Equine Science Certificate

An online continuing education certificate program
Equine Guelph and the Office of Open Learning

Submission to: University of Guelph Senate Committee on Non-degree Studies

Date: January 10, 2011

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Please find enclosed the Equine Science Certificate program review submission. The Equine Science Certificate program is submitting this program review as part of the newly established certificate and diploma review process established by the Senate Committee on Non-degree Studies.

The Equine Science Certificate is a partnership between Equine Guelph, Ontario Veterinary College and the Office of Open Learning. The certificate consists of 8 courses, the first of which was developed in Summer 2002 semester. The first certificate was awarded in June 2004 and since that time 178 certificates have been completed. We currently have over 500 individual students registered in equine courses.

I have appreciated the opportunity to be the pilot program undergoing this review process. I believe it will be a valuable tool to ensure programs maintain a high degree of academic rigor and course content remains current and relevant.

I would be happy to address any questions regarding the content of this submission and of the review process.

Regards,

Marjory Gaouette
Manager Program Development

Encl: Program Review Equine Science Certificate

1. General Information

Name of Certificate or Diploma Program

Equine Science Certificate

Sponsoring Unit

Equine Guelph, Ontario Veterinary College

Internal or External partners

Equine Guelph
Office of Open Learning

Initial funding for the development of the Equine Science Certificate was provided by the Agricultural Adaptation Council

Method of Program Delivery

The Equine Science Certificate courses are delivered online. Each course is 12 weeks in length and represents 36 hours of study. Students can expect to spend 10 – 14 hours per week completing one course.

Date of First Program offering:

Management of the Equine Environment offered in Summer, 2002 was the first course developed. The 4 core courses and the first 2 electives were developed between Summer 2002 and Winter 2004. An additional two electives were developed in 2008.

Date of Last Program Review:

This is the first submission to SCNS review. A program review is presented to the advisory committee annually.

Student Enrollment in the Equine Science Certificate

Year	# of registrations	# of courses
2002 - 2003	256	4
2003 - 2004	365	7
2004 - 2005	422	8
2005 - 2006	444	8
2006 - 2007	584	11
2007 - 2008	572	10
2008 - 2009	635	11
2009 - 2010	577	10

The first Equine Science Certificate was awarded in June 2004. Since 2004, 178 Certificates have been awarded.

Equine Science Certificate students come from all Canadian provinces, 22 U.S. states and 21 international countries.

Program Admission Requirements

Students must be at least 18 years of age, or have graduated from secondary school.

Equine Science Certificate Program Description

The Equine Science Certificate program offers a comprehensive course of online study for the horse enthusiast and owner.

The Equine Science Certificate is designed to help horse owners improve the management and welfare of horses in the industry. The courses are based on scientific research and evidence based practice. They are presented in a practical format, making it easy for horse owners to apply what they are learning in the course to the health and performance of their horses.

The overall objectives of the Equine Science Certificate are:

- Understand the physiology of your horse
- Enhance the performance of your horse
- Improve the nutritional intake and health of your horse
- Establish a safe and environmentally responsible horse housing facility

The overall outcomes for students of the Equine Science Certificate are:

- Find, review and be able to complete an analysis of science-based information on equine topics.
- Implement practices in the management and care of horses based on research and evidence.

The Equine Science Certificate consists of:

Four Core Courses (Required)

- Management of the Equine Environment
- Equine Health & Disease Prevention
- Equine Nutrition
- Equine Functional Anatomy

Four Elective Courses (Students select two)

- Growth & Development
- Equine Behaviour
- Equine Exercises Physiology
- Equine Genetics

To obtain the Equine Science Certificate, students are required to complete the four core courses and two electives. This represents 216 hours of study. Each course is 12 weeks in length and represents 36 hours of study.

The Equine Science Certificate continues to be the only online course of study in Canada and attracts students from around the world.

Program Advisory Committee Membership

Chair: John Walzak, Independent

Mr. Walzak formally represented the Ontario Harness Horse Association as their education officer. He now sits on the committee as an independent member serving as the chair of the committee and providing expertise on education programming and marketing.

Stephanie Clark, President of the University of Guelph Equestrian Club

The UoG Equestrian Club represents the Equine Science Certificate's primary target market; female horse owners, and represents the voice of the program's students.

Diane Simpson, Ontario Racing Commission
ORC is a Crown agency of the Ontario government responsible for regulating the racing industry. They support equine research and education of racing commission officials. ORC is a funding partner of Equine Guelph

Doug Nash, Instructor Equine Science Certificate; Horse Breeder
As a respected industry breeder, Mr. Nash represents the established breeding community, providing valuable feedback to both the ESC program development and the breeding industry.

Catherine Barker, Ontario Equestrian Federation
The OEF is a not-for-profit sport governing office that provides education, leadership and support to individuals, associations and companies in Ontario's horse community. OEF has 16,000 members and provides the insight of its members to the program development as well as supporting and promoting the program.

Kathy Wade Vlaar, Standardbred Canada
Standardbred Canada is the official registry, record keeping and standard-setting body for Canadian harness racing, committed to dissemination of information, promotion and protection of the industry. Standardbred Canada supports equine research and the education of its members.

Katrina Merkies, University of Guelph Kemptville campus
Kemptville campus delivers equine programming through OVC and community programming in the Kemptville area. There inclusion on the committee provides the opportunity to discuss equine programming needs for UoG students.

Brian Tropea, Ontario Harness Horse Association
The OHHA encourages, improves and promotes the breeding and racing of trotting and pacing horses. They represent Ontario harness horsemen/horsewomen in all aspects of the racing industry. OHHA supports equine research and the education of its members.

Gayle Ecker, Director, Equine Guelph
Equine Guelph is the sponsoring department.

Marjory Gaouette, Program Manager, Office of Open Learning
OOL is a partner in the delivery of the Equine Science Certificate

There are currently two open positions on the committee; the Quarter Horse Association and the Horsemen’s Benevolent and Protective Association of Ontario.

External Accreditation Offered

There is no external accreditation offered. Many organizations accept the online courses as professional development and continuing education credit. i.e. Ontario Association of Veterinary Technicians.

2. Program Review

University of Guelph's Learning Objectives

The eight courses in the Equine Science Certificate provide students with a variety of opportunities to realize the learning objectives of the University of Guelph.

Literacy

The equine courses contribute to the development of independence of thought through the experience of writing papers and reports which requires the analyses and synthesize of information or argues the students hypothesis. Students gain new knowledge, sometimes create knowledge and develop an understanding of how to use information and communicate their ideas.

Numeracy

Students are required to use mathematics through the rationing of nutritional requirements. In addition students explore primary research and learn to interpret the information.

Sense of Historical Development

A primary objective of the equine program is to encourage students to explore the context in which they practice their discipline and care for their horses. Students are encouraged to acknowledge and discuss past assumptions and explore through research, how practices change over time.

Global Understanding

The equine courses are open to international students and through discussion and class activities students understand how geography, history, cultural and environmental factors influence equine practices.

More Maturity

Many equine practices are historical. Examining current issue through guided discussion allows students the opportunity to explore how values and beliefs influence decision making in this industry.

Understanding of Forms of Inquiry

Another primary objective of the equine courses is to encourage and support students in learning how to find quality information, conduct research, analyze the information, examine their current practices, reflect on the material learned and determine how what they have learned will influence or change their current practices. Students will understand the differences between opinion-based information and practice and evidence-based information and practice.

Depth and Breadth of Understanding

At the completion of the Equine Science Certificate students will have a depth of understanding across a wide body of equine knowledge. The goal is to have students not just be able to integrate what they have learned into their equine practice but understand it is an ongoing process.

Independence of Thought

Through the discussion, activities and assignments students are encourage to not accept opinions from experts because of their position of authority but through inquiry and critical thinking.

Love of Learning

The Equine Science Certificate is primarily an adult professional development opportunity and as such is designed to provide students the opportunity to be self-directed and personally involved in their learning. Course design encourages intellectual curiosity and builds on our student's passion for horses to motivate them to continue their pursuit of knowledge.

