ANIMAL SCIENCE (ANSC)

ANSC*1210 Principles of Animal Care and Welfare Winter Only (LEC: 4.5) [1.00]
Students will be introduced to the major ethical theories that deal with humanity’s duties to animals. The relationship of ethics to science will be discussed. Factors that contribute to the quality of life of animals will be considered and methods of assessing animal welfare will be described. Common causes of reduced animal welfare will be covered. The course will also deal with how different cultures approach animal welfare and attempt to regulate it.
Prerequisite(s): 1 of BIOL*1050, BIOL*1070, BIOL*1080, BIOL*1090
Restriction(s): Registration in BSAG, BSCH.ABIO or BBRM.EQM
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*2340 Structure of Farm Animals Winter Only (LEC: 3) [0.50]
This course is an introduction to anatomy and carcass structure of farm animals. Consideration is given to the major systems in the body and the whole range of animal structure from molecular biology to commercial carcass grading. The course provides a basic understanding of factors such as meat tenderness, adipose development in the carcass, abnormalities of meat quality such as PSE pork and dark-cutting beef, and carcass composition.
Offering(s): Also offered through Distance Education format.
Prerequisite(s): 2 of BIOL*1050, BIOL*1070, BIOL*1080, BIOL*1090
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*3080 Agricultural Animal Physiology Fall Only (LEC: 3, LAB: 1.5) [0.50]
This course is an introduction to the physiology of domesticated farm animals. The course will emphasize homeostatic control of the major body systems. The lectures cover the nervous, cardiovascular, respiratory, urinary, immune, endocrine and reproductive systems. The lectures and laboratories are closely integrated.
Prerequisite(s): BIOC*2580 or EQN*2040
Restriction(s): Registration in BSC(Agr), BSC.ABIO or BBRM.EQM, Minor in Agriculture.
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*3090 Principles of Animal Behaviour Fall Only (LEC: 3) [0.50]
This course deals with why vertebrates behave as they do (with particular emphasis on mammals and birds), covering the causation of behaviour (including learning, motivation, affective states, hormones, sensory processing, and neurobiological mechanisms); function (both immediate/proximate and adaptive/ultimate); ontogeny (including socialization and sensitive periods); and phylogeny (especially the influences of taxonomic group and domestication). This framework is then applied to the following aspects of animal behaviour: foraging, anti-predator responses, sleep, sociality, mating, parental behaviour, play, dispersal and territoriality, animal intelligence, and behavioural pathologies.
Prerequisite(s): ANSC*1210
Restriction(s): ANSC*4090. Restricted to students in BSCH.ABIO, BSAG.ANSC and BBRM.EQM.
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*3120 Introduction to Animal Nutrition Fall Only (LEC: 3, LAB: 2) [0.50]
This course applies the principles of nutrition to the development of diets and feeding programs for the various species of animals of agricultural importance.
Co-requisite(s): NUTR*3210
Restriction(s): Registration in BSC(Agr) or BSC.ABIO.
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*3170 Nutrition of Fish and Crustacea Winter Only (LEC: 3) [0.50]
This course examines growth, digestive and metabolic processes, nutritional requirements and practical feeding programs for fish and crustaceans with an emphasis on those species used in aquaculture.
Prerequisite(s): NUTR*3210
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*3180 Wildlife Nutrition Winter Only (LEC: 3) [0.50]
This course is a study of the nutrition of avian and mammalian wildlife with emphasis on North American species and the role of nutrition in survival and population growth of wildlife in their natural habitat.
Prerequisite(s): NUTR*3210
Department(s): Department of Animal Biosciences
Location(s): Guelph
ANSC*3270 Animal Disorders Winter Only (LEC: 3) [0.50]
This course will highlight common causes of infectious, metabolic
and psychological/neurological disorders of domestic and companion
animals, and their potential impact on animal welfare and production.
Disorders will be addressed in the context of pathophysiology,
transmission, and prevention strategies involving environmental
enrichment, vaccination, biosecurity, nutrition, and genetic selection.
Prerequisite(s): ANSC*3080
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4010 Animal Welfare Judging and Evaluation Fall Only (LAB: 3) [0.50]
This course provides senior level students with a structured opportunity
to practice assessing animal welfare using scientific evidence. Students
learn to present their evaluations in a logical and persuasive manner.
They learn general criteria and approaches used to assess welfare and
then apply that knowledge for assessment of four different species in
practical settings.
Prerequisite(s): 15.00 credits including ANSC*1210, ANSC*3080
Co-requisite(s): ANSC*3090 or ANSC*4090
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4050 Biotechnology in Animal Science Fall Only (LEC: 3, LAB: 2) [0.50]
The course will provide an overview of how biotechnology has impacted
biomedical science and animal production. Important principles of
recombinant DNA, DNA marker identification, stem cell biology, and
generation of transgenic animals will be emphasized. The current
challenges and potential opportunities in biotechnology will also be
discussed.
Prerequisite(s): MBG*2040 or MBG*2400
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4090 Applied Animal Behaviour and Welfare Winter Only (LEC: 3) [0.50]
Students will build upon their basic knowledge of animal behaviour
and welfare for in-depth examination of how genetic selection, housing
and management practices affect the behaviour, health and well-
being of farmed and companion animals. Topics will include effects of
domestication and artificial selection on behaviour and health traits, and
how early experience affects adaptability, sexual and maternal behaviour.
Emphasis is placed on the application of behavioural knowledge to the
design of housing and management procedures that promote healthy,
productive animals and good welfare.
