Bachelor in Veterinary Sciences- UAB

http://www.uab.cat/veterinaria/english/									
Code - Subject (Catalan)	ECTS	Year	Semester	Subject (English)	Description				
102612 Laboratori Integrat	3	1st	Annual	Integrated Laboratory	This is a practical course that focus on the acquisition of technical skills in the context of the topics 1) Biochemistry and Molecular Biology and 2) Cell and Animal Biology. Experimental work, described in the protocols, supervised by the teacher.				
102628 Agronomia I Economia Agrària	6	1st	1st	Agronomy and agricultural economics	Study of agricultural species of interest in animal feed. Morphology and physiology of plants. Climate, soil and fertilization. Cereals and forage grasses. Grain legumes and forage legumes. Basics on pasture management. Introduciton to economics. Offer and demand. Market. Applications of the theory of price.				
102634 Estructura i Funció del Sistema Nerviós	6	1st	2nd	Structure and function of the nervous system	Students have to learn basic concepts related to the anatomy, histology and physiology of the nervous system. The course is divided in two sections. The first section includes basic mechanisms of neural excitability and neurotransmission. It also includes anatomical and histological descriptions of the structure of the central and peripheral nervous system. In the second section, structural and functional aspects of receptors are explained. For example, sense organs are exposed in an integrative manner trying to correlate structural and functional features. The autonomic and somatic nervous systems are also exposed including both afferent and efferent pathways. Students have to understand how visceral function is regulated and correlate neural pathways with basic principles of disease. Finally, in the last part of this section the topic bioethics is introduced. Students have to discuss several concepts such as pain, euthanasia etc. Practical work includes dissection experiments, discussion of histological slides and computer simulation of neural function. A session of laboratory work in small groups is programmed where students can practice and have to identify neural pathways with clinical relevance.				
102651 Microbiologia	6	1st	2nd	Microbiology	Microbiology. Microorganisms. Microscopy. Bacterial cell structure, growth, metabolism, genetics and genomics. Infection and pathogenicity. Bacterial taxonomy. Fungi.				
102652 Biologia Animal i Cel.lular	7	1st	1st	Animal and Cell Biology	Animal Biology: animal structure and organization, groups of veterinary interest. Cell Biology: expression and transmission of genetic information, internal organization of the eukaryotic cell and behaviour of cells in multicellular organisms.				

102659 Parasitologia	3	1st	2nd	Parasitology	This subject aims to provide training in the theoretical and practical aspects of veterinary parasitology, including the study of the protozoan and metazoan parasites of animals and the vectors which transmit them. Such aspects as parasite morphology, bionomy, physiology and sistematics are introduced, as well as the importance of the relationships among parasites, hosts and environment.
102662 Bioquímica	8	1st	Annual	Biochemistry	This course will allow the students to understand the chemical basis of the biological processes. The student will learn the structural basis of these processes, as well as the relationship between structure and function of the different types of biological compounds: carbohydrates, lipids, proteins and nucleic acids. We pay special attention to the enzymes, the proteins that catalyze the biological reactions. This course also explores the basics of metabolism. This will allow students to understand the biochemical bases of the physiology and pathology, with special emphasis on the animal species of veterinarian interest. In the last part of the course, the students will learn the molecular basis of genetic transmission as well as its regulation. The specific learning goals are to know and understand Basic elements of biological chemistry: functional groups, isomers, chemical equilibrium, principles of bioenergetics and redox potential. Structure and function of proteins, carbohydrates, lipids, nucleotides and vitamins. Metabolism of carbohydrates, the citric acid cycle and oxidative phosphorylation Lipid metabolism, lipoproteins, cholesterol and other lipids. Metabolism of nitrogen compounds: amino acids,
102679 Morfologia I	9	1st	2nd	Morphology I	Morphology I is a basic first year subject which permits the students to know and comprehend the structure and organization of the domestic animals, to understand the function of the organs and systems that build the animal organism, both through the embryonic development of the individual and in the adulthood. In particular, Morphology I focuses on the study of the general embryology, the basic tissues that form the body and the musculoskeletal system. Subjects as Structure and function of the nervous system, Morphology II and Physiology complement the contents related to the structure and function of all systems of the animal body. The educational objectives of the course are: - To understand the origin and structure of the organization of the animals during their development, the basics of the mechanisms that control embryonic development To understand the microscopic structure of cells and tissues as the basis for the study of the organs that make the animal body To understand the shape, structure, arrangement and function of the organs that make up the musculoskeletal system in different species of veterinarian
103539 Etnologia i Etologia	6	1st	1st	Ethnology and Ethology	This subject includes two rather independent parts: ethnology and ethology. The main objective of ethnology is to describe the morphology and functional traits of the main breeds of domestic animals, including both companion and farm species. The main objective of ethology is to explain the basis of animal behaviour and how behaviour relates to health and production. Also, an introduction to animal welfare will be included.