Course of Study

The Equine Science Certificate consists of the following courses

Core Courses (Required)

- Management of the Equine Environment
- Equine Health & Disease Prevention
- Equine Nutrition
- Equine Functional Anatomy

Elective Courses

- Growth & Development
- Equine Behaviour
- Equine Exercises Physiology
- Equine Genetics

Development Dates

Course	Date Developed	Original Developer	Revision Date	Current Instructor (s)
Management of the Equine Environment	Summer 2002	Susan Raymond PhD – Equine Guelph	Fall 2011	Susan Raymond PhD
Equine Health & Disease Prevention	Summer 2003	Antonio Cruz PhD – OVC Faculty	Winter 2010 (textbook) Kathleen Cavanagh	Ev Post DVM; Kathleen Cavanagh DVM, MEd;
Equine Nutrition	Winter 2004	John Burton PhD; Don Kapper PAS	Summer 2010 (textbook) Kathleen Cavanagh	Kathleen Cavanagh DVM, MEd
Equine Functional Anatomy	Fall 2003	Jeff Thomason PhD, OVC Faculty		Jeff Thomason PhD; Ioana Sonea DVM; Wendy Brett DVM; Brianne Henderson DVM
Growth & Development	Winter 2003	Leslie Hubert DVM; Pat Myers DVM, PhD	Fall 2004 Fall 2009 (textbook) Gayle Ecker	Doug Nash
Equine Behaviour	Summer 2008	Uta VonBorstel PhD; Gayle Ecker MSc, BEd		Sid Gustafson DVM
Exercise Physiology	Fall 2002	Mike Lindinger PhD; Gayle Ecker MSc. BEd		Gayle Ecker MSc; Mike Lindinger PhD; Amanda Waller PhD
Equine Genetics	Winter 2008	Alicia Skelding MSc; Reviews by Andy Robinson PhD; and Gayle Ecker MSc, BEd	Fall 2010 reviewed by Dianne Winkleman-Sim PhD	Dianne Winkleman-Sim, PhD

Review and Revision Schedule

The student materials and course outline are reviewed on a yearly basis by the current instructor assigned to the course. The course textbooks and supporting materials (i.e. videos) are reviewed and recommended by the course instructor and confirmed through review by a committee of at least three participants. A full course review process began in 2009.

Currency of program content

The development of the Equine Science Certificate actively considers emerging research and industry standards and developments. The courses are developed with the intent to bring science-based research and evidence-based practice to the education of horse owners. Horse owners are often confronted with conflicting information based on opinion without knowing where to turn for reliable and quality information.

The program advisory committee, with leaders from across the horse industry, provide the Equine Science Certificate with access to current industry trends, emerging research and areas of conflicting information to research or to approach in the teaching of our courses.

Equine Guelph's research division and the University of Guelph's equine researchers liaise with Equine Guelph to help keep the instructors current in the industry and research initiatives and findings. Equine Guelph publishes a research magazine which is accessible to instructors and students in the class.

Equine Science Certificate instructors are active participants in the horse industry, equine community and are encouraged to keep up to date in research in their subject matter expertise.

Guest speakers are used in all courses and researchers, industry experts and respected practitioners are invited to bring current research and best practices to the classroom.

Industry Updates to be aware of in the future include:

Equine Canada is facilitating a revision to the Equine Code of Practice to be released in 2013. The Codes of Practice are nationally developed guidelines for the care and handling of the different species of farm animals. They are intended to promote sound management and welfare practices through recommendations and requirements for housing, management, transportation, processing and other animal husbandry practices. Requirements refer to either a regulatory requirement, or an industry-imposed expectation of best practices to encourage a higher level of care.

The advisory committee will be following the revision process and implement any necessary updates to the Equine Science Certificate.

Individual Course Outlines

Management of the Equine Environment

Course Description

In this course you will be introduced to many of the important aspects of running a horse-housing establishment, including barn hygiene, air quality, fencing and pasture maintenance and improvement, a safety audit and much more. This course will provide you with the practical and updated information you need to ensure a safe and healthy environment for your horse, through effective and responsible management techniques.

Learning Goals:

The course will cover topics on equine facilities and management practices, including:

- Stable Design (ventilation, flooring, dimensions, warm vs. cold climate housing, stable vices)
- Site selection and farm layout
- Air quality and relationship to respiratory health of horses and their caretakers
- Forage and its role in equine health (dust and mould control, forage alternatives and processing, mycotoxins)
- Bedding alternatives (dust, absorbency, usage vs. cost, composting, manure management)
- Ammonia control
- Turnout, shelter, pasture management, fencing improvements and options
- Seasonal considerations for management
- Arenas, footing and dust control
- Manure management and environmental responsibilities including water quality
- Safety and facility inspection audit

Upon completion of the course, you will be able to:

- Assess management and safety practices related to the housing environment of the horse
- Apply knowledge of equine environmental management practices to present and future situations with the horse
- Investigate and evaluate the advantages and disadvantages of a variety of equine environmental management practices
- Conduct an environmental audit of a property for housing horses that identifies problems and solutions for the health and safety of the horse

Course Units

Unit 1:	Introduction to Management of the Equine Environment
Unit 2:	Stable Ventilation and Horse Bedding
Unit 3a:	Air Quality in Your Barn
Unit 3b:	Forages
Unit 4:	Arenas
Unit 5:	Fire and Safety

Unit 6:	Turnout for your horse: Fencing, Shelter and Pasture Management
Unit 7:	Manure Management and Environmental Responsibilities
Unit 8:	Seasonal Considerations
Unit 9:	Course Conclusion

Student Evaluation and Grading

Class Learning Questions	30%
Quizzes	15%
Environmental Assessment	55%
Total	100%

Recommended Textbook

Horsekeeping on a small acreage (2005), Cherry Hill; Storey Publishing
Stablekeeping (2000), Cherry Hill; Storey Publishing

Additional Materials

- Course Reader – a collection of articles
- Agricultural Safety Audit program booklet courtesy of Farm Safety Association Inc. (*www.farmsafety.ca*)
- CD/DVD
  - The Equine Lung
  - Chris's Case Study – Power Point Presentation
  - Fire Prevention in Horse Stables
- Bedding samples

Detailed Unit Learning Objectives

Unit 1: Introduction to Management of the Equine Environment

- Introduction to the course materials, resources and the expectations of the course.
- Learn how the web course works and how to use some of the features of a web course, to interact with the learning materials, your instructor and your classmates.
- Practice some internet skills that will enable you to successfully complete this course on-line.

Unit 2: Stable Ventilation and Bedding

- Learn about the importance of a well-designed and ventilated barn.
- Examine various choices of stall flooring systems and bedding including the associated pros and cons.
- Select a suitable bedding material based on your preferences, availability (of material), and stable management style.

Unit 3a: Air Quality in your Barn

- Become familiar with how air quality in your barn can contribute to respiratory disorders for both you and your horse.

Unit 3b: Forages
- Examine the role that mould, dust and mycotoxins associated with forages and how they play on your horse's health.
- Explore various methods to reduce dust associated with forage including alternative forage products.

Unit 4: Arenas
- Examine and become familiar with the characteristics of various choices of footing for an arena.
- Learn strategies to reduce dust in an arena

Unit 5: Fire and Safety
- Perform a safety audit on your facility.
- Use the results of the safety audit to create a plan of action to make your equine facility a safer place for you and your horse.

Unit 6: Turnout for Your Horse: Fencing, Shelter, and Pasture Management
- Perform an audit of your horse's turnout area including; shelter, fencing, pasture, and poisonous plants.

Unit 7: Manure Management and Environmental Responsibilities
- Learn about the importance of properly managing your farm waste (manure and used bedding).
- Become familiar with the process of composting as well as issues involving environmental responsibilities every horse owner should address.

Unit 8: Seasonal Considerations
- Learn about various methods to improve air quality in the stable and help cope with the challenges of winter.

Unit 9: Course Conclusion
- Establish your top priorities for improving your current horse housing situation.
- Develop your plan of action.

Equine Health & Disease Prevention

Course Description

Preventing disease and health problems should be the goal of every horse-owner. Many important topics are covered that will help you maintain optimal health by developing a year-round health maintenance program. You will be introduced to many of the common problems faced by horses, many due to management problems, and you will learn the steps to take so that you can reduce the risk for your horses.

