

# Chemistry Major-B.S. with Teacher Certification



The chemistry program offers students to choose between a Bachelor of Science(B.S.) degree or a Bachelor of Arts(B.A.) degree. Students wishing to pursue a graduate degree in chemistry or employment in the chemical industry should pursue the BS degree. The BA degree is designed for those seeking secondary education certification in chemistry as well as for several pre-professional majors (pre-dental, pre-medical, pre-pharmacy, etc.). Students pursuing careers in dentistry, medicine, and pharmacy generally major in chemistry with minor in biology or the converse.

## Bachelor of Science in Chemistry

### Requirements 45 hours

CHE 109 Technical Writing & Lab Safety	1
CHE 111 General Chemistry I	3
CHE 112 General Chemistry II	3
CHE 113 General Chemistry I Lab	1
CHE 114 General Chemistry II Lab	2
CHE 221 Analytical Chemistry	3
CHE 223 Analytical Chemistry Lab	1
CHE 315 Research Methods	2
CHE 341 Organic Chemistry I	3
CHE 342 Organic Chemistry II	3
CHE 343 Organic Chemistry I Lab	1
CHE 344 Organic Chemistry II Lab	2
CHE 350 Instrumental Analysis	4
CHE 380 Junior Seminar	1
CHE 450 Methods of Science Teaching*	3
CHE 451 Physical Chemistry I	3
CHE 452 Physical Chemistry II	3
CHE 453 Physical Chemistry I Lab	1
CHE 454 Physical Chemistry II Lab	1
CHE 460 Biochemistry	3
CHE 480 Senior Seminar	1

### B.S. Major Electives 3 hrs

ENV 355 Environmental Chemistry	4
CHE 370 Inorganic Chemistry	3
CHE 390 Junior Research	1-3
CHE 400 Special Topics	3
CHE 490 Senior Research	1-3

### B.S. Major Supporting courses 29 hrs

PHY 241 General University Physics I	4
PHY 242 General University Physics II	4
PHY 243 Gen. University Physics I Lab	1
PHY 244 Gen. University Physics II Lab	1
MTH 210 Calculus I	4
MTH 211 Calculus II	4
MTH 310 Calculus III	4
BIO 200 Biological Concepts	3
GEO 105 Introduction to Earth Science	3
GEO 106 Intro. to Earth Science Lab	1

Also Recommended: MTH 311, MTH 331, and one of the following: CIS 150, CIS 160, or CIS 300

### Professional Studies Courses 33 hrs

For 9-12 secondary teacher certification, the curriculum requires the completion of the general education component and a single major (in certifiable disciplines). [Two certifiable majors may also be completed.] Certification in a minor field is no longer advised as the Praxis specialty area examinations must be successfully completed for the minor to appear on the teaching certificate. Secondary teacher certification will satisfy the University's requirement for a minor. *The completion of teacher certification with a secondary teaching major will take a minimum of three semesters including the student teaching semester.*

ED 102 Intro. Teacher Education	3
ED 210 Basic Concepts in Education	3
ED 320 Human Development and Learning Theory	3
ED 310 Instructional Technology	3
ED 325 Exceptional Child	3
ED 390 Assessment and Instructional Strategies	3
ED 416 Curriculum and Methodology	3
ED 450 Student Teaching, 8-12*	12

\*No classes are to be taken *during* the student teaching semester other than student teaching. Exceptions *must* be appealed to the Dean and faculty of the School of Education.

# Summary of Chemistry-B.S. Teacher Education Program

## B.S. Chemistry Degree with Teacher Certification

B.S. Major Requirements	45 hrs
B.S. Major Electives	3 hrs
B.S. Supporting Courses	29 hrs
Professional Studies Courses	33 hrs
Required Minor (Secondary Education Minor from above)	
General Education	35 hrs
Physical Education	3 hrs
Literature	3 hrs
Christian Studies	6 hrs
Art, Drama, Music	2 hrs
English Composition	6 hrs
Mass Communication	3 hrs
Mathematics (included in major requirements)	
Computing & Technology	3 hrs
Biological Science (included in major requirements)	
Physical Science (included in major requirements)	
Psychology/Sociology/Culture/Economics	6 hrs
History/Political Science	3 hrs
<b>Total Hours</b>	<b>145 hrs</b>

## CAMPBELLSVILLE UNIVERSITY

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## Suggested Course Sequence

### Freshman Year

Fall Semester	Hours
CHE 109 Technical Writing & Lab Safety	1
CHE 111/113 General Chemistry I and Lab	4
ENG 111 Freshman Composition I	3
OR 100 Freshman Year Experience	1
MTH 210 Calculus I	4
BIO 200 Biological Concepts	3
General Education/Electives	2
Spring Semester	Hours
CHE 112/114 General Chemistry II and Lab	5
ENG 112 Freshman Composition II	3
MTH 211 Calculus II	4
PHY 241/243 General University Physics and Lab	5

### Sophomore Year

Fall Semester	Hours
CHE 221/223 Analytical Chemistry and Lab	4
MTH 310 Calculus III	4
PHY 242/244 General University Physics	5
ED 102 Introduction to Education	3
General Education/Electives	2
Spring Semester	Hours
CHE 315 Research Methods	2
CHE 350 Instrumental Analysis	4
MTH 311 Differential Equations	3
ED 210 Basic Concepts & Philosophy of Education	3
TH 120 Fundamentals of Speech <b>or</b>	
MAC 140 Introduction to Communication	3
CIS 100 Computer Concepts & Applications	3

### Junior Year

Fall Semester	Hours
CHE 341/343 Organic Chemistry I and Lab	4
CHE 380 Junior Seminar	1
CHE 451/453 Physical Chemistry I and Lab	4
ED 300 Human Development and Learning Theory	3
ED 310 Instructional Technology	3
General Education	3
Spring Semester	Hours
CHE 342/344 Organic Chemistry II and Lab	5
CHE 452/454 Physical Chemistry II and Lab	4
CHE 460 Biochemistry	3
ED 325 The Exceptional Child	3
General Education/Electives	3

### Senior Year

Fall Semester	Hours
CHE 450 Methods of Science Teaching	3
CHE 480 Senior Seminar	1
CHE Elective	3
GEO 105/106 Introduction to Earth Science and Lab	4
ED 390 Assessment & Instructional Strategies	3
ED 416 Curriculum & Methodology	3
General Education/Electives	1
Spring Semester	Hours
ED 450 Student Teaching	12