

02

AGRICULTURES AND FISHERIES

ANIMAL HEALTH
TECHNOLOGY

PROGRAM OF STUDY

145.A0

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ANIMAL HEALTH TECHNOLOGY

*PROGRAM OF STUDY
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145.A0**Animal Health Technology****1998**

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INTRODUCTION TO THE PROGRAM*

The *Animal Health Technology* program shares the aims and goals for technical education that serve as guidelines for the Direction générale de la formation professionnelle et technique. It was designed in accordance with the framework for developing technical studies programs, which emphasizes partnership and cooperation between the business and education communities.

This program is defined in terms of competencies and formulated in objectives and standards. The program should provide a basis for the definition of learning activities and their evaluation, since it follows an approach that takes into account training needs, the work situation and the general goals of technical education. Furthermore, it supports the application of a program approach.

The *Animal Health Technology* program includes a general education component that is common to all programs of study (16 2/3 credits), a general education component that is specific to the program (6 credits), a general education component that is complementary to the other components (4 credits) and a specific program component of 65 credits.

This document consists of two parts. Part One presents an overview of the program. Part Two describes the objectives and standards of the specific program component.

* In this document the term “program” refers to the ministerial part of the technical studies program.

OBJECTIVES OF THE GENERAL EDUCATION COMPONENTS

A. GENERAL EDUCATION COMMON TO ALL PROGRAMS

(16 2/3 units)

General education common to all programs gives all students access to a common cultural base and covers educational objectives in the following areas.

1. LANGUAGE OF INSTRUCTION AND LITERATURE

depending on the language of instruction, for a total of 7 1/3 credits.

The objectives of *Français, langue d'enseignement et littérature*, (7 1/3 credits), are as follows:

- C analyser des textes littéraires appartenant aux courants littéraires et en rendre compte dans un texte cohérent et correct (Set 1);
- C situer les représentations du monde proposées par des textes appartenant aux courants littéraires et en rendre compte dans une dissertation explicative (Set 2);
- C apprécier la littérature québécoise actuelle dans la littérature du XX^e siècle et en rendre compte dans un essai critique (Set 3).

OR

The objectives of *English, Language of Instruction and Literature*, (7 1/3 credits) are as follows:

- C to carry out the analysis and production of various forms of discourse (Set 1);
- C to apply a critical approach to literary genres (Set 2);
- C to apply a critical approach to a literary theme (Set 3).

2. **SECOND LANGUAGE**

depending on the language of instruction, for a total of 2 credits.

Students must attain one of the following objectives, according to their level of competency upon entry to the college level.

The objective of *English, Second Language*, (2 credits) is selected from the following:

- C to communicate with relative ease in English (Set 1);
- C to communicate easily in English on social, cultural or literary topics (Set 2);
- C to discuss a cultural and literary topic in writing (Set 3).

The objective in *French, Second Language*, (2 credits) is selected from the following:

- C to communicate with relative ease in French (Set 1);
- C to communicate easily in French (Set 2);
- C to discuss a cultural and literary topic (Set 3).

OR

3. **PHILOSOPHIE or “HUMANITIES”,**
for a total of 4 1/3 credits.

The objectives of *Philosophie*, (4 1/3 credits) are as follows:

- C traiter d'une question philosophique de façon rationnelle (Set 1);
- C présenter des conceptions modernes et contemporaines de l'être humain et en montrer l'importance (Set 2).

The objectives in *Humanities*, (4 1/3 credits) are as follows:

- C to apply a logical analytical process to how knowledge is organized and used (Set 1);
- C to apply a critical thought process to world views (Set 2).

OR

4. **PHYSICAL EDUCATION**

for a total of 3 credits: the objectives are as follows:

- C to determine where they stand with respect to the question of personal health (Set 1);
- C to adopt an approach leading to greater effectiveness in a physical activity (Set 2);
- C to practise physical activities regularly in the interests of personal health (Set 3).

B. GENERAL EDUCATION SPECIFIC TO THE PROGRAM
(6 credits)

The general education specific to the program consolidates and enriches the objectives of the component of general education common to all programs and supplements the latter with general education objectives belonging to the specific program component of the pre-university or technical program.

1. LANGUAGE OF INSTRUCTION AND LITERATURE

depending on the language of instruction, for a total of 2 credits.

The objective of *Français, langue d'enseignement et littérature*, (2 credits) is as follows:

- C utiliser les principes et les procédés de la communication pour la compréhension et la production de différents types de discours oraux et écrits (Set 1).

The objective of *English, Language of Instruction and Literature*, (2 credits) is as follows:

OR

- C to communicate in the forms of discourse appropriate to a given field of studies (Set 1).

2. SECOND LANGUAGE

depending on the language of instruction, for a total of 2 credits.

The student must attain the objective, chosen from the following, that is a continuation of the objective already attained in the component of general education common to all programs.

The objective of *English, Second Language*, (2 credits) is selected from the following:

- C to communicate in English using the forms of expression common in a given occupational sphere (Set 1);
- C to communicate in English using the forms of expression common in a given occupational sphere (Set 2);
- C to communicate in English in various forms of discourse (Set 3).

OR

The objective of *French, Second Language*, (2 credits) is selected from the following:

- C to communicate in French in a particular field of study (Set 1);
- C to communicate in French in a particular field of study (Set 2);
- C to discuss in French a subject related to their field of study (Set 3).

3. PHILOSOPHIE or “HUMANITIES”,
for a total of 2 credits.

The objective of *Philosophie* (2 credits) is as follows:

- C apprécier des problèmes éthiques de la société contemporaine dans leurs dimensions personnelles, sociales et politiques (Set 1).

The objective of *Humanities* (2 credits) is as follows:

OR

- C to apply a critical thought process to ethical issues relevant to the field of studies (Set 1).

C. COMPLEMENTARY GENERAL EDUCATION
(4 credits)

Complementary general education is intended to bring students into contact with fields of knowledge other than those that make up the specific program component of their pre-university or technical program. Students must therefore attain two learning objectives (for 2 credits each) in one or two of the subject areas in general education that are complementary to their specific program component.

The subject areas stipulated in the *College Education Regulations* are as follows:

1. SOCIAL SCIENCES

The objectives are as follows:

- ℄ to estimate the contribution of the social sciences to an understanding of contemporary issues (Set 1);
- ℄ to analyze one of the major problems of our time using one or more social scientific approaches (Set 2).

2. SCIENCE AND TECHNOLOGY

The objectives are as follows:

- ℄ to explain the general nature of science and technology and some of the major contemporary scientific or technological issues (Set 1);
- ℄ to solve a simple problem by applying the basic scientific method (Set 2).

3. MODERN LANGUAGES

The objectives are as follows:

- ℄ to communicate with limited skill in a modern language (Set 1);
- ℄ to communicate on familiar topics in a modern language (Set 2);
- ℄ to communicate with relative ease in a modern language (Set 3).

4. MATHEMATICS LITERACY AND COMPUTER SCIENCE

The objectives are as follows:

- ℄ to recognize the role of mathematics or informatics in contemporary society (Set 1);
- ℄ to use various mathematical or computer concepts, procedures and tools for common tasks (Set 2).

5. ART AND AESTHETICS

The objectives are as follows:

- ℄ to consider various forms of art produced by aesthetic practices (Set 1);
- ℄ to produce a work of art (Set 2).

VOCABULARY USED

Program

A program is an integrated set of learning activities leading to the achievement of educational objectives based on set standards (*College Education Regulations*, Division I, section 1).

Objective

An objective is the competency, skills or knowledge to be acquired or mastered (*College Education Regulations*, Division I, section 1).

