UNIVERSITY OF TERAMO

FACULTY OF VETERINARY MEDICINE

EAEVE VISIT

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ANNEX 4.1
CLASS OF SPECIALIST DEGREE IN VETERINARY MEDICINE

QUALIFYING TRAINING OBJECTIVES

Specialist Veterinary Medicine graduates must possess the scientific bases theoretical-practical preparation required to practice the veterinary profession, as well as the methodological and cultural bases required for full-time training and the fundamental techniques of scientific research.

The Class' specialist undergraduate must possess:

- fundamental theoretical knowledge of the basic sciences, in view of their subsequent professional application;
- the ability to identify and critically assess data relating to the state of health, welfare and pathology of single animals and livestock interpreting them in the light of basic scientific knowledge, physiopathology and pathologies of organs and body systems and performing the necessary medical and surgical operations to remove the state of illness;
- knowledge of epidemiology, diagnosis, prophylaxis, treatment and control of infectious and parasitic diseases in animals;
- the ability to identify and critically assess the state of wholesomeness, hygiene, quality and any alterations of foodstuffs of animal origin that may prejudice human health; students must also be familiar with the production and processing procedures of foodstuffs of animal origin;
- knowledge of animal nutrition and feeding and breeding technologies;
- the ability to identify and critically evaluate the impact of animal breeding on the environment.

The specialist graduates of the Veterinary Medicine class deal with the protection of animal health and the health of humans in contact with animals and those who consume foodstuffs of animal origin and contribute to the protection of the environment.

Specialist graduates operate in the national health service, private and public industry (in fields relating to animal breeding, pharmaceuticals, fodder and the processing of foodstuffs of animal origin) and in research institutes, as well as practicing as veterinary surgeons.

The training activities in the disciplines relating to basic training envisage the in depth study of matters of chemistry, biochemistry, anatomy and physiology necessary to understand biological phenomena.

The graduates must learn:

- the physical techniques of interest in the study of biological systems, the instruments required for the formation of elementary mathematical models and calculator applications for the numerical resolution of mathematical problems;
- organic and inorganic chemistry with particular reference to the macromolecules of biological interest, the biochemical concepts of the structural organisation of cells and metabolic processes in animals of veterinary interest; they must also possess general notions on the principles and techniques of chemical and biochemical analysis aimed also at the monitoring of environmental pollution;
- basic planta and animal biology and molecular biology;
- macroscopic, microscopic and ultra-structural notions of animal organisms;
- basic general veterinary and cellular physiology.
The training activities in disciplines characterising the class must aim to provide basic veterinary medical training; graduates of the class must be able to operate in the field of pathology, clinical medicine, and prevention of disease of animals as well as the control of hygiene and the quality of foodstuffs of animal origin.

In particular, the class's graduates in Veterinary Medicine must learn:

- the organisation of the various systems in domestic animal species with the fundamental notions of topographic anatomy and the structural organisation of animal organisms, also in an applied way;
- the functioning of animal organs and systems, also in an applied way, and the dynamic interaction between the various functions; they must also have understood the general foundations of animal behaviour and the factors that condition their welfare;
- the aethiopathogenetic mechanisms that concur in the presentation of pathological processes and the interrelations that take place between them and the various systems of the organism, the anatomy and pathological histology of organic systems and the nosological entities of domestic animals, microscope techniques and morphophysiological techniques and diagnostics;
- basic knowledge of epidemiology, aetiology, ways of transmission, prophylaxis, monitoring and diagnosis of infectious and parasitic disease in domestic animals, also in an applied sense, as well as the basic notions of hygiene and veterinary health organisation and veterinary policing regulations;
- the mechanism of action, pharmacokinetic and metabolism of medicines used in animals of veterinary interest and legal aspects connected to their use as well as the toxins most frequently used in the agricultural and animal breeding worlds;
- basic knowledge of the ethnological sector, genetics applied to the improvement of animal species and breeding techniques. Students must also acquire the basic concepts of animal breeding economics;
- the general concepts for the chemical and biological analysis of animal fodder and the factors that condition digestibility and use. Students must acquire concepts relating to food rationing, nutritional needs and administrative regulations governing the preparation and sale of all substances of nutritional interest of domestic animals.
- the clinical methods of direct and collateral semeiological investigations. Graduates must demonstrate mastery of the illnesses of organs and systems, including dysmetabolic, autoimmune and deficiency disorders. They must be able to recognise clinical symptoms in order to perform diagnosis and adopt suitable treatment;
- the fundamental techniques of general and local anaesthetic and main surgical techniques aimed at treating the various illnesses of various domestic species; students must also have learnt the fundamental physics required for image-based diagnostics;
- the fundamental aspects of physiopathology of reproduction in males and females in the various domestic species, also in an applied way;
- the methods and aims of ante- and post-mortem health inspections in various species of animals destined for slaughter, the basics of hygiene and food technology applied to the phases of production and sale of products of animal origin and the criteria, techniques and methods of inspections aimed at analysing the quality and state of health and preservation of the abovementioned products;
- the fundamental bases for certification and quality health documentation required for those operating in the foodstuffs sector, in order to verify conformity to current legislation and the necessary protection of public health. Ample space will be dedicated to the knowledge of Italian and European laws on health and sale, with the basic notions of common law. Students must also be aware of the issues connected to
the impact of slaughterhouses, transformation plants and the foodstuff industry on the environment.

Training activities in integrative subjects aim to allow students to develop studies on topics connected to human-animal relations, the characteristics for animal hospitalisation, livestock management, marketing, economic management of livestock, genetic and reproductive biotechnologies and molecular biology.

Training activities relating to the preparation of the final examination must allow the discussion of a thesis demonstrating the possession of the necessary professional competences. The indications provided in the Teaching Regulations also require the knowledge of one foreign language spoken in the EU.

The linguistic, computer and inter-personal skills useful for introduction into the working world and professional orientation must allow the graduates to reach the necessary maturity for occupational introduction, with reference also to professional opportunities in other EU countries and therefore the knowledge of the healthcare systems in other European Union countries, the methodology of continuing education and training, the development of specific attitudes in computer and/or technological fields are also required for the acquisition of the UTC for the practical training required to gain access to the professional authorisation examination.

With regard to the definition of courses of which the overall duration of five years is dedicated to the execution of the activities envisaged by directive 78/1027/EEC, the University Teaching Regulations are conform to the provisions of this decree and art. 6, comma3 of Ministerial Decree n.509/99. The class' specialist graduates must have acquired specific medical and veterinary skills, having performed practical training for a period of no less than 30 UTC. This practical training, to be performed full-time in the periods established by the teaching structure, but preferably during the last year in the university or qualified public (local health Authorities, Zooprophylactic Institutes), or private structures (accredited by the competent academic organs) is compulsory for admission to the state exam.

The University Teaching Regulations also determine, with reference to art.5 comma3, of Ministerial Decree of November 3rd 1999, n. 509, the fraction of students' hourly commitment reserved for study or other individual training activities according to the specific training objectives followed and the performance of training activities with a high experimental or practical content.
<table>
<thead>
<tr>
<th>Training activities</th>
<th>Disciplines</th>
<th>Subject sectors</th>
<th>UTC</th>
<th>Tot. UTC</th>
</tr>
</thead>
</table>
| Basic training activities| Disciplines applied to medical-veterinary studies                          | FIS/07 – Applied Physics (to cultural and environmental heritage, biology and medicine)  
INF/01 – Information Technology  
ING-INF/05 – Data processing systems  
MAT/05 – Mathematical analysis  
MAT/06 – Probability and mathematical statistics  
MAT/07 – Mathematical physics  
MAT/08 – Numerical analysis  
SECS-S/02 – Statistics for experimental and technological research |     | 50       |
|                          | Plant and animal biological and genetic disciplines                        | AGR/07 – Agricultural genetics  
AGR/17 – General animal breeding and genetic improvement  
BIO/01 – General Botany  
BIO/03 – Environmental and applied Botany  
BIO/05 - Zoology |     |          |
|                          | Disciplines of the structure, function and metabolism of molecules of biological interest | BIO/10 - Biochemistry  
BIO/11 – Molecular biology |     |          |
|                          | Disciplines relating to the structure and function of animal organisms     | VET/01 – Anatomy of domestic animals  
VET/02 – Veterinary physiology |     |          |
| Characterising training activities | Animal breeding, livestock and animal nutrition disciplines | AGR/17 – General animal breeding and genetic improvement  
AGR/18 – Animal nutrition and fodder  
AGR/19 – Special Animal Breeding  
AGR/20 – Animal culture |     | 70       |
| Morphology and function of animal organisms and infective and parasitic disease disciplines | BIO/10 - Biochemistry  
VET/01 – Anatomy of domestic animals  
VET/02 – Veterinary physiology  
VET/05 – Infectious diseases of domestic animals  
VET/06 – Parasitology and parasitic diseases in animals |
|---|---|
| Disciplines relating to pathological anatomy and veterinary inspections | VET/03 – General pathology and Veterinary Pathological Anatomy  
VET/04 – Inspection of foods of animal origin |
| Clinical veterinary disciplines | VET/07 – Veterinary Pharmacology and Toxicology  
VET/08 – Clinical Veterinary medicine  
VET/09 – Clinical veterinary Surgery  
VET/10 – Clinical Veterinary Obstetrics and Gynaecology |
| Integrative training activities | Interdisciplinary disciplines  
AGR/01 – Agricultural economics  
AGR/02 – Agricultural chemistry and crop growing  
AGR/10 – Rural constructions and field and forest territory  
BIO/12 – Clinical biochemistry and clinical molecular biology  
BIO/13 – Applied biology  
CHIM/10 – Foodstuff chemistry  
ING-INF/06 – Electronic and computerised bio engineering  
M-PSI/02 – Physiological psychology and psychobiology  
SECS-P/10 – Company organisation |
| Training activities | Types | (a) | (b) |
| Optional/elective subjects | 15 |
| For the final examination | 15 |
| Others (art. 10, comma 1, letter f) | Further linguistic knowledge, computer and interpersonal skills, practical training, etc. | 18 |
| TOTAL | | 198 |
ANNEX 4.2

PROGRAMMES OF THE COURSES
(IC : INTEGRATED COURSES; MC : MONODISCIPLINARY COURSES)

FIRST YEAR

I.C. – APPLIED BIOPHYSICS AND STATISTICS

Teachers: Enzo Tettamanti; Domenico Di Donato; Sergio Gigli

Objectives of the course:
Starting with a synthesis of the basic physical concepts learned in the pre university school, will be treated in depth items which are the cognitive and methodological bases for other specialized courses. The physics course, including also recalls of elements of mathematic and analytical geometry related to the specific physical items, is integrated with parts of fundamentals of computer science oriented at the learning of personal computer utilization with editing and statistical data analysis softwares; fundamentals of statistics and applied statistics oriented at approaching the student to the basic concepts of the statistics and their utilization at biological and veterinary field.

