

Bachelor of Arts in Human Biology

Human Biology

This interdisciplinary major permits students to understand humans from a variety of academic viewpoints: anthropology, applied behavioral science, biology, psychology, and speech-language-hearing. Each human biology concentration offers major-level courses in topical categories that allow students to focus on areas that interest them most while retaining the interdisciplinary manner of the major. The broad nature of this major can prepare students for a variety of post-undergraduate opportunities.

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.

First- and Second-Year Preparation

Because biology study requires preparation in other sciences, students should begin meeting major requirements in the first year. It is particularly important to take CHEM 130 and CHEM 135 in the first year and, for several majors, to take CHEM 330, CHEM 331, CHEM 335, and CHEM 336 in the second year. Ideally, most majors should also take BIOL 150 and BIOL 152 during the first year, as well as BIOL 105.

Majors and Concentrations

Bachelor's degree requirements in biology are modified as necessary. Current requirements are available in the UBP office and online (<http://www.kuub.ku.edu>). Major programs are offered in biochemistry, biology, human biology, and microbiology. Students may choose to concentrate in a range of specialties in the biological sciences, such as botany, cellular biology, developmental biology, environmental biology, ecology, entomology, genetics, marine biology, molecular biology, neurobiology, paleontology, physiology, systematics, or zoology (invertebrate or vertebrate).

Requirements for the B.A. Major in Human Biology

The curriculum builds from a broad background of general science courses and adds depth in a set of 5 specialized disciplines. Courses in the disciplines emphasize topics related to humans and provide a solid understanding of each field of knowledge.

For general requirements for the B.A. degree, see CLAS General Education Degree Requirements (<http://catalog.ku.edu/liberal-arts-sciences>) on the College of Liberal Arts and Sciences Degree Requirements page.

Students must choose 1 concentration from the 5 areas:

- Anthropology
- Applied behavioral science
- Biology
- Psychology
- Speech-language-hearing

Code	Title	Hours
General Science Requirements		
Majors must complete the following 34-hour minimum of general science requirements that serve as foundational courses for this major.		34
Introduction to Human Evolutionary Biology. Satisfied by:		
ANTH 345	Introduction to Human Evolutionary Biology	
Biology Orientation Seminar. Satisfied by:		
BIOL 105	Biology Orientation Seminar	
Principles of Molecular & Cellular Biology. Satisfied by one of the following:		
BIOL 150	Principles of Molecular and Cellular Biology	
BIOL 151	Principles of Molecular and Cellular Biology, Honors	
Principles of Organismal Biology. Satisfied by one of the following:		
BIOL 152	Principles of Organismal Biology	
BIOL 153	Principles of Organismal Biology, Honors	
Calculus. Satisfied by one of the following:		
MATH 115 & MATH 116	Calculus I and Calculus II	
MATH 125	Calculus I	
MATH 145	Calculus I, Honors	
Chemistry I. Satisfied by one of the following:		
CHEM 130	General Chemistry I	
CHEM 190 & CHEM 191	Foundations of Chemistry I, Honors and Foundations of Chemistry I Laboratory, Honors	
Chemistry II. Satisfied by one of the following:		
CHEM 135	General Chemistry II	
CHEM 195 & CHEM 196	Foundations of Chemistry II, Honors and Foundations of Chemistry II Laboratory, Honors	
Physics I. Satisfied by one of the following:		
PHSX 114	College Physics I	
PHSX 211 & PHSX 216	General Physics I and General Physics I Laboratory	
Statistics. Satisfied by one of the following:		

BIOL 570	Introduction to Biostatistics (Recommended for the Anthropology and Biology Concentrations)
PSYC 210	Statistics in Psychological Research (Recommended for the Psychology Concentration)
MATH 365	Elementary Statistics

Anthropology

Code	Title	Hours
Anthropology Concentration		
Majors must complete the following 31 hours. These additional science courses are included in the Human Biology-Anthropology major hours and GPA calculations.		
Organic Chemistry I. Satisfied by one of the following:		3
CHEM 310	Fundamentals of Organic Chemistry	
CHEM 330	Organic Chemistry I	
Organic Chemistry I Laboratory. Satisfied by:		
CHEM 331	Organic Chemistry I Laboratory	2
Cell Structure & Function. Satisfied by one of the following:		3
BIOL 416	Cell Structure and Function	
BIOL 536	Cell Structure and Function (Honors)	
Principles of Genetics. Satisfied by one of the following:		4
BIOL 350	Principles of Genetics	
BIOL 360	Principles of Genetics, Honors	
Senior Seminar in Human Biology. Satisfied by:		
BIOL 599	Senior Seminar: _____ (Must be taken in senior year)	1

