

THE COLLEGE OF AGRICULTURE AND LIFE SCIENCES

<http://www.uvm.edu/cals>

The programs of the College of Agriculture and Life Sciences (CALS) emphasize life sciences, agriculture and food systems, environment, sustainability, and the preservation of healthy rural communities. In cooperation with the Agricultural Experiment Station and the University of Vermont Extension Service, CALS fulfills the four core public functions of the University's land grant mission: teaching, research, outreach, and providing related services.

As an integral part of the University of Vermont, the College of Agriculture and Life Sciences helps fulfill the university's mission to discover, interpret and share knowledge; to prepare students to lead productive, responsible, and creative lives; and to promote the application of relevant knowledge to benefit the State of Vermont and society as a whole.

The college faculty strive for excellence in undergraduate education as evidenced by a sustained and enviable record of university teaching award winners. The college emphasizes the importance of each individual student and promotes significant student-faculty interaction. Students are provided with a firm foundation in the life sciences and social sciences in order to excel and meet the challenges in future professional careers. Faculty and staff provide a broad range of support to help students develop high-quality academic programs that meet individual needs.

Applying knowledge outside the classroom is a signature of all CALS programs. Opportunities abound for on and off-campus experiences such as internships, community service learning, undergraduate research, independent study, and study abroad. Pre-professional tracks prepare students for employment upon graduation or for the successful pursuit of advanced degrees. Career choices are broad, but focus primarily on entrepreneurship, dietetics, international and rural community development, agriculture, veterinary and human medicine, biotechnology, nutrition, research and teaching, horticulture, and the plant sciences.

Academic study is enhanced by the on-campus farm and field facilities, the labs, and the research for which the college is renowned. Many CALS faculty, working through the Agricultural Experiment Station, conduct mission-oriented, applied research and encourage undergraduate participation.

The office of the dean of the college is located in Rooms 106 and 108 in Morrill Hall. For more information, contact the Student Services office at calsstudentservices@uvm.edu or call (802) 656-2980.

CATAMOUNT CORE CURRICULUM REQUIREMENTS

All undergraduate degree students matriculating in Fall 2023 or later are required to successfully complete the Catamount Core Curriculum Requirements.

The Catamount Core Curriculum is designed to expose students to the intellectual breadth of the liberal arts, develop the skills needed to integrate and apply diverse areas of knowledge, and build the foundations for lifelong learning and active participation in local and global communities.

The Catamount Core Curriculum is made up of 42 credits in courses distributed across three main areas: LIBERAL ARTS (21 credits); CORE SKILLS (9 credits); and COMMON GROUND VALUES (12 credits).

CALS FOUNDATION REQUIREMENTS

Students develop abilities and use tools to communicate effectively, analyze, problem-solve, think critically, and work well with others.

ORAL COMMUNICATION

Students show confidence and efficacy in speaking before a group, expressing themselves in a way that is easily understood at a level that is appropriate for the audience. Competency may be met by satisfactory completion of CALS 1010 or CALS 2830 (or equivalent, where the primary focus is public speaking).

INFORMATION TECHNOLOGY

Students demonstrate mastery of technology for communication, data gathering and manipulation, and information analysis. Competency may be met by satisfactory completion of CALS 1020 or CALS 1850 (or equivalent).

DISTINGUISHED UNDERGRADUATE RESEARCH (DUR) COLLEGE HONORS PROGRAM

The CALS Academic Awards committee promotes and encourages independent research by recognizing those students who especially excel in their creative, innovative, responsible, and independent pursuit of research. DUR Committee Guidelines for student projects may be obtained on the CALS website or by emailing calsstudentservices@uvm.edu.

Independent research can be an important aspect of a student's education. Scientific research, independent projects, and internships or field practice are examples of independent research which benefit students as they pursue graduate study or seek employment. Over the years a number of undergraduate research projects have been published in well-known scientific journals and manuals, videotapes, and other products of special projects have been incorporated into classes to enhance the learning environment in the college.

