

# Department of Animal and Veterinary Sciences (AVSC)

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| Acting Chairperson: | Hamadeh, Shady                                 |
| Professors:         | Barbour, Elie; Farran, Mohamad; Hamadeh, Shady |
| Research Professor: | Sleiman, Fawwak                                |
| Instructor:         | <sup>P</sup> Tarek, Chadi                      |

## Vision

The department of Animal and Veterinary Sciences strives to be recognized as a center of excellence in animal and veterinary sciences education, research and outreach. The Department works to promote and support the veterinary science program to attract and maintain a diversified and highly qualified student body.

## Mission

The main function of the Department of Animal and Veterinary Sciences is to produce qualified graduates capable of serving the region in all areas of animal and veterinary sciences: research, services, business, and education. The Department offers a BS degree in Veterinary Sciences and two graduate programs of study leading to MS degrees in Animal Science and Poultry Science that prepare students for life-long learning and professional advancement in the field. The Department is also engaged to serve the animal and veterinary sector in Lebanon and the region by providing extension work, consultations, and diagnostic support.

## Undergraduate Program

The main function of the Animal and Veterinary Sciences Department is to produce qualified graduates capable of serving the region in all areas of animal and veterinary sciences: research, services, business, and education.

The department participates in offering courses within the FAFS undergraduate core program. Selected senior courses that cover areas of major importance in animal agriculture (i.e., nutrition, physiology, management, production) are also offered to students wishing to select an area of emphasis in animal sciences.

The department also offers the BS degree in Veterinary Sciences that prepares the graduates for life-long learning and professional advancement in the field. In this program students will get the solid basics in animal health, husbandry, nutrition, and breeding. The curriculum is integrative, multidisciplinary and multifunctional allowing graduates to have broader abilities in finding jobs in the local, regional and international markets. This program will also prepare students to pursue their graduate studies in poultry and animal sciences as well as in the basic

<sup>P</sup> Part time

medical sciences. The courses of the first two years in the Veterinary Sciences program will satisfy most of the premedical requirements needed to enter the Faculty of Medicine at AUB. The following courses are offered by the department:

## Course Descriptions

### Core Courses for the BS Degree in Agriculture

**AVSC 222      General Livestock Production      2.3; 3 cr.**  
Modern principles and practices in beef, sheep, and dairy production and reproduction.

**AVSC 224      Agricultural Microbiology      2.3; 3 cr.**  
A course that covers basic and applied microbiology. The basic microbiology includes bacteriology, virology, parasitology, and immunology, and the applied microbiology includes veterinary, soil, water, and food microbiology.

**AVSC 226      Poultry Production      2.3; 3 cr.**  
Modern principles and practices in poultry production with special emphasis on Middle Eastern conditions. *Prerequisite: AVSC 271.*

**AVSC 243      Genetics      3.0; 3 cr.**  
Principles of inheritance, with an introduction to modern genetics.

**AVSC 271      Animal Nutrition      3.0; 3 cr.**  
Structure and functioning of digestive systems of livestock and poultry; bioenergetics, nutritional deficiencies, and nutrient requirements of farm animals. *Prerequisite: NFSC 261.*

**AVSC 275      Anatomy and Physiology of Farm Animals      3.0; 3 cr.**  
Systematic anatomy and physiology of farm animals.

### Core Course for the BS Degree in Agribusiness

**AVSC 220      Livestock Production      3.0; 3 cr.**  
The course is divided into three main sections. The first section introduces the types and breeds of livestock, terminology, methods, management systems, techniques of animal production and consumer impact. The second section introduces the students to the modern management practices required for the production of economically beneficial avian species including the domestic chickens, turkeys, water fowls, game birds and others. The third section discusses the nature of economic diseases in domestic animals and avian species and the regulations of World Trade Organization in import and export of animals, including rules that prevent the trans boundary transmission of microbes causing economic diseases.

### Elective Courses for the BS Degree in Agriculture

**AVSC 241      Principles of Dairying      2.3; 3 cr.**  
Management, housing, feeding, breeding, and record-keeping in dairy production.

