

Laboratory Animal Science Program Student Handbook

2021-2022

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STUDENT DISABILITY SERVICES STATEMENT

EVMS is dedicated to providing reasonable accommodations to qualified students with a documented disability. The student must self-identify with the Office of Student Disability Services as having a disability to begin the accommodation process. It is in the best interest of the student to begin the accommodation process as soon as you are aware that you may need them, as accommodations are not retroactive. All students must be able to fulfill the academic and technical standards of their academic program with or without reasonable accommodations; however accommodations are made available to aid in fulfilling those standards, not to waive them. If you have, or believe you have, a disability for which you wish to request accommodations under the Americans with Disabilities Act or Section 504 of the Rehabilitation Act, you must contact the EVMS Disability Officer StudentDisability@EVMS.EDU. For more information about the disability accommodations process, please visit: the [online disability guide](#).

BRIEF LABORATORY ANIMAL SCIENCE PROGRAM HISTORY

The Program Director, Faculty, Technical and Administrative support staff welcome you to the Laboratory Animal Science (LAS) Master's Program at Eastern Virginia Medical School (EVMS).

EVMS is the largest biomedical research institution in southeastern Virginia as well as the area's largest medical center complex. In addition to the training of medical and health professions students, EVMS has a number of research institutes and clinical programs that interface with the basic science departments. The integration of clinical and basic sciences is an important component of the biomedical sciences graduate programs.

The Laboratory Animal Science Program was created as a respond to the great need for educated and knowledgeable professionals in laboratory animal science in laboratory animal facilities or translational research institutions.

The Laboratory Animal Science Program is administered from within the School of Health Professions. The Program Director is Alireza Hosseini, MD and Dr. Mario Rodriguez, DVM serves as veterinary director.

PURPOSE

MISSION STATEMENT

The mission of the Laboratory Animal Science Program is to provide the essential knowledge and skills to produce competent professionals in the laboratory animal field.

GOALS AND OBJECTIVES

The program is designed to build a solid foundation for a successful career in laboratory animal science. The courses focus on essential aspects of laboratory animal science and animal facility management. The practicum provides the student with the opportunity to apply theoretical knowledge to the actual practice of laboratory animal science. The program goal is to provide multidisciplinary graduate level education and

training in current technology to meet the ever-changing demands for technically sophisticated, humane and well-considered use of animals in biomedical research.

To accomplish these goals, the program focuses on the following 8 areas:

- Knowledge of basic Anatomy and physiology.
- Knowledge and provision of husbandry and general care for laboratory animals.
- Knowledge, application and enforcement of current laws and ethical codes of laboratory animal use in science.
- Knowledge of common diseases, and treatment of laboratory animals.
- Knowledge of routine surgical procedures and related equipment.
- Knowledge, application and monitoring of safe and effective anesthesia and analgesia.
- Knowledge of animal facility and laboratory management principals.
- Knowledge of routine research laboratory techniques, research design and data analysis.

Based on these goals, the following objectives have been established. After completing our two years master's program, our students will be able to;

1. Describe, explain and practice daily clinical routines associated with basic physiology, common diseases and treatment of laboratory animals including methods for safe and effective drug administration.
2. Interpret key elements of current laws and ethical codes of laboratory animal use in science, and enforce them in daily practice.
3. Identify and define principles of husbandry and general care for laboratory animals and apply these principles in clinical settings, analyze and assess current clinical practices in these areas.
4. Outline procedures and measures of safe and effective anesthesia and analgesia, conduct and monitor safe and effective anesthesia and analgesia.
5. Outline and describe routine surgical procedures and related equipment.
6. Define routine research laboratory techniques, and apply these techniques in their own research endeavor.
7. Outline and define key elements in research design and data analysis, and interpret data analysis report.
8. Describe and define essential principles of facility and laboratory management, and analyze and evaluate the managerial practice of certain facility and laboratory against these principles.

ACCREDITATION

Eastern Virginia Medical School is accredited by the Southern Association of Colleges and Schools Commission on Colleges to award the Doctor of Medicine degree, Masters' degrees, Doctoral degrees, and Certificates. Contact the Commission on Colleges at 1866 Southern Lane, Decatur, GA 30033-4097 or call 404-679-4500 for questions about the accreditation of Eastern Virginia Medical School.

KEY PROGRAM CONTACT INFORMATION

The Laboratory Animal Science Master’s Program will be administered according to the policies established in the program handbook. The program will be administered by the Program Director, the Chairs of the Curriculum and Admissions Committee, the Dean for the School of Health Professions and the Program Administrator of Laboratory Animal Science.