					This is a first-year course of basic type, where the main objective is to introduce
					students to the world of animal production and handling by studying the basic
					systems of production of animal food, and the main factors (biological, economic,
					environmental, etc) that affect the profitability of companies in each productive
					sector. In this course, the term "animal handling" refers to the handling of animal
					groups, both production and company. Knowledge of these principles is important
					to understand animal production and some aspects of animal health. It should be
					noted that a very high percentage of the students of our faculty have never had
					previous contact with livestock production. To help change this situation, the fact
					that students have a first opportunity to visit farms and understand the relationship
					between animal bandling and animal production can be very important. Therefore
					it is a subject that integrates different knowledge, with the aim of explaining the
					animal production systems, according to species in the context of a changing world
103540 Bases de la Producció i				Animal Production and	where economic and environmental circumstances can modify the production of
Manoig Animal	6	1 ct	Annual	Handling	animal food. Some of the main aspects to be understood by students are: - The
	0	151	Annuar	Handling	Fundamentals and principles of technologies used to obtain healthy and sets food
					Fundamentals and principles of technologies used to obtain healthy and safe food.
102610 Tecnologia dels Aliments	6	2nd	Annual	Food technology	Identify the main characteristics of the industries of food from animal raw
		2110	7.1111001		Imaterials.
					Veterinary degree, provides some of the specific skills required for the oversise of
					Veterinary profession. The tenis consists of two subjects in the subject Food
					Science, taught during the 1stat comparer, students must acquire the basic
					science, taught during the 1stst semester, students must acquire the basic
					knowledge and skills related with the characteristics, composition and alteration of
					food for human consumption. At the end of Food Science subject, students will be
					able to: - Recognize food components and ingredients, and their functions and
					properties - Recognize food additives and their functions - Analyse food
					components and their properties in specific foods - Identify quality indicators for
					specific foods - Relate food components, properties and quality indicators - Identify
					mechanisms of food deterioration and evaluate food deterioration possibility and
102611 Ciència dels Aliments	3	2nd	1st	Food Science	probability
					We will study the key role of nutrients in the animal health and performance. We
					will also explore how to calculate the feed evaluation and the animal requirements
102626 Nutrició Animal	6	2nd	2nd	Animal Nutrition	as required steps for feed formulation.
					Study of the functions of circulatory, respiratory, endocrine, digestive, renal and
					immune systems and their coordinated responses to face growth, reproduction,
102633 Fisiologia	9	2nd	Annual	Physiology	disease and environmental adaptation.

					Epidemiology and Statistics introduces the basic applications of statistical sciences and veterinary epidemiology. The aim of the course is that students know the
					terminology and methods used in statistics and epidemiology and covers the
					following specific objectives: - The use of basic statistical tests and situations in
					which they can be used Understanding of the behavior of diseases and infections
					in animal populations Design and implementation of epidemiological studies
					Application of the most appropriate methods in the different epidemiological
					studies Development of the capacity of analysis and criticism of an
					epidemiological study. The teaching methodology involves lectures that we try to
					be the most participatory as possible. We have also computer practical classes in
					which students must obtain statistical and epidemiological parameters of different
					databases. Also, the students have to prepare some issues that are discussed or
102643 Epidemiologia i				Epidemiology and	presented later in class.
Estadística	6	2nd	1st	Statistics	
		-			The present subject is divided in two main parts. The first one is devoted to
					Virology, whereas the second one is dedicated to immunodiagnostic techniques and
					vaccines. We provide to the students with an introduction to Virology (general
					characteristics of viruses, its genetics and types, etc) but also we teach about the
					relation between host and virus or the role of viruses in gene transfer, among other
					relevant applications. A main part of the Virology subject is viral taxonomy, logically
					paving special attention to Veterinary-relevant virus species. Some notions on
					prions and subviral agents are also offered. In the second part of the subject we
					explain different types of immunodiagnostic techniques to assess humoral and
					cellular immune response. An important block is dedicated to vaccines. What is a
					vaccine? What is the difference between vaccination and serotherapy and types of
					vaccines. Special attention is devoted to the so-called new generation vaccines
102660 Microbiologia i				Microbiology and	Both parts are taught in both theoretical and practical lessons.
Aplicacions	3	2nd	1st	Applications	
					The subject of Genetics is the study of the heredity of traits. The goal is that the
					student achieve the basic understanding theoretical and practical about the
					genome structure of prokaryotes and eukaryotes, the mechanisms of gene
					expression and their regulation at transcriptional and post-transcriptional levels. In
					addition the different sources of genetic variation will be studied. from point
					mutations to chromosomal rearrangements and their impact over different
					phenotypes of veterinary interest. The student will also learn about different
					methodologies for the analysis of genomes and the study of the genetic variability
	~				in domestic and wild animal species.
102674 Genètica	3	2nd	2nd	Genetics	

