

# CHEMISTRY, BCH

Students pursuing a degree in chemistry typically have interests in science and/or the health professions. This degree is approved by the American Chemical Society (ACS) and results in an ACS-certified degree in chemistry or biochemistry. Chemistry graduates have strong credentials to pursue graduate degrees in chemistry or related fields, health professional programs, or careers in industry.

## Admission into the Major

Students are expected to formally declare a major no later than the fourth semester of full-time enrollment (or at 61 semester hours for transfer students). Students can declare a major by completing the Change of Major/Minor Application online under the Student tab of myBama.

## Special Opportunities

The Department of Chemistry and Biochemistry Honors Program is available to students pursuing the BCH degree in the chemistry or biochemistry concentration. To participate in the chemistry honors program, students must complete the course requirements for either concentration of the BCH degree and meet the following requirements:

- Maintain a 3.30 GPA in chemistry courses, with no more than one C, and a 3.0 cumulative GPA
- Complete one semester of CH 493 Honors Research Sem or CH 494 Honors Research Sem with a grade of B– or better
- Complete at least one semester of CH 396 Undergrad Research, CH 398 Undergrad Research, or CH 399 Undergrad Research
- Complete one semester of CH 497 Intro To Research, CH 498 Intro To Research, or CH 499 Intro To Research with a grade of B– or higher. This course should be taken with the same research mentor as the CH 396/398/399 course and would typically be taken in the final semester while writing the senior thesis
- Submit an acceptable senior thesis based on research conducted under the supervision of a faculty member in the Department of Chemistry & Biochemistry

Students are invited to apply for admission to the Chemistry Honors Program on the basis of performance in introductory chemistry courses. Students may apply online using the chemistry honors application. Contact the Department of Chemistry & Biochemistry director of undergraduate studies for more details.

The department sponsors several student organizations, including the Student Affiliates of the American Chemical Society, the National Organization for the Professional Advancement of Black Chemists and Chemical Engineers, and Gamma Sigma Epsilon (the national chemistry honorary).

## Pre-health Professional Preparation

Students completing any of the chemistry degree options will have fulfilled all chemistry, math, and physics requirements for admission to pre-health professional programs (medical, dental, optometry, pharmacy, veterinary, etc., schools). With the addition of appropriate biological sciences electives, students earning the BCH degrees will have met all math and science requirements for pre-health professional programs.

## Undergraduate Research

The Department of Chemistry and Biochemistry offers two undergraduate research courses designed to provide students with a hands-on experience at the forefront of chemistry. These courses include:

Code and Title	Hours
CH 396 Undergrad Research	1-3
CH 398 Undergrad Research	1-3
CH 399 Undergrad Research	1-3
CH 497 Intro To Research	1-3
CH 498 Intro To Research	1-3
CH 499 Intro To Research	1-3

In each course, students work directly with a faculty member on a research project. Chemistry majors and minors and students with an interest in chemistry are encouraged to become involved in undergraduate research through these courses. Students should receive approval from the faculty mentor before registering for a research course. Students may find descriptions of faculty research interests on the Department of Chemistry website. Students may contact potential research mentors directly or seek advice on possible mentors from their academic advisors.

## Prerequisites

Prerequisites for all CH courses at the 300- and 400-level must be passed with a minimum grade of C–.

Students earning the bachelor of science in chemistry (BCh) degree must complete all University, College and departmental degree requirements. These include the general education requirements, the following major requirements chosen from one of two tracks, and other sufficient credits to total a minimum of 120 applicable semester hours.

## Degree Tracks

The ACS-certified degree tracks in chemistry and biochemistry provide thorough preparation for students interested in pursuing careers in chemistry, biochemistry or related fields (e.g., biomedicine, forensics, toxicology and environmental science); pursuing graduate studies in chemistry or related fields; or enrolling in a health professions school (MD, DDS, PharmD or DVM) upon graduation.

## Grade Point Average

A 2.0 grade point average in the major is required for completion of the degree. Please see the Grades and Grade Points section of this catalog for an explanation on grade point average calculations.

## Upper-level Residency

A minimum of 18 hours of 300- and 400-level courses in the major must be earned on this campus.