Programme:
Kinematics and dynamics: phenomena and basic laws: velocity and acceleration - motion equations - gravity and falling body - force - Newton’s laws of motion - vectors and graphical method of adding, subtracting and projecting forces – torque and rotation – rotational motion and centripetal force – work - kinetic and potential energy – power
Atomic physics and radioactivity: rudiments of atomic structure, X ray, radioactivity and decay laws.
Practical exercises with the PC includes: use of Windows – multitasking – Excel’s applications – statistical function in excel
I.C.: PROPAEDEUTIC BIOCHEMISTRY AND MOLECULAR BIOLOGY

Teacher: Roberto Giacominelli Stuffler

Objectives of the course:
The course aims at providing the fundamentals of organic chemistry. The structural and functional properties lipids, carbohydrates and proteins will be studied, with special emphasis upon myoglobin, haemoglobin and collagens.

Furthermore, the basic knowledge about the molecular and biochemical functions of prokaryotic and eukaryotic cells will be provided, highlighting their potential applications in the research fields of veterinary biotechnologies.

Programme:
The chemical bond.
The water ionization, the acids and the bases.
The hydrocarbons, the alcohols, the phenols, the thiols, the ethers, the carbonyl group, the aldehydes and the ketones, the carboxylic acids, the ammines and the amides.
The lipids.
The carbohydrates.
The amino acids, the peptides, the proteins.
The proteins of connective: the collagen and the elastin.
The myoglobin.
The haemoglobin: the haemoglobin A, the fetal haemoglobin, the sickle haemoglobin.
The thalassemias.
The cell membrane.
The DNA in prokaryotes: the duplication, the DNA mutations, the transcription, the translation, the genetic code.
Genes and DNA in eukaryotes: the duplication, the transcription and the translation.
The inhibitors of the duplication, the transcription and the translation in prokaryotes and eukaryotes.
Biotechnological applications of molecular biology.
The restriction enzymes.
The recombinant DNA technology and its applications.
The gene cloning.
The PCR.

I.C. VETERINARY BIOCHEMISTRY

Teacher: Daniela Barsacchi

Objectives of the course:
The course intends to give to the student the basic knowledge of the biochemistry of mammals and the correlations between the biochemical events occurring at the cellular level and the physiological processes in the animal organisms.

The first part of the course will cover the basic concepts and the general principles of the actions of proteins and enzymes as chemical catalysts in biological systems.
The main objective of the second part of the course will be the study of the metabolism, starting from the conservation of Energy, synthesis and degradation of the main cellular components. Finally, the third part of the course intends to give the knowledge of...
biochemistry in the different apparatus and systems and their integration, in order to reach a better understanding of the “molecular logics of life”.

Programme:


I.C. VETERINARY ANATOMY

Teachers: Paolo Beradinelli, Massimo Mariscoli, Giovanni Aste

Objectives of the course:

Main aim of the course is to give the students the knowledge of systemic anatomy in order to correctly individuate the exact position of different organs to allow an accurate clinical control of patients. Moreover the students must know the topographic connection between the different organs as illustrated by the mean of imaging diagnostic. Furthermore, the students may identify the different organs. The teaching activity will be done with a large support of video concerning dissectory anatomy and in a practical way with small groups of students, using domestic animals cadavers.

Programme:

I.C. ZOOLOGY, ETHNOGRAPHY AND ETHOLOGY

Teachers: Claudio Venturelli; Giorgio Vignola; Pia Lucidi

Objectives of the course:
The course is divided into three sections and aims to provide fundamental information regarding animals’ classification, animals’ identification and animal behavior. At the end of the course the students should be able to recognize the most important animal species: farm, companion and wild species; evaluate and judge the different traits associated to production; have basic knowledge about animal behavior in particular companion animals.

Programme:
The animal Kingdom. Classification of Animals: methods and purposes, species and higher groups. Nomenclature: common names and scientific names. Animal reproduction: asexual and sexual reproduction, mitosis and meiosis, spermatogenesis oogenesis, fertilization. Special types of sexual reproduction: parthenogenesis and hermaphroditism. Structure and natural history of Chordates. U rochordata, Cephalochordata and Vertebrata. Characteristics external features, integument, skeleton, locomotion, feeding, respiratory system, excretory system, nervous system and sense organs, reproduction and development, relation to man of the following taxa with particular reference to Italian fauna: Cyclostomata, Chondrichthyes,
Osteichthyes, Amphibia, Reptilia, Aves, Mammalia. Morphological evaluation of the main Italian and non-Italian breeds of companion and productive animals species. Knowledge of the animal: principles of animal morphology, zoognostics definition. Morphological types in relation to species and functional aptitude. General definition: beauty, qualities, defects, tare. Zoognostic regions: terminology, body division of regions. canine zoognostic and its functional correlations with aptitudes. Age: evaluation techniques. Classification of canine groups depending on history and different countries; dog breed standard; canine genetic selection; the fourteen Italian breeds (origins, aptitude, importance, morphological standard). Equines: origin of the species; basic of equine zoognostic; horse’s pace; coat color in horses; estimation of age using of teeth table; classification of different equine group depending on the age and country; horses breed standard; equine genetic selection; the Italian equine breeds. Cattle: dairy and beef. Basic of dairy and beef cattle zoognostic; Italian and International cow breeds: origin and diffusion; morphological standard. Sheep: milk, meat and wool aptitude. Basic knowledge of zoognostic ; Italian and International sheep breeds: origin and diffusion; morphological standard. Goat. Basic knowledge of zoognostic ; Italian and International goat breeds: origin and diffusion; morphological standard. Swine. Basic knowledge of zoognostic ; Italian and International pig breeds: origin and diffusion; morphological standard. Introduction to ethology: ethology history, the time, theory and man, fundamentals of motivation and model; stimuli releaser; animal behavior philology and ontogenesis; neuroendocrine system organization: hormonal regulation of behavior testosterone and aggressivity; pheromones and the vomeronasal organ; stress: surrenal gland, amigdala and hippocampus functions; casualty sensors, non-associative learning, reinforce, reinforce administration, shaping, superstition; classification, offspring imprinting, sexual imprinting, instinct driven learning, vocal learning; memory; 1st ad 2nd type memory, cerebral asymmetries evolution, spatial memory; social mind, audience effect, lying, deceit, mind’s theory, imitation, teaching, self-awareness, altruism; intelligence: insight, detour; work memory; expectation cells, problem solving and tools utilization, language, conscience.

M.C. GENERAL ECONOMY AND MARKETING

**Teacher:** Giuseppe Bonanni

**Objectives of the course:**
To learn basal concept of general economy and marketing and to apply them to operating models.

**Programme:**
M.C. ENGLISH AS A FOREIGN LANGUAGE

Teacher: Francesca Rosati

Objectives of the course:
The main goal of this course is to give students linguistic skills and provide the necessary approach and tools in order to optimize their ability for problem-solving in the interpretation of English texts and documents in scientific domains.

Programme:
Particular attention will be placed not only upon the characteristics of morphology and those of English syntax but more importantly upon the study of lexical collocations and morphosyntactic structures that define ESP (English for Specific Purposes) for the Faculty of Veterinary Medicine. The didactics will include materials in the original English language taken from various scientific articles, books, volumes and so on. From these articles the tasks of reading for pronunciation, text analysis and translations will be carried out. The linguistic variety of such means enable the differences of specialized terminology regarding lexicon, phonetics, morphosyntactic structures and spelling in both British and American English to be constantly verified.

The exam will be as follows:

1. TOESP (Test of English for Specific Purposes) on morphosyntactical structures, lexicon and phraseologies of English in scientific domains; no use of a dictionary is allowed for this section;
2. a written translation from English into Italian based on a scientific passage (the use of a bi-lingual dictionary is allowed for this section)
3. an oral section regarding the arguments discussed throughout the course plus a scientific reading passage for pronunciation and an at-sight translation picked by the exam committee.
SECOND YEAR

I.C. VETERINARY PHYSIOLOGY, PART I.
Teacher: Pasqualino Loi, Andrea Boari

Objectives of the course:
The first part of the Veterinary Physiology course aims at delivering the students the background necessary for the understanding the origin of molecules and life, development and evolution of multicellular organism, the mechanism of cellular differentiation, and the interrelationship among organs in a normal individual. To this extend, students will be taken through both frontal lessons to practical courses ranging from basic functions, to apparatus physiology, stressing on the connection between physiology with the more professionally oriented disciplines.

Programme:
I.C. VETERINARY PHYSIOLOGY II AND ENDOCRINOLOGY

Teachers: Barbara Barboni, Mauro Mattioli, Domenico Robbe.

Objectives of the course:
The course, from cellular physiology and general control mechanisms of nervous and cardio circulatory system, give attention to single apparatus functions. Particularly details will be given on digestive physiology emphasizing differences among monogastric and ruminant species; respiratory system and adaptive response; reproductive physiology; lactation. The integration with clinical subjects will prepare the students to practically register the normal functions of different systems on animals.

Programme:
Veterinary aspects of reproductive physiology will be emphasized with general concepts of semeiotics and the objective examination of reproductive organs of normal animals during different moment of their reproductive cycle.

