BIOMEDICAL SCIENCES - BS

Program Requirements

First Year

Fall		Semester Credit Hours
BIOL 111	Introductory Biology I [1]	4
CHEM 119	Fundamentals of Chemistry I [1]	4
Mathematics [2]		3-4
Social and behavioral sciences (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#social-behavioral-sciences) [3]		3
	Semester Credit Hours	**14**

Spring		
BIOL 112	Introductory Biology II [1]	4
CHEM 120	Fundamentals of Chemistry II [1]	4
Communication (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication) [3]		3
Mathematics [2]		3-4
Directed electives [4]		1
	Semester Credit Hours	**15**

Second Year

Fall		
CHEM 257	Organic Chemistry I - Structure and Function [1]	4
PHYS 201	College Physics [1]	4
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) [5]		3
Creative arts (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#creative-arts)		3
Directed electives [4]		3
	Semester Credit Hours	**17**

Spring		
CHEM 258	Organic Chemistry II - Reactivity and Applications [1]	4
PHYS 202	College Physics [1]	4
American history (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#american-history) [5]		3
Language, philosophy and culture (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#language-philosophy-culture)		3
Directed electives [4]		3
	Semester Credit Hours	**17**

Third Year

Fall		
BICH 409	Principles of Biochemistry	3
BIMS 320/ GENE 320	Biomedical Genetics	3
BIOL 319	Integrated Human Anatomy and Physiology I	4
POLS 206	American National Government	3
Directed electives [4]		1
	Semester Credit Hours	**14**

Spring		
BIOL 320	Integrated Human Anatomy and Physiology II	4
VTPB 405	Biomedical Microbiology	4
Communication (http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/#communication) [3]		3
POLS 207	State and Local Government	3
Directed electives [4]		3
	Semester Credit Hours	**17**

Fourth Year

Fall		
STAT 302 or STAT 312	Statistical Methods [6] or Statistics for Biology	3
Directed electives [4]		7
General elective [7]		3
	Semester Credit Hours	**13**

Spring		
Directed electives [4]		7
General electives [7]		6
	Semester Credit Hours	**13**
	Total Semester Credit Hours	**120**

1. Common Body of Knowledge Courses (CBK) must be completed with a grade of C or better. All CBK courses must be complete prior to advancing to the third and fourth year upper-division requirements.
2. Complete 6-8 hours of mathematics core courses as follows:
   - Select one of the following: MATH 142, MATH 147, MATH 151, MATH 171. This is a CBK course and must be completed with a grade of C or better.
   - Select one of the following: MATH 140, MATH 148, MATH 150, MATH 152, MATH 168, MATH 172, STAT 201.
3. Professional school prerequisites and entrance exams often recommend or require specific courses that can fulfill component areas of the University Core Curriculum, including 3 or 6 hours chosen from ENGL 103, ENGL 104, ENGL 203, and ENGL 210, and 3 or 6 hours of social and behavioral sciences courses such as PBSI 107 and SOCI 205.
4. A list of approved courses that fulfill the directed elective hours is available below and on the BIMS Program website.
5. HIST 105 and HIST 106 are recommended, however students may choose from other American History core courses.
6. Students who complete STAT 201 in Mathematics core must take STAT 312.
7. Select any course 100-499 except MATH 102-104 (http://catalog.tamu.edu/undergraduate/course-descriptions/math/); only 1 credit KINE 199 may be used.

When satisfying the required 25 hours of BIMS directed electives and 9 hours of general electives: Any combination of variable credit 285, 291, 484, 485, and/or 491 courses may not exceed 9 credit hours.

BIMS 484 on its own or in combination with other variable credit courses may not exceed 6 total credit hours. Any combination of 289/489 courses may not exceed 9 credit hours. Restrictions will be enforced by the BIMS academic advising office.

A minimum of two courses taken to complete the minimum hours of BIMS directed electives must be designated to fulfill the university's writing and oral communication graduation requirement.

