

Bachelor of Applied Science in Biotechnology

Biotechnology Program

Grounded in biological sciences, chemistry and advanced technology, biotechnology employs biological systems to solve scientific challenges that impact society. Through this program, you will be equipped for diverse career options in fields such as:

- Medical education or professions
- Food science
- Environmental and agricultural sciences
- Animal health
- Pharmaceuticals

In this unique program, you will not be assessed based on your ability to memorize an array of facts but by your ability to reference facts, formulate an approach and integrate data to solve problems.

Undergraduate Admission

Admission to KU

All students applying for admission must send high school and college transcripts to the Office of Admissions. Unless they are college transfer students with at least 24 hours of credit, prospective students must send ACT or SAT scores to the Office of Admissions. Prospective first-year students should be aware that KU has qualified admission requirements that all new first-year students must meet to be admitted. Consult the Office of Admissions (<http://admissions.ku.edu>) for application deadlines and specific admission requirements.

Visit the International Support Services (<http://www.iss.ku.edu>) for information about international admissions.

Students considering transferring to KU may see how their college-level course work will transfer on the Office of Admissions (<http://credittransfer.ku.edu>) website.

Admission to the College of Liberal Arts and Sciences

Admission to the College is a different process from admission to a major field. Some CLAS departments have admission requirements. See individual department/program sections for departmental admission requirements.

Biotechnology

KU Edwards Campus

The undergraduate program in biotechnology is offered in its entirety only at the KU Edwards Campus (<http://edwardscampus.ku.edu>), 12600 Quivira Rd., Overland Park, KS 66213. This program is designed for students who have earned an associate's degree or equivalent hours and wish to complete the upper-level courses necessary for a bachelor's degree.

B.A.S. in Biotechnology

Biotechnology is grounded in biological sciences, chemistry and advanced technology. Biotech scientists employ biological systems to solve scientific challenges and positively impact our society. The medical, food, environmental and agricultural sciences, as well as the animal health and pharmaceutical industry, are all considered part of the biotechnology field. Contact the CLAS undergraduate advisor on the Edwards Campus, Sandra Leppin, sandra.leppin@ku.edu, 913-897-8511, for more information.

Requirements for the Bachelor of Applied Science Degree in Biotechnology

General Education Requirements

In addition to degree and major requirements for all plans and subplans, all students must complete the KU Core.

Code	Title	Hours
General Science Requirements		
CHEM 130 & CHEM 135	General Chemistry I and General Chemistry II	10
CHEM 330	Organic Chemistry I	3
CHEM 331	Organic Chemistry I Laboratory	2
PHSX 114	College Physics I	1-4
BIOL 150	Principles of Molecular and Cellular Biology	4
or BIOL 151	Principles of Molecular and Cellular Biology, Honors	
BIOL 152	Principles of Organismal Biology	4
or BIOL 153	Principles of Organismal Biology, Honors	
BIOL 350	Principles of Genetics	4
BIOL 600	Introductory Biochemistry, Lectures	3
Biology Electives pick one of the following:		
BIOL 416	Cell Structure and Function	3
BIOL 435	Introduction to Neurobiology	3
BIOL 480	Biology and Diversity of Parasites	3
BIOL 506	Bacterial Infectious Diseases	3
BIOL 512	General Virology	3
BIOL 546	Mammalian Physiology	3
BIOL 560	Histology	3
BIOL 667	Chemical Communication in Sex, Feeding, and Fighting	3
BIOL 672	Gene Expression	3
Bachelor of Applied Science Core Curriculum		
MATH 365	Elementary Statistics	3
or BIOL 570	Introduction to Biostatistics	
MGMT 305	Survey of Management and Leadership	3
or PUAD 607	Introduction to Project Management	
BTEC 310	Scientific Communications	3
or COMS 310	Advanced Organizational and Professional Communication	
or COMS 330	Effective Business Communication	
Biotechnology Requirements.		
BTEC 300	Research Methods in Biotechnology	3
BTEC 305	Molecular and Microbiological Techniques	4
BTEC 400	Applied Immunology	3

BTEC 475	Applied Separation Science and Quantitative Analysis	6
BTEC 494	Selected Topics in Biotechnology <small>Taken once in junior year and once in senior year for a total of 2 credits.</small>	1
BTEC 501	Biotechnology Ethics and Responsible Conduct of Research	1
BTEC 540	Biotechnology Capstone I	3
BTEC 550	Applied Bioinformatics	2
BTEC 599	Biotechnology Internship	3
BTEC 630	Biotechnology, Regulation, Quality Control, and Quality Assurance	3
BTEC 640	Biotechnology Capstone II	3
BTEC or BIOL Jr/Sr electives		3

Major Hours & Major GPA

While completing all required courses, majors must also meet each of the following hour and grade-point average minimum standards:

Major Hours

Satisfied by 45 hours of major courses.