					Pathology (includes General Anatomic Pathology, Nosology and Pathophysiology) is
					a second year mandatory subject which first introduces students to the study of
					disease. Different types of organic, tissular and cellular lesions are studied as well as
					the genesis, causes and consequences of animal functional disturbances. Teaching is
					by lectures and practical classes, supplemented by tutorials and self learning
					activities. Practical classes in small groups using histological preparations examined
					under microscope of each of the lesions given in lectures, help students to
					understand the theoretical concepts. Students have to solve two self learning cases
					applying their knowledge. The topics are grouped in two blocks. A) General
					Anatomic Pathology, which includes the study of cellular pathology, pathological
					cellular and tissular storages, vascular disorders, inflammation and reparative
					mechanisms and neoplastic growth. B) Nosology and Physiopathlogy, which
					comprises the general concepts of Pathology, Medicine and Medical Clinic and
					gastrointestinal, cardiorespiratory, hematologic, neurologic, urinary and endocrine
					systems's pathophysiology. Practical work at the microscopy laboratory is examined
					by continuous assessment while at the end of the term there is an exam covering
					the theorical concepts studied. Students unsuccessful in their first attempts at this
					exam are usually given a second opportunity to take part or all of a second
					examination
102676 Patologia	6	2nd	2nd	Pathology	
					This course includes Clinical propedeutics, Diagnostic imaging and Necropsy
					technique. It teaches the basics to develop clinical examination of animals, sample
					collection, processing and interpretation, application of imaging techniques and
102677 Màtadas Exploratoris	0	and	and	Exploratory Mothods	basic methodology to carry out a systematic and complete necropsy.
102077 Metodes Exploratoris	9	Znu	2110	Exploratory wethous	The sim of Morphology II is that the students know the structure, organization and
					here and or worphology in is that the students know the structure, organization and
					basic function of organs, apparatus and systems that forms the animal organism.
					Specifically, the subject morphology in is the part of the morphology focused in the
					circulatory system, the endocrine glands, the respiratory apparatus, digestive fract,
					other subjects, such as in Structure and Euroption of the Nervous System, and the
					locomptor system in Morphology I. Morphology II explains both the development of
					the different organs and the structure in adulthood. Each organ is evolutioned in an
					interdisciplinary manner integrating the embryological anatomical and histological
					anneaches. The aim is to know, first the development of the organ, including the
					corresponding congenital anomalies, therefore the macroscopic anatomical aspects
					and finally achieve the microscopic structure. The anatomical explanations include
					clinical aspects, the topography of the organs and imaging approaches. All this
					knowledge will enable the student to use a correct terminology, will allow the
102678 Morfologia II	9	2nd	1st	Morphology II	student to understand and interpret the physiology and pathology of the different
			_		Animal Health II is focused on infectious diseases, parasitic diseases and preventive
102614 Sanitat Animal II	5	3rd	2nd	Animal Health II	medicine of ruminants and poultry.

					Animal Health I is organized in 3 different parts. A) The first one focuses the bases of some infectious and parasitic disease models. B) The second part encompass the pathology of the different organs and systems of the animal body (Special Anatomic
102615 Sanitat Animal I	6	3rd	1st	Animal Health I	Pathology). C) The third one is focused on the infectious and parasitic diseases of horses
102618 Aqüicultura i Ictiopatologia	3	3rd	1st	Aquaculture and Ichthyopathology	The main objective of this subject is to introduce the basic aspects related to production and health management in aquaculture and related activities.
102623 Medicina i Cirurgia d'Animals d'Abastament	6	3rd	2nd	Medicine and Surgery of Food Animals	In this subject the student will study the main diseases of non-infectious origin; mainly nutritional, environmental and management origin; that affect the proper hormonal activity and functionality of organs and systems of ruminants, pigs and rabbits, from a collectivity point view and productive purposes. The topics are divided into blocks and the problems studied are mainly reproductive, digestive and metabolic, neurological and lameness. Half of the credits of the subject are theoretical lectures and half are mostly practical clinical practices at the faculty farm and farms outside the faculty. There are also laboratory, necropsies and interactive computer lectures with a mainly clinical focus. Students have to prepare three self-learning clinical cases and one must be presented to the rest of the class. The student must attend to two seminars and to watch clinical training videos. The lecture language is mainly Catalan.
102624 Producció Animal Integrada II	5	3rd	2nd	Integrated Animal Production II	The main objectives of this course are: a) To present the main factors affecting yield and quality of meat produced by livestock; b) To present the main factors affecting the organization and performance of a farming enterprise. The teaching objectives are: 1) To know which factors affect meat production, now and in the future; 2) To know the meat production sector, and its location; 3) To know which productive factors affect meat production and its quality; 4) To know the characteristics and performance of the economic unit of production; 5) To quantify the cost and the indicators of economic profitability and to assess the impact of productive and organizational decisions on the economic performance of a company; 6) To analyse business activity in relation to strategy, financial management and investment management, and the production and supply processes.
102625 Producció Animal Integrada I	6	3rd	1st	Integrated Animal Production I	The teaching objecives of this subjects are: 1) To know which factors affect production and quality of milk; 2) To know which factors affect the production and quality of eggs; 3) To know which factors are related to livestock production and environmental contamination
102661 Reproducció Animal	6	3rd	1st	Animal Reproduction	The course is based on the physiological concepts of reproduction of domestic animals and the necessary methodology for its control. The programm covers the functional anatomy and inspection of the genital system of males and females, the physiology of reproduction, techniques for control of reproduction and animal breeding, gestation and delivery management, puerperium and lactation.

