboratory *	2-4
or CHEM 334W	Experimental Physical Chemistry II	
CRJS 222	The Criminal Justice System	3
Total Credit Hours		**119-129**

* Grade of C or better required in "W" courses if using to meet the University Writing Requirement (minimum of 3 credits total in "W" coursework required).

Elective Credit

Elective credit may be needed to meet the minimum requirement of 120 credit hours.

Honors in Chemistry

The honors program provides qualified students the opportunity for supervised individual study in their areas of interest. Admission to the program requires a cumulative GPA of 3.25 or higher and a GPA of 3.50 or higher in the major. Students must take two upper-division courses designated by the department to be honors courses. These are termed "Contract Honors Courses." A description of the procedures for these contract courses is found in the Honors College section of this Catalog.

Degree Program Guide

The Degree Program Guide is a suggested curriculum to complete this degree program in four years. It is just one of several plans that will work and is presented only as broad guidance to students. Each student is strongly encouraged to develop a customized plan in consultation with their academic advisor. Additional information can also be found in Degree Works.

Course	Title	Credit Hours
Freshman		
Fall		
ENGL 110C	English Composition (Grade of C or better required)	3
CHEM 121N	Foundations of Chemistry I Lecture	3
CHEM 122N	Foundations of Chemistry I Laboratory	1
Literature		3
CHEM 160G	Introduction to Chemistry and Biochemistry Research and Careers	3
CRJS 215S or CRJS 226S	Introduction to Criminology or Honors: Introduction to Criminology	3
	Credit Hours	**16**
Spring		
CHEM 123N	Foundations of Chemistry II Lecture	3
CHEM 124N or CHEM 125	Foundations of Chemistry II Laboratory or Foundations of Chemistry II Lab with Introduction to Chemical Research	1-2
MATH 211	Calculus I	4
COMM 101R	Public Speaking	3
ENGL 211C or ENGL 231C	Writing, Rhetoric, and Research (Grade of C or better required) or Writing, Rhetoric, and Research: Special Topics	3
CRJS 222	The Criminal Justice System	3
	Credit Hours	**17-18**
Sophomore		
Fall		
CHEM 211	Organic Chemistry I Lecture	3
CHEM 212	Organic Chemistry I Laboratory	2
MATH 212	Calculus II	4
BIOL 121N	General Biology I	3
BIOL 122N	General Biology I Lab	1
CHEM 320T	Survey of Forensic Science	3
	Credit Hours	**16**
Spring		
CHEM 213	Organic Chemistry II Lecture	3
CHEM 214 or CHEM 216	Organic Chemistry II Laboratory or Advanced Organic Chemistry Laboratory	2
STAT 130M	Elementary Statistics	3
BIOL 123N	General Biology II	3
BIOL 124N	General Biology II Lab	1
Upper Division General Education Requirement		3
	Credit Hours	**15**
Junior		
Fall		
CHEM 441	Biochemistry Lecture	3
CHEM 321	Analytical Chemistry Lecture	3
CHEM 322	Analytical Chemistry Laboratory	2
CHEM 325	Forensic Biochemistry and Microscopy with Laboratory	3
PHYS 231N	University Physics I	4
	Credit Hours	**15**
Spring		
CHEM 359	Forensic Chemistry with Laboratory	3
CHEM 421	Instrumental Analysis Lecture	3
CHEM 422	Instrumental Analysis Laboratory	3
PHYS 232N	University Physics II	4
Philosophy and Ethics (PHIL 345E recommended)		3
	Credit Hours	**16**
Senior		
Fall		
CHEM 331	Physical Chemistry Lecture I	3
CHEM 332W	Experimental Physical Chemistry I *	2
CHEM 334W or CHEM 442W	Experimental Physical Chemistry II * or Biochemistry Laboratory	2-4
CHEM 498 or CHEM 369	Independent Study or Chemistry Practicum	2-3
Upper Division General Education Requirement		3

Elective (only if needed)		1
	Credit Hours	**13-16**
Spring		
CHEM 459	Advanced Forensic Chemistry and Crime Scene Investigation	3
Interpreting the Past		3
Human Creativity		3
CHEM 461	Forensic Professional Practice	3
Language and Culture (May be waived; See requirement details)		0-6
	Credit Hours	**12-18**
	Total Credit Hours	**120-130**

* Grade of C or better required in "W" courses if using to meet the University Writing Requirement (minimum of 3 credits total in "W" coursework required).

Linked Bachelor's/Master's Degree Programs

The linked BS in chemistry and the MS in chemistry allows exceptional students to count up to 12 hours of graduate courses toward both a BS degree in chemistry and an MS degree in chemistry. Students in the combined program must complete Senior Thesis I and II (CHEM 490 and CHEM 499), be accepted into the chemistry master's program, and earn a minimum of 150 credit hours (120 discrete credit hours for the undergraduate degree and 30 discrete credit hours for the graduate degree). Additional requirements apply; please contact the Chief Departmental Advisor.