Anthropology Concentration Categories

Satisfied by completing 2 of the following 4 categories (18-21 hours 18-21 required):

Category 1: Human Anatomy and Physiology		
Biology of Development. Satisfied by:		
BIOL 417	Biology of Development	
Anatomy and Physiology. Satisfied by completing 9 hours from the following:		
ANTH 542	Biology of Human Nutrition	
ANTH 648	Human Osteology	
ANTH 650	Human Reproduction: Biology and Behavior	
BIOL 426	Laboratory in Cell Biology	
BIOL 440	Advanced Human Anatomy	
BIOL 600	Introductory Biochemistry, Lectures	
BIOL 637	Introductory Biochemistry Laboratory	
BIOL 546	Mammalian Physiology	
BIOL 647	Mammalian Physiology Laboratory	
Category 2: Human Population Biology		
Satisfied by completing 9 hours from the following:		
ANTH 340	Human Variation and Evolution	
ANTH 442	Anthropological Genetics	
ANTH 544	Origins of Native Americans	
ANTH 545	Contemporary Health Issues in Africa	
ANTH 652	Population Dynamics	
Category 3: Human Adaptation and Evolution		
Satisfied by completing 9 hours from the following:		

ANTH 350	Human Adaptation
ANTH 352	Controversies on the Living and the Dead
ANTH 503	Topics in Biological Anthropology: _____
ANTH 555	Evolution of Human Diseases

Category 4: Human Biology and Behavior

Satisfied by completing 9 hours from the following:

ANTH 359	Anthropology of Sex
ANTH 447	Human Behavioral Genetics
ANTH 461	Introduction to Medical Anthropology
PSYC 370	Behavioral Neuroscience
PSYC 536	The Psychology of Language

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 31 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 12 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>).

Applied Behavioral Science

Code	Title	Hours
Applied Behavioral Science Concentration		
Majors must complete the following 33 hours. These additional science courses are included in the Human Biology-Applied Behavioral Science major hours and GPA calculations.		
Principles of Genetics. Satisfied by one of the following:		4
BIOL 350	Principles of Genetics	
BIOL 360	Principles of Genetics, Honors	
Introduction to Applied Behavioral Science. Satisfied by:		
ABSC 100	Introduction to Applied Behavioral Science	3
Development. Satisfied by one of the following:		3
ABSC 160	Introduction to Child Behavior and Development	
PSYC 333	Child Development	
Research Methods & Application. Satisfied by:		
ABSC 308	Research Methods and Application	4
Senior Seminar in Human Biology. Satisfied by:		
BIOL 599	Senior Seminar: _____ (Must be taken in senior year.)	1

Applied Behavioral Science Concentration Categories

Satisfied by completing 2 of the following 4 categories (18-19 hours 18-19 required):

Category 1: Applied Behavioral Science

Principles and Procedures of Behavior Modification and Therapy.
Satisfied by:

ABSC 304 Principles and Procedures of Behavioral Interventions

Applied Behavioral Science. Satisfied by completing 6 hours selected from the following courses:

ABSC 150 Community Leadership

ABSC 310 Building Healthy Communities
or ABSC 311 Building Healthy Communities, Honors

ABSC 350 The Behavioral Treatment of Children with Autism

ABSC 410 Behavioral Approaches in Working with Adolescents

ABSC 437 Independent Living and People with Disabilities

Category 2: Development: Typical and Atypical

Child Behavior and Development. Satisfied by:

ABSC 632 Advanced Child Behavior and Development

Development: Typical and Atypical. Satisfied by completing 6 hours selected from the following:

ABSC 535 Developmental Psychopathology

ABSC 565 Applied Developmental Psychology

BIOL 417 Biology of Development

Category 3: Biology of Behavior

Satisfied by:

BIOL 544 Comparative Animal Physiology

Biology of Behavior. Satisfied by completing 6 hours selected from the following:

ANTH 542 Biology of Human Nutrition

BIOL 435 Introduction to Neurobiology

BIOL 440 Advanced Human Anatomy

BIOL 454 Brain Diseases and Neurological Disorders

BIOL 546 Mammalian Physiology

BIOL 647 Mammalian Physiology Laboratory

BIOL 655 Behavioral Genetics

PSYC 370 Behavioral Neuroscience

PSYC 380 Clinical Neuroscience

Category 4: Evolution, Culture, and Behavior

Evolutionary Biology. Satisfied by:

BIOL 412 Evolutionary Biology

Evolution, Culture, and Behavior. Satisfied by completing 6 hours selected from the following:

ANTH 341 Human Evolution

ANTH 415 The Rise of Civilization

ANTH 650 Human Reproduction: Biology and Behavior

BIOL 428 Introduction to Systematics

BIOL 625 Behavioral Ecology and Sociobiology

BIOL 652 Comparative Animal Behavior

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 33 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 12 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>).

Biology

Code	Title	Hours
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Biology Concentration

Majors must complete the following 32 hours. These additional science courses are included in the Human Biology-Biology major hours and GPA calculations.

Organic Chemistry I. Satisfied by one of the following: 3

CHEM 310 Fundamentals of Organic Chemistry

CHEM 330 Organic Chemistry I

Organic Chemistry I Laboratory. Satisfied by:

CHEM 331 Organic Chemistry I Laboratory 2

Physics II. Satisfied by one of the following: 4

PHSX 115 College Physics II

PHSX 212 General Physics II
& PHSX 236 and General Physics II Laboratory

Principles of Genetics. Satisfied by one of the following: 4

BIOL 350 Principles of Genetics

BIOL 360 Principles of Genetics, Honors

Senior Seminar in Human Biology. Satisfied by:

BIOL 599 Senior Seminar: _____ (Must be taken in senior year.) 1

Biology Laboratory Electives. Course selections from the following categories must include at least 3 hours of laboratory credit, 400 level or above.

Biology Concentration Categories

Satisfied by completing 2 of the following 4 categories listed below. 18-20 (18-20 hours required) (Course selections must include at least 3 hours of laboratory credit, 400 level or above.)

Category 1: Development and Genetics

Biology of Development. Satisfied by:

BIOL 417 Biology of Development

Development and Genetics. Satisfied by completing 6 hours from the following:

ABSC/PSYC 535 Developmental Psychopathology

ANTH 762 Human Growth and Development

BIOL 405 Laboratory in Genetics

BIOL 416 Cell Structure and Function
or BIOL 536 Cell Structure and Function (Honors)

BIOL 595 Human Genetics

BIOL 655 Behavioral Genetics

BIOL 688 The Molecular Biology of Cancer

PSYC 333 Child Development

PSYC 430 Cognitive Development

PSYC 531	Language Development
SPLH 566	Language Development
Anatomy and Physiology	
Mammalian Physiology. Satisfied by:	
BIOL 546	Mammalian Physiology
Anatomy & Physiology. Satisfied by completing 6 hours from the following:	
ANTH 542	Biology of Human Nutrition
ANTH 648	Human Osteology
BIOL 435	Introduction to Neurobiology
BIOL 440	Advanced Human Anatomy
BIOL 600	Introductory Biochemistry, Lectures
BIOL 637	Introductory Biochemistry Laboratory
BIOL 647	Mammalian Physiology Laboratory
PSYC 370	Behavioral Neuroscience
PSYC 375	Cognitive Neuroscience
PSYC 380	Clinical Neuroscience
Category 3: Evolution, Ecology, and Adaptation	
Evolutionary Biology. Satisfied by:	
BIOL 412	Evolutionary Biology
Evolution, Ecology, and Adaptation. Satisfied by completing 6 hours selected from the following:	
ANTH 340	Human Variation and Evolution
ANTH 341	Human Evolution
ANTH 350	Human Adaptation
ANTH 652	Population Dynamics
BIOL 414	Principles of Ecology
BIOL 668	Evolutionary Ecology
PSYC 555	Evolutionary Psychology
Category 4: Human Disease	
Fundamentals of Microbiology. Satisfied by one of the following:	
BIOL 400	Fundamentals of Microbiology
BIOL 401	Fundamentals of Microbiology, Honors
Human Disease. Satisfied by completing 6 hours selected from the following:	
ANTH 555	Evolution of Human Diseases
BIOL 402	Fundamentals of Microbiology Laboratory
BIOL 503	Immunology
BIOL 504	Immunology Laboratory
BIOL 506	Bacterial Infectious Diseases
BIOL 507	Bacterial Infectious Diseases Laboratory
BIOL 512	General Virology
BIOL 513	Virology Laboratory
BIOL 518	Microbial Genetics
BIOL 519	Microbial Genetics Laboratory
BIOL 595	Human Genetics
BIOL 616	Medical Entomology
BIOL 688	The Molecular Biology of Cancer