102665 Farmacologia	9	3rd	Annual	Pharmacology	The aim of "Pharmacology" for veterinary students is to convey the concept of medicines benefit-to-risk balance, and the factors influencing it. Mechanisms of action of drugs are explained, and the student, as a future scientist, is educated in proper thinking in pharmacology. The syllabus for the theoretical part is distributed into 4 sections (1) General pharmacology including pharmacokinetic, pharmacodynamic, and unwanted reactions, (2) system or organ-targeted medicines, (3) antibacterial and antimicroorganism agents, and (4) other (e.g. anticancer drugs). The subject includes lab practical sessions where mice/rats are manipulated by the students and . Basic mathematical problem-solving in pharmacokinetic, and interactive sessions are also planned. In the latter, the student is actively involved in the learning process by pre-analyzing or studying documents (articles, cases), and presenting or discussing them publicly with the professor as a facilitator.
102673 Millora Genètica	6	3rd	2nd	Animal Breeding	Animal Breeding focuses on theoretical and practical concepts regarding the polygenic architecture of domestic and wild animal species, this leading to conservation and selection programs. Within this context, population genetics concepts become of special relevance in order to characterize the genetic variability in current populations, and specific tools will be provided to keep this variability at a maximum though appropriate conservation programs. On the other hand, the genetic basis of quantitative phenotypic traits is proposed and discussed, this being the starting point to different mathematical approaches for the accurate prediction of the genetic merit of the breeding stock. Both genetic and genomic biostatistic tools are proposed as well as their impact on the subsequent response to genetic selection. Although prerequisites are not required to enroll in this subject, it would be desirable a basic knowledge on Mendelian genetics, molecular genetics and biostatistics.
102675 Cirurgia i Anestesiologia***	8	3rd	Annual	Surgery and Anesthesiology	Contents are divided in two different parts: Surgery and Anesthesiology. In Surgery, we review the surgical biology, surgical methods and perioperative care, including surgical pain. All the concepts can be applied in small animals, equine, exotics and farm animal's surgery. We also include a brief introduction about the surgery history and general nomenclature. In Anesthesia we review the anesthesia principles and monitoring, equipment and drugs. This part includes anesthetic action, effects and interaction, as well as administration routes and general anesthetic principles for all species. In both parts, the theoretical lessons are followed by practical labs (wet-labs), in which the students acquire the abilities needed by a veterinarian surgeon.
102613 Sanitat Animal III	5	4th	1st	Animal Health III	Animal Health III is focused on infectious and parasitic diseases of veterinary importance. Animal Health III is divided into two parts: the first one is focused on infectious and parasitic diseases affecting dogs and cats and rabbits; the second part is dedicated to those diseases that affect pigs.

102616 Pràctiques Integrades er Sanitat Animal	6	4th	Annual	Integrated Practicals in Animal Health	This subject integrates different practicals related with Animal Health divided in several modules: a) diagnostic necropsies of companion, food and exotic animals, b) inspection of slaughter rejected viscera, c) laboratory diagnosis of infectious diseases, d) laboratory diagnosis of parasitic diseases, e) microbiological laboratory diagnosis, f) discussion of cases related to preventive medicine, g) extramural practicals with veterinarians dedicated to swine, poultry and rabbit production.
102617 Política sanitària i malaties d'importància legal	5	4th	2nd	Sanitary policy and diseases of legal importance	In this subject we study the basic techniques for disease control and various infectious and parasitic diseases that are included in the national and international legislation. After an introduction on the importance of animal health in the international context and agencies that are involved , we will study the different methods of disease control in animal populations . It is also studied the methods of surveillance and contingency. In the second part , we will study diseases under control, eradication or notification. Two groups of diseases will be studied: exotic diseases with risk of appearing and endemic diseases subjected to control. In each one, we will study the etiology, pathogenesis, epidemiology, clinical presentation, diagnosis, control, prevention and legislation.
102620 Medicina i Cirurgia d'Èquids***	7	4th	Annual	Equine Medicine and Surgery	The educational objectives of the course are: A)Understand the basic concepts and methodology used in the study of the most common diseases of the feeding or management. B) Understanding the pathogenic mechanisms that will be the basis for a proper understanding and interpretation of various equine diseases to medical treatment or surgical pathology of reproduction. C) Make differential diagnosis from signs and lesions observed in animals. D) Learn the basics of fluid therapy and treatments applied to horses in emergency clinical situations. E) Develop a treatment plan medical and / or surgical adapted to each case. F) Develop a program of disease prevention program of medical, surgical or reproductive conditions.
102621 Medicina i Cirurgia d'Animals de companyia II***	7	4th	Annual	Medicine and Surgery of Domestic Animals II	The course is practical and most of it is performed in the Veterinary Teaching Hospital. The practicals are related to medical consultations, intensive care unit, surgery, diagnostic imaging, reproduction, nutrition, pathology, exotic medicine and therapeutics.
102622 Medicina i Cirurgia d'Animals de companyia I	7	4th	1st	Medicine and Surgery of Domestic Animals I	The objectives of this course are to study the most frequently diagnosed diseases in small animal clinic. This subject is entirely theoretical, the practice will be performed in the subject "Medicine and Surgery of Domestic Animals II". The course explains the description of medical and surgical anomalies of different organs and systems, including the study of etiology, clinical signs, diagnostic methods, treatment and prognosis. The program covers the ear, digestive, respiratory, reproductive, endocrine, urinary, cardiovascular, and hematopoietic. We also establish the basis of ortopedics, neurology, dermatology and ophtalmology , that will be extended in other courses.

