

Veterinary College Prerequisite Courses – United States Universities

AUB - Auburn University – College of Veterinary Medicine

The Quad Center, Auburn, AL 36849

(334) 844-6425

<http://www.vetmed.auburn.edu/home/education/admissions/prerequisites>

Courses (Semester hours)

Physics with lab (8)

Biochemistry (3)

Biology I with lab (4)

Biology II with lab (4)

Fundamentals of Chemistry with lab (8)

Organic chemistry with lab (6)

Animal Nutrition (3)

Science electives (6) Science electives must be from the following list: Comparative Anatomy, Genetics, Embryology, Mammalian or Animal Physiology, Microbiology, Cell Biology, Histology, Reproductive Physiology, Parasitology, or Immunology

Pre-Calculus with Trigonometry (3)

English Composition (6)

Fine Arts (3) Fine arts courses should emphasize history and appreciation rather than performance; courses include: art, music, theater and dance electives (6)

Literature/History (6) Students must complete 3 semester hours in both and students must complete a 6 semester hour sequence either in literature or in history

Social and Behavioral Science electives (9)

Total semester hour credits 75

UCD – University of California, Davis - School of Veterinary Medicine

One Shields Avenue, Davis, CA 95616

(530)-752-1383

admissions@vmdean.ucdavis.edu

http://www.vetmed.ucdavis.edu/students/dvm_program/admissions/Admission_Requirements.cfm<http://www.vetmed.ucdavis.edu/>

Courses (Quarter hours)

Physics (no lab) (one year) (6)

Biochemistry (no lab) upper division course (5)

General Biology with lab (one year) (14)

General Chemistry with lab (one year) (15)

Organic Chemistry with lab (one year) (6)

Genetics (no lab) upper division course (4)

Systemic Physiology (no lab) upper division course (5)

Statistics (4)

Humanities and Social Sciences (12)

English Composition (4)

Additional English/literature (8)

Upper-division courses are equivalent to one semester or one quarter.

Total quarter hour credits 83 Or Total semester hour credits 55

CSU - Colorado State University – College of Veterinary Medicine and Biological Sciences

Fort Collins, CO 80523-1062 USA

(970) 491-6909

<http://admissions.colostate.edu/>

<http://www.cvmb.colostate.edu/cvmb/Preprofessionalcourses.htm>

Courses (Semester Hours)

Physics with a lab (4)

Biochemistry (3) required prerequisite of Organic Chemistry

Laboratory associated with a biological science course (1)

Laboratory associated with a chemistry class (1)

Genetics (3)

Statistics (3) (upper division course preferred - calculus is not a substitute)

English Composition (3)

Arts & Humanities/Behavioral & Social Science electives (12)

Electives (30)

Science electives recommended

Total semester credit hours 60

Veterinary College Prerequisite Courses – United States Universities

COR – Cornell University - College of Veterinary Medicine

Ithaca, New York 14853-6401 (607) 253-3700

<http://www.vet.cornell.edu/admissions/PSPreReqAcademic.cfm>

Courses (Semester Hours)

Physics with lab (full year) (6) AP credit of 4 or higher allowed.

Biochemistry (half year required, full year preferred; lab recommended) (4)

Biology or zoology with lab (full year) (6)

General Chemistry with lab (full year) (6) AP credit of 4 or higher allowed.

Organic Chemistry with lab (full year) (6)

Microbiology with lab (3)

English Composition and Literature (full year) (6)

Three credits of literature may be satisfied by a course in public speaking.

Electives (53)

Total semester credits 90

UFL – University of Florida – College of Veterinary Medicine

Physical Address: 2015 SW 16th Avenue, Room V1-100A, Gainesville, FL. 32610-0125

Mailing Address: PO Box 100125 HSC, Gainesville, FL 32610-0125

(352) 294-4244

<http://education.vetmed.ufl.edu/admissions/>

Courses (Semester Hours)

Biology – animal biology or zoology with lab

Genetics

Microbiology with lab

General Chemistry

Inorganic and Organic Chemistry with lab

Biochemistry

Animal Science – Introduction to Animal Science and Animal Nutrition (8)

Mathematics – calculus and statistics (7)

Physics – two semesters with lab.s (8)

English Composition - two semesters (6) Only English courses in Rhetoric or Composition will be accepted.