The completed research, in a form appropriate to the discipline, is evaluated first by a departmental review committee. Independent

research of the highest quality will be chosen for college Honors by the Academic Awards committee.

HONORS PROGRAM

The CALS Honors program is a four-year Honors sequence for CALS students who are accepted into the university Honors College. It is designed for highly qualified and motivated students desiring an academically challenging undergraduate experience in the broad areas of the life sciences and agriculture.

In their first two years, Honors scholars will join Honors students from across the university in small, interdisciplinary Honors seminars conducted by renowned scholars from the University of Vermont and other institutions. In their junior and senior years, Honors scholars do Honors work within the College of Agriculture and Life Sciences. The program culminates with an Honors thesis: an opportunity to conduct independent scholarly research under the guidance of a faculty advisor.

Entering first-year students with outstanding academic records will be invited to participate in the Honors College. Scholars will be required to maintain a minimum grade-point average, participate in program activities, enroll in Honors classes and successfully complete a Senior Honors thesis.

Students in CALS who demonstrate academic excellence during their first year may apply for sophomore admission to the Honors College.

ACCELERATED MASTER'S PROGRAMS (AMPS)

The AMP allows early admission to graduate studies with up to 6 concurrent credits double-counted toward the bachelor's and master's degrees. Most programs also allow students to take an additional 3 credits of graduate coursework while still an undergraduate, but these credits may not be double counted. AMPs affiliated with the College of Agriculture and Life Sciences include:

Animal Biosciences

Food Systems

Microbiology and Molecular Genetics

Nutrition and Food Science

Public Administration

Visit the UVM Graduate College for more information.

UVM & VERMONT LAW SCHOOL

The University of Vermont (UVM) and Vermont Law School (VLS) offer unique 3+2 and 3+3 dual-degree programs. The dual-degree programs enable highly-focused students to earn both degrees in less time and at less cost from two distinguished institutions. In addition to the dual-degree programs, VLS offers a guaranteed admission program for UVM graduates. Learn more about the dual-degree and guaranteed admission programs.

EXAMPLES OF PRE-MEDICAL AND PRE-VETERINARY OPPORTUNITIES MAY INCLUDE:

PRE-MEDICAL ENHANCEMENT PROGRAM

The Premedical Enhancement Program (PEP) is a mentoring and shadowing program co-sponsored by the Larner College of Medicine's Office of Primary Care and the UVM Honors College. A small number of UVM pre-health students are accepted after a thorough application process. Read more about this program on the Larner College of Medicine website. The application season will begin in a student's sophomore year. Any pre-health UVM sophomore who meets eligibility criteria can apply.

ACEND-ACCREDITED DIDACTIC PROGRAM

UVM students who aspire to become Registered Dietitian Nutritionists have the opportunity to successfully complete the Accreditation Council for Education in Nutrition and Dietetics (ACEND)-accredited didactic program while majoring in Dietetics, Nutrition & Food Sciences (DNFS) at UVM. Dietetics is a growing profession as healthcare moves from treatment to prevention. Healthcare reform and policies discussed in Washington DC and across the country all include prevention-related components. Although many health professionals are interested in prevention, Registered Dietitians are at the cutting edge of prevention, because so many preventable diseases and conditions are tied to food and nutrition. Our UVM DNFS graduates are eligible to apply to an ACEND-accredited supervised practice program to be eligible to become Registered Dietitian Nutritionists.

UVM/TUFTS SCHOOL OF VETERINARY MEDICINE PROGRAM

Tufts University Cummings School of Veterinary Medicine offers undergraduates at UVM an opportunity to apply for admission in the spring of their sophomore year. A limited number of students are admitted; they are guaranteed a space in the veterinary school class once they graduate if they have maintained the required grade-point average upon graduation.

Participants in this program are offered the assurance of veterinary school admission without the substantial investments of time and energy that other pre-veterinary students typically make in the process of preparing, researching, and applying to numerous veterinary schools and preparing for optimal scores on the GRE. Program participants can select any undergraduate major, explore other areas of interest during their junior and senior years or choose to study abroad, thus broadening their undergraduate experience.

