

**REQUIREMENTS FOR THE BACHELOR OF SCIENCE**  
**DODGE FAMILY COLLEGE OF ARTS AND SCIENCES**  
**THE UNIVERSITY OF OKLAHOMA**

Academic Year
For Students Entering the Oklahoma State System for Higher Education Summer 2024 through Spring 2025

General Requirements	
Minimum Total Credit Hours .....	120
Minimum Upper-Division Hours .....	48
Major Hours .....	37-39
<b>Minimum Retention/Graduation Grade Point Averages:</b>	
Overall - Combined and OU .....	2.00
Major - Combined and OU .....	2.00

Program
<b>Chemical Biosciences</b>
<b>B155</b>
Bachelor of Science

OU encourages students to complete at least 30 hours of applicable coursework each year to have the opportunity to graduate in 4 years.

**GENERAL EDUCATION AND COLLEGE REQUIREMENTS**

Courses for fulfillment of General Education and Dodge College of Arts & Sciences requirements must be from the approved General Education course list published in the Class Schedule or at <http://www.ou.edu/gened/courses>. **Courses graded P/NP will not apply.**

**UNIVERSITY-WIDE GENERAL EDUCATION (MINIMUM 40 HOURS) AND COLLEGE REQUIREMENTS**

Code	Title	Credit Hours
<b>Core Area I: Symbolic and Oral Communication</b>		
<i>English Composition (6 hours)</i>		
ENGL 1113	Principles of English Composition	3
ENGL 1213	Principles of English Composition	3
or EXPO 1213	Expository Writing	
<i>Language (0-13 hours in the same language)</i>		
The college requirement cannot be met by high school coursework.		
Beginning Course		0-5
Beginning Course, continued		0-5
Intermediate Course (2000 level) <sup>1,2</sup>		0-3
<i>Mathematics (3 hours)</i>		
Choose one course from the General Education Mathematics list		
<b>Core Area II: Natural Science (7 hours, including one laboratory component)</b>		
<i>Biological Science</i>		
Choose an approved General Education Natural Science course with one of the following prefixes: BIOL, HES, MBIO, or PBIO <sup>1</sup>		
<i>Physical Science</i>		
Choose an approved General Education Natural Science course with one of the following prefixes: AGSC, ASTR, CHEM, GEOG, GEOL, GPHY, METR, or PHYS <sup>1</sup>		
<b>Core Area III: Social Science (6 hours)</b>		
P SC 1113	American Federal Government	3
Choose one course from the General Education Social Science list		
<b>Core Area IV: Arts and Humanities (18 hours)</b>		
<i>Artistic Forms</i>		
Choose one course from the General Education Artistic Forms list		
<i>Western Culture</i>		
HIST 1483	United States to 1865	3
or HIST 1493	United States, 1865 to the Present	
Choose one course from the General Education Western Culture list (excluding HIST 1483/1493)		
<i>World Culture</i>		
Choose one course from the General Education World Culture list		
<i>Additional Core IV Upper-Division Arts &amp; Humanities courses</i>		
Choose one course from Artistic Forms, Western Culture, or World Culture <sup>1,3</sup>		
Choose one course from Artistic Forms, Western Culture, or World Culture <sup>1,3</sup>		
<b>Core Area V: First Year Experience (3 hours)</b>		
Choose one course		
<b>Total Credit Hours</b>		<b>56</b>

- 1 College of Arts and Sciences Requirements: college requirements are not automatically fulfilled by a previous degree.
- 2 One course at the intermediate level or demonstrated competency at that level
- 3 6 upper-division hours, 2 courses, at the 3000- 4000-level. **Must be outside the major.**

**FREE ELECTIVES**

Electives to bring total applicable hours to the minimum total required for the degree including 48 upper-division hours.

**MAJOR REQUIREMENTS**

- Some courses required for the major may also fulfill University General Education and/or Dodge College of Arts & Sciences Requirements.
- **A grade of C or better must be earned in each Chemistry course presented for major credit. No grade below a C made in Chemistry courses at the upper-division level may be made up elsewhere without prior written approval by the OU Chemistry Department.**
- The introductory courses (CHEM 1315, CHEM 1335, CHEM 1415, CHEM 1425, & CHEM 1435) do not count towards the 37-39 required major hours.