Learning Objectives

The goal of this course is to enable you to understand important concepts of equine health and disease prevention. By the end of the course you should be able to:

- perform a daily health check and set up a health maintenance program for your facility

- understand and monitor a year-round health and prevention program for each horse based on the individual needs of that horse and the management factors that impact on that horse.
- identify common health problems of horses and the methods available to prevent and/or manage these problems
- be knowledgeable about requirements for the health maintenance of the horse
- be able to discuss the problems of the horse with your veterinarian in an informed and educated manner and assist in providing important information that will aid in the care of the horse
- learn to critically assess new information based on scientific research
- understand specific geographical factors that may impact on horse health
- critically assess your own health care program for the horse
- know the theoretical basis for providing first aid and emergency care to the horse until the veterinarian can arrive
- differentiate between conditions where immediate medical aid may be required

Note that this course is not designed to determine diagnosis, treatment or therapy options for any student situations or contexts. To establish these you must work in partnership with a qualified veterinarian.

Course Units

Unit 1:	Learning How to Learn Online: You and Your Vet
Unit 2:	The Daily Health Check and Body Condition Scoring (BSC)
Unit 3:	Your Health Maintenance Program (vaccinations, deworming)
Unit 4:	First Aid Treatment (including skin and eye conditions)
Unit 5:	Hoof Health
Unit 6:	Lameness Part 1
Unit 7:	Lameness Part 2: Arthritis and Joint Disease
Unit 8:	Teeth
Unit 9:	Colic!
Unit 10:	Other Gastrointestinal Problems
Unit 11:	Respiratory Health
Unit 12:	The Pre-Purchase Exam and Horse Owner Obligations

Recommended Textbook

Siegal, Mordecai (editor) Book of Horses: A Complete Medical Reference Guide for Horses and Foals. Harper Collins Publishers, New York, NY, 1996. ISBN 0-06-270139-8

Additional Materials

1. Course Binder
2. AAEP Pamphlets
3. Course Reader
4. Videos
    1. The Horse Health Check
    2. Lameness
5. Power Point presentation: Important parasites of horse and their control
6. Students are required to purchase a stethoscope

Student Evaluation

Online Participation	**20%**
Course Assignments: Quizzes	**10%**
First Aid Scenario	**20%**
Extended Fact Sheet	**30%**
Respiratory Risk Factors	**20%**
Total	**100%**

Detailed Unit Learning Objectives

Unit 1: Learning Objectives

- Understand the value of a lifelong relationship with your vet.
- Explore the concept of improving horse care by developing a good working relationship with a veterinarian (good vet characteristics; good owner characteristics).
- Value mutual respect between horse owner and the vet.
- Define and discuss the role of the veterinarian in the total healthcare program of the horse.

Unit 2: Learning Objectives

- Assess and identify normal and abnormal health signs.
- Practice doing a health check and body condition scoring.

Unit 3: Learning Objectives

- Learn the importance of maintaining a health maintenance program.
- Assessing results of your records.
- Learn to integrate your vet as part of your yearly program (and farrier).
- Have the knowledge to implement a year round preventive dental program.

Unit 4: Learning Objectives

- Identify emergency situations when medical help is required immediately.
- Know how to prevent situations requiring first aid from becoming worse.
- Understand the role of the skin and the basic anatomy of this important “organ”.
- Become familiar with wound care.
- Understand the basic anatomy of the eye and the health problems related to the eye.

Unit 5: Learning Objectives

- Understand the impact of the health of the hoof and recognize common problems such as thrush, cracks, punctures and abscesses.
- Learn the importance of hoof health and the consequences of poor hoof care on hoof structure and function.
- Learn the concept of a “balanced” hoof and the impact this has on hoof health.

Unit 6: Learning Objectives

- Learn to recognize an abnormal gait.
- Understand the lameness exam (i.e. flex tests, nerve blocks).

Unit 7: Learning Objectives

- Understand arthritis and relevant management practices.
- Understand the diagnostic imaging process and what it can and cannot do.

Unit 8: Learning Objectives

- Understand the importance of maintaining health teeth and the impact on the health status of the horse.
- Understand horse dentition and the results of poor dentition.
- Understand the meaning of the phrase “don’t look a gift horse in the mouth”.
- Become familiar with dental abnormalities, like abscess points, gingivitis, hooks, step mouth, shear mouth, etc.
- Understand why equine dentistry is evolving, with respect to new management approaches, power tools and life stage issues.
- Understand how tooth, gum and oral problems can affect performance and behaviour.

Unit 9: Learning Objectives

- Learn the physiology of the gastrointestinal tract and the circumstances that can lead to colic.
- Learn to implement management practices to avoid problems.
- Learn to recognize signs of colic.
- Learn to recognize the need for medical intervention and prevention methods.

Unit 10: Learning Objectives

- Learn about the damage caused by parasites.
- Learn the lifecycle of parasites.
- Understand interaction of parasites and environment (pasture maintenance and rotation, cold weather, seasonal program).
- Learn the rationale for seasonal de-worming.
- Learn an overview of other g.i. problems such as ulcers and their prevention.

Unit 11: Learning Objectives

- Recognize normal respiratory and common, basic abnormalities of the respiratory system.
- Understand the need for ammonia/dust control and air quality management issues.
- Recognize the effects of interaction between the respiratory system and the horse’s environment.
- Recognize risk factors for respiratory disease (transport, population).
- Understand respiratory noise.
- Learn about strangles, vaccinations, bleeders, small airway disease, rhino, dorsal displacement of soft palate and effects on performance.

Unit 12: Learning Objectives

- Familiarize yourself with the pre-purchase exam.
- Understand the advantages and limitations of the pre-purchase exam.
- Learn to interpret the results of the pre-purchase exam for the type of horse, the type of examination (i.e. health, performance horse soundness vs. reproductive soundness, etc.)
- Be knowledgeable about the requirements for health maintenance of the horse.
- Critically assess and improve your own horse health care program

Equine Nutrition

Course Description

You know your horse needs a good solid nutritional program. His life and career depend on the building blocks that nutrition will provide as the solid foundation; but you don't need a Ph.D. to make sure your horse has a good basic diet! This course leads you through the maze of equine nutrition and gives you the practical knowledge and skills you need to develop and maintain a healthy nutritional program for your horse. The course covers the basics of nutrition, balancing rations and special populations.

Learning Objectives

The main objective of this course will be to learn to assess and balance a ration for a horse. At the end of the course, it is expected that you will demonstrate your ability to balance or assess a ration. You will learn how to do this by working through the objectives below.

Students will be able to:

1. Understand theory related to the study of nutrition of horses.
   i. develop knowledge of the characteristics of typical horse feeds Live up with the others
   ii. identify and describe important anatomical structures and basic functions of the gastro-intestinal tract as well as how it functions to meet the nutritional needs of the horse
   iii. list horse management decisions and understand how they impose changes on the function of the gastro-intestinal tract and how these changes affect the health of the horse
   iv. learn terminology and concepts that will assist in discussing nutrition with your veterinarian, nutrition specialist or feed store representative.
   v. understand theory as it relates to the feeding of horses, including the functions and required levels of the various nutrients in the diet and the role of NRC guidelines for horses in different categories
   vi. identify the function of the major components of the equine diet and the role of forage, concentrates and supplements in the feeding of horses for good health

2. Apply nutritional theory to horses under your care by assessing and developing proper nutritional programs.
   i. identify the category of horse based on age, physiologic state, exercise level and other important factors when developing rations.
   ii. read a feed tag and interpret the information that is presented, then apply that information to the formulation of a diet for an individual horse
   iii. assessing forage visually and understand the value of the chemical analysis of forage
   iv. learn to assess a diet or develop a new diet based on the forage the horse is receiving
   v. develop the skills and knowledge needed to formulate basic rations for various types of horses, using the NRC guidelines as a starting point
   vi. identify the special needs of different classes of horses such as performance horses, broodmares and foals

Course Units

Unit 1: Learning to Learn On-Line and Accessing your horse
Unit 2: Digestive Functions and Nutrient Requirements
Unit 3: Forage and Pasture Management

Unit 4: Concentrates
Unit 5: Supplements (vitamins and macro/micro minerals)
Unit 6: Finding the Balance
Unit 7: The Performance Horse
Unit 8: Broodmares and Stallions
Unit 9: The Growing Foal
Unit 10: Special Needs Horse (Senior, Obese, Hardkeeper)
Unit 11: Toxic Plants
Unit 12: Nutrition-Related Conditions

Student Evaluation

Participation		**10%**
Quizzes – 5 at 2% each		**10%**
Fact Sheet/Special topics assignment		**40%**
Final quiz		**40%**
	Total	**100%**

Recommended Textbook

Feed Your Horse Like A Horse: Optimize your horse's nutrition for a lifetime of vibrant health
Author: Julliet M. Getty
Published by: Dog Ear Publishing LLC, 2009

Nutritional Requirements for Horses
Edition: Sixth Revised
Published by: The National Academies Press, 2007

Additional Materials

- Course Reader
- Course Workbook
- Equine Measuring Tape
- Quilter's Tape
- Body Conditioning Score Card
- Score Card for Visual Hay Quality
- CE – Equine Student Handbook
- Equine Studies course list

Detailed Course Learning Objectives

Unit 1: Learning to Learn On-Line and Assessing Your Horse

- learn to navigate in the on-line environment.
- introduce yourself and learn about other students in your group.
- learn a step-by-step procedure to assess your horse for body weight, body condition score and activity level.
- be introduced to the NRC publication "Nutrient Requirements for Horses" and the accompanying website program, and learn to navigate through these valuable resources.

