Equine Science

Writtle College is one of the oldest providers of specialist equine study and research in the UK and is known for its innovative and pioneering approach to course development. Postgraduate opportunities for equine professionals are developed through close liaison with successful figures in industry and academic experts at the University of Essex.

Postgraduate Study Programmes

The department offers two main postgraduate awards, MSc Equine Science and MSc Human and Equine Sports Science. Both have been designed to provide postgraduate students with an advanced understanding of the intrinsic problems related to the industry. Both are available on a full-time and part-time basis, however in the case of the MSc Equine Science part-time route is only available at weekends.

Both topic areas can be pursued by research, leading to an MSc, MPhil or PhD, and each can be studied as a full-time or part-time postgraduate qualification. For example in the case of the MSc Equine Science by research this would involve undertaking a major student-managed research project. The Department would strongly encourage any postgraduate student who wished to undertake an award by research.

The University of Essex

The MSc in Human and Equine Sports Science which is taught in conjunction with the University of Essex is the result of the growing collaboration between Writtle College and the University. Links with Essex have developed extensively in recent years and in addition to the quality assurance of our courses which are validated though the University, departmental staff also cooperate in research and teaching activities.

Programme highlights

In-depth research into different aspects of the equine industry is a key feature of the postgraduate equine study programmes at Writtle. Regular research presentation from external experts ensures that our students have access to current thinking and 'cutting edge' methodologies.

Previous speakers include:

- **Prof. Don Broom, Colleen Macleod Professor of Animal Welfare – University of Cambridge**
- **Dr Colin Roberts BVSc, PhD, FRCVS, RCVS specialist in Equine Internal Medicine – University of Cambridge**
- **Dr Pat Harris MA, PhD, VetMB, MRCVS, Equine Studies Group, Waltham Centre for Pet Nutrition; Adjunct Professor of Equine Studies – Virginia Polytechnic Institute and State University**
- **Dr Duncan Hannant BSc (Hons), MSc, PhD, MIBiol, Cbiol, Head of Immunology and Research Coordinator – Animal Health Trust, Newmarket**
- **Dr Derek Knottenbelt DVM&S, BVM&S, Dip ECEIM, MRCVS, Senio Lecturer (Medicine) – Liverpool Vet School**

An all-round supportive and stimulating study environment ensures that students maximise the time spent in classroom sessions in preparation for pursuing their own particular interests through self-directed study.

Research in the Department of Equine Studies

Postgraduate teaching in the Department of Equine Studies is supported by a number of ongoing research programmes, conducted by staff and students. Many studies are performed in collaboration with other institutions. Research has focused on the improvement of the welfare, breeding and management of the horse through the application of sound scientific research principles. Main areas of research include:

- The effect of stable design on behavioural measures of the welfare of the horse. In particular, this study focuses on factors such as all-enclosed 'American Barn' yards vs. traditional-style yards with looseboxes overlooking a central courtyard, effects of type of bedding, and proximity of, and access to, other horses.
- Means of enrichment of the stable environment, such as provision of toys, feed blocks and manipulation of other management factors. These studies investigate the effect of such procedures on the behaviour and welfare of the confined horse.
- The effect of controlled breeding practices on the behaviour and welfare of mares. This field study evaluates the effect of teasing and common restraint procedures on behavioural indicators of the welfare of mares, as well as effects on reproductive performance.
- Equine learning behaviour, particularly the learning of operant tasks and the effect of social factors.
- Equine ingestive and grazing behaviour and its effect on the development and maintenance of grass sward.
- Efficiency of nutrient utilisation in conventional and novel feedstuffs.
- Development of breeding strategies for the British Sports Horse.
- Use of hair clippings to identify drug administration history in horses. In order to validate this technique, fundamental research on the effect of breed type and environmental factors on tail and mane hair growth has been conducted.
- Management of horse pasture in relation to improving its utility, efficiency and appearance.

Career Opportunities

The MSc programmes are ideal for those in the equine industry who wish to improve their career prospects. Past students have gained promotions in their existing workplace, or found new employment working in education, for feed companies or in equine product sales, marketing and development.

MSc Equine Science

Who is the Course for?

The course is ideal for those in the equine industry wishing to enhance their career potential and knowledge of the intrinsic problems that can occur within such a diverse industry. Applicants will normally hold at least a second class degree in equine studies/science or a related biological science degree. However applicants holding other qualifications will also be considered.

Course Aims

This scheme will provide students with:

- **A focus on research methodology, application and critical evaluation to encourage the development of further expertise in selected aspects of equine study.**
- **An advanced understanding of the biological and physiological systems of the horse.**
- **The ability to identify acceptable husbandry practices for a range of equestrian disciplines through a knowledge of the nutritional and environmental requirements of performance horses.**
- **An understanding of the horse as an athletic, competition and breeding animal in the context of the equine and ancillary industries.**

Duration

The course is delivered on a full-time (one year) or part-time (two year) basis. Full-time students are taught over sixteen weekend blocks. Part-time students are taught over seven weekend blocks per academic year.