Name	Address	Phone	Email
Alireza Hosseini, MD Program Director Assistant Professor	Lewis Hall, Room 3027 700 W. Olney Rd Norfolk, VA 23501	757-446-5634	hosseia@evms.edu
Mario Rodriguez, DVM Veterinary Director Assistant Professor	Lewis Hall, Room 3122 700 W. Olney Rd Norfolk, VA 23501	757-446-5695	rodrigmc@evms.edu
Kathleen Gabana, M.Ed Program Administrator, Distance Education	Waitzer Hall, Suite 1100 Colley Ave Norfolk, VA 23501	757-446-7063	gabanakm@evms.edu
Angel Baker Office Coordinator, Distance Education	Waitzer Hall, Suite 1100 Colley Ave Norfolk, VA 23501	757-446-7935	bakerac@evms.edu
Tyrah Vann, MPH Administrative Secretary, Distance Education	Waitzer Hall, Suite 1100 Colley Ave Norfolk, VA 23501	757-446-0365	vannt@evms.edu

PROGRAM FACULTY

The graduate faculty of the Laboratory Animal Science Master’s Program will be certified in accordance with the general criteria contained in the policies for the certification of graduate faculty of Eastern Virginia Medical School. These criteria include research, teaching performance at the advanced level, efforts to secure funding, and attainment of necessary graduate degrees.

Full Time EVMS Faculty	Position and Department
Marta Agata Ambrozewicz, MD, PhD	Assistant Professor/Department of Pathology & Anatomy
Richard Britten, PhD	Professor/Department of Radiation Oncology & Biophysics
Stephen Deutsch, MD	Ann Robinson Endowed Chair in Psychiatry, Professor and Chair/ Department of Psychiatry and Behavioral Sciences
Diane Duffy, PhD	Professor/Department of Physiological Sciences
Eva Forgacs- Lonart, PhD	Associate Professor/Department of Physiological Sciences
Alireza Hosseini, MD	Associate Professor/Health Professions
Frank A. Lattanzio, PhD	Professor/Department of Physiological Sciences
Gyorgy Lonart, PhD	Associate Professor/Department of Pathology & Anatomy
Jacob F. Mayer	Professor/Health Professions/ Department of Obstetrics and
Julius Nyalwidhe, PhD	Assistant Professor/Department of Microbiology and Molecular Cell Biology
Karen Owen, CSA	Instructor/Health Professions/Master of Surgical Assisting Program
Mario Rodriguez, DVM	Assistant Professor, Department of Comparative Medicine
Helena Russell, MS	Assistant Professor/Health Professions/ Department of Obstetrics and Gynecology
Larry Sanford, PhD	Professor/Department of Pathology & Anatomy
Julia A. Sharp	Instructor/Department of Microbiology and Molecular Cell Biology
William Wasilenko, PhD	Associate Professor/Department of Microbiology and Molecular Cell Biology
Nazita Yousefieh, PhD	Assistant Professor/Department of Obstetrics and Gynecology

Part Time EVMS Faculty	Position and Department
Kristine Coleman, PhD	Divisions of Comparative Medicine and Neuroscience, NHP Behaviorist and Head, Behavioral Services Unit, Oregon National Primate Center
Edgardo R. Rivera-Colon	Associate Professor/ Department of Animal Industry, University of Puerto Rico
Mark T. Sharpless, MBA, JM	Operations Manager/ Yerkes National Primate Research Center, Emory University

TECHNICAL STANDARDS

The abilities and skills that candidates and students must possess in order to complete the education and training associated with Masters 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.

1.0 OBSERVATION SKILLS TECHNICAL STANDARD

1.1 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

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

2.2 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

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

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

1. Demonstrate ability to measure, 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

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

4.2 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

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

5.2 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 EVMS Student Handbook and the program handbook.

REGISTRATION

COURSE REGISTRATION

Students will register for courses six weeks prior to the start of a new semester. EVMS is transitioning to a new registration system so the remaining information may change during the academic year 2021-2022. This registration process will take place in the myEVMS portal and instructions are provided by the School of Health Professions Administrative Support team.

STUDENT FINANCES

The EVMS Financial Services office will email an invoice one month prior to the start of each semester. Your first invoice will include tuition and student fees less your acceptance deposit. Individual student bills can be viewed online on the [student portal](#) and then the link below will become accessible. Please click read the student finance policy:

[https://www.evms.edu/media/evms_private_media_restricted/all_portal/departments/financial_services/policies_amp_procedures/Student_Accounts_Receivable_Policy_\(BOV_Approved_10SEPT2019\).pdf](https://www.evms.edu/media/evms_private_media_restricted/all_portal/departments/financial_services/policies_amp_procedures/Student_Accounts_Receivable_Policy_(BOV_Approved_10SEPT2019).pdf)

PAYMENTS

Tuition payments for the Laboratory Animal Science Master's Program must be paid by the first day of each semester, based on the total number of credit hours for which a student has enrolled and is subject to change at any time. Please contact the Finance Office at 757-446-6067 or by email AR@evms.edu if you do not receive a tuition invoice.

TUITION STATEMENTS

You can access your financial statements at any time online using the [student portal](#): If you have any questions or do not receive an invoice, please contact the Finance Office at 757-446-6067 or by email AR@evms.edu.