Unit 2: Digestive Function and Nutrient Requirements

- become familiar with the anatomy of the equine digestive system and its functioning.
- learn to identify important concepts for keeping the digestive system of the horse working in a healthy way.
- be introduced to important preventative concepts that may help you prevent digestive upsets in the horse by providing a proper diet.
- practice weighing different feeds and forages as a first step to rationing.

Unit 3: Forage and Pasture management
- to learn the definition of forage and what forages are available to be used for horses.
- to learn the value of chemical analysis of hay and the role played by the visual assessment of hay.
- to determine the forage needs of different types of horses.

Unit 4: Concentrates
- to learn how to read a feed label
- to learn what is included in concentrates, and what forms they come in (processing)
- to learn the amount of concentrates needed by different groups of horses
- to learn how to add the nutritional composition of the concentrates to your ration calculations to ensure a good diet for your horse
- to understand carbohydrates vs oils as an energy source

Unit 5: Supplements (Vitamins and Macro/Micro minerals)
- to understand the purpose and role of supplements for horses
- to use supplements as necessary for balancing the ration or addressing specific problems
- to learn to ask questions about supplements and their use and the research behind them

Unit 6: Finding the Balance (Practice Rationing)
- to learn the theory behind basic steps for assessing rations and adding supplements
- to work with different qualities of forage and different rations to determine the impact on total nutritional balance

Unit 7: The Performance Horse
- to learn the special needs of the performance horse
- to learn to work with the NRC tables to identify the different needs of performance horses
- to learn about the different factors that may impact on diet relative to the specific equine event

Unit 8: Broodmares and Stallions
- to use NRC guide to find the needs specific to broodmares and stallions
- to compare differences and nutritional priorities between broodmares at different stages and stallions during the breeding and non-breeding season
- to practice assessing or developing rations for this group

Unit 9: The Growing Foal
- to learn the changing needs of the foal and growing horse
- to recognize the role played by colostrum
- to learn about different feeding strategies for young and growing horses

Unit 10: Special Needs Horse (Senior, Obese, hardkeeper)
- to learn the needs of special groups of horses including the older horse, the obese/underweight
- to learn nutritional management issues that impact on the health of special groups of horses

Unit 11: Toxic Plants
- to learn about toxic plants and their effect on horses

Unit 12: Nutrition- Related Conditions
- to be introduced to some of the nutritional disorders that can affect horses
- to find out the common nutritional disorders in your area
- to be introduced to some of the management issues for horses with nutritional disorders

Equine Functional Anatomy

Course Description

This course examines the components of the systems that enable the horse's athletic achievements. It is a study of the functions of those components, and the anatomical structures that fulfill those functions.

Learning Objectives

- to understand important anatomical structures and functions
- to view anatomy from the "form vs. use" approach and how our decisions impact on the health and well-being of the horse.
- to understand the feeding, movement and health of the horse as it is dependent on its anatomy
- to learn terminology and concepts that will assist in discussing injuries and disease, should they occur, with a veterinarian

Course Units

Unit 1:	Introduction to the Course and The Gastrointestinal Tract Part One: Nature's Disaster or Management Problem?
Unit 2:	The Gastrointestinal Tract Part Two: Nature's Disaster or Management Problem?
Unit 3:	The Respiratory System: Part One
Unit 4:	The Respiratory System: Part Two
Unit 5:	The Cardiovascular System: Part One
Unit 6:	The Cardiovascular System: Part Two
Unit 7:	The Musculoskeletal System: Part One — The Trunk and Neck
Unit 8:	The Musculoskeletal System: Part Two — The Legs
Unit 9:	Understanding the Gait of the Horse
Unit 10:	Beauty is more than Skin Deep!
Unit 11:	The Hoof
Unit 12:	Summary, Assimilation, Synthesis and Review

Student Evaluation & Grading

Participation

3 submissions selected from weeks 1 -5	**15%**
3 submissions selected from weeks 6 - 10	**15%**
Quizzes	**10%**
Minor Assignment	**10%**
Major Assignment	**50%**
	100%

Recommended Textbook

Horse Anatomy: A Colouring Atlas
Kainer, Robert A. and McCracken, Thomas O.
Alpine Publications, Loveland, Colorado
ISBN: 1-57779-021-9 (wire bound)

Building the Equine Hoof
David Hood, Connie Swenson, Bruce Johnson
ZinPro Corporation, Eden Prairie, MN

Additional Materials

Students are strongly recommended to purchase a medical dictionary. Access to an online dictionary is also suitable.

Course Materials

- Course Reader
- Functional Anatomy CD
- Set of 24 colouring pencils

Optional Resource

Rooney's Guide to the Dissection of the Horse
M. Susan Hackett and W.O. Sack
Veterinary Textbooks, Ithaca, New York, 2001
ISBN 0-960001152-4-2

Detailed Unit Learning Objectives

Unit 1: Learning Objectives

- To become familiar with the structure and basic function of the organs of the gastrointestinal tract.
- To understand "normal functioning" of the gastrointestinal system from a "use vs. function" viewpoint and the impact management decisions have on the health and welfare of the horse.

Unit 2: Learning Objectives

- To become familiar with the structure and basic function of the organs of the gastrointestinal tract.
- To understand the "normal functioning" of this system and the impact of our management decisions on the health and welfare of the horse from a "use vs. function" viewpoint.

Unit 3: Learning Objectives

- To become familiar with the structure and basic function of the organs of the respiratory system.

- To understand the “normal functioning” of this system and the impact of our management decisions on the health and welfare of the horse from a “use vs. function” viewpoint.
- To understand the concepts of “entrainment” and “bleeders” and what functional difficulties these may impose on the equine athlete.

Unit 4: Learning Objectives

- To become familiar with the structure and basic function of the organs of the respiratory system.
- To understand the “normal functioning” of this system and the impact of our management decisions on the health and welfare of the horse from a “use vs. Function” viewpoint.
- To understand the concepts of “obligate nose breather” and other design aspects in the respiratory system.

Unit 5: Learning Objectives

- To become familiar with the structure and basic function of the organs of the cardiovascular systems.
- To understand the “normal functioning” of this system and the impact of our management decisions on the health and welfare of the horse from a “form vs. use” viewpoint.

Unit 6: Learning Objectives

- To become familiar with the structure and basic function of the organs of the cardiovascular systems.
- To understand the “normal functioning” of this system and the impact of our management decisions on the health and welfare of the horse from a “form vs. use” viewpoint.

Unit 7: Learning Objectives

- To become familiar with the structure and basic function of the musculoskeletal system.
- To understand the “normal functioning” and interactions of the muscles and the skeleton from a “form vs. use” viewpoint.

Unit 8: Learning Objectives

- To become familiar with the structure and basic function of the muscles and bones of the legs.
- To understand the “normal functioning” of this system and the impact of our management decisions on the health and welfare of the horse from a “use vs. function” viewpoint.

Unit 9: Learning Objectives

- To become familiar with the basic gaits of the horse and how the bones, joints and muscles function.
- To understand the “normal gait” and how to start detecting lameness.

