PRIFYSGOL ABERYSTWYTH UNIVERSITY

Equine Science

NEWSLETTER 2016

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IBERS Institute of Biological, Environmental and Rural Sciences

Ground-breaking new equine scheme a UK first!

Dr Debbie Nash shows equine degree students how to measure the fibre content of hay samples

In response to demand, IBERS has recently opened its doors to students studying a unique new degree scheme, BSc (hons) Equine and Veterinary Bioscience; the only course of its kind in the UK. Equine degree schemes offered at IBERS are taught at the level and content of a zoology degree, using the horse as model for many of the principals and theories studied. Being a traditional university, the vast majority of teaching staff have PhD's and are research active enabling students to benefit from the latest advances in equine science and the laboratory facilities to put theory into practice. The Equine and Veterinary Bioscience degree is unique because it incorporates topics such as animal health, disease diagnosis and control and veterinary pharmacology. Students joining the scheme include those looking for an alternative to veterinary medicine and many aspire to apply to vet school after successful completion of the course. The icing on the cake is that the University's Lluest Equine Centre is a BHS 'Where to train' establishment which means you can ride while you study, work towards BHS exams, and even bring your own horse.

List of Courses

MSc
Equine Science
Animal Science
Livestock Science

PG Diploma
Equine Science

PG Certificate
Equine Nutrition
Equine Reproduction and Stud Management

BSc Honours
Equine Science
Equine Studies – 1-year top-up

Foundation Degree
Equine Studies (D324)

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Lluest Equine Centre ever popular with students and locals

The outdoor arena has had a complete make over and is looking fantastic for 2016. The first competition using it was a huge success with in excess of 100 show jumping rounds completed. Lluest run competitions most weekends including show jumping, unaffiliated dressage, affiliated dressage (including Quest Club) and show cross.

We host regular clinics with external instructors as well as offer training with Lluest equine staff. Patrick Print FBHS is a regular visiting instructor who provides a great wealth of knowledge and expertise for those who are competing or students working towards their BHS exams. We have also had the expertise of Linda de Matteo BHSI and BE accredited coach. Booked to come in February are Olivia Oakley and Lucinda Fredricks, so we are all looking forward to some world class training to start 2016!

Following a successful clinic by Matt Ryan OBE (double Olympic goal medallist) in the summer we were lucky enough to purchase a horse from him. Max is a fantastic addition to the University and will help many students to improve.

In addition to Max we have also bought a fantastic school mistress, Sox. Sox is a 16.2 hh chestnut mare that does not live up to the 'chestnut mare' stereotype. Having only been with us from October 2015 she has already become one of the student's favourites. Here at Lluest we are lucky to have a fantastic group of well-schooled horses who support teaching students to a high standard.

Aberystwyth University has already had success in the national student riding competitions (BUCS). Our A team have competed once this year and gained 2nd placed as a team with one member winning the dressage section. We wish them and the B team success in the upcoming 2016 competitions.

New addition Max being put through his paces in a Lluest Equine Centre dressage competition

Lluest Equine Centre's Sweet Pea and centre manager Hannah Appleton taking part in the Horses Inside out Demonstration, while students look on.

Horses Inside Out comes to IBERS

Gillian Higgins from Horses Inside Out (see www.horsesinsideout.com) visited Aberystwyth University's Lluest Equine centre on the 1st of October to give a day-long lecture demonstration to students. All equine students were given time out from usual lectures to learn from the real-life demonstration which links closely to modules our students study, namely Equine Anatomy and Physiology and Equine Exercise Physiology. Before the demonstration began, Gillian and her student-helpers spent almost 4 hours painting muscles and the skeleton on her two equine demonstrators – Sweet Pea and Basil.

Gillian used parts of a real horse's skeleton to illustrate points made as well as putting Sweet Pea and Basil through their paces. Sweet Pea was ably ridden by Hannah Appleton BHSII, the equine centre manager and Basil lunged beautifully for Jen Lawrence, an equine centre assistant who is on a year's work experience as part of her BSc Equine Science degree in IBERS.

Gillian's lecture illustrated how riders can encourage the horse to develop certain core muscles to promote good posture, which in turn enable the horse to lift its back and support the weight of a rider whilst exercising in an energetically efficient and physiologically correct manner. Just as Pilates can help a person's core strength, similar principals can be used to promote strength through the horse's muscles and skeleton, maximising performance quality and preventing musculoskeletal injuries. Gillian demonstrated a number of stretching exercises that can be used to develop a horse's core strength.

This understanding of the horse's physique and musculature is an intrinsic part of the equine courses offered by IBERS. Horses Inside Out, as well as practical's run by IBERS lecturers, bring to life the scientific principals taught in lectures and laboratory sessions. Everyone certainly enjoyed the day and Sweet Pea and Basil were rewarded with plenty of carrots!

Gillian Higgins from Horses Inside Out demonstrates lateral flexion in the spinal column

IBERS-Equine scientific research published

Dr Clare Winton, a recent PhD graduate from IBERS, along with, Dr Debbie Nash, Dr Matt Hegarty, Dr Rob McMahon, Dr Mina Davies Morel and Dr Neil McEwan, recently published a paper that characterised UK native pony population genetics and how they differ to those exported to North America and bred there for around 150 years. The results, published in Ecology and Evolution in collaboration with researchers in Canada, were certainly surprising. The study investigated Welsh Sections A and B, Fell, Highland, Connemara, Dartmoor, Shetland and Kerry Bog populations from both locations. When a new population is established at a location distant from its original founders, a degree of genetic 'drift' is to be expected. Indeed, the data suggested that the North American breeds of pony were slightly less diverse than their UK counterparts from whom they are derived; this was especially true for the Fell and Dartmoor pony. Furthermore, the North American Welsh, Shetland and Connemara breeds shared some genetic material suggesting there had been a degree of cross breeding between these and potentially other breed populations. The study concluded that when establishing a new population as a sub-group of an original, founding breed, it is important to understand how to maintain genetic diversity through breeding management and careful selection of breeding individuals. This study is a good example of how introducing new populations to a new habitat for conservation purposes, must be managed very carefully to safeguard genetic resources.

Nichola Reynolds an IBERS' MSc Equine Science student along with Dr Mina Davies Morel from IBERS and Prof John Newcombe a specialist equine veterinary surgeon recently published a paper on Nichola's MSc dissertation work that investigated multiple ovulations in the mare. The paper was published in the Veterinary Record. The mare's reproductive system is rarely capable of sustaining multiple pregnancies to term. Multiple pregnancies in the mare derive from multiple ovulations, (non-identical twins) which may be synchronous (occur at the same time) or asynchronous (occur up to 96 hours apart). Asynchronous ovulations may therefore result in two embryos of different sizes, which are challenging for the vet to detect and therefore manage. There are various management options that can be used if a mare is carrying a multiple pregnancy. The most common option is to eliminate one twin by 'pinching out' (physical destruction of one twin via rectal palpation), usually at by ultrasonic scanning between days 12 and 18 of pregnancy. However, if the initial multiple ovulation was asynchronous the embryos will be different in age and therefore size, increasing the chance that one will be missed at scanning increasing the risk that the mare will unknowingly be carrying a multiple pregnancy. Nichola's study found that asynchronous multiple ovulations occurred in 28.5% of mares and that this incidence increased at the beginning and end of the breeding season. It is therefore very important that mares are closely monitored in early pregnancy, particularly at the extremes of the breeding season, to detect asynchronous multiple ovulations and different sized embryos.