**AVSC 242      Small Ruminant Production in Arid Regions      2.3; 3 cr.**  
Breeding, feeding, and management of sheep and goats under arid conditions.

- AVSC 276**      **Animal Physiology Laboratory**      **0.3; 1 cr.**  
*Pre- or co-requisite: AVSC 275.*
- AVSC 277**      **Animal Breeding**      **2.0; 2 cr.**  
Principles of permanent improvement of animal and poultry production. *Prerequisite: AVSC 243 or BIOL 223.*
- AVSC 278**      **Feeds and Feeding**      **2.3; 3 cr.**  
Characteristics, conservation, and preparation of feeds; feeding of various classes of livestock.
- AVSC 279**      **Companion Pet Birds and Animals**      **3.0; 3 cr.**  
Breed and stock selection, equipment, stocking densities, routine management, rearing, feeding, behavior and interaction with humans, optimum production, and health care of pet birds and pet animals. *Free elective.*
- AVSC 280**      **Aquarium, Marine, and Farming Fish**      **3.0; 3 cr.**  
A course that covers the different fishing techniques, fish farming, characteristics of fish, comparison of classes of fish, the setup of fresh water and marine aquariums, and the common diseases of fish. *Free elective.*
- AVSC 281**      **Production of Novel Avian Species**      **3.0; 3 cr.**  
Management practices in the production of economically beneficial avian species other than the domestic chicken (e.g., ratites, turkey, water fowl, and others.).
- AVSC 282**      **Pet Birds and Animals**      **3.0; 3 cr.**  
A course that describes the anatomy and physiology of pets belonging to mammalia, reptilia, aves, and osteichthyes. The history, classification, breeds, selection, rearing, feeding, production, and health of sixteen pets will be studied. *Prerequisite: BIOL 200.*
- AVSC 299A**      **Special Topics in Animal Sciences for Agriculture program**      **2 cr.**  
Directed study. Tutorial. *Prerequisites: Fourth year standing and consent of instructor.*
- AVSC 299B**      **Special Topics in Animal Sciences for Veterinary Science program**      **2 cr.**  
Directed study. Tutorial. *Prerequisites: Third year standing and consent of instructor.*

## Core Courses for the BS Degree in Veterinary Sciences

- AVSC 203**      **History of Veterinary Medicine**      **1 cr.**  
The course explores the beginnings of veterinary medicine from ancient times to the middle ages and ending with modern times. The different specializations and branches of veterinary medicine are also explored.
- AVSC 205**      **Topographic and Applied Anatomy**      **2 cr.**  
The course is divided into six major sections starting with the palpable landmarks of the body followed by the topography of the thorax, abdomen, pelvic cavity and ending with the limbs. Superficial veins, sites of venous blood sampling, and investigation points will be explored in different body parts.
- AVSC 206**      **Clinical Diagnostics**      **2 cr.**  
The course deals with examination techniques and symptomology of internal diseases. The course is organized according to organs and organic systems, with special attention to the corresponding instrumentation used and species specific differences.

- AVSC 210 Applied Ethology 2 cr.**  
Applied ethology is the branch of animal science, which on the basis of the description of the innate behavior of farm animals and pets, studies the behavior of animals kept in intensive farming systems or, in the case of companion animals, kept in the close vicinity of humans. It also studies the effects of housing, nutrition, and attendants' care on the establishment of behavioral patterns. This subject also deals with the formation, prevention, and treatment of abnormal behavior (misbehavior, ethostasis) and describes ethical aspects of animal welfare.
- AVSC 213 Comparative Vertebrate Anatomy 4cr.**  
This course introduces the students to the field of Comparative Vertebrate Anatomy. It is organized in a manner within the unifying framework of form, function, and evolution.
- AVSC 215 Veterinary Embryology 4cr.**  
This course describes changes on the cellular, molecular and tissue levels before the birth of an animal to help in understanding the normal and abnormal structural developmental processes.
- AVSC 222 General Livestock Production 2.3; 3 cr.**  
Modern principles and practices in beef, sheep, and dairy production and reproduction.
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