Delivery and Assessment

Teaching methods for this programme will be a combination of lectures, workshops, seminars, tutorials, visits, case studies and student-managed learning. To make sure that students take full advantage of the open access study facilities at the College, the self-guided study aspect of the MSc Equine Science programme is supervised by academic staff. Students will be offered advice and guidance so that they devise a learning strategy appropriate to their needs and lifestyle. It is also recognised that in the case of part-time students, some additional study support may be required outside of course attendance. This may be by email, telephone or individual tutorial.

Assessment is through a combination of course work in the form of critical, evaluative research essays, oral presentation, unseen written examinations and a dissertation. The dissertation is undertaken over the spring/summer period for full-time students and over the final year for part-time students, under staff supervision. It consists of a scientifically-based piece of research (max. 25,000 words) on issues within equine science. Students who choose to conduct their dissertation at an external organisation, must have access to the same level of facilities and support as students conducting their projects at the College.

Students study the following modules:

Breeding Strategy and Reproductive Technology
Sports Medicine and Performance
Equine Exercise Physiology
Equine Ethics and Welfare
Behaviour
Equine Nutrition
Equine Health
Research Methods

Key Features

- **Unique blend of in-house delivery from outside speakers involved in 'cutting edge' research**
- **Overview of the global equine industry**
- **Development of research and statistical interpretation skills**
- **Emphasis on critical evaluation of current and established research practices**

Career Prospects

Research in equine and other animal sciences
Equine nutritionist
Equine/animal product development
Lecturing in equine/animal science
Product marketing and sales
Equine breeding industry

Graduates' Corner

"The MSc Equine Science has given me greater credibility both within the company I work for and the industry in general. It also created some great opportunities, in particular the chance to present the results of my dissertation to the Society of Feed Technologists conference."

MSc Human and Equine Sports Science

Who is the Course for?

The aim of this course is to provide graduates from a variety of disciplines with an advanced understanding of equine and human exercise science through the study of biological and physiological systems. Applicants will normally hold an honours degree (2.2 or above) in physical education, physiology, biochemistry, biological science, anatomy, sports medicine, recreation and leisure management, any equine studies/science, or allied subjects. Professional qualifications may also be acceptable and every application will be considered on its individual merits.

Course Aims

Students who complete this programme will be able to demonstrate:

- Knowledge of the fundamental concepts of human and equine sports science
- A clear understanding of contemporary debates about the impact of exercise on the performance, fitness and health of human and equine athletes
- The ability to formulate and undertake research into specific industry areas
- A range of key skills in information retrieval, communication, analysis and data interpretation

Duration

The MSc is delivered in conjunction with the University of Essex on either a full-time (one year) or part-time (two year) basis. Part-time students are taught over seven weekend blocks and one extra day per week. They also receive additional distance support.

Delivery and Assessment

Teaching takes place at The University of Essex campus in Colchester on Tuesdays and Thursdays for the full-time degree and will alternate annually between these days for the part-time degree. All modules taught at Writtle College will take place at weekends. Teaching methods will be a combination of lectures, seminars, tutorials, case studies and student-managed learning. The self-guided study aspect of the course will be supervised by an academic member of staff to ensure that students take full advantage of the open-access study facilities at both Writtle and Essex.

The course consists of six taught modules, two self study dissertations (8,000 words) and a masters stage research project. Only one dissertation in compulsory, which means that students can choose to write the second dissertation or take an additional optional taught module instead.
The research project (14,000 words maximum) is normally carried out over the summer vacation and submitted by 1st September.

Students will study the following core modules:

Writtle College
Exercise Physiology, Sports, Medicine and Performance
University of Essex
Research Methods
Fitness Assessment

In addition two courses must be chosen from the following optional modules:

Writtle College
Ethics and Welfare
Equine Nutrition
Equine Health
University of Essex
Human Nutrition
Human Sports Medicine
Psychology of Sport
Biochemical Aspects of Exercise and Sport

Key Features

- Focus on the scientific principles underpinning human and equine athletic performance.
- Excellent sports science facilities including an exercise laboratory and fitness training testing laboratories.
- The Centre for Sports and Exercise Science at the University of Essex received a maximum score of 24 in a recent assessment carried out by the Quality Assurance Agency for Higher Education (QAA).
- Regular lectures and presentations by equine science experts.
- Equine Training and Development Centre with 40 horses and a working stud.

Career Prospects

Health and fitness practitioners/professionals.
Research in biological science and physiology.
Lecturing in equine and sports science.
Positions in recreation and leisure management.
Equine nutritionist.
Equine product development.