FINANCIAL AID

To receive financial aid in the form of student loans you must be registered for at least half time per semester. Sources of financial aid are available to the Laboratory Animal Science Master's Program students from the Financial Aid Office at Eastern Virginia Medical School. Financial aid officers at Eastern Virginia Medical School are approved for processing various Federal and State student loan applications. Regulations and availability of these loans change from year to year, therefore, current information and applications should be sought from the institutional financial aid officers. Students should understand that any awards or loans are given only to full-time students who continue in good academic standing. Financial aid information can be obtained by contacting the Financial Aid Office: 757-446-5804 or email finaid@evms.edu.

FINANCIAL AID AND ACADEMIC PROBATION

If a student is placed on academic probation their eligibility to receive financial aid will be affected.

ATTENDANCE

Once the semester begins, the students will be notified of new course openings. It is a requirement for all distance students to log into their new courses the first week of the course. Information about the course schedule, such as start and stop dates, is available in this handbook (Program Schedule), the LAS Overview Course and the LAS Class of 2016 Calendar. Failure to log into a course and miss important deadlines may lead to withdrawal from a course.

ONLINE PROCEDURES

This section includes the Course Policies and Procedures that explain how different aspects of online courses are handled.

EXAMINATION AND PROCEDURE

Exams and quizzes that may be a component of modules are conducted through the Bb course site

ASSIGNMENT PROCEDURE

The deadlines for submitting assignments will be posted on Blackboard for each course. The assignments folder must be used for submission of all projects, reports, and papers—never email your assignments. Always submit your assignments in the format requested by the instructor, most typically MS Word; others will be specified. Also, always include your last name in the file name and put your name on each and every page.

GRADES

Grades for assignments and exams will be posted in the Blackboard course site within two weeks after the assessment or deadline. Also, within a two-week period after the end of a course and after the course survey or evaluation has been completed by all students, the course grades will be posted. If you have not received a grade for an assignment, exam or course within a two week period, please contact the Course Director to report the problem. If you do not get a response contact the Program Director hosseia@evms.edu

COURSE SURVEYS AND EVALUATIONS

Course surveys will be posted at the end of each course and are program requirement for release of your final grade. Please complete the evaluation within the specified period as stated with the posting. You will receive a reminder email about the evaluation.

INSTRUCTOR RESPONSE TIME

Instructors normally check messages once per day and respond within 48 hours. Feedback on assignments is usually provided within two weeks of receipt. If there are any concerns about missed emails or no response, please contact the appropriate Course Director. For any further concern please contact Program Director hosseia@evms.edu.

CLASS DEMEANOR

Students are expected to interact in a professional demeanor with classmates, faculty, and staff, be prompt in attending Internet meetings, be patient in online interactions, and follow through on their individual contributions to group assignments. Inappropriate language, dissension, or disruption will be removed from any web posting and disciplinary action may be taken.

EMAIL

Only your EVMS email will be used for the duration of the program. Email may be sent from within Blackboard but it will use your EVMS email account as the sending account. Information that you need to convey to the instructor or requests for an appointment are best sent via EVMSemail.

DISCUSSION BOARD, WIKI, BLOGS AND JOURNAL POSTING

The Discussion Board, Wiki, Blogs and Journal Postings in Blackboard are types of interactions where students and faculty who have access to the class can communicate with each other. Discussion Boards will be read by everyone in the class. Wiki assignments are typically group projects all members of the class will have access to, Blogs are similar to Discussion Boards where all class members will have access and Journal Postings are only available to you and your instructor. You will be responding to questions posted by the instructor, members of your group or each member of the class. All of these types of assignments will typically have a grade associated with them. Please check to make sure you understand the timing of posts, how many posts, the types and depth of the post being requested so that you may get full credit for the assignment.

Typically each course will have a general ungraded Discussion Board where you may ask for clarification of the reading materials or ask why a treatment was prescribed in the clinical area. If you have a question related to something you read, chances are someone else in the class does also. If you have posted something and you are not getting a reply, most likely no one is aware that you have posted a question. Please report this to the Course Director and appropriate action will be taken to notify others.

Please be aware of netiquette when making a post. Be respectful of each other and your faculty, avoid texting short hand, or in all caps and please behave in a professional manner.

TROUBLESHOOTING

If you cannot log into blackboard, or access your web email account, contact the Academic Computer Center (ACC), 757-466-5871, comphelp@evms.edu. If you are having difficulty saving or submitting the exam, call the Distance Learning Help Desk 757-446-5051, distancelearning@evms.edu during normal business hours or ExamSoft support from 8:30am until 8:30 pm EST Monday thru Friday: 866-429-8889 or support@examsoft.com.

