

Master of Science

Laboratory Animal Science (MS)

The online Master of Laboratory Animal Science program is designed for individuals who may be currently working within the field of laboratory animal science, those seeking career advancement or those looking for opportunities in research laboratories but who do not want to relocate to attend a traditional master's program.

Admission

The program is designed to provide basic training in laboratory animal science, animal resource management and study design to highly motivated veterinary students, veterinary technicians and research associates in educational or pharmaceutical research facilities.

The following elements are requirements to be considered for admission into the program:

For all applicants

- Bachelor's or graduate degree with a qualifying GPA of 2.5 or higher from a regionally and nationally accredited U.S. college or university or an international equivalent.
 - The program may grant exceptions on a case-by-case basis.
 - Please be advised that all students in the EVMS School of Health Professions are expected to attain a term Grade Point Average of at least 3.0 to be considered in good academic standing and a cumulative GPA of at least 3.0 to graduate.
- Successful completion of two semesters each of college-level Biology and Chemistry and one semester of Mathematics.
 - No more than one prerequisite course will be accepted without a traditional letter grade (e.g. Pass, Advanced Placement, International Baccalaureate, etc.).
 - The courses without a traditional letter grade can only be accepted for intro level prerequisite courses of Biology I, Chemistry I or Mathematics I.
 - Replacement courses may be accepted for missing prerequisite courses, only with Program Director's approval. Replacement course syllabus should be submitted by applicant for consideration.
- Minimum of three months or 500 hours of hands-on experience, as described below is required prior to the start of the first semester.
 - Applicants who desire a future as a Laboratory Animal technologist are strongly encouraged to continue a full-time experience/employment during the two years of the program to be eligible for LAT and LATG certification through American Association of Laboratory Animal Science (AALAS).
- Two letters of Recommendation (https://www.evms.edu/media/evms_public/departments/distance_education/EVMS-GradCAS_Reference-Form2.pdf), one of which must verify the minimum hands-on animal experience requirement.
- Personal statement outlining the applicant's academic and professional goals.
- Computer and computer services with various specifications.

Additional Requirements for International Applicants

In addition to meeting the admissions requirements above, international applicants are required to meet the following:

Foreign Transcripts

- Request a course by course evaluation of all foreign transcripts showing GPA calculation on a four-point scale.
- EVMS does not endorse any particular evaluating and/or credentialing service. You can use the following agencies:

- World Education Services (<https://www.wes.org/>)
- Educational Credential Evaluators (<https://www.ece.org/>)

Translation

If the academic institution that you attended does not issue documents in English, the credentialing agency will require that you submit a word-for-word translation of your transcripts. You can contact University Language Services (<https://www.universitylanguage.com/>) to submit your transcript for translation and instruct them to send the translated transcript to the credentialing agency you choose.

Transcript Evaluation

International students whose native language is not English may contact one of the following credentialing agencies to submit transcripts for official evaluation: WES or ECE. Instruct the credentialing agency to send the official evaluation (and translation) directly to GradCAS. You must provide both a course-by-course evaluation report along with an overall GPA calculation. Evaluations are mandatory even for transcripts from institutions that report grades in English. This provides EVMS with a U.S. credit equivalency and allows the transcripts to be reviewed accurately. WES and ECE are preferred credentialing services. If you wish to select a company other than these, please contact the program first.

TOEFL

International applicants whose native language is not English must take the TOEFL exam and receive a score as follows: Paper-based test: 550; Computer-based test: 213; iBT exam: 80. Please go to the ETS website to take the TOEFL exam, and request your TOEFL scores be sent directly to GradCAS. ETS reports scores for two years after the test date. If you have previously taken the TOEFL but the two-year period has expired, the program will accept a personal copy if available.

Note

If the candidate has received a BS or graduate degree from a college or university in a country where English is the primary language (like the U.S., Canada and UK), applicants could request for the TOEFL requirement to be waived by the Program Director or the Admission Committee.