					This course is aimed to help students to achieve competencies related to zoonotic
					food-borne and non food-borne diseases, as well as other causative agents of non-
					zoonotic food-borne diseases and its role in public health. Procedures for the
					analysis of risks, including determination, management and communication of risks,
102621 Seguratat Alimentària i					as well as the epidemiological aspects and investigation of food-borne disease
Zoonosi	6	4th	1st	Food safety and zoonoses	outbreaks are also subjects included in this course.
	Ŭ		100		This course is part of the hygiene and food safety and is located in the 2ndd half of
					course 4thh year of grade At the end of the course, students will: - Distinguish
					characteristics of the different food sectors - Evaluate food production more
					hygienic, more nutritious and appetizing consumer Evaluate the safety and
					nutritional value of foods and issue opinions on its edibility Indicate hygienic
					requirements to be met by the various food industries Audit of self-control system
102622 Uigiono i Increació dela				Food increation and	of a food industry Adapting the HACCP system to different types of food industry -
102632 Higiene i Inspecció dels				Food inspection and	Interpret and use existing legislation regarding different food sectors.
Aliments	9	4th	2nd	hygiene	
					loxicology is the study of poisons, including chemical and physical (radioactive)
					agents. General principles of Analytical, Experimental, Environmental and
102663 Toxicologia	5	4th	2nd	Toxicology	Regulatory Toxicology are covered, focusing mainly in Food and Veterinary
	5		2110		LOXICOLOGY. Clinical Pharmacology, Scientific basis of drug response and its individualization. Key
					aspects of pharmacodynamics and pharmacokinetics. Alterations due to age, sex
					nhysiology and nathology. Diagnosis and management of adverse reactions
					Polytherany and drug interactions. Drug residue limits. Emerging issues
					(phramacolomics) General Therapeutics Introduction to therapeutic
					interventions most likely to be repeated in any disease (containment, inflammation
					analgesia fluid therapy antibiotics antifungals antiparasitics antipeoplastics
					Systematic Therapeutics, Guideline recommendations to treat and prevent most
102664 Farmacologia Clínica I					common diseases
Terapéutica	3	4th	2nd	Therapeutics	
					This matter will be focused in the development of foods ready to eat and the
					catering development. Wi will study the different equipment to be used in an
					industrial level, hygienic conditions, formulation of the dishes, design and
					distribution of the space to assure an efficient industrial kitchen. For practical
				Foods Ready for	works, several visits must be performed wit the aim to develop a practical work,
103963 Menjars Preparats i				Consumption and	addressed to the design of a correct industrial kitchen, including the facilites, food
Restauració Col·lectiva	3	5th		Catering	formulations, conservation and maintenance of nutritional values.
			1		The study of veterinary practice throughout the history of mankind. The evolution
					of health and disease in animals and humans is studied. Professional activity within
TOSOTA HISTOLIA DE IS		_			the historical and socioeconomic context is considered.
Veterinària	3	5th	2nd	Veterinary History	

