

# MLAS - Laboratory Animal Science

## **MLAS 602 Lab Animal Husb, Care & Ethics (3 Credit Hours)**

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 covered.

## **MLAS 603 Journal Club (1 Credit Hour)**

This course will review the selected publications in related fields such as animal models in research, new technologies, etc.

## **MLAS 604 Diseases of Lab Animals I (3 Credit Hours)**

This course will cover the biology, husbandry, diseases, pathology, treatments and main research uses of main laboratory animal species.

## **MLAS 606 Anesthesia & Surgery (2 Credit Hours)**

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 record keeping.

## **MLAS 608 Internship (2 Credit Hours)**

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.

## **MLAS 613 Comp Anatomy & Physiology (4 Credit Hours)**

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.

## **MLAS 614 Applied Biostat & Res Design (3 Credit Hours)**

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.

## **MLAS 705 Diseases of Lab Animals II (3 Credit Hours)**

This course will cover the biology, husbandry, diseases, pathology, treatments and main research uses of main laboratory animal species.

## **MLAS 709 Biotech & Diagnostic Tech (3 Credit Hours)**

This course will cover various topics such as molecular analysis and detection systems including ELISA, PCR and real time PCR, basics of cell culture, laboratory blood, urine processing and basics of imaging techniques such as ultrasound, etc.

## **MLAS 711 Facility Management (3 Credit Hours)**

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.

## **MLAS 712 Graduate Seminar (2 Credit Hours)**

During this course students will be assigned to one topic of interest which will be presented to the whole group. Students will review the recent publications in their assigned topic and with recommendation and suggestions of their selected expert mentors, will prepare and present their presentation.

## **MLAS 715 Lab Animal Behavior & B Mgmt (1 Credit Hour)**

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

## **MLAS 716 Cryopreservation (1 Credit Hour)**

Cell freezing is now a well-established laboratory activity in both clinical and research facilities. This course is designed to teach technically complex process of cryopreservation by explaining the procedure of cryopreservation (freezing) of cells.