Competency

In technical education: the integrated set of cognitive skills, psychomotor skills and socio-affective behaviours that enable a student to assume a role or carry out a function, task or activity meeting the performance standards required to enter the job market. (*Cadre technique d'élaboration de la partie ministérielle des programmes d'études techniques*, p. 3). [This is a free translation.]

Standard

A standard is the level of performance at which an objective is considered to be achieved. (*College Education Regulations*, Division I, section 1).

PART ONE

OVERVIEW OF THE PROGRAM

GOALS OF THE PROGRAM

The *Animal Health Technology* program is intended to train people to practise the profession of animal health technician, principally in the clinical and research sectors.

The role of animal health technicians is to assist veterinarians in the exercise of their duties and to assist researchers in animal experimentation. In both cases they are required to perform tests on animals, to provide nursing services for them and to set up technical support systems for animal health services. Additionally, both functions require a mastery of special competencies, such as providing client services in veterinary clinics and performing technical laboratory skills in the field of animal experimentation.

The competencies acquired by animal health technicians enable them to practise their profession wherever care for animals is required. They are present in all the types of organizations listed below:

- C veterinary clinics and hospitals;
- C hospital research centres;
- C university research centres;
- C government research centres;
- C private research centres;
- C animal protection agencies;
- C teaching laboratories;
- C specimen analysis laboratories;
- C federal and provincial governments, municipalities and food inspection departments;
- C the pharmaceutical industry;
- C zoos;
- C commercial animal facilities;
- C agricultural enterprises;
- C feed mills or agromarts

The profession gives candidates access to jobs with the following titles:

- C animal health technician;
- C animal care worker;
- C animal attendant;
- C veterinary assistant;
- C veterinary clinic receptionist;
- C laboratory technician;
- C sales representative.

After acquiring experience, animal health technicians may advance to the positions of:

- C team leader;
- C supervisor;
- C director.

In accordance with the general goals of technical education, the *Animal Health Technology* program is intended to:

enable students to practise their profession competently

- C by correctly performing the tasks and technical activities of the profession as soon as they enter the job market;
- C by developing appropriately in their work environment (in the areas of technical knowledge and skills, communications, problem solving, decision making, ethics and concerns related to health and safety);

help students adapt to professional life

- C by informing them about the job market in general, as well as in the particular context of their profession;
- C by informing them of their rights and responsibilities as workers;

encourage students to develop and broaden their professional knowledge

- C by enabling them to develop their independence and ability to learn and to acquire working methods;
- C by enabling them to understand the principles underlying the techniques they are using;
- C by enabling them to better express themselves and develop their creativity, sense of initiative and spirit of enterprise;
- C by enabling them to acquire attitudes vital to their professional success and a sense of responsibility, and to develop a concern for excellence;

foster the professional mobility of students

- C by enabling them to acquire a positive attitude toward change;
- C by helping them to acquire the skills they need for managing their own careers.

The *Animal Health Technology* program also comprises the educational aims of the common, specific and complementary components of general education, as indicated in the document *Formation générale : des collèges pour le Québec du XXI^e siècle*.

Except where indicated otherwise, all the competencies outlined in the specific program component concern the following categories of animals: pets, exotic animals, farm animals and laboratory animals. The study and practice of these competencies must be exercised within the limits imposed by the *Veterinary Surgeons Act* and any other pertinent regulations.

LIST OF COMPETENCIES TARGETED BY THE SPECIFIC PROGRAM COMPONENT

00QJ	To analyze the profession
00QK	To manage equipment and materials
00QL	To admit animals for treatment
00QM	To ensure the proper operation of an animal facility
00QN	To administer nursing care
00QP	To administer nursing care to animals reproduced for consumption
00QQ	To perform clinical biochemistry and immunological tests
00QR	To perform cytological and histological tests and necropsies
00QS	To perform haematological tests
00QT	To perform microbiological and parasitology tests
00QU	To breed animals
00QV	To maintain cell and microbial cultures
00QW	To assist in radiology
00QX	To assist in surgery
00QY	To perform dental prophylaxis
00QZ	To participate in experimental surgeries
00R0	To perform physiological investigations
00R1	To provide client services
00R2	To participate in an animal experiment
00R3	To use techniques in animal restraint

- 00R4 To use chemical and biochemical laboratory techniques
- 00R5 To associate genetic and cellular factors with the growth and reproduction of animals
- 00R6 To prevent the propagation of microorganisms and parasites
- 00R7 To establish a link between the anatomy and physiology of animals and their biological functions
- 00R8 To manage nutritional care
- 00R9 To establish methods for recognizing and modifying animal behaviour
- 00RA To recognize pathological signs
- 00RB To analyze the effects of medication on an animal

PART TWO

OBJECTIVES AND STANDARDS OF THE SPECIFIC PROGRAM COMPONENT

CODE: 00QJ	
OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To analyze the profession.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To describe the profession and the working conditions. 2. To examine the tasks and operations related to the profession. 3. To examine the skills and behaviours necessary to practise the profession. 4. To examine the legal framework and regulations of the profession. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - On the basis of recent information about the profession, as well as about businesses and organizations in the field. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Relevance of information gathered. 1.2 Examination of the general characteristics of the profession and the working conditions. 1.3 Recognition of the entrepreneurial opportunities in the field. 2.1 Examination of the operations, conditions for achievement and performance criteria for each task. 2.2 Determination of the relative importance of tasks. 2.3 Correlation of steps in working methods with the tasks of the profession. 3.1 Establishment of links between the skills and behaviours required and the various tasks of the profession. 4.1 Accurate evaluation of the limits to the practice of the profession as stipulated in the law.

Elements of the Competency	Performance Criteria
5. To make out orders.	5.1 Accurate formulation of the order. 5.2 Careful selection of suppliers. 5.3 Forms correctly filled out. 5.4 Accurate transmission of the order. 5.5 Careful follow-up of the order.
6. To receive materials.	6.1 Check of the contents of the order. 6.2 Quick storage of perishable products. 6.3 Appropriate storage of material received. 6.4 Appropriate follow-up in the case of delivery errors.
7. To fill out files and records.	7.1 Maintenance sheets correctly filled out. 7.2 Records and log books correctly filled out.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To ensure the proper operation of an animal facility.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To carry out an inspection. 2. To plan interventions in an animal facility. 3. To check in animals. 4. To maintain an operational environment. 5. To condition the animals. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - With or without supervision. - In compliance with instructions. - Using a computer and specialized software. - Using technical manuals. - Using standard operating procedures. - Using primary materials. - Using appropriate equipment. - Using relevant records and files. - In a research or clinical setting. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Accurate evaluation of the state of the premises and the occupants. 1.2 Verification of the water and food supplies. 1.3 Accurate identification of specific problems. 1.4 Relevance of corrective measures carried out in emergency situations. 2.1 Correct interpretation of orders. 2.2 Logical arrangement of priorities. 3.1 Careful check of the order. 3.2 Opening of appropriate files. 3.3 Proper restraint of the animals. 3.4 Proper identification of the animals and where they will be kept. 3.5 Appropriate observation of each animal received. 3.6 Accurate determination of specific problems. 3.7 Careful choice of interventions and follow-up. 3.8 Proper installation of the animals in their place of shelter. 4.1 Proper arrangement of the shelter locations. 4.2 Appropriate modification of the material conditions of the environment. 5.1 Consideration of intended use of animal. 5.2 Appropriate quarantine measures. 5.3 Proper execution of the necessary tests and preventive treatments. 5.4 Appropriate familiarization of the animals with their handling. 5.5 Records and files filled out appropriately.

