Veterinary Course Requirements

Prerequisite Courses:	**Minimum Semester Credits**
Biological Sciences	
Laboratory associated with a biological sciences course	1
Genetics (must require biology as a prerequisite)	3
Physical Sciences	
Laboratory associated with a chemistry class	1
Biochemistry (must require organic chemistry as a prerequisite)	3
Physics with laboratory	4
Math	
Statistics (upper division course preferred - calculus is not a substitute)	3
Arts & Humanities/Behavioral & Social Sciences	
English Composition	3
Art, dance, English, humanities, foreign language, music, philosophy, speech, theater, anthropology, economics, geography, history, political sciences, psychology, sociology	12
Other	
Electives	30
Total	**60**

1. In order for a course to fulfill CSU's veterinary prerequisites, the course must be taken at a university that is accredited by the council for **higher education accreditation** (CHEA) and the course description, content level, prerequisites, and number of credits must meet the requirements as stated in this document. Courses taken at vocational and proprietary schools will not be accepted.

2. Students are encouraged to take additional **upper division biomedical science** courses. The following are not required, but are highly recommended**:** microbiology, cell biology, developmental biology, computer sciences, anatomy, physiology, histology, nutrition, and other advanced biomedical sciences.

3. If after reading our course descriptions (below) you are still not sure if your course will meet our prerequisite requirement, you can submit a **course substitution request**.

4. You can apply and be admitted under provisional admission before completing all required courses. Keep in mind the admissions committee will only be able to evaluate completed courses at the time you apply since your application cannot be edited after you submit it. If **provisionally admitted, final grades must be received by July 15** before the fall semester you will matriculate into the program.

5. There are no **expiration dates** on prerequisite courses with the exception of biochemistry and genetics, which must be taken within the last ten years; however, the committee will want to see a more recent demonstration of your ability to handle upper division biomedical science courses.

6. **International transcripts (to include Canada)** must be processed through a transcript evaluation service and received by VMCAS. Only electronically submitted World Education Services (WES) evaluations will be accepted by VMCAS.

SAMPLE COURSE DESCRIPTIONS
AT COLORADO STATE UNIVERSITY

BIOCHEMISTRY – ONE OF THE FOLLOWING COURSES:
To fulfill CSU's veterinary program biochemistry prerequisite, an equivalent course must be considered upper division at your institution, it must require organic chemistry (either one semester or two) as a prerequisite, the title must indicate it is primarily a biochemistry course, and it must be the equivalent of 3 semester credits or more.

BC351 - 4 semester credits - Principles of Biochemistry
Prerequisite: BZ110 or BZ120 or LIFE102; CHEM245 or CHEM341 or CHEM345. For majors in biological sciences, engineering, and preprofessional students in the health sciences.
Structure and function of biological molecules; biocatalysis; metabolism and energy transduction; gene expression.
BC401 - 3 semester credits - Comprehensive Biochemistry I
Prerequisite: CHEM245 or CHEM343 or concurrent registration in CHEM346; MATH155 or MATH160.
Macromolecular structure and dynamics; membranes; enzymes; bioenergetics

GENETICS – ONE OF THE FOLLOWING COURSES:
To fulfill CSU's veterinary program genetics prerequisite, an equivalent course must be considered upper division at your institution, it must require biology as a prerequisite, the title must indicate it is primarily a genetics course, and it must be the equivalent of 3 semester credits or more.

ANEQ328 – 3 semester credits - Foundations in Animal Genetics
Prerequisite: ANEQ101 or ANEQ102; LIFE 102
Foundational information of the influence of the genome and its genes on qualitative traits in animal populations

ANEQ330 – 3 semester credits – Principles of Animal Breeding
Prerequisite: BZ350 or SOCR330; 3 credits of 200- to 300- statistics
Genetic principles underlying animal improvement; elementary population genetics, heritability; selection response; mating systems; DNA markers

BC380A1 – 4 semester credits – Pre-Health Genetics
Prerequisite: BC351
Applies and extends the biochemical concepts learned in BC351 to macromolecules and molecular processes based on nucleic acids.

