

# CHEMISTRY - BA

The Bachelor of Arts program, through the availability of a generous number of electives, gives the student a firm and broadly based foundation in chemistry, with the option of pursuing other educational objectives involving specialization in at least one other field in depth. This objective is accomplished by means of the BA program flexibility and by the inclusion of a minor area of study in another discipline or completion of a track as outlined above. Additional elective hours allow further diversification.

The BA degree offers somewhat more flexibility than the BS program, in terms of tailoring a program of study that combines chemistry with an interest in subject areas such as biochemistry, biology, business, computer science, education, forensics, medicine or physics. Although the BA program may in any specific case turn out to be a somewhat less technical curriculum, it meets the needs of many students who plan to use chemistry as a springboard to a career in chemical sales, marketing, law, technical writing, teaching at a pre-college level, science journalism, etc., to name only a few possibilities.

A BA degree in Chemistry coupled with a minor in Biology, or completion of a biological chemistry track, is excellent preparation for a variety of careers in the health-related disciplines. In particular, a BA degree in Chemistry is excellent and proven preparation for medical and dental schools, and affords the superior student the opportunity to maintain flexibility for a broad spectrum of medical or dental careers.

Although not required for the BA program, abundant research opportunities are available to students. The BA program also permits and encourages non-technical elective courses.

## Program Requirements

Course	Title	Semester Credit Hours
<b>First Year</b>		
<b>Fall</b>		
CHEM 100	Horizons in Chemistry	1
CHEM 101 & CHEM 111	Fundamentals of Chemistry I and Fundamentals of Chemistry Laboratory I <sup>1</sup>	4
ENGL 104	Composition and Rhetoric	3
HIST 105	History of the United States <sup>2</sup>	3
MATH 151 or MATH 171	Engineering Mathematics I or Analytic Geometry and Calculus	4
Semester Credit Hours		15
<b>Spring</b>		
CHEM 102 & CHEM 112	Fundamentals of Chemistry II and Fundamentals of Chemistry Laboratory II <sup>1</sup>	4
HIST 106	History of the United States <sup>2</sup>	3
MATH 152 or MATH 172	Engineering Mathematics II or Calculus	4
Select one of the following: <sup>3</sup>		4
Communication ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication</a> )		

Language, philosophy and culture (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture>)

Creative arts (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts>)

Social and behavioral sciences (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences>)

International and cultural diversity (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements>)

Course for Minor

CHEM 485 Directed Studies

CHEM 491 Research

Semester Credit Hours

15

## Second Year

### Fall

CHEM 227 Organic Chemistry I<sup>1</sup> 3

CHEM 231 Techniques of Organic Chemistry 2

PHYS 218 Mechanics 4

POLS 207 State and Local Government 3

Select one of the following:<sup>3</sup> 4

Communication (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication>)

Language, philosophy and culture (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture>)

Creative arts (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts>)

Social and behavioral sciences (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences>)

International and cultural diversity (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements>)

Course for Minor

CHEM 485 Directed Studies

CHEM 491 Research

Semester Credit Hours

16

### Spring

CHEM 228 Organic Chemistry II<sup>1</sup> 3

CHEM 234 Organic Synthesis and Analysis IV<sup>4</sup> 3

PHYS 208 Electricity and Optics 4

POLS 206 American National Government 3

Select one of the following:<sup>3</sup> 3

Communication (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication>)

Language, philosophy and culture (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture>)

Creative arts (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts>)

Social and behavioral sciences (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences>)

International and cultural diversity (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements>)

Course for Minor

CHEM 485 Directed Studies

CHEM 491 Research

Semester Credit Hours 16

### Third Year

#### Fall

CHEM 315 Fundamentals of Quantitative Analysis 3

CHEM 318 Quantitative Analysis Laboratory 1

CHEM 327 Physical Chemistry I 3

Select three of the following: <sup>3</sup> 9

Communication (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication>)

Language, philosophy and culture (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture>)

Creative arts (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts>)

Social and behavioral sciences (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences>)

International and cultural diversity (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements>)

Course for Minor

CHEM 485 Directed Studies

CHEM 491 Research

Semester Credit Hours 16

#### Spring

CHEM 325 Physical Chemistry Laboratory I 1

CHEM 328 Physical Chemistry II 3

Select four of the following: <sup>3</sup> 12

Communication (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication>)