Elements of the Competency	Performance Criteria
6. To look after the well-being of the animals.	6.1 Observance of the standards for sheltering animals. 6.2 Appropriate enrichment of the animals' environment. 6.3 Proper food and water supplies. 6.4 Appropriate use of a sentinel program. 6.5 Careful choice of basic care to be given. 6.6 Appropriate dispensation of basic care. 6.7 Respect of periods of acclimatization.
7. To maintain and clean the materials and the facility.	7.1 Appropriate cleaning and disinfection of the materials and places of shelter. 7.2 Observance of environmental standards when disposing of biomedical waste.
8. To complete the files.	8.1 Files and records properly completed.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To administer nursing care.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To plan the work. 2. To prepare the materials and the animal. 3. To administer a medication, solution or fluids. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - With or without supervision. - In compliance with instructions. - Using forms and files. - Using technical documents. - Using medical materials. - Using medications, drugs and fluids. - In a clinical or research setting. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Accurate interpretation of instructions. 1.2 Determination of the relative importance of the tasks. 1.3 Determination of a logical sequence for the work. 2.1 Correct choice of medical materials and equipment. 2.2 Accurate recording of the weight of the animal. 2.3 Precise calculation of the doses of medication, drugs and fluids prescribed. 2.4 Accurate preparation and identification of medications, solutions, drugs and fluids prescribed. 2.5 Appropriate preparation of the materials or equipment. 2.6 Appropriate restraint of the animal. 3.1 Correct oral administration of a medication in tablet or liquid form. 3.2 Proficiency in the technique of tube feeding. 3.3 Correct insertion of a nasogastric tube. 3.4 Proper handling of the oesophageal pump. 3.5 Proficiency in injection techniques. 3.6 Proficiency in intravenous injection techniques and the installation of an intravenous catheter. 3.7 Correct application of topical, otic or ophthalmic medications. 3.8 Correct udder and intrauterine infusions. 3.9 Correct intranasal administration of a medication.

Elements of the Competency	Performance Criteria
4. To feed a sick animal.	4.1 Accurate interpretation of instructions when the diet is prescribed. 4.2 Correct preparation of special diets. 4.3 Proficiency in forced feeding techniques. 4.4 Effective assistance during the insertion of a nasogastric or pharyngoscopy tube. 4.5 Correct use and maintenance of a nasogastric or pharyngoscopy tube. 4.6 Accurate daily evaluation of the nutritional state of the animal.
5. To treat wounds.	5.1 Effective cleansing and disinfection of wounds. 5.2 Appropriate irrigation of wounds. 5.3 Correct administration of hydrotherapy. 5.4 Appropriate maintenance of drains. 5.5. Medication correctly administered. 5.6 Observance of aseptic techniques.
6. To make bandages.	6.1 Application of segments of bandage in a logical sequence. 6.2 Appropriate application of a bandage. 6.3 Correct application of a splint. 6.4 Correct application of a poultice. 6.5 Effective assistance during the application of a cast. 6.6 Observance of aseptic techniques.
7. To perform emergency interventions.	7.1 Evaluate the degree of urgency. 7.2 Accurate evaluation of vital signs. 7.3 Proficiency in the use of a respiratory balloon (IPPV). 7.4 Appropriate oxygenation of the animal. 7.5 Correct administration of prescribed medications and fluids. 7.6 Effective assistance during cardiorespiratory resuscitation. 7.7 Effective control of haemorrhage. 7.8 Proper control of hypothermia and hyperthermia. 7.9 Consideration of the reaction of the animal to the treatment received. 7.10 Accurate anticipation of instructions.

Elements of the Competency	Performance Criteria
8. To apply special nursing techniques.	8.1 Correct administration of a barium meal. 8.2 Correct administration of a normal or barium enema. 8.3 Efficient assistance during a tracheal cleaning (lavage). 8.4 Correct administration of an electrocardiogram. 8.5 Proficiency in blood transfusion techniques.
9. To clean and store materials.	9.1 Equipment, instruments and work surfaces free of stains. 9.2 Appropriate decontamination of materials and equipment. 9.3 Observance of environmental standards when disposing of biomedical materials.
10. To complete files and forms.	10.1 Precise entry of operations and treatments in the file. 10.2 Records of surgery, radiology and controlled drugs properly completed.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To administer nursing care to animals reproduced for consumption.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To plan the work. 2. To prepare the materials and the animal. 3. To help with parturition and foetotomy. 4. To assist with embryo transfer. 5. To perform artificial insemination. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - With or without supervision by the veterinarian. - In compliance with instructions. - Using forms and files. - Using technical documents. - Using specific data. - Using medical equipment and materials. - Using medications, drugs and fluids. - At the animal's place of shelter. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Accurate interpretation of instructions. 1.2 Determination of the relative importance of tasks. 1.3 Determination of a logical sequence for the work. 2.1 Careful choice of medical materials and equipment. 2.2 Appropriate preparation of materials or equipment. 2.3 Proper restraint of the animal. 3.1 Correct handling of equipment and obstetrical materials. 3.2 Effective assistance during parturition and foetotomy. 3.3 Appropriate care of the mother and newborn. 4.1 Proper assistance during embryo transfer. 4.2 Appropriate care of embryos. 5.1 Appropriate use of the herd management calendar. 5.2 Correct recognition of oestral period. 5.3 Correct rectal palpation. 5.4 Correct handling of insemination straws. 5.5 Insemination carried out correctly.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To perform clinical biochemistry and immunological tests.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To plan the work. 2. To prepare the test. 3. To take a specimen. 4. To process the sample. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - With or without supervision in a clinic. - In compliance with instructions. - Using forms and files. - Using technical documents. - Using medical materials, diagnostic kits and equipment for biochemical analysis. - In a clinical or research setting. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Correct interpretation of instructions. 1.2 Accurate determination of the sequence of operations. 2.1 Careful selection of materials. 2.2 Correct interpretation of instructions for the diagnostic kit or for the test. 2.3 Correct preparation of elements of the kit or the test. 2.4 Careful choice of the type of specimen. 2.5 Meticulous inspection of the calibration of instruments. 3.1 Careful selection of site from which to take the specimen. 3.2 Careful selection of technique for taking the specimen. 3.3 Appropriate restraint of the animal. 3.4 Strict observance of aseptic protocol during the taking of the specimen. 3.5 Appropriate handling of the sample. 3.6 Accurate identification of the sample. 3.7 Appropriate preservation of the sample. 3.8 Appropriate preparation of the sample to be sent to the laboratory. 3.9 Observance of health and safety rules. 4.1 Safe handling of the sample. 4.2 Appropriate preparation of the sample according to the test to be done. 4.3 Observance of the order of operations. 4.4 Correct centrifugation. 4.5 Accurate serodilution. 4.6 Accurate reading of colorimetric reaction or of quantitative results. 4.7 Accurate verification of the validity of the test. 4.8 Appropriate conservation of the diagnostic test.