Humanities (9)

Social Sciences (6)

Electives Variable credit hours - Agriculture, Advanced Biochemistry, Analytical Chemistry, Computer Science, Economics, Humanities, Journalism, Oral Communication, Political Science, Psychology, Social Sciences, Statistics, etc.

Total minimum semester hour credits 79

UGA – University of Georgia – College of Veterinary Medicine

501 D. W. Brooks Drive, Athens, GA 30602 (706) 542-5728

http://www.vet.uga.edu/admissions/requirements_page.php#course_req

Courses (Semester Hours)

English (writing intensive) (6)

Humanities and social studies (14)

General Biology with lab (8)

Advanced biological science* (8)

Chemistry with lab

Inorganic Chemistry with lab (8)

Organic Chemistry with lab (8)

Physics with lab (8)

Biochemistry (lab not required) (3)

*300/3000 level or higher biology courses that have general biology as a prerequisite. Recommended: Comparative Anatomy, Microbiology, Cell Biology and Genetics. Nutrition, behavior and ecology courses typically do not count towards the advanced biological sciences requirement.

Total semester credit hours 63

Veterinary College Prerequisite Courses – United States Universities

UIU – University of Illinois at Urbana- Champaign College of Veterinary Medicine

3505 Veterinary Medicine Basic Sciences Building, 2001 South Lincoln Avenue, Urbana, IL 61802 217-265-0380
<http://vetmed.illinois.edu/asa/brochure/02.html>

Courses (Semester Hours)

Physics with lab.s (8)

Biological Sciences with lab.s (8)

Chemical Sciences including Biochemistry; Inorganic and Organic Chemistry with lab.s (16) three lab.s required.

English composition (6) Three hours of speech/communication can replace three hours of English composition.

Humanities/Social Sciences (12)

Junior/Senior level science courses (12) Includes but not limited to: Advanced Biology, Anatomy, Genetics, Microbiology, Physiology, Zoology. Additional courses in areas such as advanced biology (i.e. anatomy, physiology, microbiology, cell biology, or genetics), business management or economics, animal nutrition, or food animal production are highly useful for all applicants.

Total semester credit hours 62

ISU – Iowa State University - College of Veterinary Medicine

2270 Veterinary Medicine, Iowa State University P.O. Box 3020, Ames, IA 50010-3020
515-294-5337 E-mail: cvmadmissions@iastate.edu

<http://vetmed.iastate.edu/academics/prospective-students/admissions/academic-requirements>

Courses (Semester Hours)

General Physics – (4) 1 semester with lab

First semester of a two-semester series with lab, does not need to be calculus-based, must include mechanics.

Biochemistry (3)

General Biology – (8) 1 year series with labs each term or individual courses with labs including one at the cellular/microbial level and one at the organism level

General Chemistry – (7) 1 year series and one term lab

Organic Chemistry - (7) 1 year series and one term lab

Mammalian Anatomy or Physiology (3) (Human anatomy and physiology will fulfill this requirement)

Genetics – (3) upper level (junior/senior) course which includes Mendelian and molecular genetics (Animal breeding or livestock improvement courses generally do not fulfill this requirement)

English composition – (6) 1 year of composition or writing emphasis courses, may include business or technical writing.

Oral communication – (3) May include interpersonal or group communication or public speaking. Acting and foreign language do not fulfill this requirement.

Arts, humanities and/or social sciences (8)

Electives (8)

Total semester credit hours 60

KSU – Kansas State University - College of Veterinary Medicine

Manhattan, KS 66506 785-532-5660

<http://www.vet.k-state.edu/admit/requirements.htm>

Courses (Semester Hours)

Physics I and II (8)

Biochemistry (3)

Principles of Biology or Zoology (4)

Chemistry I and II (8)

Organic Chemistry with lab (5)

Expository Writing I and II (6)

Humanities and/or Social Sciences (12)

Electives (9)

Animal Genetics or General Genetics (3)

Microbiology with lab (4)

Public speaking (2)

Total semester credit hours 64

All upper level science courses must have been taken within six years of the date of enrollment in the professional program.