M.C. VETERINARY FUNCTIONAL ANATOMY

Teacher: PierAugusto Scapolo.

Objectives of the course:
Students completing this subject should comprehend the comparative structure of organ systems in different species of domestic animals; the relationships between microscopic structure and function of each of the following types of anatomical structures. This will provide not only a knowledge for the immediate purposes of passing the course, but will offer
a basis upon which to continue learning and to make decisions related to the practice of medicine.

**Programme:**


**I.C. GENERAL PATHOLOGY AND VETERINARY PATHOPHYSIOLOGY**

**Teacher:** Giovanni Di Guardo

**Objectives of the course:**

The Teaching Course “General Pathology and Veterinary Pathophysiology”, which is partitioned into two sub-Courses (“General Veterinary Pathology” and “Veterinary Pathophysiology”), is aimed at providing a general overview and at clarifying, along the conceptual view of “function-dysfunction”, the aetiological factors and the main pathogenetic mechanisms which are involved in the determinism of general disease processes affecting the host’s (animal’s) cells, tissues, organs and apparatuses. In this respect, special emphasis is placed upon the topics “inflammation” and “immunopathology”, as well as on the scientific terminology which is commonly utilized in the “language of pathology”. Theoretical-practical sessions (covering 8 hours out of total 78 teaching hours), to be organized in the “histopathology” and “immunohistochemistry” laboratories, as well as in the “light microscopy” room, are also included in the Teaching Course.

**Programme:**

List of topics included in the Course arranged in chronological order:

Introduction to the Course: the concepts, the scopes and the “language” of “Pathology”, “General Pathology” and “Pathophysiology”. The utility of “Veterinary Pathology” and “Comparative Pathology”, along with the concepts of “health”, “homeostasis” and “disease”. “Natural disease” and “experimental disease”: animal models of human disease and their relevance in comparative pathology.
The concepts of “aetiology” and “pathogenesis”. Aetiological factors (agents) of disease and their classification. External (exogenous or extrinsic), internal (endogenous or intrinsic), essential, sufficient, insufficient, predisposing disease agents and etiologic co-factors (or disease concauses).

Apoptosis and necrosis: main features and differences.
Physical agents of disease: mechanical trauma, electrical trauma, heat, cold, radiant energy (radiation injury), pressure, ultrasound.
Chemical agents of disease: biologic toxins (poisons), mycotoxins, pesticides, herbicides, organochlorines, heavy metals, environmental contaminants.
Nutritional agents of disease: dietary excess, nutritional deficiencies, starvation.
External deficiencies: water, oxygen and sunlight deficiency.
Biologic agents of disease: prions and viruses, along with some examples of prion-induced and virus-induced animal disease conditions; mycoplasms, rickettsias, chlamydias, bacteria, algae, fungi, protozoan and metazoan parasites, arthropods, insects. Direct and indirect laboratory techniques utilized in the diagnosis of infectious and parasitic disease conditions in animals. The “histopathology” and “immunohistology” (“immunohistochemistry”) laboratories, along with their role in the identification of biological agents within animal tissues (theoretical-practical session to be carried out in the above laboratories).
Blood pathophysiology: erythrocyte disturbances (anaemia) and white cell disturbances (leukopenia, leukocytosis, lymphopenia, lymphocytosis).
Cardio-circulatory pathophysiology: from biochemical and morphological alterations to dysfunction and clinical symptoms (basic concepts). Pathophysiology of shock and edema.
Nervous system pathophysiology: from biochemical and morphological alterations to dysfunction and clinical symptoms (basic concepts). The examples of sheep and goat scrapie and of bovine spongiform encephalopathy (BSE) in cattle (projection and discussion of two videos showing the clinical signs of scrapie in sheep and goats and of BSE in cattle, respectively). Pathophysiology of stress.
Renal and urinary system pathophysiology: from biochemical and morphological alterations to dysfunction and clinical symptoms (basic concepts).
Pathophysiology of blood acid/base balance.
Inflammation: general concepts, historical notes and pro-inflammatory agents. Acute and chronic inflammation: main biological features, evolutionary stages, inflammatory cells, chemical mediators of inflammation, types of inflammation (inflammatory exudate’s types), systemic signs of acute inflammation (fever). Granulomatous inflammation: foreign body granulomas, infectious granulomas, parasitic granulomas.
Tissue repair (healing) processes: basic concepts.
Theoretical-practical session in the “light microscopy” room, focused on the observation and subsequent discussion of a number of histologic sections showing different types of acute and chronic inflammatory lesions in animals.
Respiratory pathophysiology: from biochemical and morphological alterations to dysfunction and clinical symptoms (basic concepts).
Digestive pathophysiology: from biochemical and morphological alterations to dysfunction and clinical symptoms (basic concepts).
Hepatic and pancreatic pathophysiology: from biochemical and morphological alterations to dysfunction and clinical symptoms (basic concepts).
Immunopathology: general concepts. Normal and abnormal immune reactions, along with their main differences. Immediate-type and delayed-type hypersensitivity reactions: aetiological factors, main pathogenetic mechanisms involved and examples of such reactions in veterinary medicine. Autoimmunity and autoimmune diseases: aetiological factors, main pathogenetic mechanisms involved and examples of such pathologic conditions in veterinary
medicine. Primary and secondary immunodeficiencies: aetiological factors, main pathogenetic mechanisms involved and examples of such pathologic conditions in veterinary medicine. Host’s immune defense mechanisms against tumours and tissue/organ transplants (transplantation): basic concepts.
Class general discussion on all the different topics dealt with during the Teaching Course.

M.C. VETERINARY MICROBIOLOGY

Teacher: PierGiorgio Tiscar

Programme:
Bacteriology: structure and functions of procaryotic cell; principles and methods of cultivation, isolation and identification; mechanisms of pathogenesis; classification and characteristics of the main groups; genetic exchange and recombination; biotechnology principles in bacteriology; antimicrobial agents; theory and practice of sterilization.
Virology: structure and characteristics; replication cycle and cytopathic effects; principles and methods of cultivation, isolation and identification; mechanisms of viral interference; classification and characteristics of the main groups.
Immunology: definition and characteristics of antigen; structure of microbial antigens; introduction to innate immunity; phagocytosis; complement; introduction to specific acquired immunity; antibodies and humoral immunity; cell-mediated immunity; mucosal-associated immunity; passive immunity; vaccines and vaccination; principles and methods of serological reactions.

I.C. GENERAL PHARMACOLOGY AND VETERINARY TOXICOLOGY

Teacher: Michele Amorena

Objectives of the course:
The course has the finality to give the bases for a correct understanding of the pharmacology and the general toxicology. Particularly, the student has to know the mechanisms pharmacodynamics and pharmacotoxicokinetics of the xenobiotics in the different animals, the main basis of toxicology of the residues, of ecotossicology and the problem list to them correlated.

Programme:

I.C. HISTOLOGICAL AND GENERAL PATHOLOGICAL ANATOMY

Teacher: Giuseppe Marruchella

Objectives of the course:
The present training program aims at providing a basic understanding of how diseases develop in domestic animals. The etiology and the pathogenetic mechanisms occurring in cells, tissues and organ systems will be explained. A foundation course covering the general aspects of veterinary pathology will be provided. A special emphasis will be placed upon the etio-pathogenesis and the kinetics of degenerative changes and neoplastic disorders. The course is designed to introduce students to the terminology and concepts of veterinary pathology and to provide them with a grounding in general disease mechanisms. Lectures will be supplemented by practical classes in gross and microscopic pathology in order to exercise the students’ problem solving attitudes.

Programme:
Introduction to General Veterinary Pathology: training program overview, advised textbooks, evaluation form.
Definition and aims of General Veterinary Pathology: from biochemical damage to functional and morphological changes. Methods in Veterinary Pathology: theory and practice.
Cellular adaptations of growth and differentiation: atrophy, hypertrophy, hyperplasia, metaplasia, dysplasia, anaplasia. Slide seminar training.
Morphological changes of connective tissues: metabolic disorders, hyalinosis, fibrinoid necrosis, amyloidosis, myxomatous degeneration. Case report presentation and discussion.


THIRD YEAR

IC: VETERINARY SPECIAL PATHOLOGICAL ANATOMY AND NECROPSY

Teacher: Leonardo Della Salda

Objectives of the course:
Knowledge of anatomo-histopathology of diseases of organ systems, concerning their macroscopic and histological features as well as their aetiology and pathogenetic mechanism involved. Ability to diagnose both macroscopically and histologically, the most common lesions and formulate differential diagnosis. Methods of how to evaluate organs macroscopically and on histopathological basis. The course deals with the pathological changes of organs in animal diseases, in response to the various injury factors. The programme is limited to the systemic pathology of the organ systems, and completed the previous course General Pathological Anatomy. Necropsy techniques are included in this course as a specific unit. Lectures are supplemented by gross pathology demonstrations, necropsies and practical work. Teaching material is in part provided by the diagnostic service of the Clinical Department (dogs, cats, and in part by external private slaughterhouses). Systemic pathology. For each organ or system lectures will cover organ physiopathology, malformations, circulatory disturbances, regressive processes, inflammations, parasitic diseases, tumours. Morphological and pathophysiological aspects of disease will be also related to clinical findings. All major diseases concerning the organ systems in question will be discussed, but special attention will be focused on those that cause major health problems in Italy.

Programme.

