CHEMISTRY MAJOR

Requirements for a Major in Chemistry

Bachelor of Science

Code	Title	Hours
CHEM 220	Basic Inorganic Chemistry	4
CHEM 230	Quantitative Chemical Analysis	4
CHEM 261	Organic Chemistry	4
CHEM 262	Organic Chemistry II	4
CHEM 311	Introduction to Physical Chemistry	4
CHEM 322	Instrumental Methods of Analysis	4
CHEM 345	Junior Seminar	1
CHEM 407	Biochemistry I	4
CHEM 445	Senior Seminar	1
PHYS 151	Introductory Physics	4
PHYS 152	Introductory Physics	4
MATH 131 & MATH 132	Calculus I and Calculus II	8
Select one of the following: [1]		1-6
CHEM 490	Learning from Chem Literature	
CHEM 496 & CHEM 498	Senior Project and Senior Project	
Student Teaching (only for Education Emphasis)		
Select all requirements in one of the following Emphases:		9-10
General Emphasis (https://catalog.rmc.edu/programs/chemistry/chemistry-major/#general)		
Research/Graduate School Emphasis (https://catalog.rmc.edu/programs/chemistry/chemistry-major/#research)		
Biochemistry Emphasis (https://catalog.rmc.edu/programs/chemistry/chemistry-major/#biochemistry)		
Forensic Science Emphasis (https://catalog.rmc.edu/programs/chemistry/chemistry-major/#forensic)		
Education Emphasis (https://catalog.rmc.edu/programs/chemistry/chemistry-major/#education)		
Total Hours		**56-62**

Emphases

General Emphasis

Code	Title	Hours
Select three of the following:		9
CHEM 305	Chemistry in Earth Systems	
CHEM 312	Advanced Physical Chemistry	
CHEM 335	Forensic Chemistry	
CHEM 360	Fundamentals of Biocatalysis	
CHEM 390	Introduction to Nanochemistry	
CHEM 400	Chemical Internship	
CHEM 401	Advanced Experimental Chemistry	
CHEM 402	Medicinal Chemistry	
CHEM 404	Advanced Organic Chemistry	
CHEM 405	Advanced Inorganic Chemistry	
CHEM 406	Introduction to Organometallic Chemistry	
CHEM 408	Biochemistry II	
Total Hours		**9**

Research/Graduate School Emphasis[1]

Code	Title	Hours
CHEM 312	Advanced Physical Chemistry	3
CHEM 405	Advanced Inorganic Chemistry	3
or CHEM 406	Introduction to Organometallic Chemistry	
Select one of the following:		3
CHEM 305	Chemistry in Earth Systems	
CHEM 335	Forensic Chemistry	
CHEM 360	Fundamentals of Biocatalysis	
CHEM 390	Introduction to Nanochemistry	
CHEM 400	Chemical Internship	
CHEM 401	Advanced Experimental Chemistry	
CHEM 402	Medicinal Chemistry	
CHEM 404	Advanced Organic Chemistry	
CHEM 408	Biochemistry II	
Total Hours		**9**

Biochemistry Emphasis

Code	Title	Hours
CHEM 408	Biochemistry II	3
Select one of the following:		4
BIOL 200	Genetics	
BIOL 201	Cell Biology	
BIOL 311	Microbiology	
Select one of the following:		3
CHEM 305	Chemistry in Earth Systems	
CHEM 312	Advanced Physical Chemistry	
CHEM 335	Forensic Chemistry	
CHEM 360	Fundamentals of Biocatalysis	
CHEM 390	Introduction to Nanochemistry	
CHEM 400	Chemical Internship	
CHEM 401	Advanced Experimental Chemistry	
CHEM 402	Medicinal Chemistry	
CHEM 405	Advanced Inorganic Chemistry	
CHEM 406	Introduction to Organometallic Chemistry	
Total Hours		**10**

Forensic Science Emphasis

Code	Title	Hours
CHEM 335	Forensic Chemistry	3
Select two of the following:		6
CHEM 305	Chemistry in Earth Systems	
CHEM 312	Advanced Physical Chemistry	
CHEM 360	Fundamentals of Biocatalysis	
CHEM 390	Introduction to Nanochemistry	
CHEM 400	Chemical Internship	
CHEM 401	Advanced Experimental Chemistry	
CHEM 402	Medicinal Chemistry	
CHEM 405	Advanced Inorganic Chemistry	

CHEM 406	Introduction to Organometallic Chemistry	
CHEM 408	Biochemistry II	
Total Hours		**9**

Education Emphasis

Code	Title	Hours
Select one of the following:		3
CHEM 305	Chemistry in Earth Systems	
CHEM 312	Advanced Physical Chemistry	
CHEM 360	Fundamentals of Biocatalysis	
CHEM 390	Introduction to Nanochemistry	
CHEM 401	Advanced Experimental Chemistry	
CHEM 402	Medicinal Chemistry	
CHEM 405	Advanced Inorganic Chemistry	
CHEM 406	Introduction to Organometallic Chemistry	
CHEM 408	Biochemistry II	
Additional Requirements for State Licensure [2]		
BIOL 123	Principles in Molecular Biology	3
Select one course from the following:		4
EVST 105	Environmental Problem Solving I	
Total Hours		**10**

[1] Students completing the Research/Graduate School Emphasis must select CHEM 496-CHEM 498 as their Capstone.

[2] Students completing the education emphasis must also complete ENGL 185 and the Education minor (https://catalog.rmc.edu/programs/education/education-minor-secondary/) for teaching licensure.

Requirements for a Teaching Endorsement in Chemistry

Students who are interested in earning a teaching license from the Commonwealth of Virginia to teach grades 6 –12 should double major in Chemistry (Education emphasis) and Education. Interested students should contact both their Chemistry advisor and their Education advisor. The program requirements of a student planning to major in education for the purpose of certification in Chemistry vary from those of other Chemistry majors. Information regarding the Education program and required courses for licensure can be found in the Teacher Preparation Handbook .

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CHEM 345	Junior Seminar	1
CHEM 407	Biochemistry I	4
CHEM 445	Senior Seminar	1
BIOL 123	Principles in Molecular Biology	3
PHYS 151	Introductory Physics	4
PHYS 152	Introductory Physics	4
MATH 131	Calculus I	4
MATH 132	Calculus II	4
EVST 105	Environmental Problem Solving I	4