Veterinary College Prerequisite Courses – United States Universities

LSU – Louisiana State University School of Veterinary Medicine

Skip Bertman Drive, Baton Rouge, LA 70803 (225) 578-9900 E-mail: svmweb@vetmed.lsu.edu
<http://www1.vetmed.lsu.edu/Admissions/DVM%20Admissions%20Info/Course%20Prerequisites/item26645.html>

Courses (Semester Hours)

General Physics I & II (labs not required) (6)

Biochemistry (appropriate course must have Organic Chemistry as its prerequisite.) (3)

General Biology/Zoology (12) (Must include at least 8 sem. hrs. (two-semester course sequence with laboratory) in general biology or introductory zoology and at least 4 sem. hrs. (one-semester course with laboratory) in microbiology at a level appropriate for premedical student)

General Chemistry I & II with labs (8)

Organic Chemistry (lab not required) (3)

Mathematics (College-level algebra/trigonometry or higher) (6)

English Composition I & II (6)

Microbiology with lab (appropriate course would be one specific for science/pre-vet majors.) (4)

Speech Communication (Public speaking or interpersonal communications) (3)

Electives (20)

Total semester credit hours 66

MSU – Michigan State University College of Veterinary Medicine

Veterinary Medical Center F & G wings 784 Wilson Road Room F-104, East Lansing, MI, 48824
(517) 353-9793 or 353-9794 E-mail: admiss@cvm.msu.edu

<http://cvm.msu.edu/student-information/dvm-program-admissions/pre-requisite-course-requirements>

Courses (Semester Hours)

Physics I and II with lab (8)

Chemistry I with lab (3)

Organic Chemistry I and II with lab (6)

Biochemistry (3) This should be a complete upper-division course in general biochemistry; half of a two-semester sequence will not meet this requirement.

Biology I and II with lab.s (6)

Genetics (4)

Microbiology (3)

Microbiology Lab. (1)

Animal Nutrition (3)

Eukaryotic cell biology (3)

College level algebra & trigonometry or pre-calculus or calculus (3)

English Composition (3)

Humanities (6) two courses that must include two of the following subject areas: history, literature, art/music/theater, history or appreciation, philosophy, and religion.

Social Sciences (6) two courses that must include two of the following subject areas: cultural anthropology, economics, human geography, political science, psychology, and sociology

Total semester credit hours 57

UMN – University of Minnesota - College of Veterinary Medicine

1964 Fitch Ave # 108 Saint Paul, MN 55108 (612) 624-4747

<http://www.cvm.umn.edu/education/prospective/courserequirements/home.html>

Courses (Semester Hours)

Physics with lab (8-12)

Biochemistry (no lab required) (3-5)

General Biology with lab (3-5)

Animal Biology or Zoology with lab (or the 2nd semester of a two-term biology sequence) (3-5)

General Chemistry with lab.s (8-12)

Organic Chemistry with lab (5-10)

Genetics (3-5)

Microbiology with lab (3-5)

College Algebra, Pre-calculus or Calculus (3-5)

English Composition (6-9) Oral communication or advanced composition may be used as an additional course.

Arts and Humanities (6-9)

Social Sciences and History (6-9)

Total semester hour credits Variable

Veterinary College Prerequisite Courses – United States Universities

MSS – Mississippi State University – College of Veterinary Medicine

240 Wise Center Dr., P.O. Box 6100 Mississippi State, MS 39762 662-325-3432

http://www.cvm.msstate.edu/academics/entrance_requirements.html#academic

Courses (Semester Hours)

Physics (can be Trig-based) (6)
Biochemistry (3)
General Biology with lab (8)
General Chemistry with lab (8)
Organic Chemistry with lab (8)
Microbiology with lab (4)
Mathematics (college algebra or higher) (6)
English Composition (6)
Speech or technical writing (3)
Humanities/fine arts/social and behavioral sciences (15)
Advanced (upper-level) science electives (12)
Total semester credit hours 79

UMO – University of Missouri – Columbia

College of Veterinary Medicine

W203 Vet Med Building Columbia, MO 65211

573- 884-3341 E-mail: VetAdmissions@missouri.edu

<http://www.cvm.missouri.edu/prep-undergrad.htm>

Courses (Semester Hours)

Physics (5) (5 hours in only the first of a companion series will not suffice.)
Inorganic Chemistry
Organic Chemistry
Biochemistry with organic chemistry as the pre-requisite (3)
Biological sciences (10) Physiology and Anatomy are highly recommended. Animal Nutrition, Animal Reproduction, Animal Husbandry, Genetics, Microbiology, Cell Biology are recommended
College Algebra or more advanced (3)
English Composition or Communication (6)
Social Sciences or Humanistic Studies (10) Psychology and Statistics are recommended
Electives (open) Business and Accounting are recommended
Total semester credit hours completed before applying 60