Prerequisite(s): ANSC*3080, ANSC*3090
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4100 Applied Environmental Physiology and Animal Housing Winter Only (LEC: 3) [0.50]
Basic concepts of environmental physiology and their application
to animal housing and management will be introduced. The course
will review the physics of heat flow, light and air quality as they relate to
animal biology and health. Other aspects, such as the physical
environment, that impact on animal health and well-being will be
discussed.
Prerequisite(s): ANSC*3080
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4230 Challenges and Opportunities in Dairy Cattle Production Fall Only (LAB: 6) [0.50]
This course will provide senior level students with experience in working
as a team to propose solutions to dairy cattle industry problems. Teams
of students will critically assess dairy cattle-related businesses at the
farm or industry level under the supervision of a faculty member.
Prerequisite(s): ANSC*3080, ANSC*3120, MBG*3060
Restriction(s): Instructor consent required.
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4260 Beef Cattle Nutrition Winter Only (LEC: 3, LAB: 2) [0.50]
This course is designed for students to evaluate problems in feeding
beef cattle. Relevant aspects of digestion and metabolism of nutrients
as well as current issues of feeding beef cattle and diagnosing nutritional
deficiencies will be included.
Prerequisite(s): ANSC*3120
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4270 Dairy Cattle Nutrition Fall Only (LEC: 3, LAB: 2) [0.50]
Students will learn how nutrients are transformed from feed into milk and
bodies of dairy animals. There will be an emphasis on feed management
on farms and developing skills in formulation and evaluation of rations
using computer models.
Prerequisite(s): ANSC*3120
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4280 Poultry Nutrition Fall Only (LEC: 3) [0.50]
This course is designed to evaluate basic and applied poultry nutrition.
Students will learn nutrient requirements of poultry, feeding value of
ingredients used in poultry feed formulation and how feeding affects the
environment, growth, reproduction, health, and composition of poultry
products for human consumption.
Prerequisite(s): ANSC*3120
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4290 Swine Nutrition Fall Only (LEC: 3) [0.50]
This course is designed to explore details of evaluating feed ingredients
and formulating diets for swine. Students will use models to evaluate
various aspects of nutrient partitioning for growth and reproduction in
pigs.
Prerequisite(s): ANSC*3120
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4350 Experiments in Animal Biology Winter Only (LAB: 6) [0.50]
This course provides an opportunity for directed hands-on projects
involving live animals and laboratory techniques. A set of selected
projects will be provided by Animal Biosciences faculty within their broad
fields of study.
Prerequisite(s): 14.00 credits including ANSC*3080
Restriction(s): Restricted to students in BSCH.ABIO,BSAG.ANSC and
BBRM.EQM. Instructor consent required.
Department(s): Department of Animal Biosciences
Location(s): Guelph
ANSC*4470 Animal Metabolism Winter Only (LEC: 3) [0.50]
Current concepts in whole animal metabolism and the quantitative
techniques used to measure whole body metabolic kinetics will be
presented. Tissue and organ specific biochemical processes will be
integrated with whole body control mechanisms.
Prerequisite(s): NUTR*3210
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4490 Applied Endocrinology Winter Only (LEC: 3) [0.50]
This course examines the endocrine systems of farm animals and
their applications to improve and monitor the production, performance,
behavior and health of livestock. Considerable emphasis will be placed
upon understanding how knowledge of endocrine regulation can be
applied within animal production systems.
Prerequisite(s): ANSC*3080
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4560 Pet Nutrition Fall Only (LEC: 3) [0.50]
This course covers nutrient requirements, feed formulation and
nutritional idiosyncrasies for dogs, cats, and exotic pets.
Prerequisite(s): NUTR*3210
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4610 Critical Analysis in Animal Science Winter Only (LEC:
3) [0.50]
Students are guided to independently research and critically review a
topic of emerging importance in animal biosciences. Students select a
topic in consultation with the instructor.
Prerequisite(s): 15.00 credits including 2.00 in ANSC or EQN
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4650 Comparative Immunology Winter Only (LEC: 3) [0.50]
This course gives an overview of the immune defense mechanisms
of domestic species, and to compare common and unique defense
strategies developed for resisting microbial and viral infections. Topics
include innate and acquired immunity, evolution of the immune system,
immunoregulation, and the host response to pathogen invasion.
Prerequisite(s): ANSC*3080
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4700 Research in Animal Biology I Fall and Winter (LEC:
6) [0.50]
This course is a continuation of ANSC*4700, Research in Animal Biology
I. It allows more sophisticated projects to be undertaken or to provide
an opportunity to build upon the work of ANSC*4700. Evaluation of the
course requires a greater emphasis on data analysis or experimental
design than for ANSC*4700. Selection of a faculty advisor and approval
of course coordinator must be obtained before course selection.
Prerequisite(s): ANSC*4700
Restriction(s): Restricted to students in BSC.ABIO and BSAG.ANSC.
Instructor consent required.
Department(s): Department of Animal Biosciences
Location(s): Guelph

ANSC*4710 Research in Animal Biology II Fall and Winter (LAB:
6) [0.50]
This course is a continuation of ANSC*4700, Research in Animal Biology
II. It allows more sophisticated projects to be undertaken or to provide
an opportunity to build upon the work of ANSC*4700. Evaluation of the
course requires a greater emphasis on data analysis or experimental
design than for ANSC*4700. Selection of a faculty advisor and approval
of course coordinator must be obtained before course selection.
Prerequisite(s): ANSC*4700
Restriction(s): Restricted to students in BSC.ABIO and BSAG.ANSC.
Instructor consent required.
Department(s): Department of Animal Biosciences
Location(s): Guelph