CODE: 00QQ

Elements of the Competency

5. To clean and store the materials.

6. To complete files and forms.

Performance Criteria

5.1 Instruments and work surfaces free of stains.
5.2 Appropriate decontamination of materials and instruments.

5.3 Observance of environmental standards when disposing of biomedical waste and materials.

6.1 Request forms appropriately filled out.
6.2 Accurate recording in the file of the test carried out and results obtained.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To perform cytological and histological tests and necropsies.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To plan the work. 2. To take a specimen from a live animal. 3. To take a specimen during a necropsy. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - Under the supervision of the clinic veterinarian or without supervision. - In compliance with instructions. - Using forms and files. - Using technical documents. - Using cytology materials. - Using histology materials. - In a clinical or research setting. (In a clinic histology tests are limited to taking tissue specimens.) <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Correct interpretation of instructions. 1.2 Logical determination of operations to be carried out. 2.1 Careful selection of materials. 2.2 Careful selection of specimen site. 2.3 Effective assistance during the administration of anaesthetic to the animal. 2.4 Appropriate stabilization of tissues by immersion or perfusion. 2.5 Observance of the correct technique for taking specimens. 2.6 Appropriate preservation of the specimen. 2.7 Precise identification of the specimen. 2.8 Appropriate preparation of the specimen to be sent to the laboratory or for further treatment. 2.9 Accurate description of observations. 3.1 Meticulous dissection of a carcass. 3.2 Accurate location of organs. 3.3 Correct specimen taken of an organ or fragment of tissue. 3.4 Appropriate conservation of the sample. 3.5 Precise identification of the specimen. 3.6 Appropriate preparation of the specimen to be sent to the laboratory or for further treatment. 3.7 Observance of safety standards. 3.8 Accurate description of observations.

Elements of the Competency	Performance Criteria
4. To prepare a histology slide.	4.1 Appropriate impregnation of the tissues. 4.2 Appropriate coating or freezing of tissues. 4.3 Meticulous cutting of tissue blocks. 4.4 Meticulous mounting of the sample on a glass slide. 4.5 Correct fixation of the specimen slice. 4.6 Appropriate staining of the tissues.
5. To prepare a cytology slide.	5.1 Correct spreading and fixation of the smear. 5.2 Correct staining of the cells.
6. To observe cells and tissues in a microscope.	6.1 Appropriate handling of an optical microscope. 6.2 Accurate distinction of the principal types of cells and normal tissues.
7. To maintain and clean the materials.	7.1 Appropriate disinfection of the materials. 7.2 Observance of environmental standards during disposal of biomedical waste.
8. To complete files and forms.	8.1 Request forms filled out appropriately. 8.2 Files and records properly completed.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To perform haematological tests.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To plan the work. 2. To obtain a blood specimen. 3. To examine the specimen under a microscope. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - With or without supervision in a clinic. - In compliance with instructions. - Using forms and files. - Using technical documents. - Using medical materials and instruments for haematology analysis. - In a clinic or a research setting. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Accurate interpretation of instructions. 1.2 Precise determination of operations to be carried out. 2.1 Careful selection of the specimen site. 2.2 Careful selection of materials. 2.3 Correct choice of technique for taking the specimen. 2.4 Appropriate restraint of the animal. 2.5 Observance of rules of sterilization during the taking of the specimen. 2.6 Effective assistance during the taking of a bone marrow specimen. 2.7 Proper handling of the specimen obtained. 2.8 Accurate identification of the specimen. 2.9 Proper preservation of the specimen. 2.10 Appropriate preparation of the specimen to be sent to the laboratory or for further treatment. 2.11 Observance of health and safety rules. 3.1 Proficiency in technique for preparing smears. 3.2 Careful selection of staining. 3.3 Appropriate staining of the smear. 3.4 Proper handling of the microscope. 3.5 Differentiation of the cellular blood elements according to the animal species. 3.6 Appropriate estimation of the number of platelets. 3.7 Correct evaluation of the morphology of red blood cells. 3.8 Correct performance of differential. 3.9 Notation of toxic changes in the blood cells.

Elements of the Competency	Performance Criteria
4. To perform a cell count.	4.1 Proficiency in haematocrit methods. 4.2 Correct use of a haematocytometer. 4.3 Precise count of white blood cells, red blood cells and platelets. 4.4 Accurate calculation of red blood cell indicators. 4.5 Proper use of basic functions of automatic counting apparatuses.
5. To examine plasma.	5.1 Correct determination of the presence of haemolysis, lipidemia, and icterus. 5.2 Accurate measurement of plasma protein. 5.3 Correct execution of tests for blood cell compatibility.
6. To clean and store the materials.	6.1 Instruments and work surfaces free of stains. 6.2 Appropriate decontamination of materials and instruments. 6.3 Observance of environmental standards when disposing of biomedical materials.
7. To update files and fill in forms.	7.1 Request forms appropriately filled out. 7.2 Accurate recording in the file of tests carried out and results obtained.

CODE: 00QT	
OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To perform microbiological and parasitology tests.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To plan the work. 2. To prepare the materials. 3. To take a specimen. 	<p>Achievement Context</p> <ul style="list-style-type: none"> -Individually or in a group. -With or without supervision in a research setting; with supervision in a clinic. -In compliance with instructions. -Using forms and files. -Using technical documents. -Using microbiological materials. -Using parasitology materials. -In a research or clinical setting. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Correct interpretation of instructions. 1.2 Logical order of operations to be carried out. 2.1 Proper disinfection of the work area. 2.2 Correct preparation of the basic nutritive media and solutions. 2.3 Appropriate sterilization of materials and solutions. 3.1 Careful selection of the specimen. 3.2 Careful selection of materials. 3.3 Correct choice of technique for taking the specimen. 3.4 Appropriate restraint of the animal. 3.5 Observance of aseptic protocol. 3.6 Proper handling of the specimen. 3.7 Accurate identification of the specimen. 3.8 Proper preservation of the specimen. 3.9 Appropriate preparation of the specimen to be sent to the laboratory or for further treatment. 3.10 Observance of health and safety rules.

Elements of the Competency	Performance Criteria
4. To isolate bacteria and parasites.	4.1 Appropriate flotation and filtration of fecal specimens. 4.2 Production of pure cultures on gelatin.
5. To examine the specimen under a microscope.	5.1 Appropriate spreading and fixation of the smear on the slide. 5.2 Appropriate staining of the smear. 5.3 Appropriate handling of an optical microscope and an immersion lens. 5.4 Accurate distinction between the principal morphological types of bacteria and fungi. 5.5 Distinction between gram-positive and gram-negative bacteria. 5.6 Accurate recognition of the principal internal and external parasites.
6. To cultivate bacteria.	6.1 Observance of aseptic protocol during inoculation. 6.2 Observance of inoculation methods. 6.3 Appropriate incubation of bacteria in aerobiosis.
7. To describe bacteria for the purpose of identification.	7.1 Observance of aseptic protocol. 7.2 Appropriate description of bacteria using diagnostic kits.
8. To evaluate the resistance of a bacterium to different antibiotics.	8.1 Appropriate inoculation on gelatin. 8.2 Correct arrangement of disks that have absorbed antibiotics. 8.3 Accurate evaluation of zones of inhibited growth.
9. To maintain and clean the materials.	9.1 Appropriate disinfection of material. 9.2 Observance of environmental standards when disposing of biomedical waste.
10. To update files.	10.1 Request forms filled out appropriately. 10.2 Accurate recording in the file of tests carried out and results obtained.