TRANSFER CREDIT TO LAS

Transfer of credit may be allowed for course work taken at a regionally accredited institution of higher learning, such as the Southern Association of Colleges and Schools, for courses in which a grade of B (3.0) or higher was received or a passing grade was achieved in a pass/fail course. Doctoral programs may accept a maximum of 12 transfer credits, and master's programs may accept 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 for special application or credential requirements. Decisions regarding applicability of transfer courses/credits will be made by the Program Director in consultation with the faculty as deemed appropriate. EVMS assumes responsibility for the academic quality of all course work or credit

recorded on the institution's transcript. It is the responsibility of each program to determine a student's comprehension of the requisite material and to ensure that the transferred course work and/or learning outcomes are comparable to the courses offered by the applicable EVMS program.

MAKE-UP POLICY

Make-up is allowed only for exams with either a valid medical or judicial excuse. Any other make-up for exams, quizzes, or any other assignments is allowed only with a valid reason and by Course Director's approval. The student has to notify the Instructor as soon as possible when he/she did not attend or cannot attend a programmed exam. The make-up exams will be programmed at a later time with different questions.

LATE ASSIGNMENTS

Late Work policy does not apply to Exams (see Make-up policy for Exams). All other Assignments must be submitted on or before their due date. EVMS/Blackboard server problems are not an excuse for late assignments. Notify your instructor with your technical issue as soon as possible such as if you are unable to upload your assignment to Blackboard. Late work will be discounted 20% of the grade if handed one day late, 50% of the grade if handed 2 days late, 75% of the grade if submitted 3 days late and will be graded with 0 points after 3 days. The course professor, at his/her sole discretion, may choose to amend this policy in certain cases to accommodate extenuating circumstances.

STUDENT PROGRESS

Student progress in this program is monitored at the individual course and semester levels. Progress is evaluated at the course level during and at the end of a course by the Course Director. If student performance falls below a level that is acceptable, the Course Director will issue a written warning which is sent to the Program Directors as well as the student. This warning should alert the student to problems that should be remedied immediately. Once a student has been issued a warning they must contact the Program Director to discuss ways to remedy the situation. Communication between the Course Director, Program Director and the student will be established to discuss options. The Program Director will meet in the middle and at the end of each semester with individual Course Directors as needed to evaluate student progress at the course level. At the end of the semester, the student GPA will be evaluated by the Program Director. Since the students in the Laboratory Animal Science Master's Program will be required to achieve a cumulative GPA of 3.00 or better to obtain a graduate degree, this standard must be met each semester.

ACADEMIC STANDING, WARNING AND PROBATION

1. Students are considered to be in good academic standing if their term and cumulative GPA is 3.00 or greater.
2. If a student's term or cumulative GPA falls below 3.00, a written warning will be issued. Students who receive a warning must increase their cumulative GPA to 3.00 or higher by the completion of the following semester, or they will be placed on academic probation.
3. Students placed on academic probation must achieve a term GPA of 3.00 or higher by the completion of the following semester, or they will be subject to dismissal. Students on probation who achieve a term GPA of 3.00 or higher, but whose cumulative GPA is below 3.00, may remain on probation for one additional semester.
4. No student may remain on probation for more than two consecutive semesters. Any student who fails to attain a cumulative GPA of 3.00 or higher after two semesters of probation will be subject to dismissal from the program.
5. Students receiving a grade of C- or below in any course may be asked to retake the course or part of the course based on a decision by the Course and Program Directors. Most courses are taught only

once a year, which may mean taking the course or a part of the course with the following cohort of students.

6. Any student receiving the grade of a C- in two courses will be subject to dismissal from the program.
7. The Program will make every reasonable effort to notify students of their academic status. A letter is mailed to each student placed on academic warning, probation or dismissal. However, it is the responsibility of every student to monitor their academic progress, and to check with the Program Director if there are any questions about his or her academic status.

Note: When a student is placed on academic probation their eligibility to receive financial aid may be affected.

PROFESSIONALISM AND SCHOLARLY REQUIREMENTS

LAS WRITING STYLE

This program uses American Medical Association (AMA) Manual of style formatting and citation for all assignments. If you have a question about formatting that you need help with that is not covered elsewhere, please consult the [AMA Style Guide](#), 10th Edition.

THE EVMS HONOR SYSTEM

The students, faculty, and administration of EVMS join together in support of the EVMS Honor Code for the purposes of (a) providing an atmosphere of mutual trust, concern, and respect; (b) fostering honorable and ethical behavior; and (c) cultivating lifelong professional conduct.

Any action indicating lack of integrity or dishonesty in academic matters is considered a violation of academic ethics and the Honor Code. Such offenses include, but are not limited to, lying, stealing, engaging in or attempting to engage in cheating, plagiarism, sabotage, falsifying or manipulating data, or knowingly passing off work of another as one's own. Any student who fails to abide by the Honor Code or live up to its principles is subject to disciplinary action by the Honor Court. All students are obligated to support the Honor Code and report any violation thereof to the Honor Council. Each student subscribes to the Honor Code by signing in writing his/her support at the time of matriculation.