NCSU – North Carolina State University – College of Veterinary Medicine

1060 William Moore Drive, Raleigh, NC 27607 (919) 513-6786

<http://www.cvm.ncsu.edu/student-services/admissions.html>

Courses (Semester Hours)

Physics with lab (8)
Biochemistry lab preferred (3-4)
Biology or Zoology with lab (4)
Chemistry, general with lab.s (8)
Chemistry, organic with lab.s (8)
Genetics lab preferred (3-4)
Microbiology with lab (4)
Animal Nutrition (3) Human, Plant and species specific (Equine, Swine, etc) Nutrition courses will **NOT** satisfy this requirement
Calculus or **Logic** (3)
Statistics (3)
English composition/communications or Public Speaking (6)
Humanities/Social Sciences (6)
Total semester credit hours 59-61

Veterinary College Prerequisite Courses – United States Universities

OHS – Ohio State University College of Veterinary Medicine

Office of Professional Admissions, Student Academic Building, 281 West Lane Avenue, Columbus, Ohio 43210
(614) 292-9444 professional@osu.edu
<http://vet.osu.edu/education/prerequisites>

Courses (Semester Hours)

Physics with lab (10)

Biochemistry (5) if Biochemistry is taught as a two-course sequence, both courses must be taken.

General biology with lab.s (8)

General chemistry with lab.s (10)

Organic chemistry (8) lab recommended but not required.

Molecular Genetics (3)

Microbiology with lab (4) must include introduction to virology & immunology.

Math (algebra and trigonometry) (5)

English Composition (3)

Humanities and Social Sciences (14)

Electives (8)

Total 78 - 82 semester hours

OKS - Oklahoma State University, Center for Veterinary Health Sciences

110 McElroy Hall, Stillwater, OK 74078 405-744-6653
http://www.cvm.okstate.edu/index.php?option=com_content&view=article&id=116&Itemid=283

Courses (Semester Hours)

Physics I & II (8)

Biochemistry (3)

Biological sciences, general zoology or equivalent with lab (8)

Biology elective for science majors (8)

Chemistry I and II with lab (8-10)

Organic Chemistry I and II with lab.s - must include aliphatic & aromatic compounds. (8)

Genetics (4-5) lab recommended but not required.

Microbiology with lab (5)

Animal Nutrition (3)

Mathematics, college algebra or higher level course; no statistics (3)

English Composition (6)

English elective (may include speech, technical writing or literature) (3)

Humanities/Social Sciences (6)

Elective(s) If all of the above courses do not total 60 credit hours, science and/or business electives may be used; business and commerce are encouraged. Credit hours will vary according to institution in which coursework is completed.

Total semester credit hours (minimum) 64

ORS – Oregon State University, College of Veterinary Medicine

700 SW 30th Street, Corvallis, OR 97331-4801 541-737-2098
<http://oregonstate.edu/vetmed/students/future/dvm/academic-requirements-admission>

Courses (Semester Hours)

Physics sequence: 8

Biochemistry : minimum of 1 course or course sequence, upper division sequence is preferred.

General Biology sequence:

General Inorganic Chemistry sequence with lab.s: 2 semesters

Organic Chemistry sequence sufficient to meet requirements for upper division biochemistry: 1-2 semesters

Genetics: 3 - must include Mendelian and molecular genetics.

Biological Sciences: Recommended courses include: additional biochemistry, additional physiology and/or anatomy, animal reproduction, cell biology, cell physiology, epidemiology, histology, immunology, microbiology, parasitology, and virology.

Animal Nutrition: 2 semester hours - must include monogastric and ruminant nutrition.