To be eligible to apply, candidates for this program must be sophomores and must have demonstrated academic proficiency in their course work, particularly in the pre-veterinary science courses.

It is expected that competitive applicants will have:

- Completed at least two science sequences (most typically the year of introductory chemistry and the year of introductory biology) by the spring semester of their sophomore year.

- Completed prerequisite courses at their undergraduate institution or at other universities by special permission of the veterinary school's admissions office.
- Achieved a highly competitive cumulative grade-point average.

AP credit is acceptable as long as it appears on the student's transcript. The GRE is not required for applicants to this joint program; the applicant's SAT scores will be considered during the admissions process.

For more details on the application process and program requirements, visit the Pre-veterinary Information for Prospective Students on the Department of Animal and Veterinary Sciences website.

UVM/ROYAL (DICK) SCHOOL OF VETERINARY STUDIES, THE UNIVERSITY OF EDINBURGH (UOE, R(D)SVS) PLACEMENT AGREEMENT

The University of Vermont (UVM) and the Royal (Dick) School of Veterinary Studies, the University of Edinburgh (UoE, R(D)SVS) have entered into an early entrance admission placement program that will make available three guaranteed places for UVM early application students. Application to the UoE, R(D)SVS early admission program can be made at the end of the second year (four semesters) with predetermined science and math courses completed and a minimum GPA of 3.40. If accepted, the 3.40 or above GPA has to be maintained until the time of graduation. Admitted students must receive adequate animal handling experience throughout their residence at UVM. The type of experience required can be coordinated between the student and the UoE, R(D)SVS. Opportunity will exist to credit some components of UVM teaching in animal husbandry and animal handling as accredited prior learning for the Edinburgh degree. Advice will be given by UoE, in consultation with UVM, as to what courses can be credited. If requested, opportunity to undertake a four week vacation clinical placement (companion animal and/or equine) at R(D)SVS will be available to all students in the program.

UVM/UNIVERSITY OF GLASGOW MATRICULATION AGREEMENT

The University of Glasgow (UoG), Glasgow, UK and the University of Vermont (UVM), Burlington, VT USA have formed an agreement whereby University of Vermont students can complete a joint B.S./BVMS degree attending UoG in their fourth year at UVM. UVM may send students who have successfully completed three years of study in the University of Vermont Animal and Veterinary Sciences Bachelor of Science (B.S.) program to the Bachelor of Veterinary Medicine and Surgery programme (BVMS) hosted by the School of Veterinary Medicine, College of Medical, Veterinary and Life Sciences at Glasgow. Participating students will continue as candidates for degrees from their home institution (UVM) and will not, at the end of the first year at UoG, be eligible candidates for degrees from the host institution (UoG). Credit for subjects taken at UoG will be transferred to UVM to fulfill the requirements for awarding successful students a B.S. degree in Animal and Veterinary Sciences from

UVM at the end of their fourth year. University of Vermont students meeting matriculation requirements and successfully completing Year 1 of the BVMS program at the University of Glasgow will be offered a direct entry place in Year 2 of the BVMS program. UVM students must work with the Department of Animal and Veterinary Sciences to apply at the beginning of the fall semester of their junior year.

ARTICULATION AGREEMENTS

For more information on articulation agreements with other colleges and universities, please go to <https://catalog-next.uvm.edu/undergraduate/admissioninfo/articulationagreements/>

MAJORS

Agroecology and Landscape Design B.S.

Animal Science B.S.

Biochemistry B.S.

Biological Science B.S.

Community and International Development B.S.

Community-Centered Design B.S.

Community Entrepreneurship B.S.

Food Systems B.S.

Microbiology. B.S.

Molecular Genetics B.S.

Nutrition and Food Sciences B.S.

Plant Biology B.S.

Public Communication B.S.

Self-Designed B.S.