Special Pathological Anatomy. Special pathology of the following organ systems of domestic mammals will be considered:
Female and male genital systems (malformations, circulatory disturbances, regressive processes, inflammations, parasitic diseases, tumours). Moreover, for all the above-mentioned systems: circulatory disorders, parasitic lesions, and neoplastic conditions. Histopathology. Brief overview of the main techniques employed in histopathology. Histopathology of the following topics: inflammation of the mucous and serous membranes; spleen and lymph nodes (hyperplasia, acute and chronic inflammation, lymphoma); heart (infarction, myocarditis, endocarditis); lung (edema, emphysema, atelectasia, bronchopneumonia, fibrinous and interstitial pneumonia); liver (jaundice, steatosis, necrosis, chronic passive congestion, purulent, pyogranulomatous and interstitial hepatitis, cholangiohepatitis, cirrhosis); kidney (infarction, degenerative changes, glomerulonephritis, purulent and interstitial nephritis); testis (atrophy, orchitis, tumours); prostate gland (hyperplasia, purulent inflammation); ovary (cysts, tumours); uterus (cystic hyperplasia-pyometra complex); mammary gland (mastitis, tumours); dermatitides; muscle (atrophy; hypertrophy; necrosis; myositis); central nervous system (encephalomalacia, purulent, non-purulent and granulomatous encephalitis, tumours).

**Necropsy**


**I.C. PHARMACOLOGY AND SPECIAL VETERINARY TOXICOLOGY**

*Teacher: Michele Amorena*

**Objectives of the course:**
The student has to show to know the mechanism of action, the pharmacokinetics and the metabolism of the drugs used in pets and large animals, in particular stressing the differences among the species. The student has to have understood the different procedures of administration of such drugs in order to provide preventive or therapeutic treatments. Furthermore the student has to know the related legislative aspects as well as the toxic substances more frequently responsible of poisoning in the animals, their source and their toxicodynamic and toxicokinetics properties in order to protect the animal and the public health and the environment.

**Programme:**

Chemotherapy of the parasitosis: anthelminthic drugs, antiprotozoal drugs.  

Special Toxicology  
Poisoning from: carbon monoxide; sulphurous anhydride; nitrogen oxides; urea and salts of ammonium; nitrates and neighs; Chlorine and its salts; Fluorine; Arsenic; Mercury; Lead; Cadmium; Copper; Selenium; hydrocyanic acid and cyanides; organochlorines; organophosphorics; carbamates; herbicides; fungicides; natural pyretroids and synthetic pyretroids; molluscaicides; rodenticidals; strychnine; mycotoxins;  
Toxic plants: plants rich in nitrates and neighs; plants cyanogenetics; plants containing oxalic acid and oxalates; plants photosensibilization.  
Marine biotoxins.  
The doping of the animals.  
Environmental pollutants. Dioxins. Polichlorobyphe nils. IPA. Metals

I. C. PARASITOLOGY AND PARASITIC DISEASES OF ANIMALS

Teachers: Donato Traversa; Antonio Gatti.

Objectives of the course:  
Aetiology, biology, epidemiology, pathogenesis, symptoms, pathological anatomy, diagnosis, control and molecular biology of the most important parasitosis of veterinary concern and of zoonotic parasitosis.  

Aims of the course are to provide:  
- basic knowledge on immunological, biological, physiological and pathological aspects of parasitic diseases caused by protozoan, helminths, arthropods and fungi/yeasts.  
- basic knowledge on morphological, biochemical and epidemiological aspects on protozan and metazoan parasites.  
- deep applied theoretical and practical knowledge on diagnosis, prophylaxis and control of animal parasitic diseases and zoonotic parasitosis.  
- theoretical and practical knowledge on all biomolecular aspects and biotechnology applied to parasites and parasitic diseases.  

Programme:  
Protozoan-caused diseases: Trypanosomosis, Leishmaniosis, Toxoplasmosis, Neosporosis, Examinosis, Trichomonosis, Histomonosis, Coccidiosis, Giardiosis, Cryptosporidiosis, Sarcocystosis, Babesiosis, Theileriosis  
Trematodes-caused diseases: Fasciolosis, Dicroceliosis, Schistosomosis, dog and cat liver trematodosis, gastrointestinal ruminant trematodosis.  
Diseases caused by adult and larval tapeworms  
Arthropods-caused diseases: infections by ticks, mites, fleas, lice and flies (myasis).  
Pentastomides-caused diseases: Linguatulosis  
Infection by fungi/yeasts of pets and livestock  
Host-Parasite Relationships: immunology, host’s reaction, parasites ways of immunological escaping.  
Parasitosis control: control programs, pilot control programs, disinfection, chemotherapy, immuno-prophylaxis, vaccination, anthelmintic resistance.
I.C. EPIDEMIOLOGY AND INFECTIOUS DISEASES OF ANIMALS

Teachers: Fulvio Marsilio; Cristina E. Di Francesco

Objectives of the course:
Fundamental knowledges about aetiology, epidemiology, pathogenesis, diagnosis, prophylaxis and control of the diseases argument of the program.

Programme:

I.C. VETERINARY MEDICAL AND SURGICAL SEMEIOTIC

Teachers: Andrea Boari, Massimo Mariscoli

Objectives of the course:
The Course includes two integrated modules that enable the under-graduated student to learn the semiological method based on clinical observation including interviewing clients, taking the history and performing a complete physical examination either of small animals, horses and ruminants.
By means of factual correlation between functional anatomy and clinical procedures, the student learns how to examine all body systems or organs of the patient and identify the clinical abnormalities. Furthermore the student learns how to develop a problem list based on the understanding of pathological mechanisms of the observed problems and finally to establish a list of differential diagnosis using the problem-oriented approach.
The fundamentals of a complete systematic clinical examination is provided to every student by means of lectures and either practical or supervised work.

Programme:
Veterinary Medical Semeiotic
The classical scheme of general clinical examination based on direct tests such as inspection, palpation, percussion and auscultation, appropriately revised, up-dated and integrated with the newer collateral diagnostic procedures are presented and interactively discussed. Furthermore the
The clinical examination of different systems including GI tract, cardio-circulatory, respiratory, urinary, tegumentary and hemo-lymphopoietic system is also illustrated. At the end of the course the student must be confident with the clinical examination, be able to recognize clinical abnormalities and to list differential diagnosis as well as further collateral diagnostic procedures.

**Veterinary Surgical Semiotics**

The course is made-up of theoretic and practical lectures that allow the students to learn how to perform and interpret the clinical examination of the muscular-skeletal system, nervous system and the visual and auditory systems. The clinical examination is performed on clinical cases and the some tutorial or supervised work is performed mainly with help of videos on different clinical cases. After taking confidence with the clinical method the student learn how to localize a lesion or a functional problem following a logical approach, how to list differential diagnosis and how to chose further diagnostic procedures.

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**I.C. VETERINARY DIAGNOSTIC IMAGING AND LABORATORY MEDICINE**

**Teachers:** Carlo Guglielmini; Morena Di Tommaso.

**Programme:**

Radiology: Radiation physics Basic properties of x-rays. The X-ray tube. Making of a radiographic image (cassettes, screens, x-ray films, grids) and film processing. Radiographic negative and positive contrast media (Iodinated and barium compounds). Radiation protection. Radiographic positioning of small and large animals. Visual perception and radiographic interpretation. Normal and pathological findings of the axial and appendicular skeleton in small and large animals. Radiographic examination of the neck and thorax: the larynx, trachea and esophagus; the thoracic wall and the diaphragm, mediastinum and pleural space; the heart, great vessels and the pulmonary vasculature; the lung. Radiographic examination of small animals abdomen: the peritoneal space; the liver and spleen; the kidneys and urinary bladder; the prostate gland and uterus; the stomach, small and large bowel; Contrastographic procedures of the gastrointestinal tract and urinary system; Basic physical principles of computed tomography, magnetic resonance imaging and scintigraphy.


Doppler ultrasonography: basic physics, spectral and colour flow Doppler.


examination, urine protein: creatinine ratio. Examination of cavity effusions (pleural, abdominal and pericardial).

I.C. VETERINARY SURGICAL PATHOLOGY AND SURGICAL METHODS

Teacher: Lucio Petrizzi

Objectives of the course:
Give to the student of the third year a basic knowledge of the nature and ethiopathogenesis of the main diseases of surgical interest, their classification, healing patterns of lesions in different tissues and healing disturbances. During the methodology lectures the student will be given knowledge of basic surgical diagnostic and therapeutic techniques and main principles to follow during surgery.

Programme:
Inflammation, regeneration, wound healing, scarring and scar, disturbances of soft tissue healing.
Chronic wounds, ulcers, fistulas, caries.
Thrombosis, embolism, metastasis.
Infiltrations, tumours, cysts.
Atresia, stenosis, occlusions, adherences, adhesions, ankylosis, contractures.
Retentions, pathologic emissions, collections, ectasia.
Dismorphosis, dysfunctions, paralysis and paresis, lameness.
Heterotomy, ectopy, paratopies.
Traumatic lesions, compressions, contusions, wounds, ruptures, fractures.
Ethiopathogenesis of some important diseases of domestic mammals
The surgical unit: space distribution and overall organization
Asepsis e antisepsis.
Surgical instruments and devices. Sterilization.
Animal handling and restrain.
Clinical evaluation of surgical patients.
Preparation of patient, surgical field, surgeon and assistants.
Delivery of therapies.
Dieresis, exeresis, centesis, catheterism. Haemostasis. Drainages. Dressings
Suture materials and patterns. Stomies ed anastomosis.

I.C. ANIMAL BREEDING AND ECONOMICS OF LIVESTOCK PRODUCTION

Teachers: Melania Giammarco; Andrea Bonfiglio.

Objectives of the course:
The integrated course “Animal breeding and economics” consists of Animal breeding and genetics and economics of livestock production courses. Animal breeding and genetics strives to present a balance between topics in animal genetics and animal breeding (the application of the principles of animal genetics with the goal of genetically improving farm animals). The course is designed to enhance the knowledge of genetic principles and their applications on
genetic improvement of livestock populations. The course “Economics of livestock production” gives theoretic and basic instruments for correct management of a livestock farm and for a study of the market of livestock products and the relevant European and national policies.

Programme:
FOURTH YEAR

I.C. VETERINARY SURGICAL CLINIC

Teachers: Aurelio Muttini, Amedeo Cuomo

Objectives of the course
Improve the student skill in the approach and treatment of surgical diseases with particular regard to dog, cat and horse.