Physiology – animal or human: at least 2 semesters

Mathematics: Course or course sequence in college level algebra and trigonometry

Statistics: 3

English Composition: 4

Public Speaking: 2

Humanities/Social Sciences: 8

Veterinary College Prerequisite Courses – United States Universities

UPA – University of Pennsylvania School of Veterinary Medicine

Office of Admissions, 3800 Spruce Street, Philadelphia, PA 19104-6044 215.898.5434

admissions@vet.upenn.edu

<http://www.vet.upenn.edu/EducationandTraining/StudentAdmissions/Requirements/tabid/298/Default.aspx>

Courses (Semester Hours)

Physics with lab (8)

Biology or Zoology (9 - three courses) a basic understanding of genetics should have been derived from these courses. The biology requirements may be met by taking a six semester credit course in general biology, which includes the biology of plants and animals. This may be followed by a course of not less than three semester credits in embryology or comparative anatomy of the vertebrates. An alternative method of completing the biology requirements is to take separate courses in vertebrate zoology, genetics, and embryology or comparative anatomy.

General Chemistry with lab (8)

Organic Chemistry with lab (4)

Calculus (3)

Math statistics or BioStats (3)

English (one must be a composition course) (6)

Humanities or social sciences (6)

Electives (43) Additional science courses (biochemistry and microbiology) are strongly encouraged, but not required.

Total semester hour credits 90

PUR – Purdue University Purdue Veterinary Medicine

Student Services Center, 625 Harrison Street, West Lafayette, IN 47907

(765) 494-7893 vetadmissions@purdue.edu

http://www.vet.purdue.edu/admissions/4-required_courses.pdf

Courses (Semesters)

Physics with lab (2)

Biochemistry (1)

Biology with lab (2) including diversity, developmental, cell structure

Inorganic chemistry with lab (2)

Organic chemistry with lab (2)

Genetics with lab (1)

Microbiology with lab (1)

Careers in Veterinary Medicine (if available) (1)

Animal Nutrition (1)

Calculus (1)

Statistics (1)

English composition (1)

Communication (1) (interpersonal, persuasion or speech)

Humanities (3) - foreign languages, cognitive sciences, and social sciences; economics recommended

Total semester credit hours 69-86

Veterinary College Prerequisite Courses – United States Universities

UTN – University of Tennessee - The College of Veterinary Medicine

2407 River Drive, Knoxville, TN 37996 (865) 974-VETS

<http://www.vet.utk.edu/admissions/procedure.php>

Courses (Semester Hours)

Physics with lab (8)

Biochemistry, exclusive of laboratory (4) This should be a complete upper-division course in general cellular and comparative biochemistry. Half of a two-semester sequence will not satisfy this requirement. The biochemistry course requirement must have been satisfactorily completed within five years of the time you wish to enter the professional program.

General biology/zoology with lab (8)

General inorganic chemistry with lab (8)

Organic chemistry with lab (8)

Cellular biology (3)

Genetics (3)

English composition (6)

Social Sciences/Humanities (18)

Science Electives - Applicants are strongly encouraged to take additional biological and physical science courses especially comparative anatomy, mammalian physiology, microbiology with laboratory, and statistics.

Total semester credit hours 66

Texas A & M College of Veterinary Medicine at Texas A&M University

422 Raymond Stotzer Pkwy, College Station, Texas 77845 (979) 862-2489

send applications to: 702 Colorado, Suite 6.400, Austin, TX 78701

<http://vetmed.tamu.edu/dvm/future/prerequisites>

Courses (Semester Hours)

Physics (8)

General Biology with lab (4)

General Microbiology with lab (4)

Genetics (3)

General Animal Science lab recommended (3)

Inorganic Chemistry with lab (8)

Organic Chemistry with lab (8)

Biochemistry (must be lecture hours only) (5)

Calculus OR Statistics (3)

Composition and Rhetoric (3)

Literature (3)

Speech Communication (3)

Technical Writing (3)

TUF – Tufts University - Cummings School of Veterinary Medicine at Tufts University

200 Westboro Road, North Grafton, MA 01536 (508) 839-7920

vetadmissions@tufts.edu

http://www.tufts.edu/vet/dvm/prerequisite_courses.html

Courses (Semester Hours)

Physics (6)

Biochemistry (3)

General biology (8) with lab

General inorganic chemistry (8) with lab

Organic chemistry (8) with lab

Genetics (3) (unless included in biology)

Science Electives- Additional science courses such as cell biology, microbiology, physiology, comparative or developmental anatomy are recommended

Math/Statistics (6)

English (6)

Social and Behavioral Sciences (6) May include psychology, sociology, cultural anthropology, political science, and or economics

Humanities and Fine Arts (6) May include literature, music, art, history, philosophy, religion, and or foreign language.