CODE: 00QU	
OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To breed animals.</p>	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - With or without supervision. - In compliance with instructions. - Using forms and files. - Using technical documents. - In a research setting (small animal).
<p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To plan reproduction. 2. To select the animals for breeding. 3. To supervise the mating. 4. To follow the course of gestation and birth. 5. To follow the development of the offspring. 6. To update files. 	<p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Correct interpretation of instructions. 1.2 Logical determination of the duration of each stage of reproduction and the frequency of mating, according to the offspring desired. 2.1 Consideration of sexual maturity. 2.2 Accurate determination of number of breeding animals, according to sex. 2.3 Accurate evaluation of quality of semen. 3.1 Appropriate synchronization of the oestral cycle of the females. 3.2 Appropriate inducement of oestral period. 3.3 Correct detection of oestral period. 3.4 Appropriate context and duration of the introduction of males and females. 3.5 Accurate verification of coitus. 4.1 Appropriate isolation of pregnant females. 4.2 Appropriate enrichment of the environment. 4.3 Proper monitoring of the gestation period. 4.4 Accurate recognition of the advance signs and the normal stages of parturition. 5.1 Observance of the lactation period. 5.2 Appropriate weaning of newborns. 5.3 Correct identification of the sex of the newborns. 5.4 Correct identification of the offspring. 5.5 Accurate identification of the pedigree of the offspring. 6.1 Observance of the procedure for registering offspring. 6.2 Records and files properly updated.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To maintain cell and microbial cultures.</p>	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - With or without supervision. - In compliance with instructions. - Using research procedures. - Using technical manuals. - Using primary materials. - Using materials from cell cultures. - Using materials from microbial cultures. - Using records and files. - In a research setting.
<p>Elements of the Competency</p> <p>1. To plan the work.</p> <p>2. To prepare the materials.</p> <p>3. To describe the culture.</p> <p>4. To change the medium of an adhesive cell culture.</p> <p>5. To produce a subculture from cell or microbial cultures.</p>	<p>Performance Criteria</p> <p>1.1 Correct interpretation of instructions. 1.2 Logical order of operations to be carried out.</p> <p>2.1 Appropriate disinfection of the work environment. 2.2 Correct preparation of culture media and solutions. 2.3 Appropriate sterilization of materials and solutions. 2.4 Appropriate arrangement of materials necessary for aseptic operations. 2.5 Careful selection of work environment.</p> <p>3.1 Accurate description of the macroscopic characteristics of a culture. 3.2 Accurate evaluation of the degree of confluence of a cell culture. 3.3 Correct determination of the cell count or bacterial colonies in a culture medium. 3.4 Accurate determination of the viability of a culture.</p> <p>4.1 Appropriate disposal of the medium. 4.2 Proper addition of the new medium. 4.3 Observance of aseptic work techniques and careful handling of cultures.</p> <p>5.1 Appropriate dilution of cell cultures. 5.2 Appropriate removal of adhesive cell cultures. 5.3 Appropriate centrifugation of cells in suspension. 5.4 Appropriate washing of a cell culture. 5.5 Appropriate specimen taking and inoculation of bacterial cultures. 5.6 Observance of aseptic work techniques and careful handling of cultures. 5.7 Accurate identification of cultures.</p>
<p>6. To ensure favourable conditions for growth and conservation.</p>	<p>6.1 Appropriate incubation of cultures. 6.2 Regular checks on the state of cultures and the physical conditions of incubation. 6.3 Appropriate preservation of cultures.</p>

CODE: 00QV

Elements of the Competency

7. To maintain and clean the materials.

8. To update records.

Performance Criteria

7.1 Appropriate disinfection and sterilization of materials and the work environment.

7.2 Observance of environmental standards when disposing of biomedical waste.

8.1 Accurate record of operations and observations.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To assist in radiology.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To prepare the material. 2. To apply health and safety rules. 3. To prepare and position the animal. 4. To develop X-rays. 5. To clean and store the materials. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - Under direct supervision. - In compliance with instructions. - Using forms and files. - Using technical documents. - Using radiographic, medical and anaesthetic materials. - In a clinic or research setting. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Correct startup of the radiology equipment. 1.2 Careful selection of cassettes and films. 1.3 Accurate identification of films. 1.4 Appropriate selection of exposure factors. 2.1 Appropriate use of radioprotective clothing and equipment. 2.2 Correct use of a dosimeter. 2.3 Observance of rules for circulating within protected areas. 2.4 Proper restriction of fields of exposure. 2.5 Safe handling of the animal during exposure. 3.1 Efficient assistance during administration of anaesthetic to the animal. 3.2 Correct positioning of the animal. 3.3 Appropriate orientation of the head of the radiology apparatus, the cone of a dental X-ray apparatus and films. 3.4 Attentive monitoring of the patient. 4.1 Appropriate circulation in the darkroom. 4.2 Correct preparation of development basins. 4.3 Observance of the sequence, development times, rinsing and fixing of films. 4.4 Correct evaluation of the quality of films. 4.5 Relevance of corrections made. 5.1 Periodic cleaning of screens. 5.2 Cleanliness of radioprotective materials, development basins and the automatic developer. 5.3 Change of developing solutions and fixer. 5.4 Appropriate storage of hazardous materials.

Elements of the Competency

6. To update files and records.

Performance Criteria

- 6.1 Clear and accurate description of the operations carried out.
- 6.2 Precise indication of observations on the anaesthetic monitoring sheet.
- 6.3 Records of radiology, anaesthetic and controlled drugs properly completed.

Elements of the Competency	Performance Criteria
3. To participate in the surgical operations.	3.1 Disinfection of hands. 3.2 Observance of protocol for putting on sterile clothing. 3.3 Maintenance of sterile conditions during draping of the animal. 3.4 Accurate presentation of the equipment. 3.5 Precise execution of the instructions of the surgeon. 3.6 Careful monitoring of the patient.
4. To carry out post-operative nursing.	4.1 Careful monitoring of the animal's return to consciousness. 4.2 Accurate calculations pertaining to prescribed drugs. 4.3 Correct administration of prescribed drugs. 4.4 Precise evaluation of the general state of the animal. 4.5 Precise evaluation of the state of the surgical wound. 4.6 Appropriate evaluation of treatments or prescribed medical care.
5. To clean and sterilize the materials and the surgery room.	5.1 Cleanliness of surgical instruments and operating areas. 5.2 Correct packing and sterilization of instruments, sheaths and operating areas. 5.3 Periodic changing of the solution in the cold sterilization basin. 5.4 Order and cleanliness of the operating room. 5.5 Observance of environmental standards when disposing of biomedical waste and materials.
6. To update files and records.	6.1 Precise recording of treatments carried out, drugs administered and daily observations. 6.2 Records of surgery, anaesthetic and controlled drugs properly completed.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To perform dental prophylaxis.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To prepare the materials and the animal. 2. To perform operations to remove tartar and polish teeth. 3. To carry out post-operative nursing. 4. To maintain and clean the materials. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - Under the supervision of the veterinarian. - In compliance with instructions. - Using files, forms and records. - Using dentistry instruments. - Using dentistry equipment. - Using anaesthetic equipment. - Using medical materials. - Using monitoring equipment. - In a clinical or research setting. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Careful choice of materials and equipment. 1.2 Correct preparation of materials and equipment. 1.3 Maintenance of the sterility of the materials and equipment. 1.4 Appropriate restraint of the animal. 1.5 Correct administration of prescribed pre-operative care. 1.6 Efficient assistance during administration of anaesthetic. 2.1 Effective assistance during a dental examination. 2.2 Proficiency in supragingival and subgingival scaling techniques. 2.3 Correct polishing of teeth. 2.4 Meticulous verification of quality of tartar removal. 2.5 Precise execution of the instructions of the veterinarian. 2.6 Observance of health and safety rules. 3.1 Accurate administration of prescribed care. 3.2 Efficient monitoring of the animal's return to consciousness. 3.3 Clear and precise explanations about oral hygiene to the client. 4.1 Effective cleaning of the materials. 4.2 Accurate sharpening of dental cures. 4.3 Correct lubrication of the equipment. 4.4 Proper sterilization of the materials. 4.5 Observance of environmental standards when disposing of biomedical materials.