Programme
Small animals. Approach to the traumatized patient. Reconstructive surgery of soft tissue and skin. Traumatic fractures treatment. Hernias and body cavities discontinuation. Approach to diagnostic and surgical treatment of the most important pathology in: Respiratory system; Gastrointestinal system; Urinary system; Musculoskeletal apparatus; Ear, eye and annexes; Endocrine system.

I.C. VETERINARY ANAESTHESIOLOGY AND SURGICAL TECHNIQUES

Teachers: Aurelio Muttini, Amedeo Cuomo.

Objectives of the course
Give to the student a basic practical and theoretical knowledge of anaesthetic approach to the patient of different species.

Programme:
I.C. OBSTETRICS, PATHOPHYSIOLOGY OF REPRODUCTION AND ARTIFICIAL INSEMINATION

Teachers: Augusto Carluccio; Pasqualino Loi; Fausto Cairoli.

Programme:
Physiology of reproduction in the male of domestic species; Physiology of Reproduction in the female of the domestic species. Gametes maturation, fertilization and embryonic development in mammals. Implantation and pregnancy. Control of the reproductive activity with a particular focus on the ovine species. Semen technology, AI, superovulation and Embryo transfer, embryo biotechnologies: sexing, in vitro embryo production, embryo freezing, cloning, transgenesis.

Practical courses: estrus synchronization, superovulation, embryo recovery and transfer, laboratory activity on in vitro embryo production, embryo handling and micromanipulation.

Obstetrics: Importance and aims of obstetrics, comparative anatomy of the genital female tract in different domestic species, estrus cycle in domestic animals, fertilisation and embryonic attachment, development of fetal membranes and placentation. Physiology of the gestation period; shape and location of the pregnant uterus; number and position of the fetus/es in the uterus; length of pregnancy; hormonal control of gestation; Diseases and accidents during the gestation period; abortion; fetal mummification and maceration; extraterine pregnancies; dropsey of the fetus and fetal membranes; hysterocele; torsion of the uterus; vagino-cervical prolapse; Parturition; symptoms of approaching parturition; endocrinology of parturition; stages of parturition; Dystocia; common forms of dystocia in domestic animals; Obstetrical operations; mutation; forced extraction; fetotomy; cesarean section; Puerperal period; involution of uterus; Injuries and diseases of the puerperal period; postpartum hemorrhage; lacerations and contusions of the birth canal; uterine prolapse; metabolic diseases; postparturient infections and diseases; postpartum paraplegia


I.C. INSPECTION AND CONTROL OF FOOD OF ANIMAL ORIGIN: PRIMARY PRODUCTS

Teachers: A. Vergara; P. Visciano

Objectives of the course: students must acquire the ability of identifying and analysing the quality and the possible alterations of primary products (meat, milk, fishery products, eggs, honey) in order to express correct judgments in relationship to the national and EC rules.


I.C. INFECTIOUS DISEASES, PROPHYLAXIS AND ANIMAL HEALTH II

Teacher: Fulvio Marsilio

Objectives of the course:
Fundamental knowledge about aetiology, epidemiology, pathogenesis, diagnosis, prophylaxis and control of the diseases argument of the program.

Programme:

I.C. VETERINARY INTERNAL MEDICINE AND VETERINARY FORENSIC MEDICINE

Teachers: Carlo Guglielmini; Tonino Talone

Programme:
The respiratory system: diseases of the nasal cavity, pharynx, larynx, trachea, airways, lungs, pleura, mediastinum, and diaphragm.
The cardiovascular system: congenital heart diseases, cardiac arrhythmias, diseases of the pericardium, myocardium, endocardium and vascular vessels, heart failure.
The haemotopoietic system (anaemia and leukaemia) and haemostatic disorders.
The gastrointestinal system: diseases of the oral cavity, pharynx, esophagus, stomach, prestomachs, intestine, peritoneum, liver and pancreas, colic in horse.
The musculoskeletal system: bone and muscular diseases.
The urinary system: diseases of the kidneys, ureters, bladder and urethra, renal failure.
The endocrine system: diseases of the pituitary gland, thyroid, adrenal glands and endocrine pancreas.
The tegumentery system: parasitic, bacterial, allergic diseases of the skin.
The central nervous system: most common CNS diseases.
Metabolic dieases: ketosis, tetany and hypocalcemia.

I.C. ANIMAL PRODUCTION

Teacher: Lamberto Lambertini

Objectives of the course:
Objective of the course is to introduce students and develop an understanding of: husbandry techniques of the main livestock species; farm environment and farming environmental impact; microclimatic conditions and its effects on the farm systems; disinfecting and deratting techniques. At the end of the course, students should be able to recognize a good farm characteristic and to give the instruction to the breeders to prevent problems and improve production. The course is articulated in two different parts: animal production hygiene and husbandry technology. The course is supported by different farm visits.

Programme:
and disinfestations: general information, classifications and characteristic of the most important products. The insect's struggle and rodent control in the farm.

Husbandry technology. Dairy production: dairy breeds; Italian and European situation; calf care and weaning; heifers breeding; high yield dairy cows: management throughout different production phases; dairy farm facilities; automatic milking procedures; feeding and nutrition strategy. Beef productions: beef cattle breeds; farming system for young bulls and veal husbandry. Swine production: main breeds and hybrids reared in Italy; reproduction and growing finishing pigs management; housing and feeding of swine; carcass and meat quality. Rabbit breeding: scenario of international and Italian rabbit production: profitability and diffusion; rabbit farming: weaning, growing and reproduction; basic feeding and nutrition management.

I.C. AVIAN ANATOMY AND HUSBANDRY AND POULTRY DISEASES

Teachers: PierAugusto Scapolo; Giuseppe Martino; Cristina Di Francesco

Objectives of the course:
The course provide the fundamental knowledge about the most common poultry diseases together with knowledges of the structure/function of major organ systems and poultry processing. The course consists of lectures and necroscopic examinations but also guided visit to poultry stock farm are performed.

Programme:
Introduction to anatomical and histological terms. The structure of avian skin and feathers
Skeletal system including appendicular and axial skeletons. Myology and arthrology of chick.
Anatomy and histology of the following systems:
Digestive system
Respiratory system and air sacs
Cardiovascular and lymphatic systems
Urinary system
Male and female reproductive systems.
Eggs production. Eggs chemical and nutritional characteristics. Factors affecting egg quality.
Fundamental knowledge about aetiology, epidemiology, pathogenesis, diagnosis, prophylaxis and control of the poultry diseases. Principles of disease prevention: washing and disinfecting of buildings; vaccination. Salmonella infections; Chlamydiosis; Colibacillosis; Fowl Cholera; Infectious Coryza; Mycoplasmosis. Newcastle disease; Infectious Bursal Disease; Chicken Infectious Anemia; Infectious Bronchitis; Influenza; Adenovirus infections; Avian Encephalomyelitis; Infectious Laringotracheitis; Poxvirus infections; Neoplastic diseases: Marek’s disease; Leukosis / Sarcoma group. Coccidiosis.
I.C. ANIMAL FEEDING AND NUTRITION

Teacher: Alessandro Gramenzi

Objectives of the course:
Animal Nutrition deals with classification and function of nutrients, digestive processes, characterization of feedstuffs, and formulation of diets for domestic animals. In this course, will be considered all aspects of nutrition for domestic animals, from fundamentals of nutrition through feeds and feeding. Students will learn about nutrients, digestive systems, feeds, ration balancing and livestock feeding. The principles apply to all mammalian but will be applied especially to beef cattle, dairy cattle, sheep, swine and horses. Will be emphasized the relationship between nutrition, livestock production quality and animal health. There will be an exposure to computerized ration balancing techniques, in addition to the principles of ration formulation by hand methods.

Programme:
Introductions, Introduction to course, Expectations
History of Nutrition; Composition of Plants (animal food) vs. Animals
Nutrient Classes
Water
Carbohydrates, (definitions, classifications, functions, deficiencies, etc.)
Fat, (definitions, classifications, functions, deficiencies, etc.)
Proteins, (definitions, classifications, functions, deficiencies, etc.)
Vitamins, Vitamins A, D, E, K (definitions, classifications, functions, deficiencies, etc.)
B-Vitamins, (definitions, classifications, functions, deficiencies, etc.)
Minerals, Introduction; Required;
Macro Minerals
Trace Minerals
Ultra Trace Minerals
Non-nutritive feed additives, growth promotants
Mycotoxin contamination of feedstuffs
Digestive anatomy and secretions, physiology; pigs
Ruminant and Herbivore anatomy and function. Fermentation.
Feedstuff analysis and evaluation.
Energetics. TDN, GE, DE, ME, Net E. Value of Protein (BV, NPU, N Dig., N Reten.)
Feed production and classification
Concentrates: cereal grains, by-product feeds.
Concentrates: protein feeds, miscellaneous.
Balancing rations, Principles, Non-ruminant applications. Method applied to some ruminant rations.
Forages: Grasses, Legumes, Residue feeds
Forage Intake and Factors affecting Dry Matter Intake (i.e., Feed Consumption)
Forages: harvest forms; pasture, hay, silage.
Ration balancing with Forages
Balancing rations with the aid of Computers
Feeding Beef Cattle
Feeding Dairy Cattle
Feeding Sheep
Feeding Swine
Special things about the nutrition of pets.
FIFTH YEAR

I.C. VETERINARY MEDICAL CLINIC AND THERAPY

Teacher: Andrea Boari

Objectives of the course:
Students will learn to methodically solve clinical problems. They will develop skills necessary for collection of clinical data and will develop clinical reasoning and problem solving skills. In order to pass this course, students must work independently to solve problems and/or take care of clinical cases and/or answer clinically relevant questions with or without reference material within a time frame defined by the instructor.

Programme:
This is an internal medicine and therapeutic interactive/discussion course which involves homework, pop tests, scheduled tests and solving clinical cases of internal medicine. The scope of the course may include any medical problem that occurs in dogs, cats, horses, and cattle. The specific content of the course typically varies from year to year. Part of the clinical cases come from hospitalized animals and students learn how to approach a clinical case starting from the correct interview with the owner, going through physical examination and, then, through optimal diagnostic and therapeutic steps.