As a student in the LAS program you are required to sign the EVMS honor code document and to abide by the EVMS honor code outlined in the EVMS student handbook. If you are ever in doubt about what is permitted or not permitted in the online program during testing, assignments, writing or take home exams, please read carefully the instructions for the particular assessment or assignment. If you are still in doubt, email or call your appropriate instructor, course director or the program director for clarification.

To completely understand what we consider plagiarism, the following is our definition: (1) submitting work (or a part thereof) that belongs to another person or has been written by someone other than you; (2) copying from a source without proper acknowledgment, quotation marks, or both, and (3) paraphrasing from a source without proper acknowledgment.

The simplest way to prevent plagiarism is to maintain proper attribution and citation techniques. As you write academic papers, you must remember to conscientiously attribute ideas and quotes when referring to the writings of others. The format in which you refer to another's work will depend on the style guide preferred by the department offering your course. Your instructor will verify the style guide you should be using.

In view of the fact that each student, has signed an honor pledge, it follows that each piece of work submitted by a student during the program is to be his or her own work unless prepared under alternate conditions specified by the faculty member in charge of the course. Enforcement of the Honor Code in the classroom and

online is a responsibility which is shared by faculty and students. Instructors may, at their discretion and with the help of the student, exercise the option of identifying proctors for examinations.

PLAGIARISM POLICY

Plagiarism can best be defined as stealing and passing off the ideas and/or exact words of another as your own. Unintentional plagiarism, where the plagiarism is the result of ignorance, poor writing skills, or mistakes in writing up citations in early drafts, is forgivable.

Basically, if you submit a final draft to an instructor or to a journal for publication with the words or ideas of another person consciously copied with or without citation, then you are guilty of plagiarism.

Thus, students in this program will be trained to:

- Understand proper ways to cite and use material from others' work.
- Know the differences between citation, quotation, and plagiarism.

GRADUATION REQUIREMENTS

LENGTH OF TIME TO COMPLETE THE MASTER'S DEGREE

It is expected that students in the Laboratory Animal Science Master's Program will be able to complete their requirements in two (2) calendar years. If the student has not completed the degree requirements at the end of the standard two-year period and they anticipate non-completion by the 90-day post-graduation cutoff, the student must submit a written plan for completion of the outstanding requirements which is due by the third week in May of their graduation year. This petition must be approved by the program director. While completing their requirements students must maintain continuous enrollment in the program. This process is started by registering for an additional course by the 3rd week in May of their original graduation year. All requirements for the Laboratory Animal Science Program must be completed within three (3) calendar years from the time the student is matriculated into the program. In unusual circumstances, extensions may be granted by the Program Director.

GRADUATION

EVMS confers formal academic degrees at an annual graduation ceremony to students in degree granting programs. All candidates for academic degrees, who qualify during a given academic year, will be graduated at this ceremony regardless of the actual completion date of the degree requirements. Students may participate in commencements while still completing requirements however they will be presented with an empty diploma folder during the ceremony. The diploma will be sent after all degree requirements are completed. In order to participate in graduation all degree requirements must be completed within 90 days after the date of graduation. The Program Director and Student Progress Committee must see that all requirements have been completed or that adequate progress has been made one month prior to graduation or the student will not be approved to attend commencements. The student must petition for approval to attend graduation one month prior if all requirements have not been met.

The ceremony is conducted on the third Saturday in May. Caps and gowns for distance learning students are distributed on the day of graduation at Scope Auditorium. A line-up sheet will also be given to inform graduates of the order of procession. Assistance will be provided for any questions or concerns.

Commencement exercises are part of a larger academic tradition. Commercial activity is incompatible with these exercises. Such activities are appropriately conducted during the rehearsal or at class banquets. Any public displays of graduation information and events must be approved by both the Chief Marshal and the Office of Institutional Advancement.

LAS PROGRAM REQUIREMENTS

EVMS LABORATORY SAFETY AND ADDITIONAL TRAINING COURSES

Students working or otherwise participating in research at EVMS must complete the General Laboratory Safety Courses given by the EVMS Department of Environmental Health and Safety Services. The required courses will include:

1. The online laboratory safety
2. HIPAA
3. Blood borne pathogens
4. A recent (less than a year) TB test; in-case of positive TB test, a chest X-ray and physician report confirming none active tuberculosis is required
5. IACUC online trainings
 - The Collaborative Institutional Training Initiative (CITI) general course entitled, working with the IACUC,
 - The CITI species-specific course(s) (Mouse, Rat, Rabbits and Primates)
 - The EVMS OHSP Course for Non-human Primate(NHP)
 - The EVMS Occupational Health and Safety (OHSP) Course

EVMS SCIENTIFIC MISCONDUCT POLICY

Students working or otherwise participating in research or clinical work must be familiar with and follow the EVMS Guide for Scientific Misconduct

Additional copies of the guide are available from the [office of research](#) 757-446-8480.