Elements of the Competency

5. To update the file and records.

Performance Criteria

- 5.1 Clear and precise description of the care and treatments provided.
- 5.2 Precise notations on dental charts.
- 5.3 Exact notation of dates for follow-up and next regular examination.
- 5.4 Accurate updating of records detailing surgery, anaesthetic and controlled drugs.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To participate in experimental surgeries.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To plan the work. 2. To prepare the materials and the animal. 3. To administer anaesthetic to the animal. 4. To prepare the surgery. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - With supervision. - In compliance with instructions. - Using technical documents. - Using an experimental procedure. - Using forms and files. - Using surgical, medical and anaesthetic materials. - Using anaesthetic and monitoring equipment - Using scientific equipment. - Using medications, solutions and drugs. - In a rodent research setting. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Accurate interpretation of instructions. 1.2 Careful choice of surgical technique. 1.3 Determination of a logical work sequence. 2.1 Careful selection of materials and instruments. 2.2 Appropriate preparation of materials and instruments. 2.3 Strict maintenance of the sterile condition of the materials. 2.4 Appropriate restraint of the animal. 2.5 Exact measurement of the weight of the animal. 2.6 Precise calculation of the doses of drugs and medications to be administered. 3.1 Accurate evaluation of the physical state of the animal. 3.2 Proper administration of drugs and medications. 3.3 Proficiency in the use of anaesthetic equipment. 3.4 Accurate evaluation of the degree of anaesthesia. 3.5 Careful monitoring of the animal. 4.1 Appropriate preparation and disinfection of the surgical site. 4.2 Disinfection of hands. 4.3 Proficiency in the techniques of putting on sterile clothing. 4.4 Strict maintenance of sterile conditions during draping of the animal.

Elements of the Competency	Performance Criteria
5. To operate on the animal.	5.1 Accurate selection of the incision site. 5.2 Appropriate selection of required surgical instruments. 5.3 Accurate recognition of tissues approached. 5.4 Observance of protocol for soft tissue dissection. 5.5 Proper ligation of blood vessels. 5.6 Strict observance of aseptic protocol. 5.7 Precise, atraumatic execution of the surgery. 5.8 Appropriate use of the basic functions of an electrocautery.
6. To suture the surgical site.	6.1 Careful selection of suture materials. 6.2 Accurate determination of tissues to be sutured. 6.3 Logical sequence of suture layers. 6.4 Careful selection of suture techniques. 6.5 Mastery of the square knot technique. 6.6 Suture executed with precision. 6.7 Correct use of surgical staples.
7. To carry out post-operative nursing.	7.1 Careful monitoring of the animal's return to consciousness. 7.2 Precise calculation of doses of drugs and medications. 7.3 Precise evaluation of the general state of the animal. 7.4 Precise evaluation of the general state of the surgical wound. 7.5 Appropriate administration of necessary treatments and care.
8. To clean and store the materials.	8.1 Clean surgical instruments. 8.2 Clean surgical drapes. 8.3 Correct packing and sterilization of instruments, sheaths and surgical drapes. 8.4 Observance of environmental standards when disposing of biomedical waste and materials.
9. To update files and records.	9.1 Precise recording of the surgery and treatments carried out and drugs administered. 9.2 Precise descriptions of materials and type of suture. 9.3 Precise recording of daily observations. 9.4 Records detailing surgery, anaesthetic and controlled drugs properly completed.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To perform physiological investigations.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To plan the work. 2. To prepare the materials and the animal. 3. To record physiological data. 4. To perform canulations. 5. To carry out physiological montages <i>in vitro</i>. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - Under the supervision of the researcher. - In compliance with instructions. - Using research procedures. - Using technical manuals. - Using primary materials. - Using laboratory physiology materials. - Using records and files. - In a research setting. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Correct interpretation of instructions. 1.2 Logical order of operations to be carried out. 2.1 Proper selection of materials and equipment. 2.2 Appropriate preparation of materials and equipment. 2.3 Proper administration of fluids and drugs. 2.4 Appropriate administration of anaesthetic to the animal. 2.5 Appropriate dissection, disengagement and immobilization of the structures under investigation. 2.6 Observance of the anatomic and physiological integrity of tissues and organs. 2.7 Appropriate monitoring of the animal. 3.1 Exact identification of the anatomical structures to be explored. 3.2 Accurate installation of electrodes or signal receptors. 3.3 Consideration of the sensitivity zone of the recording system. 3.4 Consideration of the possibilities for adjusting the amplification and transcription units. 4.1 Consideration of the direction of circulation in the arteries or veins. 4.2 Appropriate ligation of arteries or veins. 4.3 Correct placement and stabilization of canulas and catheters. 5.1 Respect for the anatomical and physiological integrity of organs during the montage. 5.2 Maintenance of appropriate conditions for the physiological equilibrium of organs.

Elements of the Competency	Performance Criteria
6. To clean and store the materials.	6.1 Instruments and work surfaces free of stains. 6.2 Appropriate decontamination of materials and instruments. 6.3 Observance of environmental standards when disposing of biomedical waste.
7. To update records and files.	7.1 Accurate notation of operations and observations in the file. 7.2 Record of controlled drugs properly completed.

Elements of the Competency	Performance Criteria
6. To carry out monetary transactions.	6.1 Bill made out accurately. 6.2 Exact calculation of taxes. 6.3 Correct change returned to client. 6.4 Correct use of debit and credit cards and cheque guarantee systems. 6.5 Exact count of the cash at the end of the day.
7. To update files and records.	7.1 Accurate recording in the file of the advice and information given the client. 7.2 Forms, certificates and records properly completed.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To participate in an animal experiment.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To participate in the planning of an experiment. 2. To organize the procedure of an experiment. 3. To ensure the scientific nature of observations. 4. To preserve the integrity of the animal model. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - With or without supervision. - In compliance with instructions. - Using research procedures. - Using technical manuals. - Using laboratory materials for experimentation. - Using a computer and specialized software. - In a research setting. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Appropriate participation in the compilation of relevant documentation. 1.2 Correct interpretation of the statistical data contained in the documentation. 1.3 Appropriate development of a simple experimental outline. 1.4 Appropriate detailing of methods required to carry out the experimental procedure. 1.5 Correct correlations between the components of a given experiment and the scientific method. 2.1 Correct interpretation of instructions. 2.2 Observance of the experimental procedure. 2.3 Precise determination of the sequence of operations. 2.4 Appropriate organization of work according to time and technical constraints. 2.5 Verification of the availability of materials and equipment. 3.1 Consideration of controlled and uncontrolled variables. 3.2 Objectivity and rigour in the collection of data. 4.1 Perfection of strategies aimed at reducing stress, discomfort and pain associated with the experiment. 4.2 Attention to the principles of preserving the microbiological status of the animal. 4.3 Determination of pertinent connections between the objectives of the research and the quality and limitations of the biological material used. 4.4 Observance of bioethical standards.

Elements of the Competency	Performance Criteria
5. To process data.	5.1 Logical and objective presentation of data. 5.2 Precision of statistical calculations and biometry.
6. To transmit the data.	6.1 Clarity, precision and objectivity of data transmitted. 6.2 Appropriate formatting of data.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To use techniques in animal restraint.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To plan the work. 2. To approach the animal. 3. To restrain the animal manually. 4. To use restraining tools and implements. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - Without supervision. - In compliance with instructions. - Using restraining equipment. - Using restraining implements. - Using technical documents. - Using files. - In a research or clinical setting. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Correct interpretation of instructions. 1.2 Determination of a logical sequence of operations. 2.1 Accurate evaluation of the attitude of the animal. 2.2 Reassuring communication with the animal. 2.3 Tactile contact reassuring to the animal. 2.4 Cage exit safe for the animal and the technician. 3.1 Appropriate choice of method of transport. 3.2 Appropriate choice of method of restraint. 3.3 Appropriate immobilization of the animal on a table. 3.4 Observance of the method of restraint. 3.5 Correct evaluation of the degree of restraint to be exercised. 3.6 Maintenance of an attitude reassuring to the animal. 3.7 Observance of health and safety rules. 4.1 Correct determination of the type of materials to be used. 4.2 Correct preparation of the tool or implement. 4.3 Appropriate use of the principal implements of restrain. 4.4 Safe entry of the animal into the restraining apparatus and equally safe exit. 4.5 Avoidance of harm to the animal. 4.6 Maintenance of an attitude reassuring to the animal.