1) The student will learn to solve clinical problems with a logical and methodical approach, as opposed to using memory and "pattern recognition". This methodical path includes a) defining problems at their highest possible level, b) determining the possible rule outs (i.e., differential diagnoses), c) determining which of the possible differentials are most likely based upon the available data, and d) determining the optimal diagnostic and/or therapeutic plan based on the previous assessment.

2) The student will learn to use existing texts and/or library facilities to solve clinical problems.

3) Students will come to understand various clinical problems so that they a) can readily distinguish between problems that mimic one another, b) know and understand the categories of diseases that produce a particular problem and how to distinguish between these categories, c) know the specific diseases that cause each category mentioned in 3b, and d) know and understand the tests needed to distinguish between the various diseases. Ultimately, they will be able to choose the right treatment based on the presumptive diagnosis and/or to correct or control severe clinical signs.

I.C. VETERINARY OBSTETRICAL CLINIC

Teacher: Augusto Carluccio

Objectives of the course:
The student must demonstrate his ability to a clinical approach to theriogenology problems. Furthermore, he need to know the causes of infertility and to formulate a diagnosis, prognosis and therapy, and to use specific and appropriate drugs. He must demonstrate the knowledge of the reproductive laws. He need to know the principle techniques for manipulation of estrus cycle, for artificial insemination and embryo transfer in farm animals. Finally he must demonstrate the knowledge of the main surgical techniques in animal reproduction.
**Programme:** Animal contention in theriogenology; Reproductive anamnesis; Clinical evaluation of the reproductive patient; Use of laboratory and collateral diagnosis; Diagnosis of pregnancy in domestic animals; Diagnosis and therapy of the most important causes of female infertility; Anesthesiological approach in theriogenology; Surgery in animal reproduction; Clinical aspects and therapy of postpartum diseases; Use of the drugs used in theriogenology; Manipulation of estrus cycle; Diagnosis and therapy of the disease in animal neonatology; Clinical approach to the mammary diseases.

**IC INSPECTION AND CONTROL OF FOOD OF ANIMAL ORIGIN: PROCESSED PRODUCTS**

**Teachers:** A. Ianieri; A. Vergara

**Objectives of the course:** students must learn the processes involved in the safe production of food, and the veterinary involvement. They must acquire the ability of identifying and analysing the quality and the possible alterations of processed products in order to express correct judgments in all the steps of food chain (production, sale and use by the final consumer), in relationship to the national and EC rules.

**Programme:** food processing and food technology: strategies for food preservation. Heat treatment. Irradiation. Drying and reducing of water activity. Control of pH and use of organic acids. The use of chemical preservatives: sulfite and nitrite. The effect of redox potential. New and emerging physical methods of preservation. Use of combined preservative factors. Microbial ecology of different types of food: processed meat products, fermented meats, processed fishery products, dairy products, fermented milk products, egg products. The HACCP-based approach in the different typologies of food industries: the food business operators’ obligations and the hygiene requirements. Principles, concepts and methods of good manufacturing practice and quality management. Health and safety checks for proper handling, storage and preparation of foods, adequate refrigeration temperatures, proper cleaning and sanitizing of utensils, work areas and equipment, prevention of cross-contamination. Principles of training of personnel working in food industry. Drill-lessons are organised in this step. Students are divided in groups and are invited to write detailed flow-diagrams for the most known food products and to put in place the requested procedures based on hazard analysis and critical control point (HACCP).


Examples of real cases will be supported by guided visits or documentation on food production and transformation plants. Drill-lessons on analytical and sensorial evaluation (microbiological and chemical tests) on foodstuffs of animal origin will be performed.
ANNEX 5.1

AGREEMENT FOR THE INTEGRATIVE TEACHING ACTIVITIES
OF THE FACULTY OF VETERINARY MEDICINE AND FOR PRACTICAL
TRAINING COURSES

BETWEEN

The University of Teramo, Faculty of Veterinary Medicine, located in Viale Cruciani no. 122, federal ID number 92012890676, hereinafter named “promoter subject” represented by the President of the Faculty of Veterinary Medicine, prof. Fulvio MARSILIO (Rector delegate according to D.R. no. 547 dated 09/30/2004), born in Bari on 12/20/1960

AND

……………………….., located in (city zip code), hereinafter named “hosting subject”, represented by Mr…………………………………….., born in …………………………., on……………………….

Whereas

- That art. 27 of DPR 382/80 foresees: “University Rectors can stipulate conventions with public and private bodies, under proposals by the faculty, in order to use extra-university tooling and logistic services for integrative teaching activity performances, oriented to the completion of academic and professional training”.

- That art. 8 of Law 341/90 provides for: “the fulfillment of study courses and cultural and training activities formerly mentioned in art. 6, according to the modalities defined by single location, the Universities can make use of the cooperation of public and private subjects, by having faculty to foresee the constitution of association, also under private law rules, and the stipulation of appropriate conventions”.

- That the Teaching Regulation of the University approved with D.R. 151 dated 7/31/2001 foresees in art. 2, paragraph 3: “the University can organize, according to the rules in force and the present Regulation, further teaching and training activities also in cooperation with public and private bodies and subjects, both Italian and foreign”.

- That it is the University’s general interest to be able to employ extra-university competences and structures in order to ensure a better and more complete accomplishment of its own institutional tasks, in particular concerning the possibility to give students who are writing their thesis and that attend Specialization courses, Doctorate courses and University Masters, relevant specialist practice-theory experiences.

It is agreed and stipulated what follows:
Art. 1.

Purposes

The Faculty of Veterinary Medicine of the University of Teramo can use resources and structures external to the University, in particular in cooperation with the structure named ……………………., hereinafter named hosting subject, according to the modalities implied in the present Agreement, for the performance of teaching practical integrative activities in its School Courses, Specialization Schools, Doctorate Courses and University Masters, in order to integrate and execute professional knowledge and cultural training of the students and to experiment innovative teaching modalities by the participation to activities of practical-applied nature, as well as of activities of practical traineeship.

Art. 2.

Modalities for the carrying out of the integrative practical teaching activities
and those of internship activities

Modalities, performance time, number of students attending integrative practical teaching activities and internship activities will be object of a mutual consultation.

The responsibility of integrative practical teaching activities and internship activities is binding to the teacher or teachers of the Integrated Course or to the teacher responsible for the internships; they can make use of the competences of specialized professionals within the hosting subject.

The practical activities will be held according to the hygiene, security and health rules on job sites provided by the subject regulations in force.

Further activities carried out by students during the integrative practical teaching activities and internship do not constitute a job relationship with the hosting subject; neither can they be substitutive of company labor or professional efficiency. Compensation is not considered on behalf of the hosting subject for the fruition of company services for the student.

Art. 3

Insurance Coverage

The University of Teramo guarantees that the students who benefit from the integrative practical teaching activities and internship activities, also outside of the official lesson schedule, are covered by an insurance policy (workers compensation) in case of injury suffered during the activities mentioned in this agreement, as well as for civil responsibility (liability insurance) for injuries to third parties (people and/or goods) against their will during the abovementioned activities.

The workers compensation policy is currently stipulated with ASSITALIA Assicurazioni – branch of Teramo.

The liability insurance policy is stipulated with FONDIARIA Assicurazioni – Branch of Teramo.

The student’s commute back and forth from the premises of the hosting subject are excluded from the insurance policy, unless authorized vehicle by the University of Teramo, provided by the same insurance policy.

The insurance coverage for employees of the hosting structure is the responsibility of the hosting subject, as well as of the rooms and infrastructures put on hand for the integrative practical teaching activities.
Art. 4
Costs

It is recognized that the implementation of the given agreement will not garner, on behalf of all parties, any financial duty to one another.

Art. 5
Terms

The given agreement will enter into force starting from the date of subscription for the duration of one year.
The agreement will be wordlessly renewed from year to year, unless written disregard from one of the parties to be communicated within two months of the deadline by certified mail.
It is understood that, also in case of withdrawal, the fulfillment of activities in course will be granted, until the end of the teaching semester.

Art. 6
Efficacy

The given agreement is binding for the parties according to the laws, which dispose the execution.

Art. 7
Controversy

The parties bounded with the given agreement accept to define in a friendly manner any controversy that may arise from the activity which is object of the given agreement and, in the case being impossible to achieve an agreement in this way, any eventual dispute should be resolved by ritual arbitrate according to Art. 806 and following the code of civil procedure with a board of arbiters composed of three arbiters. Each of them is nominated by one of the three parties; the President of the board of arbiters is named by his/her own members, and in the case of disagreement or missed nomination of the President on behalf of one of the parties, the he/she is nominated by the President of the Court of Teramo, being this the town where the board of arbitors is located.

Art. 8
Final provisions

As regards what is not expressly disposed of in the given agreement, the parties defer to what is provided for in the matter regulations in force.

Read, approved and undersigned.
Teramo, ________________________
The Dean of the Faculty of Veterinary Medicine
University of Teramo
Prof. Fulvio MARSILIO

The Legal Representative of ...........................................
Dr. .................................................................

.................................................................
ANNEX 5.2

UNIVERSITY OF TERAMO

Evaluation Nucleus (NUVA) Report - Faculty of Veterinary Medicine
Academic year 2005-2006

Section A:

A1: Coverage degree of surveying
Eightythree out of 93 (89.25%) courses held by the Faculty of Veterinary Medicine during the academic year 2005-2006 have been surveyed by means of 2569 student’s questionnaires. The ratio between the number of questionnaires and the number of students (1101) is 2.33/student, the highest of our University. Moreover the covering index, near the 90% of the students, gives a high statistical value to the evaluation. To enter the school of veterinary medicine, a student must go through a university entrance examination that enhance his motivation in following the courses. Furthermore the attendance to all courses is mandatory and the presence of students is verified every lectures. Both the evidences can explain the higher participation of the students in the evaluation process of the Veterinary Medicine curriculum. The number of students (1101) results from the addition of the students of the School of Veterinary Medicine (718), of the curriculum Animal Health and Welfare, a school for veterinary technician/nurses (225) and two curricula dedicated to Biotechnology (136) and Biotechnology of Reproduction (22).