MINORS

- Agroecology
- Animal Science
- Applied Design
- Biochemistry
- Bioinformatics
- Biosecurity
- Community and International Development
- Community Entrepreneurship
- Consumer and Advertising
- Food Systems
- Green Building and Community Design
- Microbiology
- Molecular Genetics
- Nutrition and Food Sciences

- Plant Biology
- Public Communication
- Soil Science
- Sports Management
- Sustainable Landscape Horticulture

REQUIREMENTS

MAJOR DEGREE REQUIREMENTS

All programs in the College of Agriculture and Life Sciences lead to the Bachelor of Science degree and require:

1. The successful completion of a minimum of 120 credits of course work.
2. A minimum cumulative grade-point average of 2.00.
3. Completion of the Catamount Core Curriculum.
4. CALS 1010 (CALS 2830) and CALS 1020 (CALS 1850) foundation courses or approved equivalent courses for transfer students.
5. Students may overlap up to eight credits between their major and minor. Departmental exceptions and restrictions allowed.
6. All courses as specified in individual program majors.

The applicability of courses to specific areas of study is based on content and not departmental label. Applicability of courses to fulfill requirements rests with the student's advisor and, if necessary, concurrence of the dean of the college.

TECHNOLOGY REQUIREMENT

The College of Agriculture and Life Sciences prepares students for careers and graduate studies by applying their knowledge, skills, and values in the classroom, as well as experiences in labs, farms, facilities, internships and study abroad. In these professional capacities, students will be expected to apply technology to communicate, compile, and analyze their work. Therefore, all CALS undergraduate programs require students to have a laptop computer.

PRE-PROFESSIONAL PREPARATION

Students striving for admission to professional colleges, such as dentistry, medicine (including naturopathic), chiropractic, osteopathic, and veterinary medicine, can meet the undergraduate requirements for these programs through enrollment in CALS majors. Competition for admission to professional schools is very keen, and a superior academic record throughout an undergraduate program is necessary to receive consideration for future admission. Due to the intense competition, only a small percentage of those first-year students declaring an interest in professional schools are eventually admitted after completion of the baccalaureate. Consequently, students must select a major, in an area of their choice, to prepare them for a career other than medical sciences. The pre-professional requirements will be met concurrently with the major requirements for the B.S. degree. Students interested in human medical sciences often enroll in biochemistry, biological sciences,

nutrition and food sciences, microbiology or molecular genetics. Those interested in veterinary medicine usually enroll in animal science or biological science.

Each student prepares a four-year program of courses, with the guidance of a faculty advisor, to meet requirements for a B.S. degree in their major. It is recommended that students complete the following courses to meet minimum requirements of most professional schools. It is the responsibility of each student to contact the professional schools of their choice to determine the exact entrance requirements.

Human Medical and Dental Schools

BIOLOGY WITH LABORATORY		
Choose one of the following sequences:		8
BIOL 1400 & BIOL 1450	Principles of Biology 1 and Principles of Biology 2	
BCOR 1400 & BCOR 1450	Exploring Biology 1 and Exploring Biology 2	
CHEMISTRY WITH LABORATORY		
Inorganic Chemistry:		8
CHEM 1400	General Chemistry 1	
CHEM 1450	General Chemistry 2	
Organic Chemistry:		8
CHEM 2580	Organic Chemistry 1	
CHEM 2585	Organic Chemistry 2	
PHYSICS WITH LABORATORY		
With math:		10
PHYS 1400 & PHYS 1410	Elementary Physics I and Elem Physics Problem Solving I	
PHYS 1450 & PHYS 1460	Elementary Physics II and Elem Physic Problem Solving II	
MATHEMATICS (REQUIREMENT VARIES)		
MATH 1212	Fundamentals of Calculus I	3
MATH 1224	Fundamentals of Calculus II	3
HUMANITIES, SOCIAL SCIENCES, LANGUAGES		
Students must complete the minimum college requirements in this area that includes English composition and speech. Many Medical and Dental Schools require two English Courses. Psychology and Sociology courses are required and/or recommended. For more information, Please visit the UVM Pre-Health website.		