A minimum of 36 hours of 3/400 level coursework must be completed in residence at Texas A&M University to earn a degree.

All students are required to complete 3 hours of International and Cultural Diversity (http://catalog.tamu.edu/undergraduate/general-information/degree-information/international-cultural-diversity-requirements/) credit (ICD) and 3 hours of Cultural Discourse (http://catalog.tamu.edu/undergraduate/general-information/degree-information/cultural-discourse-requirements/) (CD) credits. A course satisfying a core category, a college department requirement, or a free elective can be used to satisfy this requirement. Select in consultation with academic advisor.

All students must complete the Foreign Language requirement: two units of the same foreign language at the high school level or a two course sequence of the same foreign language at the college level. Please see the university catalog "Requirements for a Baccalaureate Degree" for further details.

Directed Electives

Biomedical Science (BIMS) directed electives are courses that are specifically approved for the curriculum. A student must choose 25 semester credits from the following list of approved courses. The list of approved BIMS directed electives will also be available on the BIMS Program website:

Code	Title	Semester Credit Hours
ANSC 107	General Animal Science	3
ANSC 108	General Animal Science Laboratory	1
ANSC 210	Companion Animal Science	3
ANSC 318	Animal Feeds and Feeding	3
ANSC 320	Animal Nutrition and Feeding	3
ANSC 303	Principles of Animal Nutrition	3
ANSC 326/ FSTC 326	Food Bacteriology	3
ANSC 327/ FSTC 327	Food Bacteriology Lab	1
BICH 412	Biochemistry Laboratory I	1
BICH 414	Biochemical Techniques I	2
BICH 431/ GENE 431	Molecular Genetics	3
BICH 432/ GENE 432	Laboratory in Molecular Genetics	2
BIMS 110	One Health in Action	1
BIMS 125	Animals in Society	1
BIMS 201	Introduction to Phenotypic Expression in the Context of Human Medicine	2
BIMS 289	Special Topics in...	1-4
BIMS 291	Research	0-4
BIMS 380	Equine-Assisted Activities and Therapies - Best Practices	3
BIMS 481	Seminar	1
BIMS 484	Internship	0-3
BIMS 485	Directed Studies	0-4
BIMS 489	Special Topics in...	1-4
BIMS 491	Research	0-4
BIMS 405/ GENE 405	Mammalian Genetics	3
BIMS 421/ GENE 421	Advanced Human Genetics	3
BIOL 401	Critical Writing in Biology	1
BIOL 402	Communicating Biological Research to the Public	1
BIOL 403	Medical Narratives	1
COMM 370	Health Communication	3
ENTO 208	Veterinary Entomology	2
ENTO 209	Veterinary Entomology Laboratory	1
ENTO 210	Global Public Health Entomology	3
ENTO 423	Medical Entomology	2
ENTO 425	Disease Ecology	3
ENTO 427	Medical Entomology Laboratory (co-requisite for ENTO 423)	1
ENTO 431/ FIVS 431	The Science of Forensic Entomology	3
ENTO 432/ FIVS 432	Applied Forensic Entomology	1
MKTG 443/ PHLT 426	The Business of Healthcare	3
NRSC 401/ VIBS 401	Developmental Neurotoxicology	3
NUTR 222	Nutrition for Health and Health Care	3
POSC 454	Animal Welfare	3
URPN 370	Health Systems Planning	3
VIBS 111	Biodefense, Biosecurity and Bioterrorism	1
VIBS 201/ NRSC 201	History of Neuroscience	1
VIBS 204	Fundamentals of Food Toxicology and Safety	3
VIBS 210	Twenty-first Century Global One Health	1
VIBS 211	Twenty-first Century Biological Threats	1
VIBS 222	Great Poisonings of the World	3
VIBS 243	Introductory Mammalian Histology	2
VIBS 285	Directed Studies	0-4
VIBS 289	Special Topics in...	1-4
VIBS 305	Biomedical Anatomy	4
VIBS 310	Biomedical Writing	1
VIBS 311	Biomedical Explorations through Narrative	1
VIBS 343	Histology	4
VIBS 401/ NRSC 401	Developmental Neurotoxicology	3