Unit 10: Learning Objectives

- To become familiar with the structure and basic function of the skin.
- To understand the “normal functioning” of the skin and the impact of our management decisions on the health and welfare of the horse from a “use vs. function” viewpoint.

Unit 11: Learning Objectives

- To become familiar with the structure and basic function of he equine hoof.
- To understand the “normal functioning” of the hoof and the impact of our management decisions on the health and welfare of the horse from a “use vs. function” viewpoint.

Unit 12: Learning Objectives

- Summary session: To provide an opportunity to ask questions about the overall anatomy of a horse.

Growth & Development

Course Description

The care and management of a broodmare in order to produce a vigorous, active foal is not "rocket science"! However, it does require a strong commitment to acquire the knowledge necessary to be successful in such an endeavour. Frequently, it is thought that "nature" will take care of itself and reproduction "will just happen". The domesticated horse has become much more dependent upon the human species for its care, feeding and exercise and we have demanded optimum performance from them. Hence, it is a horse owner's responsibility to be as well informed as possible. The well-being of your horse(s) rests with you. The purpose of this course is to provide the student with practical knowledge and skills that will aid in the effective management of broodmares for the ultimate goal of producing "new life", an energetic, healthy foal!

Learning Objectives

- To acquire the necessary understanding and some skills to effectively manage a broodmare
- To understand the estrous cycle and breeding options in the mare
- To comprehend the changes during pregnancy in the mare and developing fetus
- To understand the foaling (birthing process) and the warning signs of problems
- To be more informed about the foal's requirements for optimal growth and development from birth to six months of age
- To understand and practice Body Condition Scoring and Estimating Weight
- To practice evaluating information

Course Units

Unit 1:	Course introduction Facilities, Care and Management
Unit 2:	The Mare – Structure and Function
Unit 3:	The Stallion – Structure and Function
Unit 4:	Breeding
Unit 5:	Gestation Part 1
Unit 6:	Gestation Part 2
Unit 7:	Foaling Part 1
Unit 8:	Foaling Part 2
Unit 9:	The Newborn Foal
Unit 10:	The Growing Foal Part 1
Unit 11:	The Growing Foal Part 2
Unit 12:	Summary

Student Evaluation and Grading

Participation in CLQ’s	**20%**

Quiz – 4 quizzes each 2.5%		**10%**
Assignment #1: A viable pregnancy		**35%**
Assignment #2: Development of a Healthy Foal		**35%**
	Total	**100%**

Recommended Textbook

Davies Morel, Mina G. (2008). *Equine Reproductive Physiology, Breeding and Stud Management. 3rd Edition*. CABI Publishing

Additional Materials

- DVDs/CDs
  - The Nature of Foaling
  - The Weighs and Neighs
- Body Condition Scoring card
  Fact Sheets

Detailed Unit Learning Objectives

Unit One Learning Goals

- understand effective management of the broodmare and stallion in some depth
- know the preventive aspects of management practices and how the decisions made can enhance health and reproductive function of the mare and stallion

Unit Two Learning Goals

- understand the basic anatomy of the broodmare
- understand the function of the reproductive tract of the mare and how it accommodates a foal
- understand the impact of anatomy and conformation on breeding performance

Unit Three Learning Goals
to understand the basic anatomy of the stallion.

- understand the function of the reproductive tract of the stallion and how it works in the production of a foal.
- understand the composition of sperm and how this affects reproduction and the process of artificial insemination.

Unit Four Learning Goals

- understand the process of breeding and the preparation of the mare for breeding
- understand the preparation of the stallion for breeding and covering
- understand the preventive aspects of breeding management and the decisions that you can make to enhance safety and health
- understand the hormonal functions in the mare and how that relates to gestation and foaling

Unit Five Learning Goals

- understand the development of a foal
- understand the hormonal control of pregnancy
- tunderstand the anatomical changes that take place in the mare during gestation

Unit Six Learning Goal

- to continue to learn about the changes and management practices for gestation (continuation of unit five learning goals)

Unit Seven Learning Goals
- learn to identify the stages of foaling so that you know what is normal
- learn to identify "bell ringer" signs that signal the need for veterinary assistance.
- learn to Identify hormonal control of parturition (foaling) and the signs of foaling

Unit Eight Learning Goals: (continuation of Unit Seven learning goals
- learn to identify the stages of foaling so that you know what is normal
- learn to identify "bell ringer" signs that signal the need for veterinary assistance.
- learn to identify hormonal control of parturition (foaling) and the signs of foaling

Unit Nine Learning Goals
- learn the normal parameters for the newborn foal that indicate a healthy foal
- understand the role of colostrum for the newborn foal
- learn suggested methods for management of the mare and foal for optimal health

Unit Ten Learning Goals
- learn the parameters for the newborn foal that indicate a healthy foal
- understand the role of colostrum for the newborn foal
- learn suggested methods for management of the mare and foal for optimal health

Unit Eleven Learning Goals (continuation of Unit 10 learning goals)
- learn the parameters for the newborn foal that indicate a healthy foal
- understand the role of colostrum for the newborn foal
- learn suggested methods for management of the mare and foal for optimal health

Unit Twelve Learning Goals
- This unit is a review and summary of the course.

Equine Behaviour

Course Description

Handling a horse can be risky, even if you know the animal. When you handle unfamiliar horses the risks increase. While horses may not be able to speak our language, horses do have a language of their own. It is important for those caring for horses to learn the language of horses for their safe and humane care in the domestic environment.

Course topics include horse perception, learning, social hierarchies and play, communication and body care, ingestive and elimination behaviours, interaction of stallions, mares and foals, locomotion, training and handling, transporting horses and unwelcome behaviours (stereotypies).

Learning Objectives

The goal of this course is to enable you to understand important concepts of equine behaviour and how they relate to the care and welfare of horses. By the end of the course you should be able to:

- Understand key aspects of horse behaviour and the impact of various equine management practices on their health and welfare.
- Understand and monitor a prevention program for horses, based on the perception capabilities of horses and the management factors that impact horse perception.

- Identify common behaviours of horses and the methods available to prevent and/or manage these problems
- Be knowledgeable about horse communication between horses and between humans and horses
- Be able to discuss social and play behaviours of the horse as they relate to housing, handling and training
- Critically assess new information based on scientific research
- understand ingestive and eliminative behaviours and how they may impact the horse's health
- Critically assess your own management program for mares, foals and stallions in your care as it relates to behaviour of each
- Differentiate between unwelcome behaviours and their causes

Course Units

Unit 1:	Introduction to Equine Behaviour
Unit 2:	Perception
Unit 3:	Behaviour & The Brain
Unit 4:	How Horses Learn
Unit 5:	Social & Play, Communication
Unit 6:	Body Care
Unit 7:	Ingestive and Eliminative Behaviour
Unit 8:	Stallions, Mares and Foals
Unit 9:	Unwelcome Behaviours
Unit 10:	Stereotypies
Unit 11:	Training & Handling, Transporting
Unit 12:	Locomotion
Unit 13:	Welfare & Course Review

Student Evaluation

Quizzes	20%
Final Quiz in Week 13	10%
Minor Assignment	30%
Major Assignment	40%
Total	**100%**

Recommended Textbook

Equine Behaviour - A Guide for Veterinarians and Equine Scientists
Paul McGreevy, Published by Elsevier, 2004.

Additional Materials

- DVDs/CDs
    - A Horse's World by Wall to Wall Productions, London
        - DVD Script
    - Horse Health Check
- Horse Health Check Poster
- Field Observation Worksheets
- Training Clicker

- Highlighter

Detailed Unit Learning Objectives

Unit 1: Introduction to Equine Behaviour Learning Objectives
- Learn about learning online.
- Introduce yourself to the class and to get to know other students in your class.
- Practice observing horses as an introduction to equine behaviour.
- Learn the basics of evolution and classification of equus and the changes due to domestication, including normal and stereotypic behaviours.
- Develop a behaviour profile on a horse.
- Learn about the five freedoms of the horse as defined by McGreevy and how this can be applied to horse management.

Unit 2: Perception Learning Objectives
- To understand the perception of the horse including vision, chemoreception, hearing and touch
- To develop your observational skills to identify specified equine behaviours.