Elements of the Competency	Performance Criteria
5. To restrain an aggressive animal.	5.1 Correct evaluation of the animal's level of aggressiveness. 5.2 Reassuring communication with the animal. 5.3 Appropriate technique of capture. 5.4 Observance of the proper technique of capture. 5.5 Proper fitting of a muzzle. 5.6 Accurate evaluation of the need for chemical restraint.
6. To clean and store the materials.	6.1 Clean work surfaces. 6.2 Appropriate decontamination of materials.
7. To update the file.	7.1 File properly updated.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To use chemical and biochemical laboratory techniques.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To interpret safety data sheets for chemical products. 2. To prepare solutions. 3. To adapt the pH of a solution. 4. To separate substances. 5. To measure dosage of substances. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - With or without supervision. - In compliance with instructions. - In response to particular needs encountered during the performance of a task. - Using relevant technical documentation. - In a research or clinical setting. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Correct identification of the symbols used to designate molecules. 1.2 Precise definition of the main functional organic groups. 1.3 Correct interpretation of the symbols for mass and concentration. 1.4 Correct interpretation of the basic nomenclature of organic and inorganic substances. 1.5 Correct interpretation of the symbols related to laboratory safety. 2.1 Exact determination of quantity of products to use. 2.2 Accurate conversion of different units of concentration. 2.3 Accurate weighing of products. 2.4 Appropriate use of volumetric containers. 2.5 Correct dissolution of solutes. 2.6 Appropriate dilution of a solution. 2.7 Accurate identification of solutions. 2.8 Proper storage of solutions. 2.9 Observance of health and safety rules. 3.1 Exact determination of the pH of a solution. 3.2 Relevance of corrective measures applied. 4.1 Observance of the basic rules of centrifugation. 4.2 Correct execution of the basic operations related to chromatography and organic extraction. 5.1 Accurate association of the concentration of a substance and its optical density. 5.2 Appropriate determination of the concentration of a substance using control solutions.

Elements of the Competency	Performance Criteria
6. To take measurements.	6.1 Exact determination of the margin of error. 6.2 Determination of the appropriate degree of precision. 6.3 Precise and uniform measurement. 6.4 Verification of the calibration of measuring instruments.
7. To make compounds react in a solution.	7.1 Observance of the instructions for carrying out a reaction. 7.2 Correct interpretation of the symbolic representation of a reaction. 7.3 Observance of the main factors that can affect the balance of chemical reactions. 7.4 Consideration of the general properties of reactivity and solubility of the main functional organic groups. 7.5 Consideration of the general physical and chemical properties of the main biochemical compounds. 7.6 Observance of health and safety rules.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To associate genetic and cellular factors with the growth and reproduction of animals.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To connect the processes of growth and homeostasis with the cellular transformation of matter. 2. To relate the processes of reproduction and growth to cellular activity. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually. - Without supervision. - In compliance with instructions. - In compliance with clients' requests. - In response to particular needs encountered during the execution of a task. - Using relevant technical documentation. - In both research and clinical settings. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Accurate characterization of the main components necessary to the cellular activity of an animal. 1.2 Accurate association of the physical and chemical factors influencing enzyme activity and physiological processes. 1.3 Accurate distinction of the principal mechanisms of membrane transport involved in the exchange of substances between the animal and its environment. 1.4 Correct association between the functions of the main cell compartments and physiological processes. 1.5 Correct association between the processes for obtaining cellular and nutritional energy. 1.6 Correct association between cellular activity and the mechanisms regulating the physiology of an animal. 1.7 Establishment of relevant connections between cellular metabolism and physiological and pathological processes. 2.1 Accurate distinction between the modes of cell division related to reproduction and growth. 2.2 Accurate characterization of the mechanisms for synthesizing cellular materials according to genetic information. 2.3 Accurate characterization of the main types of tissue organization in cells. 2.4 Correct association between the functions of cells and the role of tissues and organs.

Elements of the Competency	Performance Criteria
3. To anticipate the results of a genetic cross.	3.1 Accurate characterization of the distribution of chromosomes during the formation of reproductive cells. 3.2 Correct distinction of the main elements of animal karyotypes. 3.3 Accurate description of the main interactions between dominant and recessive genes. 3.4 Correct determination of results expected from crosses according to Mendelian genetics. 3.5 Correct determination of the results expected from crosses involving sexual characteristics. 3.6 Establishment of relevant connections between the laws of genetics and genetic and chromosomal diseases. 3.7 Establishment of relevant connections between the principles of genetics and techniques for raising and improving animal stock.
4. To relate the mechanisms of molecular genetics to biotechnologies.	4.1 Correct association of the main elements used in genetic engineering and the steps in the replication of DNA and protein synthesis. 4.2 Establishment of relevant connections between cell properties and technologies that rely on the process of cell growth.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To prevent the propagation of micro-organisms and parasites.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To determine the risks of propagation. 2. To select means of prevention. 3. To use means of prevention. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - With or without supervision. - In compliance with instructions. - In compliance with clients' requests. - In response to particular needs encountered during the performance of a task. - Using relevant technical documentation. - In a research or clinical setting. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Accurate evaluation of risks according to the nature of the organisms in question. 1.2 Establishment of relevant connections between the nature of the organisms and their principal epidemiological factors. 1.3 Exact determination of risks in relation to the physiological stage of the organisms. 1.4 Analysis of risk in terms of the state of the materials and animals. 1.5 Accurate evaluation of the risk of zoonotic diseases. 2.1 Appropriate association of the nature of the organisms and methods of chemical and physical control. 2.2 Appropriate distinction between the properties of the main methods of chemical and physical control. 2.3 Careful selection of means of prevention. 3.1 Correct use of methods of sterilization and disinfection. 3.2 Movements and gestures done to reduce the risk of contamination. 3.3 Personal hygiene and appropriate clothing. 3.4 Hygienic restraint of the animals. 3.5 Cleanliness of the environment and food. 3.6 Proper handling of biomedical products and waste. 3.7 Appropriate isolation of sick animals. 3.8 Careful elimination of the main routes of propagation of organisms. 3.9 Observance of health and safety rules.

Elements of the Competency	Performance Criteria
4. To determine the role of immunity in prevention.	4.1 Accurate distinction between specific and non-specific defence mechanisms. 4.2 Accurate conceptualization of the main interactions between antigens and antibodies. 4.3 Accurate distinction between the mechanisms of humoral and cellular immunity. 4.4 Accurate evaluation of the effectiveness of an immunization in terms of the physiological state of the animal. 4.5 Correct association between the effectiveness of an immunization and the vaccination schedules. 4.6 Accurate description of different types of vaccination. 4.7 Precise distinction between the main allergic reactions and normal immune reactions.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To establish a link between the anatomy and physiology of animals and their biological functions.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To describe specific anatomical systems. 2. To describe the interrelation of physiological processes. 3. To relate observations made during a test or a recording of data to the anatomy and physiology of the systems explored. 4. To anticipate the effects of a physical or invasive intervention. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually. - Without supervision. - In compliance with instructions. - In compliance with clients' requests. - In response to particular needs encountered during the performance of a task. - Using relevant technical documentation. - In a research or clinical setting. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Accurate identification of the structures that make up specific anatomical systems. 1.2 Accurate description of the organization of the main tissues in an organ. 1.3 Exact location of anatomical structures of a system in relation to each other. 1.4 Establishment of relevant connections between each of the structures and the functional organization of a specific anatomical system. 2.1 Appropriate association of the particular roles of organs and the general functions of the physiological systems of an animal. 2.2 Accurate characterization of the influence of the nerves and hormones on physiological processes. 3.1 Establishment of relevant connections between the nature and function of components of biological liquids and clinical tests in haematology and biochemistry. 3.2 Correct associations between the physiological activities recorded and the anatomical structures and processes that generate them. 3.3 Establishment of relevant connections between the results of a test and normal anatomical and physiological data for an animal. 4.1 Accurate description of the whole anatomy of an organ or an animal. 4.2 Accurate description of the physiological equilibrium of an organ or an animal.