102635 Treball Fi de Grau	6	5th	1st or 2nd	Degree Final Project	The Degree Final Project (TFG) is a mandatory subject of 6 ECTS in the fifth year of Veterinary degree. It consists of an original, individual project which applies knowledge and competencies acquired throughout the studies. Student is under the tutelage of one professor and the topic is chosen from a list of proposals. The project is presented in pdf format and in the form of a poster. TFG is evaluated by the tutor and by a panel composed of three lecturers.
					In this course, learning of the different diseases affecting the skin, the nervous system, the eyes, the orthopedic system and systemic diseases is achieved clinically. The student rotates and participates in the clinical activities performed by the dermatology, internal medicine, neurology, ophthalmology and orthopedic services of the Veterinary Teaching Hospital at the Autonomous University of Barcelona. Students are present during appointments, but they also participate in some clinical activities performed by the different specialties. Students participate also in rounds and case discussions. Learning follows a case-oriented approach both, on the hospital premises or in different labs in which cases of different specialties are presented for discussion. The course is composed of seminars, labs, case discussion sessions, and clinical rotations in the hospital. This course is an essential complement of the theory courses "Advances in internal medicine, surgery and
102636 Pràctiques Clíniques en				Clinical Practices in	orthopedics" and "Advances in dermatology, neurology and ophthalmology".
Medicina i Cirurgia	6	5th	Annual	Medicine and Surgery	
102637 Medicina d'Animas Exòtics i de Zoològic	3	5th	2nd	Exotic and Zoo Animals Medicine	Exotic and Zoo Animal Medicine subject deals with husbandry conditions, management and the most common diseases, diagnosis and treatment, which affect to small mammals, birds and reptiles kept as pet and in a Zoo.
102639 Ecopatologia de Fauna Salvatge	6	5th	1st	Ecopathology of Wild Animals	The main objective of the course is to provide to the student basic knowledge, from the veterinary point of view, about native wildlife and specifically knowledge about handling and their main diseases. This course completes the gap in the previous curriculum regarding the professional training of veterinarians in this matter and responds to the growing importance and social demands for these skills in these professionals. Lectures (1 hour of presentation of the course and job opportunities plus 20 classes of one hour each). Section I: Overview of native wild species (2 hours). Section II. Management (3 hours). Section III: Capture and handling (4 hours). Section IV: Pathology (11 hours). Seminars (5 topics, 1 hour each). These seminars are about specific topics of interest to applied concepts introduced in lectures. Practicum (five classes of five hours each).
-0-					This is a clinical oriented course. The learning objectives are: 1) to learn how to
102640 Avenços en Medicina i Cirurgia d'Èquids	6	5th	2nd	Advances in Equine Medicine and Surgery	approach and treat the most common clinical problems in equine veterinary medicine; b) to acquire practical skills needed in order to treat equine patients.

102649 Carn i Productes Càrnics	6	5th	1st	Meat science and technology	Meat science and technology Students will acquire knowledge of the properties of meat, conservation or transformation processes. Effects of processing on microbiological, organoleptic, nutritional and functional properties of meat and derived products. Basic principles in the use of laboratory animals in research, including learning outcomes for designated veterinarian in an animal facility. Main topics: Legislation,
102646 Ous i Ovoproductes 102648 Leche y Productos	3	4th	2nd	Egs and egg products	properties, the storage conditions. Other food and non-food products used for many applications (medical, cosmetics, feed, industry, etc) are reviewed. The purpose of this course is teaching to the students milk structures and composition as well as the main principles of industrial milk and dairy food
					Following this subject students will acquire knowledge of the biochemical characteristics of eggs and the functional properties of their components. Conservation of shell eggs and changes occurred during the shelf-life. In the second part the technology of egg products is revised, from liquid egg products to hard cooked egg, from the processing equipment, the changes in the functional
102645 Peix i Productes de la Pesca	6	5th		Fish and fish products	Following this subject students will acquire knowledge of the global fish market in the world, fisheries and edible species. Biochemical characteristics and spoilage behaviour will be thoroughly studied. The third chapter covers the more traditional processing of fish (handling, cooling, freezing, drying, smoking and so on) and their effects on microbiological, organoleptic, nutritional and functional properties. Finally, the protein concentrated products, like surimi and gel products. Other non- food products used for many applications (medical,cosmetics, feed, etc) are reviewed.

					This course will allow the students to understand the molecular basis and
					mechanisms of disease, ie, which biochemical processes and physiological
					imbalances lead to the appearance of certain diseases. Currently, biomedical
					research is focused on the understanding of the molecular mechanisms that cause
					the disease. It is from this knowledge that we can identify molecular strategies for
					the design of new therapeutic new drugs, to identify molecular targets and to
					establish effective mechanisms of prevention. In this context, the veterinarian has
					an important role and biomedical research should be envisaged as a future
					professional option. This course aims to complement the knowledge of the
					molecular basis of biological processes, which is essential for the comprehensive
					understanding of the pathological conditions. The course focuses on diseases of
					great importance in human medicine for their high incidence which are the subject
					of an active basic research, both in our environment and in the international arena:
102658 Bases Moleculars i				Molecular basis and	cancer, diabetes, genetic diseases, Alzheimer, gastrointestinal and renal diseases,
Mecanismes de les Malalties	3	5th	1st	mechanisms of diseases	and asthma. The ultimate goal is to bring the veterinarians closer to human
					The objectives of this course are: a) to know the basis of organic livestock and
					agriculture production; b) to know the role of the veterinarian in organic
					production; c) to know the Catalan and European legislation for production and
102667 Producció Pamadora i				Organic livestock and	comercialization of organic products; d) to acquire the critical and analytical ability
		C + I+	2		to evaluate different livestock and agriculture production systems.
Agricola Ecologica	3	5th	Zna	agriculture production	
					The main objective of the Fish Farming course is that students delve into fish
					maintenance and production. They will get to know the factors that determine and
					affect the profitability of production (water needs, breeding, types of facilities,
					prevention of diseases) not only in fish intended for human consumption but also
					those aimed at a more playful (ornamental fish. The content is divided into four
					units. Unit 1: it covers general aspects as basis of the main farming systems, species
					selection and culture site. Unit 2: it is focused in the management of the most
					important physiological aspects that affect production (breeding, genetics and
					nutrition). Unit 3: it includes the management of the different stages of production,
					including issues related to the sacrifice and product quality and environmental
					aspects. Unit 4: it is focused in the management of ornamental fish culture.
102671 Piscicultura	3	5th	2nd	Fish Farming	
					It is a compulsory subject that develops in the first part the legal (Spanish, European
102680 Ética i Legislació Costió				Ethics and Legislation	and international legislation) and ethical aspects related to the veterinary
Emprocarial		F + b	1.ct	Dusinges Management	profession. The second part gives an overview and insight in the basic concepts and
Empresariai	5	รเท	ISL	Business ivianagement	methods in business management.