Major Hours in Residence

Satisfied by a minimum of 15 hours of KU resident credit in the major.

Major Junior/Senior Hours

Satisfied by a minimum of 45 hours from junior/senior courses (300+) in the major.

Major Junior/Senior Graduation GPA

Satisfied by a minimum of a 2.0 KU GPA in junior/senior courses (300+) in the major. GPA calculations include all junior/senior courses in the field of study including F's and repeated courses. See the Semester/Cumulative GPA Calculator (<http://clas.ku.edu/undergrad/tools/gpa>).

Below is a sample 4-year plan for students pursuing the BAS in Biotechnology. To view the list of courses approved to fulfill KU Core Goals, please visit the KU Core website (<http://kucore.ku.edu/courses>).

This degree plan assumes students will have the equivalent of MATH 101 or MATH 104 prior to the freshman year, fall semester.

Freshman

Fall	Hours Spring	Hours
Goal 2.1 Written Communication (First Course, 2 Crs Required)	3 Goal 2.1 Written Communication (Second Course, 2 Crs Required)	3
COMS 130 (Goal 2.2 Oral Communication)	3 CHEM 135 (General Science Requirement) ²	5
CHEM 130 (Goal 1.2 Quantitative Literacy or Goal 3 Natural Science, General Science Requirement)	5 BIOL 152 (Goal 3 Natural Science, Major Requirement)	4
BIOL 150 (Goal 3 Natural Science, Major Requirement) ¹	4 Elective (Total Hours)	2
	15	14

Sophomore

Fall	Hours Spring	Hours
Goal 5 Social Responsibility & Ethics	3 Goal 3 Humanities	3

CHEM 330 (General Science Requirement) ³	3 Goal 3 Social Sciences	3
CHEM 331 (General Science Requirement)	2 Goal 4.2 Global Awareness	3
Elective (Total Hours)	3 PHSX 114 or 211 and 216 (Goal 1.1 Critical Thinking, Goal 1.2 Quantitative Literacy, or Goal 3 Natural Science, General Science Requirement)	4-5
Elective (Total Hours)	3 Elective (Total Hours)	3
	14	16-17

Junior

Fall	Hours Spring	Hours
BTEC 300 (Major Requirement)	3 BTEC 400 (Major Requirement)	3
BTEC 305 (Major Requirement)	4 BTEC 475 (Major Requirement)	6
BTEC 310, COMS 310, or COMS 330 (BAS Core Curriculum)	3 BTEC 494 (Major Requirement)	1
BIOL 350 (General Science Requirement) ²	4 BIOL 600 (General Science Requirement) ²	3
	MATH 365 (or BIOL 570, Fall only Lawrence campus, BAS Core Curriculum)	3
	14	16

Senior

Fall	Hours Spring	Hours
BTEC 540 (Major Requirement)	3 Goal 4.1 Human Diversity	3
BTEC 550 (Major Requirement)	2 BTEC 494 (Major Requirement)	1
BTEC 599 (Major Requirement)	3 BTEC 501 (Major Requirement)	1
MGMT 305 or PUAD 607 (BAS Core Curriculum)	3 BTEC 630 (Major Requirement)	3
Elective (Total Hours)	3 BTEC 640 (Goal 6 Integration & Creativity, Major Requirement)	3
	BTEC/BIOL Jr/Sr Elective; BTEC 599 recommended (Major Requirement) ⁴	3
	BIOL Elective; choose from several options, see footnote 4 (General Science Requirement) ⁴	3
	14	17

Total Hours 120-121

- Concurrent or prior enrollment in CHEM 130 is required.
- CHEM 135 is a Spring only course offered at the Lawrence campus. BIOL 350 is a Fall only course offered at the Edwards campus. BIOL 600 is a Spring and Summer course offered at the Edwards campus.
- Most medical schools require the full CHEM 330, CHEM 331, CHEM 335, and CHEM 336 sequence.

⁴ Refer to the Degree Requirements tab for a list of courses that can fulfill this major requirement.

Please note:

All students in the College of Liberal Arts and Sciences are required to complete 120 total hours of which 45 hours must be at the Jr/Sr (300+) level.

The same course cannot be used to fulfill more than one KU Core Goal.

However, overlap of a KU Core course with a major or degree-specific requirement is allowed. Overlapping is recommended to allow more opportunities to explore other majors and/or minors.