Code	Title	Credit Hours
<b>Chemistry</b>		
CHEM 1315	General Chemistry	
or CHEM 1335	General Chemistry I: Signature Course	
Choose one of the following:		
CHEM 1415	General Chemistry (Continued)	
CHEM 1425	Advanced General Chemistry (HONORS)	
CHEM 1435	General Chemistry II: Signature Course	
CHEM 3053	Organic Chemistry I: Biological Emphasis	3
CHEM 3152	Organic Chemistry Laboratory: Biological Emphasis	2
CHEM 3153	Organic Chemistry II: Biological Emphasis	3
CHEM 3451	Basic Physical Chemistry Laboratory	1
CHEM 3453	Basic Physical Chemistry	3
CHEM 3653	Introduction to Biochemistry	3
CHEM 3753	Introduction to Biochemical Methods	3
<b>Biological Sciences</b>		
BIOL 1124	Intro Biol: Molecule/Cell/Phys	4
MBIO 3812	Fundamentals of Microbiology Laboratory	2
MBIO 3813	Fundamentals of Microbiology	3
BIOL/MBIO/PBIO 4843	Molecular Biology	3
Choose a minimum of 4 hours from the following lecture/lab combinations:		
BIOL 3101 & BIOL 3103	Principles of Physiology Lab and Principles of Physiology	4-5
BIOL 3201 & BIOL 3203	Animal Development Lab and Animal Development	
BIOL 3333 & BIOL 3342	Genetics and Genetics Laboratory	
BIOL 4244	Animal Histology	
Choose a minimum of 3 hours from the following:		
BIOL 2124	Human Physiology	3-4
BIOL 2234	Introduction to Human Anatomy	
BIOL/MBIO/PBIO 3113	Cell Biology	
BIOL 3214	Comparative Vertebrate Anatomy	
MBIO 4823	Pathogenic Microbiology and Infectious Disease	
MBIO 4833	Basic Immunology	
<b>Total Credit Hours</b>		<b>37-39</b>

**MAJOR SUPPORT REQUIREMENTS**

Code	Title	Credit Hours
MATH 1823	Calculus and Analytic Geometry I	3
or MATH 1914	Differential and Integral Calculus I	
PHYS 1311	General Physics Lab I	1
PHYS 1321	General Physics Lab II	1
Choose one of the following:		
PHYS 2414 & PHYS 2424	General Physics for Life Science Oriented Majors and General Physics for Life Science Oriented Majors	8
PHYS 2514 & PHYS 2524	General Physics for Engineering and Science Majors and General Physics for Engineering and Science Majors	
<b>Total Credit Hours</b>		<b>13</b>

More information in the catalog: (<http://ou-public.courseleaf.com/dodge-arts-sciences/chemistry-biochemistry/chemical-biosciences-bachelor-science/>).

## INFORMATION CONCERNING GENERAL RULES, REGULATIONS AND MINIMUM REQUIREMENTS

**Arts and Sciences Hours:** At least 80 semester hours of liberal arts and sciences courses are required for a BA degree. At least 55 semester hours of liberal arts and sciences courses are required for a BS degree.

**Pass/No Pass Enrollment:** A maximum of 16 semester hours of free elective credit may be attempted under this option.

**Individual Studies (e.g., courses titled "Independent Study"):** A maximum of 12 total semester hours may be counted toward graduation, excluding Honors Reading and Honors Research.

**P.E. Courses:** No physical education activity courses will be counted toward the 120 semester hours of acceptable credit for graduation.

**Senior Institution Hours:** A minimum of 60 semester hours applied toward graduation must be earned at senior (4-year) institutions.

**Residency:**

- At least 15 of the final 30 hours applied toward the degree or at least 50 percent of the hours required by the institution in the major field must be satisfactorily completed at the awarding institution.
- At least 15 semester hours of upper-division major work must be completed in residence at OU.
- OU correspondence courses are *not* considered resident credit.