Veterinary Medical Schools

All of the courses listed above under Human Medical and Dental Schools plus:

BIOCHEMISTRY		
BIOC 3001	Fundamentals of Biochemistry	3
(optional corresponding lab)		1
WRITTEN ENGLISH		
Choose two of the following:		6
ENGL 1001	Written Expression	
ENGL 1740	The Art of the Essay	
ENGL 1730	Intro to Creative Writing	
GENETICS		
BCOR 2300	Genetics	3
or ASCI 2160	Animal Genetics	
MICROBIOLOGY		
MMG 2010	Microbiol & Infectious Disease	4
NUTRITION		
ASCI 3040	Advanced Animal Nutrition	4
STATISTICS		
STAT 1410	Basic Statistical Methods 1	3

Several schools require a course in introductory animal sciences, vertebrate embryology, immunology, molecular genetic cell biology or statistics. Students should consult their advisor regarding specific requirements for various veterinary schools. Requirements vary by school.

Finally, both human and veterinary medical schools want to see a history of interest in medicine. It is important for students to work with physicians or veterinarians and gain first-hand knowledge of their chosen profession. Volunteer or paid work in hospitals, nursing homes or emergency centers is important. Commercial farm experience is also valuable for pre-veterinary students.

Students applying to CALS who express an interest in medicine or pre-veterinary medicine should present evidence of high performance in high school level science and mathematics courses, plus additional supporting documentation such as high SAT scores, strong letters of recommendation, and a motivational summary statement.

REGULATIONS

GOVERNING ACADEMIC STANDARDS

The College of Agriculture and Life Sciences Studies committee reviews the semester grades of all students in the college whose

semester or cumulative grade-point average falls below the 2.00 minimum, as well as the academic progress of all students placed on academic probation the previous semester. Detailed information may be obtained from the CALS Student Services office, 106 Morrill Hall, (802) 656-2980.

Guidelines

A student whose semester grade-point average falls below a 2.00 will be placed “on trial” and will be given a target semester average to achieve by the end of the following semester. A student whose semester grade-point average is below a 1.00 or who fails to achieve the stated target average while “on trial” may be placed on “intermediate trial”. Any student with a prolonged history of poor grades, including students who consistently fail to achieve the target semester average, may be placed on “final trial”. A student who does not achieve the target semester grade-point average while on “final trial” is a candidate for dismissal from the university.

Additional Guidelines for CALS Academic Probation

Any student who has been dismissed can return to the College of Agriculture and Life Sciences assuming the student has satisfied the stipulations stated in their dismissal letter. Upon re-entry to the university, the student will be placed on “intermediate trial” and will not be allowed to take more than twelve credits during the semester in which they are re-admitted.

If a student is dismissed twice during their undergraduate degree program, the student will be required to take one academic year off as a matriculated student. During this period, courses may be taken through Professional and Continuing Education at the University of Vermont or elsewhere. Upon re-entry to the university, the student will be placed on “intermediate trial” and will not be allowed to take more than twelve credits during the semester in which they are re-admitted.

If the student is dismissed for a third time, the dismissal is final and cannot be appealed. Readmission to the university will only be permitted if the student is granted an Academic Reprieve. Please refer to the Academic Reprieve section under Academic and General Information in this catalog for details on this policy.

Appeal

A student may appeal a dismissal to the CALS Studies Committee by direction of the dismissal letter. The student will be asked to appear in person before the Studies Committee to appeal the case.

Continuing Education and Readmission

A student who has been dismissed from the college may take up to six credits of course work through UVM Professional and Continuing Education or another institution in an attempt to improve their grades. To gain readmission to the college, the student must achieve no less than a 2.67 semester average on the six credits. If six credits are

to be taken at another institution, the student should work with the UVM Office of Transfer Affairs to ensure transferability.

DEPARTMENTS/PROGRAMS

Animal and Veterinary Sciences

Biochemistry

Biological Science

Community Development and Applied Economics

Food Systems

Microbiology and Molecular Genetics

Nutrition and Food Sciences

Plant and Soil Science

Plant Biology