Elements of the Competency	Performance Criteria
5. To relate interventions that use the biological functions of an animal to the anatomy and physiology of the relevant systems.	5.1 Appropriate associations between the operation of the conservation systems of the organism and the maintenance of homeostasis and health. 5.2 Appropriate associations between nutritional interventions and physiological needs. 5.3 Establishment of relevant connections between the function of reproductive systems and the interventions in animal breeding and reproduction. 5.4 Consideration of the healing processes of an animal. 5.5 Establishment of relevant connections between the defence systems of an animal and interventions for the prevention or treatment of illness.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To manage nutritional care.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To select a diet or a commercial food. 2. To calculate the daily ration of a healthy or sick animal. 3. To select a feeding method. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually. - With or without supervision. - In compliance with instructions. - In compliance with clients' requests. - Using technical documentation and appropriate primary materials. - In both research and clinical settings. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Consideration of nutritional needs according to the life stage of the animal or the stage of development of an illness. 1.2 Considerations of behavioural and socio-economic limitations. 1.3 Establishment of relevant connections between feeding and the types of digestion of particular species. 1.4 Accurate association of nutrients with their principal food sources. 1.5 Brief evaluation of the energy and nutritional value of foods. 1.6 Appropriate evaluation of the quality of commercial foods based on ingredients listed on the label. 2.1 Observance of methods used to calculate diets. 2.2 Exact determination of daily ration according to energy and nutritional needs. 3.1 Choice of a feeding method appropriate to the life stage of the animal and the raising method. 3.2 Observance of feeding methods. 3.3 Distribution of meals according to an appropriate schedule. 3.4 Observance of rules of hygiene in feeding.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To establish methods for recognizing and modifying animal behaviour.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To identify the normal and abnormal behaviour of animals. 2. To interact and communicate with animals. 3. To apply the basic principles of animal behaviour modification. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually or in a group. - With or without supervision. - Special attention to dog and cat behaviour. - In compliance with instructions. - In compliance with clients' requests. - In response to particular needs encountered during the performance of a task. - Using relevant technical documentation. - In a research or clinical setting. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Correct identification of the principal normal behaviours. 1.2 Appropriate distinction between the innate and acquired components of different behaviours. 2.1 Correct identification of the principal modes of perception and communication among animals. 2.2 Appropriate use of different methods of communication with animals. 2.3 Correct interpretation of motivations of an animal behaviour. 2.4 Observance of roles in social hierarchy when interacting with an animal. 2.5 Appropriate use of means of helping animals adapt to the stresses of domestic life and captivity. 2.6 Appropriate enrichment of animals' environments, considering their behavioural needs. 2.7 Consideration of the effect of human/animal interactions on the physiological state of animals and humans. 2.8 Adoption of appropriate preventive behaviours. 3.1 Observance of the stages of psychomotor development and socialization. 3.2 Appropriate education of a young animal. 3.3 Appropriate use of basic methods of systematic adaptation and desensitization. 3.4 Appropriate use of basic methods of classical and operative conditioning. 3.5 Use of appropriate methods of reinforcement. 3.6 Research on solutions to frequently encountered behavioural problems.

Elements of the Competency	Performance Criteria
4. To interpret the signs and behaviours related to aggressiveness.	4.1 Correct recognition of principal signs of defensive behaviour and aggressiveness. 4.2 Appropriate association of signs of aggressiveness with their possible causes. 4.3 Accurate evaluation of the degree of aggressiveness and risks involved.

Elements of the Competency	Performance Criteria
4. To anticipate the presence of pain in an animal.	4.1 To establish relevant connections between the clinical and behavioural signs observed and the degree of pain or discomfort experienced by the animal. 4.2 Realistic anticipation of the reactions of the animal to painful stimulation involved with the examination and medical treatments. 4.3 Consideration of strategies intended to reduce the pain felt by the animal, or the pain inflicted on it.

OBJECTIVE	STANDARD
<p>Statement of the Competency</p> <p>To analyze the effects of medication on an animal.</p> <p>Elements of the Competency</p> <ol style="list-style-type: none"> 1. To interpret labels, prescriptions and monographs. 2. To establish a relevant connection between signs observed in an animal and a medication or a drug. 3. To establish a relevant connection between the effects of a medication and its dosage. 	<p>Achievement Context</p> <ul style="list-style-type: none"> - Individually. - Without supervision. - In compliance with instructions. - In compliance with clients' requests. - On the basis of observations. - In response to a particular situation encountered during the performance of a task. - Using files and technical documents. - In both clinical and research settings. <p>Performance Criteria</p> <ol style="list-style-type: none"> 1.1 Precise distinction of the generic and commercial names of medications. 1.2 Correct identification of the concentration of a medication. 1.3 Correct interpretation of information. 2.1 Careful questions asked of client. 2.2 Correct recognition of clinical signs observed. 2.3 Appropriate distinction between clinical signs and normal or pathological behaviours. 2.4 Accurate evaluation of the degree of urgency. 2.5 Clear communication of observations. 2.6 Consideration of principles for treating poisonings. 3.1 Accurate correlation between the therapeutic plasma concentration of a medication and the effects observed in an animal. 3.2 Relevant deduction of the consequences of modifying a dosage and the administration interval for a medication. 3.3 Relevant deduction of the consequences of a premature interruption of a medication.

Elements of the Competency	Performance Criteria
4. To establish connections between the pharmacokinetics of a medication and the effects observed in an animal.	4.1 Relevant deduction of the consequences of inappropriate administration of a medication. 4.2 Appropriate association between the condition of an animal's flesh or its degree of dehydration and the action time and potential secondary effects of a medication. 4.3 Deduction of the consequences of a disruption of physiological functions on biotransformation and the elimination of a medication. 4.4 Consideration of physiological processes that determine the active duration of a drug in the organism.
5. To establish connections between the pharmacodynamics of a medication and the effects observed in an animal.	5.1 Appropriate deduction of the therapeutic and secondary effects of common medications in relation to their methods of action. 5.2 Appropriate association of the effects observed in an animal after simultaneous administration of an agonist with its antagonist.

VOCABULARY

The vocabulary listed below is offered as a suggestion only as an aid in distinguishing the different performance criteria. It is not a substitute for the expertise of the teacher, who must use his or her professional judgment in evaluating the standards achieved by the student.

When a task must be performed adequately and in accordance with rules or standards, the following terms have been used: correct, brief.

When a task must produce a practical result, the following terms have been used: effective, clear, proper.

When a task requires the exercise of judgment, the following terms have been used: appropriate, careful, accurate, relevant.

When a task must be carried out with confidence and precision, the following terms have been used: exact, meticulous, precise, strict, proficiency, observing.