## Required Minor

The BCH degree (chemistry and biochemistry tracks) does not require a minor.

## Additional Major Requirements

Students are responsible for ensuring that they have met all University, College, major, and minor requirements. However, each student must meet with an adviser in the major department for academic planning and

to be approved for registration each semester. College advisers are also available for additional assistance with minor, College and University requirements.

## Major Courses

The bachelor of science in chemistry degree requires the successful completion of one of either the chemistry track (41 semester hours) or the biochemistry biochemistry track (43 hours).

### Chemistry Track

Code and Title	Hours
CH 101 or General Chemistry	4
CH 117 Honors General Chemistry	
CH 102 or General Chemistry	4
CH 118 Honors General Chemistry	
CH 223 Quantitative Analysis	4
CH 231 Elem Organic Chemistry I	3
CH 232 Elem Organic Chem II	5
& CH 237 and Elem Organic Chem Lab	
CH 338 Elem Organic Chem Lab II	2
CH 413 Inorganic Chemistry	4
CH 441 Physical Chemistry I	3
CH 442 Physical Chemistry II	3
CH 448 Physical Chemistry Lab	2
CH 424 Instrumental Analysis	4
CH 461 Biochemistry I	3
Credit Hours Subtotal:	41

#### Ancillary Courses

Grades in ancillary courses are not computed into the major GPA. The major in chemistry culminating in the BCh degree requires the successful completion of the following courses outside the major:

MATH 125 or Calculus I	4
MATH 145 Honors Calculus I	
MATH 126 or Calculus II	4
MATH 146 Honors Calculus II	
MATH 227 or Calculus III	4
MATH 247 Honors Calculus III	
PH 105 or General Physics W/Calc I	4
PH 125 Honors Gen Ph W/Calculus	
PH 106 or General Physics W/Calc II	4
PH 126 Honors Gen Ph W/Calculus II	

Total Hours 61

### Biochemistry Track

Code and Title	Hours
CH 101 or General Chemistry	4
CH 117 Honors General Chemistry	
CH 102 or General Chemistry	4
CH 118 Honors General Chemistry	
CH 223 Quantitative Analysis	4
CH 231 Elem Organic Chemistry I	3
CH 232 Elem Organic Chem II	5
& CH 237 and Elem Organic Chem Lab	
CH 338 Elem Organic Chem Lab II	2

CH 413 Inorganic Chemistry	4
CH 441 Physical Chemistry I	3
CH 442 Physical Chemistry II	3
CH 448 Physical Chemistry Lab	2
CH 461 Biochemistry I	3
CH 462 Biochemistry II	3
CH 463 Biochemistry Laboratory	3
Credit Hours Subtotal:	43

#### Ancillary Courses

Grades in ancillary courses are not computed into the major GPA. The major in chemistry culminating in the BCh degree requires the successful completion of the following courses outside the major:

MATH 125 or Calculus I	4
MATH 145 Honors Calculus I	
MATH 126 or Calculus II	4
MATH 146 Honors Calculus II	
MATH 227 or Calculus III	4
MATH 247 Honors Calculus III	
PH 105 or General Physics W/Calc I	4
PH 125 Honors Gen Ph W/Calculus	
PH 106 or General Physics W/Calc II	4
PH 126 Honors Gen Ph W/Calculus II	

Total Hours 63

The BCh degree prepares students for a wide range of career opportunities in chemistry and biochemistry, as well as related sciences (toxicology, forensics, environmental science). The BCh degree also prepares students for careers in medical fields.

## Types of Jobs Accepted

Recent graduates have gone on to enroll in graduate programs in chemistry, biochemistry, or related fields of science. These students often pursue careers in academia (high school and college teachers) or as researchers in the chemical industry or government labs. Chemistry graduates also enroll in health professional programs leading to careers as doctors, pharmacists, dentists, and veterinarians. Chemistry graduates also take jobs directly after graduating working in the chemical industry as technicians or quality control scientists, as high school teachers, or in related fields where they can use their chemistry background, such as pharmaceutical sales, patent law, or technical writing.

## Jobs of Experienced Alumni

academic careers, physicians, dentists, pharmacists, industrial researchers, entrepreneurs

Learn more about opportunities in this field at the Career Center