GradCAS

GradCAS (https://catalog.evms.edu/preview_program.php?catoid=9&pooid=2036#GradCAS) will **ONLY** accept the evaluation report from the credentialing agency. **Do not send** your foreign transcript to GradCAS.

All other foreign transcript evaluations from the credentialing agency must be sent directly to GradCAS to the following address:

GradCAS Transcript Processing Center
P.O. Box 9217
Watertown, MA 02471

GRE School Code: 5729 TOEFL School Code is B886

Application submission

Applications should be submitted by March 1 for early admission consideration. Applications submitted after March 1 will be considered until all positions are filled. Students who plan to seek Financial Aid (https://www.evms.edu/education/financial_aid/) are advised to submit their applications as early as possible. Upon acceptance into the program, a \$300 nonrefundable matriculation fee (which will be credited toward the first semester's tuition) is required to secure class placement.

Important Note:

International applicants who are applying for ICLAS Scholarships (<https://iclas.org/iclas-scholarship-program-for-veterinarians/>), should contact program director immediately for an early application review and provisional acceptance which is needed for ICLAS application process.

Prerequisite Experience

Applicants are encouraged to include all animal-related experience they have. Experience and skills related to the maintenance of the health and well-being of animals in research or laboratory animal facility settings will be considered as hour-for-hour against experience requirement. Such experience includes procurement, care, use, handling, treatment, surgical or necropsy activities, cage wash operations, clinical pathology, quality assurance and IACUC functions that relate to laboratory animal science or the direct supervision or training of personnel engaged in these activities, and experience gained as part of an externship, internship, preceptorship or fellowship in a laboratory animal facility.

Experience and skills in a laboratory animal facility that do not affect the health and well-being of laboratory animals - such as office/administration, selling laboratory animals equipment - or in a non-laboratory animal facility - such as veterinary clinics, zoos, pet stores or other similar businesses - will be considered based on a 3-to-1 ratio. Therefore, nine (9) months of such experience will be considered as equal to three (3) months of hands-on experience.

Transfer credits

Transfer of credit may be allowed for coursework taken at a regionally accredited institution of higher learning, such as an accredited member of the Southern Association of Colleges and Schools (<http://www.sacscoc.org/>), for courses in which a grade of B (3.0) or higher was received and for a maximum of 9 transfer credits. Course grades obtained from another institution will not be counted in the GPA. All applicants seeking to transfer credit(s) should contact the program (lasinfo@evms.edu) for special application or credential requirements. Decisions regarding applicability of transfer courses/credits will be made by the program director in consultation with faculty as deemed appropriate.

Technical Standards

The abilities and skills that candidates and students must possess in order to complete the education and training associated with the Master's of Laboratory Animal Science Program are referred to as "Technical Standards." These abilities and skills are essential for professionals in animal care facilities and preclinical biomedical research settings which utilize animal models.

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1.0 Observation Skills Technical Standard

1.01 Demonstrate sufficient attention and accuracy in observation skills (visual, auditory and tactile) in the lecture hall, laboratory and/or online settings. Indicators include but are not limited to accurate visualization and discrimination of text, numbers, patterns, graphic illustrations and other imaging texts.

2.0 Communication Skills Technical Standard

2.01 Demonstrate effective communication skills with biomedical research or animal care professionals and with people of varying cultures, ethnicities and personalities.

2.02 Indicators include, but are not limited to, these examples:

1. Clear, efficient and intelligible articulation of spoken English language.
2. Legible, efficient and intelligible written English language.
3. Accurate and efficient English language reading skills.
4. Accurate and efficient, expressive and receptive communication skills.
5. Ability to accurately follow directions (oral and written).

3.0 Critical Reasoning Skills Technical Standard

3.01 Demonstrate critical reasoning skills, including but not limited to intellectual, conceptual, integrative and quantitative abilities.

3.02 Indicators include but are not limited to these examples:

1. Demonstrate ability to measure, calculate, reason, analyze, integrate and synthesize information.
2. Demonstrate ability to acquire, retain and apply new and learned information.