**Grade Point Averages:** Students must earn a minimum over all 2.00 for each of the following: Combined Retention GPA (all college grades), OU Retention GPA, GPA for all major courses, and GPA for all major courses taken at OU. Some schools and departments of the College have higher minimum grade point averages required for their students.

### SUGGESTED SEMESTER PLAN OF STUDY

This plan shows one possible grouping of courses that would allow students to graduate in four years. Please refer to the front of the degree checksheet for official requirements. Students must consult with Dodge College of Arts and Sciences and/or Department of Chemistry and Biochemistry academic advisors to verify that courses selected each semester fulfill the recommended plan and satisfy university, College of Arts and Sciences, and Chemical Biosciences major requirements.

Year	FIRST SEMESTER		Hours	SECOND SEMESTER		Hours
<b>FRESHMAN</b>	CHEM 1315	General Chemistry	5	CHEM 1415	General Chemistry (Continued)	5
	ENGL 1113	Principles of English Composition ( Core I )	3	ENGL 1213 or EXPO 1213	Principles of English Composition ( Core I ) or Expository Writing	3
	MATH 1823 or MATH 1914	Calculus and Analytic Geometry I ( Core I ) or Differential and Integral Calculus I	3-4	PHYS 2514 or PHYS 2414	General Physics for Engineering and Science Majors or General Physics for Life Science Oriented Majors	4
		First Year Experience (Core V)	3	PHYS 1311	General Physics Lab I	1
					Artistic Forms (Core IV)	3
	<b>CREDIT HOURS</b>		<b>14-15</b>	<b>CREDIT HOURS</b>		<b>16</b>
<b>SOPHOMORE</b>	CHEM 3053	Organic Chemistry I: Biological Emphasis	3	CHEM 3152	Organic Chemistry Laboratory: Biological Emphasis	2
	PHYS 2524 or PHYS 2424	General Physics for Engineering and Science Majors or General Physics for Life Science Oriented Majors	4	CHEM 3153	Organic Chemistry II: Biological Emphasis	3
	PHYS 1321	General Physics Lab II	1	MBIO 3813	Fundamentals of Microbiology	3
	BIOL 1124	Intro Biol: Molecule/Cell/Phys ( Core II )	4		Beginning Language (Core I)	5
	HIST 1483 or HIST 1493	United States to 1865 ( Core IV ) or United States, 1865 to the Present	3		World Culture (Core IV)	3
		<b>CREDIT HOURS</b>		<b>15</b>	<b>CREDIT HOURS</b>	
<b>JUNIOR</b>	CHEM 3653	Introduction to Biochemistry	3	CHEM 3453	Basic Physical Chemistry	3
	MBIO 3812	Fundamentals of Microbiology Laboratory	2	CHEM 3451	Basic Physical Chemistry Laboratory	1
		Choose one of the following:	3		Arts & Humanities, upper-division, outside major (Gen. Ed.)	3
	BIOL 4843	Molecular Biology		P SC 1113	American Federal Government ( Core III )	3
	MBIO 4843	Molecular Biology			Intermediate Language	3
	PBIO 4843	Molecular Biology			Free Elective	2
		Western Culture (Core IV)	3			
	Beginning Language continued (Core I)	5				
	<b>CREDIT HOURS</b>		<b>16</b>	<b>CREDIT HOURS</b>		<b>15</b>
<b>SENIOR</b>	CHEM 3753	Introduction to Biochemical Methods	3		BIOL, Major Group, Lecture with Lab	4
		BIOL/MBIO, Major Group, Lecture	3		Free Elective, upper-division (3000-4000-level)	3
		Social Science (Core III)	3		Free Elective	3
		Arts & Humanities, upper-division, outside major (Gen. Ed.)	3		Free Elective	3
		Free Elective, upper-division (3000-4000-level)	3			
		<b>CREDIT HOURS</b>		<b>15</b>	<b>CREDIT HOURS</b>	

<sup>1</sup> CHEM 4913, CHEM 4923, and CHEM 4933 are not all offered every semester. Students should plan accordingly.