Unit 3: Behaviour & The Brain Learning Objectives
- To learn about the fundamentals of functional and behavioural neuroanatomy
- To learn about case studies related to equine behaviour
- To develop your own case study as an optional activity and discuss the results with other students while learning about their case studies

Unit 4: How Horses Learn Learning Objectives
- To learn the principles of horse training through applied equine behavioural science
- To understand approaches to learning theory and the work of cognitive ethologists and how the biology of the species influences behaviour
- To learn effective methods of training and retraining
- To gain hands-on experience in developing introductory learning tasks

Unit 5: Social & Play, Communication Learning Objectives
- To understand the social organization of horses, social hierarchies, pair bonding, dispersal, agonistic behaviour, aggression and submission, homing
- To apply this information to the domestic situation including mal-imprinting and over-bonding, aggression to humans and voluntary isolation
- Understanding stereotypes: weaving and stall-walking
- To understand the normal communication of the horse

Unit 6: Body Care Learning Objectives
- To learn about grooming (self and mutual) in the horse
- To learn about pest avoidance, behavioural thermoregulation, rest and sleep, and play
- To learn about behavioural anomalies in maintenance behaviour

Unit 7: Ingestive and Eliminative Behaviour Learning Objectives
- Understanding feeding patterns and behaviours and various factors impacting this behaviour, including learning and physiological factors
- Learn improved methods of feeding by studying the normal behaviours and the impact from poor feeding management and dietary practices

- Learn about the importance of water and how it is provided to the horse in order to understand water intake and physiological balance
- Understand how eliminative behaviour is influenced by age and socio-sexual factors and how this can affect grazing behaviour, including territorial behaviours in a herd

Unit 8: Stallions, Mares and Foals Learning Objectives

- To understand the behavioural and psychological needs of the mare and the stallion in order to design appropriate management practices
- Develop safe management practices which support or mirror the feral mare/stallion continuous interaction, improving fertility and reducing unwelcome behaviours
- Evaluate different methods of weaning which may cause various abnormal and unwanted behaviours

Unit 9: Unwelcome Behaviours Learning Objectives

- Learn the definitions of various unwelcome behaviours, and to know the various behaviours occurring in horses
- Understand the concept of behavioural need
- Learn about risk factors associated with the development of unwelcome behaviours

Unit 10: Stereotypies Learning Objectives

- Develop protocol to alleviate the different types of stereotypies
- Understand the importance of performing a stereotypy has to the horse
- Know the problems associated with physical prevention of stereotypies as well as with freely allowing the horse to perform the stereotypy

Unit 11: Training & Handling, Transporting Learning Objectives

- Understand the importance of proper handling and how it can improve the understanding between horse and handler
- Become familiar with different training philosophies and the scientific basis behind them (if any)
- Become familiar with numerous factors associated with transport that can compromise horse welfare and safety

Unit 12: Locomotion Learning Objectives

- Understand the normal behaviours of the foal which are necessary for normal development
- Relate the interdependence of locomotion with survival instincts, ingestive, communication and courtship behaviours
- Understand human influences on equine locomotion and their effects

Unit 13: Welfare & Course Review Learning Objectives

- Learn about some of the welfare issues facing the equine industry today
- To challenge all facets of welfare issues and to think of possible solutions, including what a single person can do to help
- Discover various equine welfare agencies or associations and the current issues they are facing
- Be able to see things from the horses' perspective rather than the human perspective in order to improve the health and welfare of horses in your care

Equine Exercise Physiology

Course Description

This non-degree online course introduces many of the important aspects of conditioning the equine athlete for various disciplines, including topics such as base conditioning, aerobic and anaerobic exercise and recovery, monitoring of conditioning gains and prevention of health and performance problems and more. This course provides practical and updated information needed to ensure a safe and effective training program through applied scientific knowledge of exercise physiology.

Course Objectives

The goal of this course is to enable you to understand important concepts of equine exercise physiology. Understanding equine exercise physiology will help you to train a horse to a specific discipline. You will learn to physically assess a horse and design a discipline-specific training and conditioning program. Results obtained from equine research will provide the rationale for training actions. By the end of the course you should be able to:

- perform a horse health check
- to safely carry out a daily conditioning workout using the knowledge gained from this course to prevent over-work.
- design and monitor a year-round training program for a horse (using training principles, structuring the workout, monthly and yearly plans)
- identify problems specific to the various disciplines and suggest appropriate prevention or actions
- explain the scientific rationale for suggested practices based on an understanding of horse exercise physiology (the structure and function of the systems)
- assess the advantages and disadvantages of new technology and alternate training venues or programs for the athletic horse

Course Units

Unit 1:	Introduction to Learning in an Online Environment and to the Equine Exercise Physiology Course
Unit 2:	How Does Movement Happen? Learning About Muscle
Unit 3:	Where Does the Energy Come From?
Unit 4:	How Does the Energy Get to the Muscle?
Unit 5:	How Does the Muscle Get Oxygen? The Cardiorespiratory System
Unit 6:	Thermoregulation: Preventing Heat Stress in the Horse
Unit 7:	Whether ‘Tis Better to Excrete or Recycle: That Is the Question!
Unit 8:	How Does My Horse Keep Going and Going? And How Do I Know When He's Tired?
Unit 9:	What Happens with Regular Exercise? Training Adaptations
Unit 10:	How Do I Monitor the Changes?
Unit 11:	What Else Is There? Nutritional Guidelines and Other Assorted Topics
Unit 12:	Course Summary

Student Evaluation and Grading

Quizzes (5 quizzes at 6 marks each, Units 3, 5, 7, 9, 11)	30%
Assignment: Participation and Engaging with Course Content	20%
The Training Journal	50%
Part I & II 10%	
Part III 20%	
Part IV 20%	
Total	**100%**

Recommended Textbook

Clayton, Hilary M. (1991). Conditioning Sport Horses. Sport Horse Publications. #ISBN: 0-9695720-0-X

Student Materials

- Course Manual
- Course Reader
- DVD
- Video The Horse Health Check
- CD Molecular Muscle Contraction (optional)

Additional Reading available for download on the course website

Sampieri, F., Hinchcliff, K.W., Jose-Cunilleras, E. (2007) Electrolyte Supplementation for Endurance Horses: Effects on Fluid Losses and Performance. © 2007 American Association of Equine Practitioners, v. 53, 82-85. Reprinted with Permission.

Equine Genetics

Course Description

The horse population is growing, and a basic understanding of various genetic considerations can assist the horse breeder. In addition to colour genetics, breeders should have an understanding of medical genetics; both Mendelian and Polygenic and performance traits. Aspects of genetic descriptions of breeds, along with parentage testing and pedigrees will also be investigated.

Learning Goals

The goal of this course is to enable you to understand important concepts of equine behaviour and how they relate to the care and welfare of horses. By the end of the course you should be able to:

- understand key aspects of horse genetics
- learn the genetics of colours and colour dominance, including white markings which are unique to the horse
- describe parentage testing of horses
- develop awareness of the role genetics plays in disease
- describe the genetics of performance traits and the impact of genetics vs. environment

Students Assignments and Grading

Quizzes on Units (Units 3, 5, 7, 9, 11) at 4% each	20%
Final Quiz in Week 12	40%
Participation Submission	10%
Major Assignment	30%
Total	**100%**

Recommended Textbook

Horse Genetics by Ann T. Bowling, Published by CAB International, 1996

Student Materials

- Course Workbook
- Equine Genetic Case Study
- American Paint Horse Associations Guide to Coat Color Genetics

Detailed Learning Objectives

Unit 1: Introduction to Equine Genetics
- Learn about learning online.
- Introduce yourself to the class and to get to know other students in your class.
- Understand and be able to apply basic genetic terminology.
- Understand the three principles of Mendelian genetics.
- Learn how to apply the Punnett square to breeding predictions and how to interpret it.
- Learn how to apply the Probability method to breeding predictions.

Unit 2: Basic Colour Genetics
- understand the genetic code that controls each coat colour in horses
- know the key points that define each colour classification
- be able to assign genotypes to the phenotypic appearance of horses

Unit 3: Coat Colour Patterns
- Be able to distinguish between different colour patterns that exist in horses
- Be able to apply basic genetics and equine coat colour genetics to developing breeding programs

Unit 4: Parentage Testing
- Distinguish between the different molecular methods used to identify horses
- Be able to apply these methods to discriminate parentage

Unit 5: Equine Medical Genetics 1
- Apply the principles of genetics as they relate to medical conditions
- identify genetic conditions and be able to explain what could happen in the horse

Unit 6: Equine Medical Genetics 2
- Apply the principles of genetics as they relate to medical conditions
- identify genetic conditions and be able to explain what could happen in the horse.