A2: Characteristic of the sample
Compare to the other Faculties of our university Veterinary Medicine has the higher rate of female students (68,8%) and the lower age of the students, 90.4% is under 25 y of age. Almost half of the students (46,5%) entering Veterinary Medicine come from “Liceo” specializing in scientific studies and the 18.2% from “Liceo” specializing in classical studies.

Section B: Evaluation of lecture or practical exercises rooms and teaching equipments
The student opinion about the adequacy of the lecture rooms, practical exercises rooms and the teaching equipments is moderately critical with respectively a degree of satisfaction of 73,1% (lecture rooms), 63,6% (practical exercises rooms) and 63,6% (teaching equipments). The degree of satisfaction is the lower compare to the other Faculty of the University which are lodged in convenient and proper new or renewed buildings. The student’s opinion stresses their uneasiness regarding the structural inadequacy for practical and tutorial activity which is a fundament of the teaching process that cannot be set aside.

Section C: Study load and Curriculum organisation
The study load of each course is judged adequate by 75,2% of the students and the majority of them (65,2%) consider adequate the overall time schedule of parallel courses within a semester. More critical is the student’s opinion regarding the overall study load of the parallel courses within a semester that is adequate only for 45,7% of the students as well as the overall examination time schedule positive for the 45,4%.
**Section D: Quality of the teaching activity and the examination system**

78.6% of the students is satisfied by the clear explanation of the examination procedures and criteria. A large majority (84.5%) of students judged adequate the teaching material (books, handouts etc.) recommended or supplied by the teacher, the 83.3% consider satisfactory the ability of the teacher explaining the different topics of the course and the 91.5% consider the teacher able to give exhaustive answer to any explanation request. All these parameters have the higher rate of the University. A positive evaluation of the ability to motivate the students (80.5%) and stimulating an active participation and interaction (79.3%) by the teacher were also assessed. To attend lectures (86.6%) and practical exercises (86.9%) is helpful for the students. Finally student demonstrate to be satisfied by the teacher’s comply with the official lectures calendar (91.0%) and the teacher availability for questions or suggestions during consulting hours (88.2%).

**Section E: Knowledge requested, overall degree of satisfaction**

The 63.3% of the Veterinary Medicine students states to have preliminary knowledge sufficient to understand the topic of the courses (lowest rate of the University). On the other hand 84.4% of the students is interested to the courses. The overall degree of satisfaction is 75.4% for the Faculty of Veterinary Medicine and 78.9% for the school of Veterinary Medicine.

**Section F: Final comments**

As reported in the sections D and E the teaching quality at the School of Veterinary Medicine is appreciated by the student and judged largely adequate. Shadows are evident in the overall study load of the parallel courses within a semester as well as the overall examination time schedule judged negatively by the students (section C). Clear is also the uneasiness of the students regarding the inadequacy of the structures and equipment for practical and tutorial activity which is a fundament of the teaching process that cannot be set aside in a School of Veterinary Medicine.
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<thead>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Is the required working load of this course acceptable?</td>
<td>62.3</td>
<td>69.6</td>
<td>73.0</td>
</tr>
<tr>
<td>16</td>
<td>Was the teacher on time at the lectures?</td>
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<td>76.2</td>
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<tr>
<td>17</td>
<td>Are lectures topics faithful to the syllabus presented at the beginning of the course?</td>
<td>66.3</td>
<td>84.0</td>
<td>86.3</td>
</tr>
<tr>
<td>18</td>
<td>Are lectures interesting?</td>
<td>71.2</td>
<td>76.0</td>
<td>78.5</td>
</tr>
<tr>
<td>19</td>
<td>Are lectures useful to understand the scientific and professional value of the given knowledge?</td>
<td>70.6</td>
<td>79.6</td>
<td>81.3</td>
</tr>
<tr>
<td>20</td>
<td>Are the lectures useful to prepare for the examination?</td>
<td>67.8</td>
<td>80.6</td>
<td>83.5</td>
</tr>
<tr>
<td>21</td>
<td>Does the teacher use the teaching supports such as slides, videos, overhead projector etc.) adequately?</td>
<td>69.0</td>
<td>82.3</td>
<td>88.1</td>
</tr>
<tr>
<td>22</td>
<td>Has the teacher explained evaluation and examination procedures and criteria?</td>
<td>58.7</td>
<td>69.4</td>
<td>78.3</td>
</tr>
<tr>
<td>23</td>
<td>Is the teaching material (books, handouts etc.) recommended or supplied by the teacher adequate?</td>
<td>61.8</td>
<td>77.9</td>
<td>80.9</td>
</tr>
<tr>
<td>24</td>
<td>Is the teacher able to explain clearly the topics?</td>
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<td>81.7</td>
</tr>
<tr>
<td>25</td>
<td>Is the amount of knowledge given during the course adequate?</td>
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<td>76.1</td>
<td>78.9</td>
</tr>
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<td>26</td>
<td>Does the teacher motivate the students to learn the topics of the course?</td>
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<td>75.7</td>
<td>80.0</td>
</tr>
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<td>Is the teacher available during consulting hours?</td>
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<td>74.4</td>
<td>73.4</td>
</tr>
<tr>
<td>28</td>
<td>Does the teacher stimulate the interaction of students during lectures?</td>
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<td>75.8</td>
<td>76.7</td>
</tr>
<tr>
<td>29</td>
<td>Gives the teacher exhaustive answer to any explanation request?</td>
<td>73.3</td>
<td>85.8</td>
<td>89.5</td>
</tr>
<tr>
<td>30</td>
<td>Does the teacher comply with the official lectures calendar?</td>
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<td>84.7</td>
<td>88.3</td>
</tr>
<tr>
<td>31</td>
<td>Does the teacher comply with the lecture’s length?</td>
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<td>84.2</td>
<td>87.1</td>
</tr>
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<td>It’s useful to take lectures of this corse?</td>
<td>66.2</td>
<td>79.0</td>
<td>83.5</td>
</tr>
<tr>
<td>33</td>
<td>Are the teaching activities such as practical exercises, seminars, tutorials, etc. useful?</td>
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<td>68.6</td>
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<td>68.5</td>
<td>65.4</td>
</tr>
<tr>
<td>35</td>
<td>Gives the teaching staff during practical exercises or tutorials exhaustive answer to any explanation request?</td>
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<td>68.8</td>
<td>65.4</td>
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<td>Does the teaching staff comply with the official calendar of practical exercises or tutorials?</td>
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<td>62.4</td>
</tr>
<tr>
<td>37</td>
<td>Does the teaching staff comply with the length of practical exercises or tutorials?</td>
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<td>64.6</td>
</tr>
<tr>
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<td>Overall I’m satisfied with this course</td>
<td>60.3</td>
<td>75.0</td>
<td>78.9</td>
</tr>
</tbody>
</table>
### ANNEX 5.4
Form distributed to the students for the evaluation of teaching

**University of Teramo**

**School of Veterinary Medicine**

Name of the course ………………………………

Teacher …………………………………………

Please fill the following questionnaire using only the sheet for optical reading. Filling the questionnaire is optional. The questionnaire is designed to record your personal opinion on the different aspects of the teaching process. Your opinions will contribute to improve the teaching environment and quality. The questionnaire is anonymous and it will be processed only by the evaluation nucleus (NUVA) for statistical purpose.

If you do not know how to answer a question or a question is not applicable for the course concerned, you may skip the question. Do not write anything else on this side of the form.

At the end of questionnaire (observations) you can write further comments.