VIBS 408	Neuroscience and Religion	3
VIBS 411	Tumor Cell Biology and Carcinogenesis	3
VIBS 413	Introduction to Epidemiology	3
VIBS 422	Endocrine Toxicology	4
VIBS 443	Biology of Mammalian Cells and Tissues	4
VIBS 445	Learning and Applying Peer Teaching Principles in Biomedical Anatomy	3
VIBS 447	Neurophysiology of Music	2
VIBS 456	Science in Cinema and Society	3
VIBS 485	Directed Studies	0-4
VIBS 489	Special Topics in...	1-4
VIBS 277/ NRSC 277	Essential Neuroscience - From Molecules to Nervous Systems	3
VIBS 407/ NRSC 407	Core Ideas in Neuroscience	2
VIBS 424/ VTPP 424	Biomedical Neuroendocrinology and Endocrine Disorders	3
VIBS 426/ ENTO 426	Methods in Vector-Borne Disease Ecology	3
VIBS 450/ NRSC 450	Mammalian Functional Neuroanatomy	4
VLCS 422	Equine Disease and Epidemiology	3
VLCS 485	Directed Studies	0-4
VSCS 485	Directed Studies	0-4
VTPB 212	Genetics in the News	3
VTPB 221	Great Diseases of the World	3
VTPB 285	Directed Studies	0-4
VTPB 289	Special Topics in...	1-4
VTPB 303	Medical Communication in the International Community	3
VTPB 407	Advanced Veterinary Microbiology Laboratory	1-3
VTPB 408	Clinical Microbiology	3
VTPB 409	Introduction to Immunology	3
VTPB 410	Cell Mechanisms of Disease	3
VTPB 411	One Health and Tropical Ecology	3
VTPB 415	Immunogenetics and Comparative Immunology	3
VTPB 438	Biomedical Virology	3
VTPB 485	Directed Studies	0-4
VTPB 489	Special Topics in...	1-4
VTPB 301/ RWFM 309	Wildlife Diseases	3
VTPB 460	Mammalian Cell Pathobiology	3
VTPB 487	Biomedical Parasitology	4
VTPP 123	Foundations of Physiology	3
VTPP 207	Methodologies of Physiology Education Research	3
VTPP 208	Analysis and Evaluation of Physiology Education	3
VTPP 223	Design of Experiments for Physiology Research	3
VTPP 224	In Vitro Experimentation in Physiology Research	3
VTPP 232	Theoretical Foundations of Health Disparities Research	3
VTPP 233	Health Disparities Research Parameters and Analysis	3
VTPP 234	Design of Models for Physiology Research	3
VTPP 235	Analysis and Validation of Models for Physiology Research	3
VTPP 281	Seminar	4
VTPP 285	Directed Studies	0-4
VTPP 289	Special Topics in...	1-4
VTPP 291	Research	0-4
VTPP 401/ BMEN 400	History of Human and Veterinary Medicine in Europe	4
VTPP 404	Food Toxicology and Safety	3
VTPP 420	Applied Pharmacology	2
VTPP 423	Biomedical Physiology I	4
VTPP 424/ VIBS 424	Biomedical Neuroendocrinology and Endocrine Disorders	3
VTPP 425	Pharmacology	3
VTPP 427	Applied Biomedical Physiology	3
VTPP 429	Introduction to Toxicology	3
VTPP 438	Analysis of Genomic Signals	3
VTPP 444	Practicum in Biomedical Research	3
VTPP 452	Fetal and Embryo Physiology	3
VTPP 481	Seminar	4
VTPP 485	Directed Studies	0-4
VTPP 489	Special Topics in...	1-4
VTPP 491	Research	0-4