Total Hours

32-34

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 32 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 12 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>).

Psychology

Code	Title	Hours
Psychology Concentration		
Majors must complete the following 31 hours. These additional science courses are included in the Human Biology-Psychology major hours and GPA calculations.		
Organic Chemistry I. Satisfied by one of the following:		3
CHEM 310	Fundamentals of Organic Chemistry	
CHEM 330	Organic Chemistry I	
Organic Chemistry I Laboratory. Satisfied by:		
CHEM 331	Organic Chemistry I Laboratory	2
Principles of Genetics. Satisfied by one of the following:		4
BIOL 350	Principles of Genetics	
BIOL 360	Principles of Genetics, Honors	
Research Methods. Satisfied by:		
PSYC 200	Research Methods in Psychology	3
Senior Seminar in Human Biology. Satisfied by:		
BIOL 599	Senior Seminar: _____ (Must be taken in senior year.)	1
Psychology Concentration Categories		
Satisfied by completing 2 of the following 4 categories listed below. (18 hours required)		18
Category 1: Evolution, Adaptation and Health		
Satisfied by completing 9 hours selected from the following:		
PSYC 555	Evolutionary Psychology	
PSYC 605	Health Psychology	
ANTH 340	Human Variation and Evolution	
ANTH 341	Human Evolution	
ANTH 350	Human Adaptation	
ANTH 442	Anthropological Genetics	
ANTH 447	Human Behavioral Genetics	
ANTH 542	Biology of Human Nutrition	
ANTH 555	Evolution of Human Diseases	
BIOL 412	Evolutionary Biology	
BIOL 595	Human Genetics	
Category 2: Human Development		

Child Development. Satisfied by:

PSYC 333 Child Development

PSYC 334 Child Development, Honors

Human Development. Satisfied by completing 6 hours selected from the following:

PSYC 430 Cognitive Development

PSYC/ABSC 535 Developmental Psychopathology

PSYC/ABSC 632 Advanced Child Behavior and Development

BIOL 417 Biology of Development

Category 3: Human Cognition and Language

Cognitive Psychology. Satisfied by:

PSYC 318 Cognitive Psychology

Human Cognition & Language. Satisfied by completing 6 hours selected from the following:

PSYC 418 Introduction to Cognitive Science

PSYC 482 Sensation and Perception

PSYC 518 Human Memory

PSYC 531 Language Development

PSYC 536 The Psychology of Language

SPLH 466 Language Science

SPLH 566 Language Development

Category 4: Neuroscience

Satisfied by completing 9 hours selected from the following:

PSYC 370 Behavioral Neuroscience

PSYC 375 Cognitive Neuroscience

PSYC 380 Clinical Neuroscience

ANTH 650 Human Reproduction: Biology and Behavior

BIOL 435 Introduction to Neurobiology

BIOL 454 Brain Diseases and Neurological Disorders

BIOL 655 Behavioral Genetics

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 31 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 12 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>).

Speech-Language-Hearing

Code	Title	Hours
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Speech-Language-Hearing Concentration

Majors must complete the following 30 hours. These additional science courses are included in the Human Biology-Speech-Language-Hearing major hours and GPA calculations.

Physics. Satisfied by one of the following:

SPLH 120 The Physics of Speech 4

PHSX 115 College Physics II

Research Methods. Satisfied by:

SPLH 660 Research Methods in Speech-Language-Hearing 3

Genetics. Satisfied by one of the following:

BIOL 350 Principles of Genetics 4

BIOL 360 Principles of Genetics, Honors

Senior Seminar in Human Biology. Satisfied by:

BIOL 599 Senior Seminar: _____ (Must be taken in senior year.) 1

Speech-Language-Hearing Concentration Categories

Satisfied by completing 2 of the following 4 categories (18-19 hours 18-19 required).