102681 Rotatori Salut Pública	2	5th	Annual	Public Health Rotation not available for Exchange	The aim of this course is that the students have the opportunity to be introduced in the context of the veterinary profession. The activities are focused on the tasks of the veterinary profession related to public and animal health in general: a) understand and learn the importance of inspection and control in food production and animal health, b) understand the importance of animal health and monitoring and inspection tasks veterinary prevention of zoonoses; c) become aware of animal welfare as an intrinsic element of evaluation of modern production and animal health; d) understand the importance of the production of food of animal origin in the economics and social life; e) develop analytical skills in food and livestock businesses in order to their improvement.
102682 Rotatori Hospital Clínic Veterinari***	9	5th	Annual	Veterinary Hospital Rotation	Four weeks within the Veterinary Teaching Hospital to involve the student in the daily clinical activities of a busy referral hospital. The weekly rotations are small animal medicine, surgery, critical care and one week elective.
103259 Microbiologia dels Aliments	6	5th	1st	Food Microbiology	Factors affecting the growth and survival of microorganisms in foods. Detection and enumeration of foodborne microorganisms. Microorganisms associated with foods (indicators, spoilage, pathogens, useful) and their control.
103964 Avenços en Medicina, Cirurgia i Traumatologia d'Animals Petits	6	5th	1st	Advances in Small Animal Medicine, Surgery and Orthopedics	The main objectives of this subject are: a) to acquire the ability to develop different diagnostic protocols applied to internal medicine, surgery and orthopedics; b) to apply specific medical and surgical treatments to each clinical case; c) to know different anesthetic protocols for specific diseases and critical patients; d) to acquire the basis for conducting an orthopedic examination; e) to know and understand the avanced techniques applied to soft tissue surgery and orthopedics.
103965 Avenços en Dermatologia, Neurologia i Oftalmologia d'Animals Petits	3	5th	1st	Advances in Small Animal Dermatology, Neurology and Ophthalmology	This subject introduces the student in the knowledge of the most common dermatologic, neurologic and ophthalmic diseases of the dog and the cat. Furthermore, explains the neurologic and ophthalmologic surgical treatments currently used for the treatment of such diseases.
103966 Producció i Sanitat de				Cattle production and	The class approaches cattle production and health from a comprehensive, herd- approach analysis that includes herd investigation, index calculation and evaluation, and decision making strategies to diagnose, evaluate and take actions to improve technical and/or economical performance. Students will learn to implement biological knowledge in production and health in field conditions, using data and analytical methods to prioritize actions that will provide an estimate of economic cost and benefit. Computer models will be used to diagnose and evaluate different scenarios. Planning and production organization will also be approached for a beef farm. At the end of the course, students will visit and analyze data from a true dairy
bovins	6	5th	2nd	Health	farm.

					Integrated production and medicine of swine and rabbits. The main objectives are: 1- To understand the critical points in the production and health of pigs and rabbits and how to analyze them. 2- To identify the most common health and production
103967 Producció i Sanitat de porcs i conills	6	5th	1st	Production and Health of Pigs and Rabbits	problems in these species and plan possible solutions depending on the context
103968 Producció i Sanitat d'Aus	3	5th	2nd	Health and Production of Poultry	This is an optional subject taught during the second semestre of the 5th year of the Veterinary Degree. Tha aim of this subject is to give a broad vision of the poultry production sector, with emphasis in the role that veterinarians should play within this process. Based on a problem-solving approach, students will have to face real situations in poultry farms and find the best solution taking into account animal welfare, public health and economical aspects.
103969 Producció i Sanitat de petits remugants	3	5th	1st	Production and Health of Small Ruminants	The main objective of this subject is to introduce the students in the specialization of ovine and caprine production. At the end of the course students will be able to plan and intervene positively in planning, reproduction, management, nutrition and health of sheep and goat herds in different production situations.
					Nowadays there is a growing demand from society for safe and quality foods, particularly those of animal origin. Ensuring the quality and safety of these products involves implementing control programs throughout the whole production chain under the principle "from farm to table." The objectives of this course is that students will know the basic principles governing the different management systems commonly used in primary production like codes of Good Farming Practices (GFP) or the principles of Hazard Analysis and Critical Control Point (HACCP) between others. We also pursue that the students will know the main Authorities (at International, European or National level) that define and regulate the different food polices and will became familiar to the different main regulations. We also will pay attention to the different available schemes to certify the different processes and final food products. At the end of this course students will be able to identify the main biological and chemical hazards that threaten the production chain
103970 Qualitat I Seguretat en Producció Ramadera	3	5th	1st	Quality and Safety in Livestock Production	including environmental concerns. Also they will be able to identify the main tools available to reduce and control risks. The course will specially focus on the control
103971 Biotecnologia embrionària aplicada a la ramaderia	3	5th	1st	Embryo biotechnology in farm animals.	The aim of this subject is to give at the students the knowledge and the skills of the following Assissted Reproductive Technologies (ART) in farm animal: In vitro Embryo Production (IVEP), gamet and embryos cryopresrvation, sperm and embryo sexing and cloning animals by Somatic NuclearTransfer methodology Moreover, transgenic animals and Stem Cells will be discussed and their future applications on veterinary sciences. Laboratory teaching will be focussed in: oocyte and sperm selection for in vitro embryo production, embryo classification and cryopreservation, Multiovulation and Embryo transfer in rabbits.