EVMS STUDENT PUBLISHING POLICY

Authorization for publishing any or all of your Graduate Seminar as a meeting abstract, meeting poster, book chapter or article in a scientific journal must be sought from your advisor(s) and the Program Director. All seminar work done as part of the requirements of completing the Masters in Laboratory Animal Science must be attributed to EVMS, your advisor and your local institution.

CURRICULUM

The Program Schedule/Calendar included in an appendix in this handbook is color coded, listed by name, course number, course director, number of weeks, and number of credit hours. Important dates are indicated, such as internship course dates as well as graduation dates. Holiday breaks are indicated in red. A summary table of the Curriculum is also included.

The curriculum for the Laboratory Animal Science Master's Program has been constructed with the input from the Course and Program Directors. The curriculum is designed to meet the needs of the professionals in laboratory animal science; to deepen basic knowledge and science in animal research and facility management. Another aspect of the program is to impart best practices and laws and ethics involved with animal use in research.

The 2 years (full time; or 4 years part time) multidisciplinary course of study provides coursework and research opportunities that give the students general and specialized animal science training. The program is designed in five semesters at an average of three courses per semester for thirteen courses (31 credit hours):

- MLAS-513 | Comparative Anatomy and Physiology (4Credits)
- MLAS-514 | Applied Biostatistics & Research Design (3Credits)
- MLAS-502 | Laboratory Animal Husbandry, Care and Management (3 Credits)
- MLAS-503 | Journal Club (1 Credit)
- MLAS-504 | Diseases of Laboratory Animals I (3Credits)
- MLAS-506 | Anesthesia and Surgery (2 Credits)
- MLAS-508 | Internship (2 Credits)
- MLAS-505 | Diseases of Laboratory Animals II (3 Credits)
- MLAS-511 | Facility Management (3 Credits)
- MLAS-509 | Biotechnology & Diagnostic techniques (3 Credits)
- MLAS-512 | Graduate Seminar (2 Credits)
- MLAS-515 | Laboratory Animal Behavior & Behavioral Management (1 Credit)
- MLAS-516 | Cryopreservation (1 Credit)

Students complete coursework and interact with instructors and classmates through a distance education format utilizing the Blackboard Learning Management System and are required to attend one week Internship Course at the EVMS campus during the summer course between years 1 and 2. Upon successful completion of the program, students are awarded the Master of Science (MS) in Science specializing in Laboratory Animal Science.

Please note that all policies and procedures within the Student Handbook are subject to change without notice.

COURSE DESCRIPTIONS

Comparative Anatomy and Physiology: MLAS 513

This Course will cover anatomy and physiology of laboratory animals including study of body systems such as skeletal, muscular, circulatory, digestive, nervous, respiratory, reproductive and special sense organs and principles of diseases.

Applied Biostatistics & Research Design: MLAS 514

This course will cover the fundamentals of research design, including the use of literature search, the formulation of testable hypotheses, selection of the appropriate methodology and statistics to evaluate these hypotheses and the generation and interpretation of experimental outcomes. Students will learn to critique published studies, as well as to create and evaluate their own studies and protocols.

Laboratory Animal Husbandry, Care & Ethics: MLAS 502

This course will discuss husbandry practices, proper nutrition and enrichment requirements for different species; environmental parameters, such as proper housing, temperatures, humidity and lighting. Humane handling, restraint and overall well-being of laboratory animals will also be discussed.

Journal Club: MLAS 503

This course is designed in an interactive journal presentation and evaluation format. Students will review publications related to animal models in research and new technologies. The students will develop an appreciation for the usefulness, limitations, and special requirements involved in the development and characterization of unique animal models and their use while gaining a deeper understanding of human diseases.

Diseases of Laboratory Animals I and II: MLAS 504/505

This course will cover diseases and pathogens that affect laboratory animal species; the presentation, diagnoses, treatment and related regulations. The course will start with a detailed introduction to pathology, microbiology and pharmacology before covering specific diseases that affect common laboratory animal species.

Anesthesia and Surgery: MLAS 506

This course will review techniques and procedures used in surgery and anesthesia, including instruments and equipment preparation and identification, handling of instruments and supplies during surgery, anesthesia induction and monitoring, post-surgical care, clean up and surgical recordkeeping.

Internship: MLAS 508

During this course, students will have hands-on experience on various aspects and techniques and on multiple laboratory animal species. This course is for one week (40 hours) on the EVMS campus in Norfolk, Virginia.

Biotechnology & Diagnostic techniques: MLAS 509

This course will consist of lectures covering various general techniques or laboratory animal specific testing used in a research environment, such as:

- Cellular and molecular techniques including western blot, ELISA, flow cytometry, PCR, real time PCR and the basics of cell culture.
- Basics of imaging techniques such as X-ray, MRI, ultrasound, computerized tomography (CT).
- Lab animal pathology including blood and urine analysis, cytology and external parasites.

Facility Management: MLAS 511

This course provides both technical and Non-technical skills necessary for the successful laboratory animal facility managers such as; understanding of facility equipment, personnel management and scheduling, supply procurement, space allocation, animal production management, communication with researchers and senior management, conflict resolution, hiring and firing, critical thinking, problem solving, negotiation, finance/budgeting, and vendor management skills.

