Chemistry, BS - Biochemistry Concentration

This concentration meets the requirements of the American Chemical Society for certification and serves as preparation for medical school, dental school, veterinary school, pharmacy school, graduate study in biochemistry or employment as a clinical chemist.

Chemistry: Biochemistry Concentration, BS Requirements:
- Chemistry, Biochemistry Concentration, BS degree requires 128 credit hours.
- 39 of 128 credit hours must be taken at 300 level or higher (39 credits includes courses taken at the 300+ level in major, minor (if chosen), Pre professional area and electives).
- 12 credit hours of 300 level and above must be taken in the major--or 6 credit hours in the major and 6 credit hours in the minor (if chosen).
- 12 of the last 18 credit hours must be taken at UAH, with an overall 25% of coursework taken at UAH.
- Unless otherwise noted a C- or better is required for all College of Science prerequisite courses.
- No more than 64 credit hours from a two-year college can be applied toward a UAH degree.
- For graduation application instructions, see here (http://catalog.uah.edu/undergrad/policies-procedures/application-graduation).
- Please see the Pre-Professional Advising Office (http://www.uah.edu/ppa) for information about requirements for admission to specific professional schools.

Degree Requirements

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<td>DRAWING: FOUNDATIONS</td>
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<td>or EH 242</td>
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<td>PHL 150</td>
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<td>PHL 201</td>
<td>INTRODUCTION TO LOGIC</td>
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<td>WGS 200</td>
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**Chemistry, BS - Biochemistry Concentration**

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**History and Social and Behavioral Sciences** 12

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<td>HY 221</td>
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Social and Behavioral Sciences: Choose two 6

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<td>PSC 102</td>
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2nd History or 3rd Social and Behavioral Science: Choose one 3

2nd History 1

3rd Social and Behavioral Science 3

**Pre Professional** 10

Computer Science: Choose one 3

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Technical Writing 3

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Additional Required Mathematics 4

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**Chemistry Core** 25

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<td>CH 123 &amp; CH 126</td>
<td>GENERAL CHEMISTRY II and GENERAL CHEMISTRY LAB II</td>
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<td>CH 223 &amp; CH 224</td>
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**Biochemistry Concentration Requirements** 20-22

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<tr>
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<td>CH 347 &amp; CH 345</td>
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CH 348 & CH 346
BIOPHYSICAL CHEMISTRY II
and EXPERIMENTAL PHYSICAL CHEM II
CH 362
GENERAL BIOCHEMISTRY LAB
CH 363 & CH 364
GEN BIOCHEMISTRY II
and GEN BIOCHEMISTRY LAB II
CH 402
INORGANIC CHEMISTRY LAB
CH 421
INSTRUMENTAL ANALYSIS
CH 491
INTRO TO CHEMICAL RESEARCH
or CH 492
INTRO TO CHEMICAL RESEARCH
or CH 493
INTRO TO CHEMICAL RESEARCH

Biology Minor Requirements

- BYS 119
  PRINCIPLES OF BIOLOGY
- BYS 120
  ORGANISMAL BIOLOGY
- BYS 219
  GENETICS AND EVOLUTION
- BYS 300
  CELL & DEVELOPMENTAL BIOLOGY
- BYS 321
  GENERAL MICROBIOLOGY I

Choose one
- BYS 519
  GENE STRUCTURE & FUNCTION
- BYS 543
  MOLECULAR BIOLOGY OF THE CELL
- BYS 430
  IMMUNOLOGY

(Immunology is required for admission to many Pharmacy schools)

For a double major with Biology, count Biochemistry I and lab as Biology and add BYS 490 and 8 hours of Biology credit (BYS 313+ BYS 314 for example).

Elective Courses

- Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 credits of 100 level HPE courses can count toward degree requirements

Total Semester Hours

1 Students must take one literature and one history course. Students must also take either a second literature or history course to complete a sequence. (EH 207 + EH 208, EH 209 + EH 210, EH 242 + EH 208, EH 242 + EH 210, HY 103 + HY 104, or HY 221 + HY 222)
2 Based on Math placement (http://www.uah.edu/science/departments/math/undergraduate-students/placement), prerequisite (MA 112 and/or MA 113) Mathematics courses may be required.
3 No more than 6 hours can be taken in a single discipline.
4 For choices see the World Languages and Cultures (http://catalog.uah.edu/undergrad/colleges-departments/arts-humanities-social-sciences/foreign-languages-literatures/#coursestext) department.
5 Courses in organic chemistry completed at the 2-year college level may be used to satisfy semester hour and prerequisite requirements for upper level chemistry courses at UAH but do not count toward the 300-level requirements of the major.

Sample four year plans for Chemistry, Biochemistry Concentration BS degree:

Note: These are only examples and variations are possible.

Example 1: Chemistry major with Biology minor

Year 1

Fall

- EH 101
  FRESHMAN COMPOSITION
  3
- CH 121 & CH 125
  GENERAL CHEMISTRY I
  and GENERAL CHEMISTRY LAB I
  4
- MA 171
  CALCULUS A
  4
- BYS 119
  PRINCIPLES OF BIOLOGY
  4
- FYE 101
  CHARGER SUCCESS
  1

Term Semester Hours:

  16

Spring

- EH 102
  FRESHMAN COMPOSITION
  3
- CH 123 & CH 126
  GENERAL CHEMISTRY II
  and GENERAL CHEMISTRY LAB II
  4
BYS 120 ORGANISMAL BIOLOGY 4
MA 172 CALCULUS B 4
Elective 1

Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 HPE 100 level courses can count toward degree requirements.

### Term Semester Hours: 16

#### Year 2

**Fall**

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<td>CH 223 &amp; CH 224</td>
<td>QUANTITATIVE ANALYSIS and QUANTITATIVE ANALYSIS LAB</td>
<td>4</td>
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<tr>
<td>PH 111 &amp; PH 114</td>
<td>GEN PHYSICS W/CALCULUS I and GENERAL PHYSICS LAB I</td>
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### Term Semester Hours: 15

#### Spring

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<td>PH 112 &amp; PH 115</td>
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<td>BYS 219</td>
<td>GENETICS AND EVOLUTION</td>
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### Term Semester Hours: 15

#### Year 3

**Fall**

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<td>CELL DEVELOPMENTAL BIOLOGY</td>
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### Term Semester Hours: 16

#### Spring

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### Term Semester Hours: 16

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Electives can be taken from any department and do not have to be taken in your major or minor. No more than 4 HPE 100 level courses can count toward degree requirements.

### Year 4

**Fall**

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<td>INSTRUMENTAL ANALYSIS</td>
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<td>BYS 543</td>
<td>MOLECULAR BIOLOGY OF THE CELL (or Social/Behavioral Science)</td>
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<td>or IMMUNOLOGY</td>
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<td>or CS 103</td>
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See Requirements tab for approved list.

**Spring**

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<td>GENE STRUCTURE FUNCTION (or Social/Behavioral Science)</td>
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<td>or CH 491</td>
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<td>or CH 492</td>
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May be one, two or three credits per agreement of student and department.

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<td>Humanities/Fine Art/Literature</td>
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See Requirements tab for approved list.

**Total Semester Hours: 16**

### Example 2: Chemistry major with double major in Biology

**Year 1**

**Fall**

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**Spring**

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**Term Semester Hours: 16**
### Year 2

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### Year 3

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### Year 4

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See Requirements tab for approved list.

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**Spring**

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See Requirements tab for approved list.

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**Total Semester Hours:** 132