- reflect on your role in the horse industry to reduce the incidence of genetic disorders

Unit 7: Equine Karyotype
- Identify the equine genome and how it was discovered
- Be able to apply your knowledge of the equine genome to defining chromosomal abnormalities

Unit 8: Genetics of Performance Traits
- Apply genetic concepts to the explanation of variations in performance traits between horses and breeds.
- Employ performance measures, heritability, and generation interval and selection intensity for the development of breeding programs

Unit 9: Pedigrees and Breeding Schemes
- Assemble written information into a correctly developed equine pedigree.
- Describe the different breeding schemes and in which situations they are appropriate.
- Formulate breeding programs based on pedigree information

Unit 10: Genetic vs. Environment & Sire vs. Dam
- Distinguish between environment and genetic factors.
- Contrast how genetic and non-genetic factors both can modify the action of genes.

Unit 11: Genetic Descriptions of Breeds
- Calculate allelic and genotypic frequencies in different equine populations.
- Discuss the five rules of Hardy-Weinberg equilibrium and how they apply to equine genetics.
- Associate genetic differences and similarities with each equine breed.
- Review how linkage plays an important role within the equine genome.

Unit 12: Equus
- Practice classifying different equine species according to the Linnaean taxonomic system.
- Recognize equine endangered species and hybrids.
- Complete Final Exam

List of Instructors with current bio

Dr. Wendy Brett

Dr. Wendy Brett has been involved with horses since she was a young girl. After high school, she spent a year in Germany as a working student, returning to Ontario to manage a hunter/jumper/ breeding farm for the next 5 years. She obtained her BSc , and veterinary degree from the University of Guelph, and then worked for a busy equine practitioner, specializing in performance horses and thoroughbred broodmare practice . Wendy returned to OVC to complete a Residency in Equine Surgery before running her own equine ambulatory and surgical clinic. She has spent a number of years in small animal practice, helped coach veterinary students in the clinical communication course, and lectured to foreign veterinarians in the Veterinary Skill Training Enhancement Program. Throughout various career pursuits Wendy continued to ride and show hunters and jumpers, and taught riding. Wendy lives with her family on a small horse farm in Puslinch where she pursues her latest passion: eventing. She is also currently the District Commissioner for the Guelph Pony Club. ‘I thoroughly enjoy teaching at all levels, and continue learning daily from "My Horses, My Teachers."

Dr. Kathleen Cavanagh

As a **horsewoman**: worked with horses since I was 9 years old, taught both able-bodied and mentally /physically challenged students, trained horses in my teen years, managed a breeding farm and a pleasure horse barn, had my first horse for 31 years. Currently I am showing primarily in Sport Horse division, Arabian Circuit (hunter, dressage, hack)

As a **veterinary educator**: currently act as a coach for veterinary student communication skills labs and recently co-authored a textbook. I have written and edited many articles and managed different aspects of educational website/CD development for several clients. In addition to developing comprehensive wellness practice protocols, I have consulted with the CVMA for their online presence to develop a career presentation used across Canada by vets.

Gayle Ecker

At Work: Gayle has been the Senior Manager of Equine Guelph since its inception in 2003, and played an instrumental role in its birth. She has dedicated her energies to advancing the equine industry through education and communications. Gayle created the ‘pyramid of education’ model – an educational approach that

provides learning pathways for career development at all levels (youth education > industry skills > Equine Science Certificate > higher education) in the equine industry. In collaboration with the Office of Open learning, Gayle developed the Equine Science Certificate program – an on-line program targeted to the equine industry. She also acts as an instructor in the program.

At Horseplay: Gayle started riding before she could walk! A dappled grey Shetland pony named Pogo was her first mount. Known as the 'show junkie', Gayle spent her youth competing at Arabian shows. A former researcher, Gayle's expertise is in the area of exercise physiology. She has been the Assistant Chef d'Equippe for the Canadian Endurance Team, traveling around the globe with the team to international events like the Pan-Am and World Endurance Championships. These days, Gayle takes pleasure in riding her two Quarter horses through the wooded trails of her country home.

Dr. Sid Gustafson

Pursuing his lifelong horsemanship interests, Dr Gustafson graduated from Washington State University with a Doctor of Veterinary Medicine degree to specialize in equine sports medicine. His subsequent concern for the mental and physical health challenges that stabling and confinement created for horses led him to the study of equine behavior. As Equine Studies Program Coordinator for the Natural Horsemanship Program at the University of Montana Western from 2006-2008, Professor Gustafson developed a science-based equine studies curriculum that explored equine behavior and husbandry as well as appropriate contemporary horsemanship. He is currently completing a book on equine behavior and contemporary horse culture to be by published by Eclipse Press entitled The Language of Natural Horsemanship to be released this fall in Lexington, Kentucky.

Sid had the good fortune to be raised with horses in Montana just under the Medicine Line of Alberta, Canada, a country he wandered into horseback often riding with the Blackfeet Indians. He developed an early interest in equine behavior through his exposure to his family's ranching and horse breeding pursuits, where he was witness to feral horses in natural settings on a regular basis. Sid has raised and trained horses all his life, and continues to do so understanding clearly there is much more to know and appreciate about horses. In addition to consulting and teaching Equine Behavior, Dr Gustafson currently is a seasonal regulatory veterinarian at Finger Lakes Racetrack across Lake Ontario from Guelph in Ontario County, New York, where he represents the horses.

Brianne Henderson

I consider myself lucky enough to have been immersed in the equine world since birth. I grew up on an Arabian and Sport Horse breeding/training farm in Niagara, Ontario. My family continues to produce Crabbet Arabian and Arabian/Warmblood crosses for the sports of dressage and endurance. My involvement in the world of endurance racing includes experience as a competitor and a line

veterinarian from grass roots to an international level of competition. Most recently I was the Assistant Team Veterinarian for Team Canada at the World Equestrian Games in Lexington Kentucky. I graduated from the Royal (Dick) School of Veterinary Studies in Edinburgh, Scotland, where I focused my studies on equine sports medicine and surgery. Currently, I am working in mixed practice to gain experience before I begin my training to become an equine surgeon. My love of the equine athlete and my focused interest in surgery has given me a great love of anatomy and understanding form to function. I encourage all horse owners and riders to improve their knowledge of how anatomy and conformation relate to the athletic ability of their animal.

Dr. Jane Kielly

Dr. Jane Kielly is a graduate from the Ontario Veterinary College in 2000. She has spent 8 years in clinical veterinary practice in the Ottawa Valley focusing in the field of equine medicine and surgery. Her special interests are in equine herd health management, performance horse strength and conditioning, lameness and reproductive technologies such as artificial insemination and embryo transfer. She is currently teaching as an assistant professor in the Department of Animal and Poultry Science at the Ontario Agriculture College, Kemptville campus as well as fulfilling the role of facility veterinarian and exploring research opportunities. Her teaching goal is to incorporate clinical experiences in an interactive environment to further education in equine health and performance.

Dr. Mike Lindinger

Dr. Mike Lindinger began his training as a comparative animal physiologist during his final two years of undergraduate study at the University of Victoria. His MSc work in the Biology Department of McMaster University involved acid-base and ion transport regulation in amphibians, where he conducted experiments in fish and marine mussels. His focus shifted to mammalian skeletal muscle and human exercise physiology during his PhD research in the Department of Medicine at McMaster University. Joining the faculty at the University of Guelph in late 1987, Mike has continued studies of skeletal muscle ion and acid-base regulation using rodent as well as human and equine muscle preparations. Mike's research in equine exercise physiology began in 1992, with extensive studies on dehydration of endurance horses, development of an oral electrolyte supplement, physiology of heat stress, heat acclimation and exercise, quantification of fluid and electrolyte shifts during exercise and recovery, determination of the origins of acid-base disturbances during exercise, and non-invasive assessment of hydration status in horses.