Total semester credit hours 60

Veterinary College Prerequisite Courses – United States Universities

Tuskegee University - College of Veterinary Medicine, Nursing & Allied Health

Tuskegee, AL 36088 334-727-8174 cvmnah@tuskegee.edu 334-727-8460 ahuang@mytu.tuskegee.edu
www.tuskegee.edu/graduateadmissions

Courses (Semester Hours)

Physics with lab (8)

Biology with lab (4)

Genetics (4)

Microbiology with lab (4)

Chemistry with lab (4)

Organic Chemistry with lab (4)

Biochemistry with lab (4)

Advanced Biology (9) (300 Level or Above) (Ecology, Biology, Zoology, Physiology, Microbiology, Anatomy, Immunology, Genetics, Histology, and Others)

Introduction to Animal Science (3)

Animal Nutrition/Feeds & Feeding (3)

Mathematics (6)

English (6)

Social Sciences (6) (Sociology, Anthropology, Communication, Economics, and others)

Liberal Arts (6) (Any Language, Arts, Humanities, and others)

Electives (8)

VMR – Virginia-Maryland Regional College of Veterinary Medicine

Virginia Tech, Duck Pond Drive (0442), Blacksburg, Virginia 24061 540-231-7666

<http://www.vetmed.vt.edu/acad/dvm/req.asp#course>

Courses (Semester Hours)

Physics (8) with lab

Biochemistry (3) laboratory not required

General Biology (8) with lab

Organic chemistry (8) with lab

Science Electives – cell biology, comparative anatomy, genetics, microbiology, nutrition and physiology recommended

Mathematics (6) (college algebra or higher)

English Composition (3)

English Technical Writing (3)

Humanities/Social Sciences (6) may include, but are not restricted to: art, philosophy, history, economics, psychology or sociology.

Total semester credit hours 45

WSU – Washington State University – College of Veterinarian Medicine

Veterinary Admissions, PO Box 647012, Washington State University, Pullman WA 99164-7012 509-335-5107

<http://www.vetmed.wsu.edu/prospectiveStudents/Requirements.aspx>

Courses (Semester hours)

Physics with lab (4)

Biochemistry (3)

Biology with lab (8)

Inorganic chemistry with lab (8)

Organic chemistry with lab (4)

Math (pre-calculus or higher) (3)

Statistics (methods) (3)

Genetics (4)

English Composition/Communication (6).

Arts & Humanities/Social Science/History (21).

Total semester credit hours 64

Veterinary College Prerequisite Courses – United States Universities

WES – Western University of Health Sciences

309 East Second Street, Pomona, California 91766

(909) 623-6116

<http://prospective.westernu.edu/veterinary/requirements>

Courses (Semester Units)

Physics with lab (6)

Microbiology (3)

Organic chemistry with lab (3).

Genetics or Molecular Biology (3)

Physiology (3) must be upper-division course in animal, human or comparative physiology; will not accept courses in cellular, neurology, pathology or reproductive physiology.

Biochemistry (3) lab recommended

Upper-division biological & life sciences (9) (must include one upper div lab)

Preferred courses: anatomy, immunology, embryology.

Highly recommended courses: zoology, endocrinology, cell biology, molecular biology, reproduction, parasitology, histology, toxicology, nutrition, pharmacology

Statistics (3) Must be a course designed or specified for science majors.

English composition (6)

Psychology or Sociology (3)

Humanities/Social Sciences (9)

Public Speaking or small group communication (3) speech and communication courses in a language other than English will not be accepted

WIS – University of Wisconsin - School of Veterinary Medicine

2015 Linden Dr., Madison, WI 53706

(608) 263-2525

http://www.vetmed.wisc.edu/Required_course_work.29.1.html

Courses (Semester Hours)

Physics - two-semester lecture series (6)

Biochemistry - course which has organic chemistry as a prerequisite (3)

Biology or Zoology with lab (5)

General and Qualitative Chemistry, two-semester lecture series with lab (8)

Organic Chemistry, one-semester lecture satisfying biochemistry prerequisite (3)

Genetics or Animal Breeding must include principles of heredity (3)

Statistics (3)

English Composition or Journalism (6)

Social Sciences or Humanities (6)

Science electives - upper-level science courses such as anatomy, physiology, microbiology, or cell/molecular biology are recommended