<table>
<thead>
<tr>
<th>Question</th>
<th>Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Age of the student</td>
<td>A) ≤ 20 y</td>
</tr>
<tr>
<td></td>
<td>B) 21-22 y</td>
</tr>
<tr>
<td></td>
<td>C) 23-24 y</td>
</tr>
<tr>
<td></td>
<td>D) 25-26 y</td>
</tr>
<tr>
<td></td>
<td>E) ≥ 27 y</td>
</tr>
<tr>
<td>2) Sex</td>
<td>A) female</td>
</tr>
<tr>
<td></td>
<td>B) male</td>
</tr>
<tr>
<td>3) School of origin</td>
<td>A) “Liceo” classical studies</td>
</tr>
<tr>
<td></td>
<td>B) “Liceo” scientific studies</td>
</tr>
<tr>
<td></td>
<td>C) Technical secondary school</td>
</tr>
<tr>
<td></td>
<td>D) “Liceo” art subjects</td>
</tr>
<tr>
<td></td>
<td>E) land-surveyor</td>
</tr>
<tr>
<td>4) School of origin</td>
<td>A) teacher’s training school</td>
</tr>
<tr>
<td></td>
<td>B) commercial school</td>
</tr>
<tr>
<td></td>
<td>C) “Liceo” foreign languages</td>
</tr>
<tr>
<td></td>
<td>D) Other Italian secondary schools</td>
</tr>
<tr>
<td></td>
<td>E) Other foreign secondary schools</td>
</tr>
<tr>
<td>5) Year of enrolment</td>
<td>A) 1st</td>
</tr>
<tr>
<td></td>
<td>B) 2nd</td>
</tr>
<tr>
<td></td>
<td>C) 3rd</td>
</tr>
<tr>
<td></td>
<td>D) 4th</td>
</tr>
<tr>
<td></td>
<td>E) 5th</td>
</tr>
<tr>
<td>6) Year over the regular duration of curriculum (off-course – F.C.)</td>
<td>A) 1st FC</td>
</tr>
<tr>
<td></td>
<td>B) 2nd FC</td>
</tr>
<tr>
<td></td>
<td>C) 3rd FC</td>
</tr>
<tr>
<td></td>
<td>D) 4th FC</td>
</tr>
<tr>
<td></td>
<td>E) over the 4th FC</td>
</tr>
<tr>
<td>7) Knowledge requested by the course:</td>
<td>A) I do not have these knowledge</td>
</tr>
<tr>
<td></td>
<td>B) The requested knowledge where not a topic of previous courses</td>
</tr>
<tr>
<td></td>
<td>C) The requested knowledge where a topic of previous courses but I didn’t pass these examinations yet.</td>
</tr>
<tr>
<td>8) Are the lecture rooms adequate? (can you hear, can you see, can you sit?)</td>
<td>A) NO</td>
</tr>
<tr>
<td></td>
<td>B) NO&gt;YES</td>
</tr>
<tr>
<td></td>
<td>C) YES&gt;NO</td>
</tr>
<tr>
<td></td>
<td>D) YES</td>
</tr>
<tr>
<td>9) Are the practical exercise rooms (including tutorial and teaching laboratories) adequate?</td>
<td>A) NO</td>
</tr>
<tr>
<td></td>
<td>B) NO&gt;YES</td>
</tr>
<tr>
<td></td>
<td>C) YES&gt;NO</td>
</tr>
<tr>
<td></td>
<td>D) YES</td>
</tr>
<tr>
<td>10) Are the equipments for practical exercises are adequate?</td>
<td>A) NO</td>
</tr>
<tr>
<td></td>
<td>B) NO&gt;YES</td>
</tr>
<tr>
<td></td>
<td>C) YES&gt;NO</td>
</tr>
<tr>
<td></td>
<td>D) YES</td>
</tr>
<tr>
<td>11) Is the required working load of this course acceptable?</td>
<td>A) NO</td>
</tr>
<tr>
<td></td>
<td>B) NO&gt;YES</td>
</tr>
<tr>
<td></td>
<td>C) YES&gt;NO</td>
</tr>
<tr>
<td></td>
<td>D) YES</td>
</tr>
<tr>
<td>12) I’m following a recommended plan of studies</td>
<td>A) NO</td>
</tr>
<tr>
<td></td>
<td>B) NO&gt;YES</td>
</tr>
<tr>
<td></td>
<td>C) YES&gt;NO</td>
</tr>
<tr>
<td></td>
<td>D) YES</td>
</tr>
<tr>
<td>13) Is the overall study load of the parallel</td>
<td>A) NO</td>
</tr>
<tr>
<td></td>
<td>B) NO&gt;YES</td>
</tr>
<tr>
<td></td>
<td>C) YES&gt;NO</td>
</tr>
<tr>
<td></td>
<td>D) YES</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>14</td>
<td>Is the overall time schedule of the parallel courses acceptable?</td>
</tr>
<tr>
<td>15</td>
<td>Is the examination time schedule of the parallel courses acceptable?</td>
</tr>
<tr>
<td>16</td>
<td>Was the teacher on time at the lectures?</td>
</tr>
<tr>
<td>17</td>
<td>Are lectures topics faithful to the syllabus presented at the beginning of the course?</td>
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<td>18</td>
<td>Are lectures interesting?</td>
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<td>19</td>
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<td>20</td>
<td>Are the lectures useful to prepare for the examination?</td>
</tr>
<tr>
<td>21</td>
<td>Does the teacher use the teaching supports such as slides, videos, overhead projector etc.) adequately?</td>
</tr>
<tr>
<td>22</td>
<td>Has the teacher explained evaluation and examination procedures and criteria?</td>
</tr>
<tr>
<td>23</td>
<td>Is the teaching material (books, handouts etc.) recommended or supplied by the teacher adequate?</td>
</tr>
<tr>
<td>24</td>
<td>Is the teacher able to explain clearly the topics, and make himself understood?</td>
</tr>
<tr>
<td>25</td>
<td>Is the amount of knowledge given during the course adequate?</td>
</tr>
<tr>
<td>26</td>
<td>Does the teacher motivate the students to learn the topics of the course?</td>
</tr>
<tr>
<td>27</td>
<td>Is the teacher available during consulting hours?</td>
</tr>
<tr>
<td>28</td>
<td>Does the teacher stimulate the interaction of the students during lectures?</td>
</tr>
<tr>
<td>29</td>
<td>Gives the teacher exhaustive answer to any explanation request?</td>
</tr>
<tr>
<td>No.</td>
<td>Question</td>
</tr>
<tr>
<td>-----</td>
<td>--------------------------------------------------------------------------</td>
</tr>
<tr>
<td>30</td>
<td>Does the teacher comply with the official lectures calendar?</td>
</tr>
<tr>
<td>31</td>
<td>Does the teacher comply with the lecture’s length?</td>
</tr>
<tr>
<td>32</td>
<td>It’s useful to take lectures of this course?</td>
</tr>
<tr>
<td>33</td>
<td>Are the teaching activities such as practical exercises, seminars, tutorials, etc. useful?</td>
</tr>
<tr>
<td>34</td>
<td>Is the level of difficulty of practical exercises or tutorials adequate?</td>
</tr>
<tr>
<td>35</td>
<td>Gives the teaching staff during practical exercises or tutorials exhaustive answer to any explanation request?</td>
</tr>
<tr>
<td>36</td>
<td>Does the teaching staff comply with the official calendar of practical exercises or tutorials?</td>
</tr>
<tr>
<td>37</td>
<td>Does the teaching staff comply with the length of practical exercises or tutorials?</td>
</tr>
<tr>
<td>38</td>
<td>Are the attendance to lectures and the study load adequate to pass the exam immediately after the end of the course?</td>
</tr>
<tr>
<td>39</td>
<td>Have your previous knowledge been sufficient to follow the lectures of the course?</td>
</tr>
<tr>
<td>40</td>
<td>Independently by my opinion on this course I’m interested to this argument</td>
</tr>
<tr>
<td>41</td>
<td>Overall I’m satisfied with this course</td>
</tr>
</tbody>
</table>

Comments:

…………………………………………………………………………………………………
…………………………………………………………………………………………………
…………………………………………………………………………………………………
…………………………………………………………………………………………………
…………………………………………………………………………………………………
…………………………………………………………………………………………………
…………………………………………………………………………………………………
…………………………………………………………………………………………………
## ANNEX 5.5

Data from the Dean office database on students examination (per Subject and per year)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Students which passed examinations %</th>
<th>Months between the end of the course and the positive examination n.</th>
<th>Mean mark Pt. / 30</th>
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<tbody>
<tr>
<td></td>
<td>December 04</td>
<td>December 05</td>
<td>December 06</td>
</tr>
<tr>
<td>Applied biophysics and statistics</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Propaedeutic biochemistry and molecular biology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veterinary biochemistry</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Veterinary anatomy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zoology, ethnography and ethology</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General economy and marketing</td>
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<td></td>
</tr>
<tr>
<td>Mean 1st year</td>
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<td></td>
<td></td>
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<td>Applied biophysics and statistics</td>
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</tr>
<tr>
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<td>67.1</td>
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<td>Veterinary functional anatomy</td>
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<td>General Pathology and Veterinary Pathophysiology</td>
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<td>Histological and general pathological anatomy</td>
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</tr>
<tr>
<td>Pharmacology and general veterinary toxicology</td>
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<td>32.0</td>
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<td>Veterinary microbiology</td>
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<tr>
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<td>49.1</td>
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<td>Animal breeding and economics of livestock production</td>
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<td>60.3</td>
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<td>26.4</td>
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<tr>
<td>Pharmacology and special veterinary toxicology</td>
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<td>19.9</td>
<td>17.3</td>
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<td>Parasitology and Parasitic Diseases of Animals</td>
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<tr>
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<td>22.9</td>
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</tr>
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<td>7.6</td>
<td>9.7</td>
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<td>Inspection and control of food of animal origin: primary products</td>
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<td>20.5</td>
<td>11.5</td>
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<tr>
<td>Infectious diseases, prophylaxis and animal health II</td>
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<td>26.7</td>
<td>29.3</td>
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<td>Veterinary internal medicine and veterinary forensic medicine.</td>
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<td>23.8</td>
<td>13.6</td>
</tr>
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<td>Animal production</td>
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<tr>
<td>Veterinary anaesthesiology and surgical techniques</td>
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<td>9.4</td>
<td>0.3</td>
</tr>
<tr>
<td>Mean 4th year</td>
<td>10.3</td>
<td>25.5</td>
<td>19.5</td>
</tr>
<tr>
<td>Internal Medicine and clinical therapeutic</td>
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<td>13.2</td>
<td>6.6</td>
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<tr>
<td>Veterinary obstetrical clinics</td>
<td>2.2</td>
<td>10.4</td>
<td>13.7</td>
</tr>
<tr>
<td>Inspection and control of food of animal origin: processed products.</td>
<td>8.8</td>
<td>35.9</td>
<td>11.9</td>
</tr>
<tr>
<td>Corso Integrato Professionalizzante</td>
<td>2.2</td>
<td>1.9</td>
<td>4.2</td>
</tr>
<tr>
<td>Mean 5th year</td>
<td>4.0</td>
<td>15.3</td>
<td>9.1</td>
</tr>
</tbody>
</table>
ANNEX 6.1

Schematic plans of the Faculty

Plan 1 – Schematic general Plan Molinari
Plan 2 – Basement Floor Molinari
Plan 3 – Ground Floor Molinari
Plan 4 – First floor Molinari
Plan 5 – Second Floor Molinari
Plan 6 – Third basement Floor Cartecchio
Plan 7 – Second basement Floor Cartecchio
Plan 8 – First basement Floor Cartecchio
Plan 9 – Ground Floor Cartecchio
Plan 10 – First Floor Cartecchio
Plan 11 – Second Floor Cartecchio
Plan 12 – Third Floor Cartecchio
Plan 13 – Schematic general plan Chiareto
Plan 14 – Basement Floor Chiareto
Plan 15 – Ground Floor Chiareto
University of Teramo Chiareto (Bellante)

Annex 6.1 - Plan 14

BASEMENT FLOOR
University of Teramo
Chiareto (Bellante)

Annex 6.1 - Plan 15

FIRST FLOOR
ANNEX 6.2

Schematic Prospects of the new premises including
The Veterinary Teaching Hospital (under construction)