					This is an optional subject included in the last year of the degree, and its main
					objective is to provide the learning outcomes required to perform the function B
					(designing procedures and projects) defined in the European Directive 2010/63/EU
					concerning the use of animals for scientific purposes. The course focuses on the
					application of the Three Rs (3rds) principles for a more ethical use of experimental
					animals, and covers all issues that have to be taken into account when designing an
					experiment. These issues include: election of the animal model (systematic
					literature search, outbred and inbred animals, genetically modified animals,
					experimental models) the identification of the experimental unit (replication versus
					pseudo-replication), the importance of animal welfare in the experimental design,
					identification of the important sources of variability and how an adequate design
					can minimise its impact, randomization, determination of sample size, types of
					experimental design (completely randomized and factorial experiments, blocking,
103972 Disseny Experimental i				Experimental design and	cross-over designs), statistical analysis and interpretation of the results obtained,
de projectes de recerca	3	5th	2nd	research projects	and ARRIVE Guidelines for reporting Animal Research. These issues are taught in
					The aim of the course is to provide the students with updated knowledge on
					methodologies and procedures used for assisted reproduction in laboratory animal.
					Furthermore, the course also covers applications for expansion, recovery,
					maintenance and management of strains of interest. The program of lectures
					addresses the following topics: Reproduction in laboratory animals, Assisted
					reproduction techniques in laboratory animals, In vitro manipulation of gametes
					and preimplantation embryos, Embryo transfer, Cryopreservation of gametes and
					preimplantation embryos. The practical sessions are "hands on" based; designed to
					complement the theoretical sessions and addressed to gain practical knowledge on
					the field. During these sessions, the students: recover and manipulate mouse
103975 Tècniques de				Assisted Reproduction	gametes and embryos, perform sperm capacitation procedures and oocyte in vitro
reproducció assistida aplicades a				Techniques Applied to the	maturation, carry out embryo splitting, perform freezing and thawing of gametes
la gestió de soques d'animals de				Management of	and embryos, and small chirurgic interventions as male vasectomy and embryo
laboratori	3	5th	2nd	Laboratory Animal Strains	transfers.
					The student will gain insight into: - Technologies used to generate transgenic
					animals overexpressing specific transgenes or knocking down the expression of
					endogenous genes Application of the aforementioned technologies in
					biomedicine and livestock Mouse anatomy and embryology in order to
					understand the embryonic development of organs and to analyze
					morphological/anatomical abnormalities in genetically modified mouse models In
					vivo and ex vivo gene therapy, including characteristics of the different types of
				Genetically Modified	vectors (viral and non-viral) used for gene transfer as well as their advantages and
103976 Animals modificats				Animals and Gene	disadvantages, administration routes and applications of gene therapy in the
genèticament i terapia ènica	3	5th	2nd	Therapy	treatment of hereditary and non-hereditary human diseases.

					This subject provides the basic theoretical and practical knowledge about
					animal cell culture: equipment, sterility, biochemical requirements and
103977 Cultius cel·lulars en				Cell Culture in Biomedical	specific techniques to characterize different kinds of cells.
recerca biomèdica	3	5th	2nd	Research	

*** IMPORTANT : The Faculty is forced to limit the number of places for exchange students in some of the subjects:

- 102621 Medicine and surgery for domestic animals II
- 102620 Equine Medicine and Surgery
- 102675 Surgery and Anestesiology
- -Hospital Rotation

For all of them, places are very limited and we will consider the subjects and courses previously taken by the student. For example, a student who does not have expertise in Surgery and Anaesthesiology will not be eligible to do Medicine and Surgery of Farm/Companion/Equine animals

In any case, all these places are assigned in June. In July and September, practice groups will be closed and no more students will be accepted, so it is important to send us your learning agreements as soon as possible.

Remember that Public Health Rotation are not available for Exchange students.