BZ350 - 4 semester credits - Molecular and General Genetics
Prerequisite: LIFE102; one course in statistics. Primarily for students in biological sciences
Mendelian, molecular, and population genetics emphasizing the molecular basis of genetics

BZ455 - 3 semester credits - Human Heredity and Birth Defects
Prerequisites: BZ111 or LIFE103
Human heredity and its individual and social implications; causes of congenital defects

BC463 - 3 semester credits - Molecular Genetics
Prerequisites: BC401 or concurrent registration or BC351; LIFE201B. Credit not allowed for both BC463 and BC563
Molecular basis of gene structure, replication, repair, recombination, and expression

MIP450 - 3 semester credits - Microbial Genetics
Prerequisite: MIP300 (General Microbiology); BC351 or BC401 or concurrent registration
Principles of genetics at molecular level: mutation, recombination, complementation, suppression, control of gene expression, & recombinant DNA

SOCR330 - 3 semester credits - Principles of Genetics
Prerequisite: BZ110 or BZ120 or LIFE102
Transmission, population, and molecular genetics; practical applications

PHYSICS - ONE OF THE FOLLOWING COURSES:
PH121 - 5 semester credits - General Physics I
Corequisite: MATH125 (Numerical Trigonometry)
Concepts of force, torque, energy, momentum, work used to cover fluids, waves, sound, temperature, heat; biological, physical examples (noncalculus)

PH122 - 5 semester credits - General Physics II
Prerequisite: PH121. Credit not allowed for both PH122 and PH142.
Electricity including electrostatics and simple circuits; magnetism; optics; nuclear physics, radiation; biological, physical examples (noncalculus)

PH141 - 5 semester credits - Physics for Scientists and Engineers I
Prerequisite: MATH126; MATH155 or MATH160. (Calculus). Students who have had high school physics may enroll in MATH155 or MATH160 concurrently. Credit not allowed for both PH141 and PH121.
Forces, energy, momentum, angular momentum, oscillations, waves, heat, thermodynamics (calculus based)

STATISTICS – ONE OF THE FOLLOWING COURSES:
STAT301 - 3 semester credits - Introduction to Statistical Methods
Prerequisite: MATH118 (College Algebra).
Techniques in statistical inference; confidence intervals, hypothesis tests, correlation and regression, analysis of variance, chi-square tests

STAT307/ERHS307 - 3 semester credits - Introduction to Biostatistics
Prerequisite: MATH118 (College Algebra). Credit allowed for only one course: STAT301, STAT307, ERHS307, STAT309, STAT311.
Biostatistical methods; confidence intervals, hypothesis tests, simple correlation and regression, one-way analysis of variance

Prerequisite Course Substitution Request

To request a Course Substitution for one of CSU/s veterinary prerequisite requirements, please use the **Course Substitution Request form** to send your course information as an email attachment to DVMAdmissions@colostate.edu. Please fill out every field, including all information requested. If not all information is submitted, your request will be returned for the missing information and will delay the processing of your request.

You will need the following information.

- Institution Name
- Course title and course number
- Prerequisite(s) required for the course – include title
- Number of credits (indicate semester/quarter)
- Grade received
- Course level (FR, SO, JR, SR, GR)
- Course description

1) If your Course Substitute Request is for "**English Composition**", please write a description of the writing requirement(s) at your Institution and how you fulfilled the requirement.
   a. "English Literature" does not qualify as an equivalent course.
   b. **AP English Composition** (not AP English Literature) will fulfill CSU's veterinary prerequisite requirement of English Composition, if the course appears on an official transcript.
   c. Completion of a four year degree (ie: bachelor of science) will fulfill CSU's veterinary prerequisite requirement of English Composition, if completion of the degree appears on an official transcript.

2) If your Course Substitute Request **is approved**, please provide a one-sentence statement to include the approval date in the "Special Circumstances" section of the Colorado Supplemental Application.

3) Please note:
   a. CSU **does not grant waivers** for veterinary prerequisite requirements, i.e. applicants must have an "approved" equivalent substitution.
   b. If you would like to provide **supporting documentation**, please scan and attach to your email message. Please do NOT fax.

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