4.0 Motor and Sensory Function Technical Standard

4.01 Demonstrate sufficient motor and sensory function to perform typical animal care or laboratory duties.

4.02 Indicators include but are not limited to these examples:

1. Functional and sufficient sensory capacity (visual, auditory and tactile) to use laboratory equipment and perform procedures.
2. Execute motor movements that demonstrate safety and efficiency in the various learning settings (i.e., classroom, online and laboratories).
3. Physical stamina sufficient to complete the online didactic and some laboratory study, which will include prolonged periods of sitting.

5.0 Behavioral and Social Attributes Technical Standard

5.01 Demonstrate the behavioral and social attributes vital to participation in a professional program and service as a practicing animal care and laboratory professional.

5.02 Indicators include but are not limited to these examples:

1. Possess the emotional health required for full utilization of mental faculties (judgment, orientation, affect and cognition).
2. Ability to develop mature and effective professional relationships with faculty, animal user researchers, the public and other members of the animal care or use team.
3. Possess personal qualities that facilitate effective therapeutic interactions (compassion, empathy, integrity, honesty, benevolence, confidentiality).
4. Demonstrate impartial motives, attitudes and values in roles, functions and relationships.
5. Ability to monitor and react appropriately to one's own emotional needs and responses.
6. Display appropriate flexibility and adaptability in the face of stress or uncertainty associated with clinical encounters and clinical environments.
7. Compliance with standards, policies and practices set forth in the program handbook.

Curriculum Requirements

The program has a total of 31 credits in five semesters over two years.

Course Sequence (Full Time)

1st Year

<i>Term 1 - Fall</i>		7
MLAS 613	Comparative Anatomy & Physiology	
MLAS 614	Applied Biostatistics and Research Design	

<i>Term 2 - Spring</i>		7
MLAS 602	Laboratory Animal Husbandry, Care, & Ethics	

MLAS 603	Journal Club	
MLAS 604	Diseases of Lab Animals I	

<i>Term 3 - Summer</i>		4
MLAS 606	Anesthesia & Surgery	
MLAS 608	Internship	

2nd Year

<i>Term 4 - Fall</i>		6
MLAS 705	Diseases of Lab Animals II	
MLAS 711	Facility Management	
<i>Term 5 - Spring</i>		7
MLAS 709	Biotech & Diagnostic Tech	
MLAS 712	Graduate Seminar	
MLAS 715	Laboratory Animal Behavior and Behavioral Management	
MLAS 716	Cryopreservation	
<i>Term 6 - Summer (CRB Track Only)</i>		0-6
RCS 701	Introduction IVF, Laboratory Tech and Skills Development	
RCS 705	IVF Technology	

Total Credit Hours **31-37**

Course Sequence (Part Time)

1st Year

<i>Term 1 - Fall</i>		4
MLAS 613	Comparative Anatomy & Physiology	
<i>Term 2 - Spring</i>		3
MLAS 604	Diseases of Lab Animals I	
<i>Term 3 - Summer</i>		2
MLAS 606	Anesthesia & Surgery	

2nd Year

<i>Term 4 - Fall</i>		3
MLAS 614	Applied Biostatistics and Research Design	
<i>Term 5 - Spring</i>		4
MLAS 602	Laboratory Animal Husbandry, Care, & Ethics	
MLAS 603	Journal Club	
<i>Term 6 - Summer</i>		2
MLAS 608	Internship	

3rd Year

<i>Term 7 - Fall</i>		3
MLAS 705	Diseases of Lab Animals II	
<i>Term 8 - Spring</i>		4
MLAS 709	Biotech & Diagnostic Tech	
MLAS 716	Cryopreservation	
<i>Term 9 - Summer</i>		3
MLAS 711	Facility Management	

4th Year

<i>Term 10 - Fall</i>		3
MLAS 712	Graduate Seminar	
MLAS 715	Laboratory Animal Behavior and Behavioral Management	
<i>Term 11 - Spring (CRB Track Only)</i>		0-6
RCS 701	Introduction IVF, Laboratory Tech and Skills Development	
RCS 705	IVF Technology	

Total Credit Hours **31-37**