

# CHEMISTRY WITH CONCENTRATION IN MATERIALS CHEMISTRY, B.S.

## Requirements

Requires 43-46 hours in chemistry and must include the following courses:

Code	Title	Hours
<b>Required Major Courses</b>		
CHM 111	College Chemistry I	3
CHM 111L	College Chemistry I Lab	1
CHM 122	Organic Chemistry I	3
or CHM 123	Organic Chemistry I Honors	
CHM 122L	Organic Chemistry I Lab	1
or CHM 123L	Organic Chemistry I Honors Lab	
CHM 280	College Chemistry II	3
CHM 280L	Theory and Methods of Quantitative Analysis Lab	1
CHM 334	Chemical Analysis	4
CHM 334L	Chemical Analysis Lab	0
CHM 341	Physical Chemistry I	3
CHM 341L	Physical Chemistry I Lab	1
CHM 342	Physical Chemistry II	3
CHM 342L	Physical Chemistry II Lab	1
CHM 361	Inorganic Chemistry	3
CHM 361L	Inorganic Chemistry Lab	1
CHM 364	Materials Chemistry	3
CHM 364L	Materials Chemistry Lab	1
CHM 370	Biochemistry I: Macromolecules and Metabolism	3
CHM 370L	Biochemistry Lab	1
or CHM 371L	Advanced Biochemistry Lab	
CHM 381	Chemistry Seminar and Literature	0.5
CHM 395	Senior Capstone	0.5
Select one of the following Options:		0-3
Option 1:		
CHM 390	Chemical Research Experience	
Option 2:		
Select no fewer than 1.5 hours of the following:		
CHM 391	Undergraduate Research	
CHM 392	Undergraduate Research	
Select two of the following:		6
CHM 223	Organic Chemistry II	
CHM 321	Intermediate Organic Chemistry	
CHM 324	Medicinal Chemistry I	
CHM 351	Special Topics in Chemistry	
CHM 362	Nanochemistry in Energy and Medicine	
CHM 366	Chemistry and Physics of Solid State Materials	
CHM 373	Biochemistry II	

CHM 376	Biophysical Chemistry	
PHY 354	Introduction to Solid State Physics	
<b>Co-Requirements</b>		
PHY 111	Mechanics Waves and Heat	4
or PHY 113	General Physics I	
or PHY 123	General Physics I - Studio Format	
PHY 114	General Physics II	4
or PHY 124	General Physics II - Studio Format	
MST 112	Calculus with Analytic Geometry II	4
MST 113	Multivariable Calculus	4

For the **B.S. major with concentration in materials chemistry**, the following schedule of chemistry and related courses is typical:

Code	Title	Hours
<b>First Year</b>		
CHM 111	College Chemistry I	3
CHM 111L	College Chemistry I Lab	1
CHM 122	Organic Chemistry I	3
or CHM 123	Organic Chemistry I Honors	
CHM 122L	Organic Chemistry I Lab	1
or CHM 123L	Organic Chemistry I Honors Lab	
MST 111	Calculus with Analytic Geometry I	4
MST 112	Calculus with Analytic Geometry II	4
<b>Sophomore</b>		
CHM 223	Organic Chemistry II (Elective)	3
CHM 280	College Chemistry II	3
CHM 280L	Theory and Methods of Quantitative Analysis Lab	1
PHY 111	Mechanics Waves and Heat	4
or PHY 113	General Physics I	
or PHY 123	General Physics I - Studio Format	
PHY 114	General Physics II	4
or PHY 124	General Physics II - Studio Format	
MST 113	Multivariable Calculus	4
<b>Junior</b>		
CHM 341	Physical Chemistry I	3
CHM 341L	Physical Chemistry I Lab	1
CHM 342	Physical Chemistry II	3
CHM 342L	Physical Chemistry II Lab	1
CHM 381	Chemistry Seminar and Literature	0.5
<b>Junior or Senior</b>		
CHM 334	Chemical Analysis	4
CHM 334L	Chemical Analysis Lab	0
CHM 364	Materials Chemistry	3
CHM 364L	Materials Chemistry Lab	1
CHM 391	Undergraduate Research	0-3
or CHM 392	Undergraduate Research	
or CHM 390	Chemical Research Experience	
<b>Senior</b>		
CHM 361	Inorganic Chemistry	3
CHM 361L	Inorganic Chemistry Lab	1
CHM 370	Biochemistry I: Macromolecules and Metabolism	3

CHM 370L	Biochemistry Lab	1
or CHM 371L	Advanced Biochemistry Lab	
CHM 395	Senior Capstone	0.5
Upper-level CHM or PHY elective		

## Honors

Qualified majors are considered for honors in chemistry. To be graduated with the designation "Honors in Chemistry," a student must have a minimum GPA in chemistry courses of 3.3 and a minimum overall GPA of 3.0. In addition, the honors candidate must satisfactorily complete an approved research project, prepare a paper describing the project, and present results at a seminar for departmental approval. Honors thesis research must be conducted on the Wake Forest University campus with a WFU Chemistry faculty member as research adviser or co-adviser. For additional information, members of the departmental faculty should be consulted.