Graduate Seminar: MLAS 512

Students will choose their topic of interest and review recent publications in their related topics and prepare a presentation, using the recommendations of their mentors.

Students will be responsible to select a mentor, depending on their topic of interest either from MLAS instructors, or their professional work environment. Mentors should write a letter to course director to commit their willingness of working with the students.

Mentors will sign off on progress checklist report, which will be turned in to MLAS administrator before the presentation time. Students are responsible for weekly report of their progress and work with their mentors on Blackboard, during the development phase.

Laboratory Animal Behavior and Behavioral Management: MLAS 515

This course will provide students with behavioral biology of species commonly used in laboratories. It will also cover behavioral management, including enrichment and positive reinforcement training. Lastly, this course will introduce students to some behavioral tests utilized to model human behavior.

Cryopreservation: MLAS 516

Cell freezing is now a well-established laboratory activity in both clinical and research facilities. Good laboratory practice also requires a variety of other laboratory activities, including appropriate labeling, comprehensive recordkeeping including a cryo-inventory, appropriately trained personnel, and quality assurance. Thus, a laboratory technician needs more than just a familiarity with technical protocols: it requires the development and implementation of standards and procedures consistent with good laboratory practice.

SOCIETIES

AMERICAN ASSOCIATION FOR LABORATORY ANIMAL SCIENCE (AALAS)

The American Association for Laboratory Animal Science (AALAS) is a membership association of professionals employed around the world in academia, government, and private industry who are dedicated to the humane care and treatment of laboratory animals, as well as the quality research that leads to scientific gains that benefit people and animals. AALAS provides educational materials to laboratory animal care professionals and researchers, administers certification programs for laboratory animal technicians and managers, publishes scholarly journals, supports laboratory animal science research, and serves as the premier forum for the exchange of information and expertise in the care and use of laboratory animals.

LABORATORY ANIMAL MANAGEMENT ASSOCIATION (LAMA)

LAMA is an association dedicated to advancing the quality of management and care of laboratory animals throughout the world. Since its establishment in 1984, LAMA has grown to over 700 members residing in geographical locations as widespread as Asia, Australia, Europe and Canada. The membership continues an active role in AALAS and the career field by providing leadership to numerous committees and organizations on local, state and national levels.

STUDENT CHECKLIST

Laboratory Animal Science Master's Program

ONLINE ORIENTATION	
<input type="checkbox"/> Complete Orientation Course	
<input type="checkbox"/> Review LAS Handbook	
FALL SEMESTER: YEAR 1	
<input type="checkbox"/> Complete Semester 1 Coursework	<input type="checkbox"/> Comparative Anatomy & Physiology
	<input type="checkbox"/> Applied Biostatistics & Research Design
<input type="checkbox"/> Complete Semester 2 Online Registration	
SPRING SEMESTER: YEAR 1	
<input type="checkbox"/> Complete Semester 2 Coursework	<input type="checkbox"/> Diseases of Laboratory Animals I
	<input type="checkbox"/> Laboratory Animal Husbandry, Care and Ethics
	<input type="checkbox"/> Journal Club
<input type="checkbox"/> Complete Semester 3 Online Registration	
SUMMER SEMESTER: YEAR 1	
<input type="checkbox"/> Complete Semester 3 Coursework	<input type="checkbox"/> Anesthesia & Surgery
	<input type="checkbox"/> Internship
<input type="checkbox"/> Complete Semester 4 Online Registration	
FALL SEMESTER: YEAR 2	
<input type="checkbox"/> Complete Semester 4 Coursework	<input type="checkbox"/> Facility Management
	<input type="checkbox"/> Diseases of Laboratory Animals II
<input type="checkbox"/> Complete Graduation Information Form	
<input type="checkbox"/> Select Topic and Mentor for Graduate Seminar Series and Receive Course Director Approval	
<input type="checkbox"/> Mentorship Confirmation Letter to Graduate Seminar Course Director	
<input type="checkbox"/> Complete Semester 5 Online Registration	
SPRING SEMESTER: YEAR 2	
<input type="checkbox"/> Schedule Your Seminar with Course Director	
<input type="checkbox"/> Complete Semester 5 Coursework	<input type="checkbox"/> Biotechnology & Diagnostic techniques
	<input type="checkbox"/> Graduate Seminar
	<input type="checkbox"/> Lab Animal Behavior & Behavioral Management
	<input type="checkbox"/> Cryopreservation
<input type="checkbox"/> Certification for Graduation Form	