Category 1: Development and Genetics

Biology of Development. Satisfied by:

BIOL 417 Biology of Development

Development and Genetics. Satisfied by completing 6 hours selected from the following:

ANTH 762 Human Growth and Development

BIOL 405 Laboratory in Genetics

BIOL 416 Cell Structure and Function

or BIOL 536 Cell Structure and Function (Honors)

BIOL 595 Human Genetics

BIOL 655 Behavioral Genetics

PSYC 333 Child Development

PSYC 430 Cognitive Development

SPLH 464 Undergraduate Seminar in: _____

or SPLH 764 Seminar in: _____

SPLH 466 Language Science

SPLH 566 Language Development

Category 2: Anatomy and Physiology

Mammalian Physiology. Satisfied by:

BIOL 546 Mammalian Physiology

Anatomy and Physiology. Satisfied by completing 6 hours selected from the following:

BIOL 440 Advanced Human Anatomy

BIOL 647 Mammalian Physiology Laboratory

SPLH 462 Principles of Speech Science

SPLH 463 Principles of Hearing Science

Category 3: Neuroscience

Physiology of Organisms. Satisfied by:

BIOL 544 Comparative Animal Physiology

Neuroscience. Satisfied by completing 6 hours selected from the following:

BIOL 435 Introduction to Neurobiology

PSYC 370 Behavioral Neuroscience

PSYC 375	Cognitive Neuroscience
PSYC 380	Clinical Neuroscience
SPLH 464	Undergraduate Seminar in: _____ (Neural Bases of Speech & Voice)
SPLH 464	Undergraduate Seminar in: _____ (Speech Motor Control)
Category 4: Research Practicum	
Satisfied by completing 9 hours selected from the following courses:	
SPLH 464	Undergraduate Seminar in: _____ (Circuit Theory & Bioinstrumentation)
SPLH 449	Laboratory/Field Work in Human Biology (various topics)
SPLH 499	Directed Study in Speech-Language-Hearing

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 30 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 12 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>).

Sample 4-year plans for the BA degree in Human Biology with concentrations in the following can be found here: Anthropology (<http://catalog.ku.edu/liberal-arts-sciences/biology/ba-human-biology/anthropology>), Applied Behavioral Science (<http://catalog.ku.edu/liberal-arts-sciences/biology/ba-human-biology/applied-behavioral-science>), Biology (<http://catalog.ku.edu/liberal-arts-sciences/biology/ba-human-biology/biology>), Psychology (<http://catalog.ku.edu/liberal-arts-sciences/biology/ba-human-biology/psychology>), and Speech-Language-Hearing (<http://catalog.ku.edu/liberal-arts-sciences/biology/ba-human-biology/speech-language-hearing>), or by using the left-side navigation.

Departmental Honors

Undergraduate majors are eligible to graduate with honors in biology if they fulfill the following requirements:

1. Complete all course work required for the appropriate degree in biology.
2. Achieve a minimum grade-point average of 3.25 overall and 3.5 in the major.
3. Complete BIOL 499 Introduction to Honors Research with a grade of B or higher.
4. Complete BIOL 699 Biology Honors Research Colloquium with a grade of B or higher.
5. Complete an independent research project under the supervision of a faculty member in an area appropriate to the degree sought.

6. Submit an honors thesis to the honors committee once the research is complete and present the results of the completed research at the honors research symposium.

Students majoring in Human Biology with Anthropology, Applied Behavioral Science, Psychology, or Speech-Language-Hearing concentrations will follow the honors requirements for their respective concentration department.

Specific guidelines and intent forms are available in the Undergraduate Biology Program office and online (<http://www.kuub.ku.edu>). Candidates must declare their intent to graduate with honors at least 2 semesters before graduation.

Study Abroad

Consult an advisor at least 4 months before undertaking study abroad. Consult the Office of Study Abroad (<http://www.studyabroad.ku.edu>), 108 Lippincott Hall, for information about study in one of the many countries (e.g., Scotland, Australia, Switzerland) with special arrangements with KU.