

# Bachelor of Science in Biomedical Sciences (BS)

## Degree Type

Bachelor of Science

The faculty of Bryan College of Health Sciences, Biomedical Sciences Program, believes that:

The baccalaureate degree program in biomedical sciences exists to prepare graduates to pursue graduate study in a wide range of health related fields which contribute directly and indirectly to the delivery of quality health care and services. Educational preparation for advanced study in a health related field is built on an in-depth, integrated study of natural sciences and general education concepts. Knowledge and skills require a high level of critical thinking and are developed through didactic and field experiences related to the field of study.

Students and graduates are guided by legal and ethical standards, and require communication and interpersonal skills which promote positive interaction with others in the educational and healthcare environment. They critically evaluate scientific theories, gain competence in both theoretical and experimental science, and recognize the contribution of science to society. Quality healthcare cannot exist without the academic framework and intellectual discipline inherent in the study of natural sciences.

Learning is a life-long, interactive process that builds on previous experience and ideally results in change in attitudes, beliefs, and/or behaviors. Learning occurs in a variety of environments, and involves the cognitive, affective, and psychomotor domains. The learner is responsible for actively seeking knowledge both independently and under the supervision and guidance of qualified faculty.

Faculty are responsible as role models, mentors, and teachers for providing a caring environment in which students are free to explore and develop personally, professionally and intellectually. The College provides educational opportunities within the multiple contexts of legal and ethical boundaries, political and economic forces, sociocultural influences, and spiritual and historical factors. This environment provides quality education, which develops critical thinking and contributes to meeting the emerging health care needs of society.

## Bachelor of Science in Biomedical Sciences

This pre-professional program prepares students for graduate level study in areas such as medicine, dentistry, pharmacology, physical therapy, occupational therapy, chiropractic, physician assistant, optometry, or careers in science such as biomedical research, bioprocessing, pharmaceutical discovery and development, medical devices and diagnostics, scientist/technician positions in industry, government, and research labs.

Bryan College of Health Sciences offers several pathways for students to complete their BS in Biomedical Sciences from Bryan while also advancing to an additional degree. These include the PharmD Assurance Track and the Medical Laboratory Science (MLS) track, both in collaboration with UNMC. Both of these require application and acceptance to UNMC programs. In addition, we are a Partner Program with Kansas City University's Doctor of Osteopathic Medicine and Dental College.

The PharmD Assurance Track is for students who have been accepted into UNMC's Pharmacy Early Assurance Program. The PharmD Assurance Track at BCHS includes all of the required prerequisite coursework needed for entry into the UNMC PharmD program in a 3+4 model in which students complete three years of pre-requisite coursework at Bryan College of Health Sciences and then enter the four year PharmD program at UNMC. Upon the successful completion of the first year of coursework in the PharmD program at UNMC, 32 credits of PharmD coursework will transfer back to Bryan College of Health Sciences and a BS in Biomedical Sciences will be earned.

The Medical Laboratory Science (MLS) track of the Biomedical Sciences program prepares students for entry into the Medical Laboratory Science program at UNMC. The MLS concentration includes all of the required prerequisite coursework needed for entry into the UNMC MLS program. This program allows students to earn their BS in Biomedical Sciences from Bryan upon successful completion of the MLS program at UNMC. Students will apply to the MLS program at UNMC during their junior year and admission to the MLS program is at the sole discretion of UNMC.

To earn a Bachelor of Science in Biomedical Sciences, a student must earn a total of 123 semester hours, including 48 credits satisfying general education requirements and 75 additional credits as specified below.

For the PharmD Assurance track, each student must complete a core requirement of 48 general education credits and 43 additional credits within the Biomedical Sciences major. 32 credits will be transferred back from UNMC's PharmD program upon successful completion of the first year of the PharmD coursework for a total of 123 semester hours.

For the MLS track, each student must complete a core requirement of 48 general education credits and 31 additional credits within the MLS concentration. 43 credits will be transferred in from UNMC's MLS program upon successful completion of the MLS program for a total of 122 semester hours.

Acceptance to the Biomedical Sciences program does not guarantee admission to KCU through their Partner Program. Students will need to apply to KCU through the Partner Program during their sophomore year of the program. Students in the KCU Partner Program Pathway must complete 48 general education credits and 44 additional credits within the Biomedical Sciences major. 31 credits will be transferred back from KCU's DO or Dental program upon successful completion of the first year of coursework for a total of 123 semester hours.

## Honor Society for Biomedical Sciences

### **Beta Beta Beta National Biological Honor Society, Gamma Delta Alpha chapter**

TriBeta is an honor society for students dedicated to improving the understanding and appreciation of biological study and extending boundaries of human knowledge through scientific research. The Gamma Delta Alpha chapter at BCHS was chartered in the spring of 2019. Membership is by invitation to qualified Biomedical Sciences students and faculty. New member induction occurs annually in the spring semester.

## Curriculum Objectives

Upon completion of the program the student will:

1. Establish broad foundational knowledge in order to engage in scientific pursuits
2. Apply scientific concepts by integrating them into the context of human health
3. Employ technology in practical settings to facilitate scientific inquiry
4. Develop multidisciplinary laboratory skills to create professional readiness
5. Incorporate ethical reasoning into ones professional identity
6. Propose novel ideas through the application of the scientific method

## Required Courses:

*The following courses are a requirement of Bryan College of Health Sciences.*

Item #	Title	Credits
GSTU101	Introduction to the Bryan College of Health Sciences Experience	1
HIMS100	Medical Terminology	1

# Natural Sciences

## Natural Sciences

Item #	Title	Credits
BIOS110	General Biology	4
BIOS120	Cell Biology	4
CHEM110	General Chemistry I	4
CHEM120	General Chemistry II	4

# Social Sciences

## Social Sciences

Item #	Title	Credits
PSYC121	Introduction to Psychology	3
PSYC201	Human Growth & Development	3
PSYC321	Abnormal Psychology	3
SOCI101	Introduction to Sociology	3

# Communications

## Communications

Item #	Title	Credits
	Communications Elective	3

# Mathematics

## Mathematics

\*If a student places directly in MATH205, a general elective will replace MATH155. If a student required MATH105: Intermediate Algebra prior to MATH 155, MATH105 will serve as one of the general electives.

Item #	Title	Credits
MATH155	College Algebra	3
MATH205	Calculus	4
STAT210	Elements of Statistics	3

## Humanities/Fine Arts

### Humanities/Fine Arts

Item #	Title	Credits
ENGL104	English Composition I	3
ENGL154	English Composition II	3
PHIL210	Ethics in Health Care	3

## Business/Management

### Business/Management

Item #	Title	Credits
	Business Management Elective	3

## General Electives

### General Electives

Students will work with their advisor to select the appropriate general elective courses. 3 credit hours must have a cultural studies designation.

Item #	Title	Credits
	General Electives (9)	9

## Major-Biomedical Sciences

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Item #	Title	Credits
BIOS150	Scientific Literacy	1
BIOS205	Microbiology	4
BIOS221	Pathophysiology	3
BIOS310	Genetics	3
BIOS320	Biochemistry	4
BIOS330	Scientific Research Methodology	3
BIOS334	Human Anatomy	4
BIOS335	Human Physiology	4
BIOS410	Molecular Biology	4
BIOS445	Field Research Experience	3
BIOS480	Senior Capstone	1
CHEM210	Organic Chemistry I	4
CHEM220	Organic Chemistry II	4
PHYS210	General Physics I (with lab)	4
PHYS220	General Physics II (with lab)	4
	BIOS Elective (9)	9
	<b>Total Credits</b>	<b>123</b>