Doug Nash

Doug served as farm manager at Glengate (formerly Cantario Farms) for almost 30 years. Glengate consisted of 3 farms, housing 80 - 100 mares, 8 stallions, and yearlings. In addition to servicing 1200 mares annually with their own stallions, Glengate collected, shipped, froze, evaluated, imported and exported semen for 125 to 140 stallions of all breeds and disciplines. Raised near a commercial standardbred breeding farm and local fairgrounds, Doug spent his youth working on the farm and training and racing in Ontario and Michigan. His first love was always the farm and in l974, he took over the management of a farm with 6 stallions and 130 mares. Since that time, he has personally attended over 2500 foalings and witnessed and participated in the evolution of artificial insemination, the freezing of semen and embryo transplants.

Dr. Ev. Post

Dr. Ev. Post grew up with horses and has enjoyed experience in many of the equine disciplines. After graduation from the Ontario Veterinary College in 1997, she moved to England. During the next 5 years, she worked in equine private practice and at the University of Liverpool Large Animal Hospital. She completed a 3-year Equine Surgical Residency with specialization in Orthopedics at that same hospital. Upon moving back to Canada in 2002, she has practiced in the Campbellville, ON area providing first and second opinions for equine cases. She strongly believes continuing education for both the horse owner as well as the veterinarian, coupled with ongoing research are paramount to the welfare of our horses.

Dr. Susan Raymond

At Work: Susan oversees the communications program and is heavily involved in the education programs of Equine Guelph. Susan is the instructor and course co-creator of the Management of the Equine Environment online course, Equine Science Certificate program. Susan has also been the assistant instructor of the Equine Journalism online course, Equine Business Management Certificate program. Formerly, she was involved in air quality research which provided practical recommendations to the horse industry on stable design and management. Susan has completed a PhD, investigating the effects of exposure of horses to mycotoxins.
At Horseplay: Horses are not only part of Susan's professional life, but are her true passion and take up much of her social life. Susan has had a variety of experiences within the horse industry, from exercising young racehorses to jumping, dressage and trail rides. Most recently, she has had the opportunity to work with endurance horses and has even competed in a number of "ride and ties".

"I believe that we, as caregivers, hold a tremendous responsibility to our horses. The environment that we create for them has a considerable impact on their welfare, health and performance ability, regardless of discipline. I feel extremely fortunate that, through these industry education programs I am able to combine my love of horses with my interest in communication and education as a career."

Dr. Ioana Sonea

Dr. Ioana Sonea practiced equine medicine (racetrack and pleasure horses) until 1983, when she started a residency in Equine internal medicine at Michigan State University. Upon completion of her residency in 1986, she obtained a Ph.D. in Veterinary Anatomy, and worked as an ambulatory clinician for the Equine Field Service at Michigan State University (1990-1994). After teaching comparative veterinary anatomy and physiology at the Ontario Veterinary College, Ioana returned to Michigan State, where she currently teaches. Ioana continues to visit Guelph each year to co-facilitate the Guided Tour of Equine Anatomy and Advanced Equine Anatomy workshops. In her spare time Dr. Ioana enjoys dog sports and gardening (can't afford a horse, unfortunately). Dr. Sonea will be facilitating our in-person anatomy workshops in 2010 with Dr. Jeff Thomason.

Dr. Jeff Thomason

Jeff is the Anatomy Professor with Biomedical Sciences. The majority of his time is spent teaching anatomy to the veterinary students at the Ontario Veterinary College and carrying out his internationally recognized research on the form and function of the equine hoof. Jeff is a popular speaker amongst horse owners as he has the ability to “bring the anatomy to life” with his presentations. His seminars are well known for his teaching aids as he brings “bits and pieces” for demonstration purposes to give his audience an in-depth view and understanding of the form and function of the horse. Dr. Thomason also teaches our in person Anatomy workshops.

Industry Support

Equine Guelph will be implementing an industry-wide research survey on February 1, 2011. Equine Guelph has been responding to the research and education needs of the horse industry for the last 8 years. The survey is expected to reach 40,000 people within the horse industry in Canada. The goals of the survey (for Equine Guelph) are:

- Improve and develop equine education programs (including the ESC)
- Identify areas of research that are of highest priority to the horse industry
- Enhance communication of horse-related information to the horse industry
- Identify trends among different equine industry groups

This extensive external industry research is expected to be completed in April, 2011. It was determined that the Equine Science Certificate program should not conduct an additional external survey at this time as the same goals were being met through the Equine Guelph survey. The program will have full access to the results of the survey and the recommendations for improvement and expansion of equine online education would be examined.

The wide spread industry representation on Equine Science Certificate program committee is an indication of the level of external support this program has. Membership on this committee is renewed on a yearly basis.

Student Summative Evaluations

Students are requested to complete a student evaluation at the conclusion of each course. The student evaluation was revised for the Winter 2009 semester and is currently in use. The evaluation includes sections on learning support services, registration, course design in reference to the students learning objectives, course content, instructor feedback, course materials, online course features and an opportunity for the student to comment on general experience in the course.

A summary of student comments follows:

> Dr. Ev was very supportive throughout this course. She frequently asked for feedback from students on how to improve the course in the future and she was very prompt and thorough at answering student's queries. Furthermore she made a real effort to encourage group discussion. She is one of the most engaged instructors I have had to date through the ESC courses.
>
> I thoroughly enjoyed this course and would highly recommend it to other horse owners.
> Topics covered were relevant to all disciplines and I feel like I will be a better owner and care-taker for my horse.
>
> The website made this course very easy for me to take, I have social anxiety and have a hard time in a classroom situation so being able to take a class online is really important to me. The only problem I found was that I was unable to participate in as much as I would have hoped to in the discussions due to this problem.
>
> Great course just as I expected and overall was a wonderful learning experience!! The theoretical framework of the course of examining both the structure and function of the horse's anatomy was really beneficial and provided me with a better understanding of how the horse's body works!
>
> Very positive experience. I was particularly pleased to see the level of discretion used by instructors where students messed up on quizzes, missed deadlines or were confused by content. This reduced stress I am sure for a number of students and helped maintain a positive class atmosphere.
>
> I found that this course really boosted my knowledge about managing my horses' environment to lead to their overall well-being, health, and safety, as well as the management of my facility (how to do things, making things more efficient, etc).
>
> This course is very well put together and presented. Doug was excellent in taking the written word out of the text and making it real. I am very pleased with the course and feel that I have learned a great deal having done it. I feel well

prepared for the coming spring when we will have 6 mares deliver at our farm! That's when I'll really see theory coming to life.

Gayle Ecker was very well organized and presented the week's objectives clearly. She offered a great many examples that gave a reality to the physiology and presented many thought provoking subjects. She replied to questions quickly which helped because this course moved along so quickly it was sometimes hard to keep track of all the "conversations".

Dr Sid turned us all into critical thinkers. Additional materials were provided for further reading for those interested. He created an easy and fun atmosphere for all of the students regardless of our backgrounds. Interesting topics of discussion were presented to keep the discussions flowing.
I enjoyed having an accurate learning experience where I feel confident I am getting true information that I can apply. I cannot wait to take some more courses and look forward to completing my equine science certificate and eventually my diploma.

Commentary of Program Resources

Staffing

The Equine Science Certificate is a joint program offered by Equine Guelph and the Office of Open Learning.

Management and Coordination is provided by:

Gayle Ecker, B.Ed, MSc
Director Equine Guelph

Marjory Gaouette, B.Ed, MA (Leadership)
Manager Program Development

The Office of Open Learning (OOL) provides:

- program needs assessment and SCNS submission preparation
- program management support
- project management
- financial and budgetary management
- registration services
- instructional design
- learner support services

The Manager of Program Development support will include; needs assessment completion, program development, project planning and management, budgeting, financial accounting and forecasting, market research, student recruitment, designing and executing marketing plans, course delivery and evaluation.

The Distance Learning Specialist support will include; course design and pedagogical strategy, online learning best practices, assessment strategies, course material production, educational technology development and instructor support.

Learner Support Services will include; student registration, grade reports and awarding of certificate/diplomas, admissions, copyright coordination, course material production, and technical support.

Equine Guelph provides:

- Advisory committee management and support
- Subject matter expertise

- Marketing support
- Industry networking
- Equine research

Library services:

- Students access the library resources primarily electronically and make use of:
  - E-journals
  - Library holdings
  - Students supports to conduct research and writing

Technology Supports:

- The program is delivered through Desire 2 Learn platform supported by OOL.