APPENDICES

APPENDIX 1: MLAS CLASS OF 2023 - YEAR 1

ORIENT	Online Orientation August 3 - 22, 2021		
Fall Semester (1)	<p align="center">(MLAS-513) COMPARATIVE ANATOMY & PHYSIOLOGY</p> <p align="center">Edgardo Rivera Colon 4 Credits</p>	<p align="center">(MLAS-514) APPLIED BIostatISTICS AND RESEARCH DESIGN</p> <p align="center">Frank A. Lattanzio 3 Credits</p>	
	FINAL EXAM WEEK		
WINTER BREAK December 10, 2021 - January 10, 2022			
Spring Semester (2)	<p align="center">(MLAS-504) DISEASES OF LAB ANIMALS I</p> <p align="center">Mario C. Rodriguez 3 Credits</p>	<p align="center">(MLAS-502) LABORATORY ANIMAL HUSBANDRY, CARE & ETHICS</p> <p align="center">3 Credits</p>	<p align="center">(MLAS-503) JOURNAL CLUB</p> <p align="center">Alireza Hosseini 1 Credit</p>
	FINAL EXAM WEEK		
Summer Semester (3)	<p align="center">(MLAS-506) ANESTHESIA & SURGERY</p> <p align="center">Mario C. Rodriguez 2 Credits</p>		
			<p align="center">(MLAS-508) INTERNSHIP</p> <p align="center">Alireza Hosseini 2 Credits</p>

For the part time curriculum and course sequences please see our website

APPENDIX 2: MLAS CLASS OF 2022 - YEAR 2

Fall Semester (4)	(MLAS-511) FACILITY MANAGEMENT Mark T. Sharpless 3 Credits		(MLAS-505) DISEASES OF LAB ANIMALS II Mario C. Rodriguez 3 Credits	
	FINAL EXAM WEEK			
WINTER BREAK December 10, 2021 - January 10, 2022				
Spring Semester (5)	(MLAS-509) BIOTECHNOLOGY & DIAGNOSTIC TECHNIQUES Nazita Yousefieh 3 Credits	(MLAS-512) GRADUATE SEMINAR Nazita Yousefieh 2 Credits	(MLAS-515) LABORATORY ANIMAL BEHAVIOR & BEHAVIORAL MANAGEMENT Kristine D. Coleman 1 Credit	(MLAS-516) CRYOPRESERVATION Jacob F. Mayer 1 Credit
	FINAL EXAM WEEK GRADUATION 5/21/2022			
For the part time curriculum and course sequences please see our website				

MLAS YEAR 1 - COURSE CURRICULUM (Full Time)

Course #	Course Name	Credit Hours
Fall Semester (1)		
MLAS-513	Comparative Anatomy & Physiology	4
MLAS-514	Applied Biostatistics & Research Design	3
		7
Spring Semester (2)		
MLAS-504	Diseases of Lab Animals I	3
MLAS-502	Laboratory Animal Husbandry, Care & Ethics	3
MLAS-503	Journal Club	1
		7
Summer Semester (3)		
MLAS-506	Anesthesia & Surgery	2
MLAS-508	Internship	2
		4
MLAS YEAR 2 - COURSE CURRICULUM (Full Time)		
Fall Semester (4)		
MLAS-511	Facility Management	3
MLAS-505	Diseases of Lab Animals II	3
		6
Spring Semester (5)		
MLAS-509	Biotechnology & Diagnostic Techniques	3
MLAS-512	Graduate Seminar	2
MLAS-515	Laboratory Animal Behavior & Behavioral Management	1
MLAS-516	Cryopreservation	1
		7
MLAS Program Total Credit Hours		31
OPTIONAL CLINICAL REPRODUCTIVE BIOLOGY (CRB) TRACK CURRICULUM		
Spring Semester (5)		
RCS-705	In Vitro Fertilization Technology	3
Summer Semester (6)		
RCS-701	Introduction IVF, Laboratory Techniques and Skills Development	3
CRB Track Total Credit Hours		6
For the part time curriculum and course sequences please see our website		

Master of Science in Laboratory Animal Sciences		
	Class of 2022	Class of 2023
Orientation		
Term I	Fall 2021	Fall 2021
Start Date	8/23/2021	8/23/2021
End Date	12/10/2021	12/10/2021
Final Exams	12/6-12/10/2021	12/6-12/10/2021
Term II	Spring 2022	Spring 2022
Start Date	1/10/2022	1/10/2022
End Date	4/29/2022	4/29/2022
Final Exams	4/25-4/29/2022	4/25-4/29/2022
Term III	Summer 2022	Summer 2022
Start Date	N/A	5/9/2022
End Date	N/A	7/29/2022
Final Exams		7/25-7/29/2022
Commencement Rehearsal	5/20/2022	5/19/2023
Commencement Ceremony	5/21/2022	5/20/2023
HOLIDAYS AND BREAKS		
Labor Day	9/6/2021	9/6/2021
Thanksgiving Break	11/25/2021 - 11/26/2021	11/25/2021 - 11/26/2021
Martin Luther King, Jr. Day	1/17/2022	1/17/2022
Memorial Day	5/30/2022	5/30/2022
Juneteenth (observed)	6/20/2022	6/20/2022
Fourth of July	7/4/2022	7/4/2022