Language, philosophy and culture (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture>)

Creative arts (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts>)

Social and behavioral sciences (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences>)

International and cultural diversity (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements>)

Course for Minor

CHEM 485 Directed Studies

CHEM 491 Research

Semester Credit Hours 16

### Fourth Year

#### Fall

CHEM 326 Physical Chemistry Laboratory II 1

CHEM 481 Seminar <sup>4</sup> 2

Select one of the following: 3

CHEM 320 Instrumental Analysis Laboratory

CHEM 362 Descriptive Inorganic Chemistry

CHEM 415 Analytical Chemistry

CHEM 446 Organic Chemistry III

CHEM 456 Chemical Biology

CHEM 462 Inorganic Chemistry

CHEM 464 Nuclear Chemistry

CHEM 466 Polymer Chemistry

CHEM 468 Materials Chemistry of Inorganic Materials

CHEM 470 Industrial Chemistry

CHEM 483 Green Chemistry

CHEM 489 Special Topics in...

BICH 410 Comprehensive Biochemistry I

BICH 411 Comprehensive Biochemistry II

BICH 440 Biochemistry I

BICH 441 Biochemistry II

PHYS 309 Modern Physics

Select two of the following: <sup>3</sup> 8

Communication (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication>)

Language, philosophy and culture (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture>)

Creative arts (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts>)

Social and behavioral sciences (<http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences>)

International and cultural diversity (<http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements>)

Course for Minor

CHEM 485 Directed Studies

CHEM 491 Research

Semester Credit Hours 14

#### Spring

Select one of the following: 3

CHEM 320 Instrumental Analysis Laboratory

CHEM 362	Descriptive Inorganic Chemistry	
CHEM 415	Analytical Chemistry	
CHEM 446	Organic Chemistry III	
CHEM 456	Chemical Biology	
CHEM 462	Inorganic Chemistry	
CHEM 464	Nuclear Chemistry	
CHEM 466	Polymer Chemistry	
CHEM 470	Industrial Chemistry	
CHEM 468	Materials Chemistry of Inorganic Materials	
CHEM 483	Green Chemistry	
CHEM 489	Special Topics in...	
BICH 410	Comprehensive Biochemistry I	
BICH 411	Comprehensive Biochemistry II	
BICH 440	Biochemistry I	
BICH 441	Biochemistry II	
PHYS 309	Modern Physics	
Select three of the following. <sup>3</sup>		9
Communication ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication</a> )		
Language, philosophy and culture ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture</a> )		
Creative arts ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts</a> )		
Social and behavioral sciences ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences</a> )		
International and cultural diversity ( <a href="http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements">http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements</a> )		
Course for Minor		
CHEM 485	Directed Studies	
CHEM 491	Research	
Semester Credit Hours		12
Total Semester Credit Hours		120

<sup>3</sup> These electives must include 12 hours which meet the language, philosophy and culture (3 hours), creative arts (3 hours), social and behavioral science (3 hours) and communication (3 hours) requirements of the University Core Curriculum. In addition, 6 hours of courses must be in the area of international and cultural diversity. These may be in addition to the previous 12 hours of University Core Curriculum courses, or if a course in this category satisfies an area of the Core, it can be used to meet both requirements. Additional elective hours must be used to complete a required minor approved by the granting department or students must satisfy the requirements of one of the approved chemistry track programs. BA chemistry majors may take CHEM 485 or CHEM 491 as elective courses. The total hours of CHEM 485 and CHEM 491 taken on a graded (A-F) basis may not exceed 9. Additional hours of these courses may be taken on an S/U basis. A maximum of 6 hours of these courses may be included on the degree plan. Electives should be chosen in consultation with the chemistry advisor, and should be selected to meet the residency requirement (36 hours at 300-400-level must be taken at TAMU). Electives recommended in the various track programs should be strongly considered.

<sup>4</sup> This is a designated C- or W-course.

<sup>1</sup> Choose a section designated for chemistry majors.

<sup>2</sup> Students may substitute any 6 hours of American history courses approved by the University Core Curriculum to fulfill this requirement, but no more than 3 hours may be in Texas history. Students seeking teacher certification must take HIST 105 and HIST 106.