

# School of Equine and Animal Science

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## School of Equine and Animal Science

The School of Equine and Animal Science offers a number of postgraduate taught and research opportunities to meet the aspiration of those who wish to study for an MSc, MPhil or PhD. The courses offered are suitable for those who wish to progress directly from undergraduate studies, as well as those who have had a break from study or are in employment. The courses are available on a full-time and part time basis and provide the opportunity to study at an advanced level either by a combination of teaching and research or by research only. The quality of the learning experience is enhanced through the College's strong links with the University of Essex and the involvement of successful figures in animal and equine industries and the wider research community.

### Resources

#### Equine Training and Development Centre

The Equine Training and Development Centre is an excellent scientific and commercial resource for student teaching in terms of exercise physiology, biomechanics, rider fitness and equine enterprise management. The Centre comprises of a 50 x 40 metre indoor arena, two large outdoor arenas, a horse walker, jumping paddock, cross country course and 20-box DIY livery yard.

#### Lordships Stud

The well-established Lordships Stud provides excellent facilities for training and the production of quality competition horses. Students are involved in all aspects of stud management and young horse production, from conception through to sale. Specialist facilities at the stud include modern veterinary examination and AI collection areas, laboratory, manege, indoor school, foaling boxes with web linked CCTV (FOALCAM) and 20 hectares of permanent pasture. A number of stallions stand at Lordships Stud. These are used for the teaching of practical techniques including teasing and semen collection. Lordships Stud has close links with the British Equestrian Veterinary Association and is a CPD venue for reproduction courses.

#### Lordships Science Centre

Equine and animal courses involve the study of anatomy, physiology, nutrition, health and breeding, and many classes take place in the specialised laboratories at the Lordships Science Centre. Laboratory work may include a variety of different analytical and investigative methods, ranging from anatomical

demonstrations and dissections, examination of preserved slide material and more specialised analytical techniques such as ELISA, GLC, in vitro fermentation techniques, histology and microbiology. The Centre has recently acquired the latest state of the art Computer Assisted Sperm Analysis (CASA) equipment. The 'Spermanalysis Unit' is involved in research into new concepts for maximising the measurable parameters of mammalian spermatozoa. The unit is also used to support consultancy work related to the reproductive potential of stallions within the equine breeding industry.

#### Animal Care Unit

The Animal Care Unit houses traditional companion animal species such as rabbits, guinea pigs and rodents, exotic animals including snakes, water dragons and geckos and yard animals such as goats, sheep, geese and ducks. Making it an ideal facility for the demonstration of comparative animal behaviour, differences in nutritional requirements and issues relating to animal welfare and management.

#### The College Farm

Farm livestock are a major sector within the animal industry. The College farm has a commercial pig unit, a flock of sheep, a Red Poll suckler herd and facilities for housing calves. In addition, the College has access to a large dairy unit. Our Masters courses in Animal Production and Nutrition, and Animal Biology and Welfare use these units extensively for teaching purposes and research projects.

#### Postgraduate study programmes

The School offers taught Masters courses in Equine Science, Human and Equine Sports Science, Animal Biology and Welfare and Animal Production and Nutrition. These

courses are designed for students mainly, but not exclusively, from the biological sciences who want to develop an in-depth knowledge and understanding of the horse; the science underpinning the development of the performance horse and rider; the biology and welfare of companion, domesticated and wild animals managed for production or leisure, and the scientific and applied basis of farm livestock production and nutrition. All are available on a full and part-time basis. In the case of the MSc Equine Science and the Human and Equine Sports Science, both the full and part-time options are weekend based.

In addition, the School also offers suitably qualified applicants the opportunity to study towards a postgraduate degree by research only. The programmes, leading to the award of MSc, MPhil or PhD can be studied on a full or part-time basis. Students who are considering a programme of study leading to the award of a PhD should allow a minimum of three years full-time study or six to eight years part-time study.

### **The University of Essex**

The College has long standing research links with the University of Essex, which also validates the College's Postgraduate degrees. 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.

### **Research activity**

Research activity and consultancy work are significant aspects of postgraduate programmes within the School of Equine and Animal Science. See pages 8 and 9 for further details.

### **Centre for Equine and Animal Science (CEQAS)**

One of the Centres of Innovation at Writtle College, CEQAS is developing a research and consultancy portfolio to capitalise on the expertise of academic staff and enrich the learning environment of students. The activities of CEQAS feed directly into the curriculum and have provided numerous opportunities for students to complete assignments, case studies and dissertations based on ongoing work.



The work of CEQAS focuses around six themes: Fertility and Reproductive Performance; Animal Health and Nutrition; Behaviour and

Welfare; Industry and Enterprise Development; Complementary Therapies and Ethnoveterinary Medicine and Equestrian Sports Performance.

Current research and consultancy work includes the causes, detection and prevention of lameness in dairy cows, evaluation of semen quality, biomechanical dysfunction and treatment in horses and evaluation of equine sports performance.

CEQAS staff have presented, offered and invited papers at numerous national and international conferences.

## MSc Equine Science

### Postgraduate Diploma in Equine Science

### Postgraduate Certificate in Equine 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 science through the study of biological and physiological systems. Applicants will normally hold at least a second class degree in equine studies/science or a related biological science degree. Applicants holding other qualifications will also be considered.

#### Course aims

This scheme will provide students with:

- An understanding of research methodology, the critical evaluation and application of existing knowledge to enhance further expertise in selected aspects of equine science.
- 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

This course is delivered over one year on a full-time basis or over two years on a part-time basis. Full-time students are taught over 16 weekend blocks. Part-time students are taught over seven weekend blocks per academic year.

#### Delivery and assessment

Teaching methods for this programme are 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 (max. 25,000 words), based on an approved research project on a subject related to equine science. The research project is undertaken over the spring/summer period for full-time students and over the final year for part-time students, under staff supervision. Students who choose to conduct their research project at an external organisation, must have access to the same level of facilities and support as students conducting their projects at the College.

Students will 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
- Dissertation

#### 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

Upon successful completion of this course, graduates will be able to undertake research in equine and other animal sciences. Graduates will also be able to lecture in equine/animal science or work in equine nutrition, equine/animal product development, product marketing and sales, or the equine breeding industry.

## MSc Human and Equine Sports Science

### Postgraduate Diploma in Human and Equine Sports Science

### Postgraduate Certificate in 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, or 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 over one year on a full-time basis or over two years on a part-time 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 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 College and the University of Essex.

The course consists of six taught modules, two self study dissertations (8,000 words) and a research project. Only one dissertation is 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:

#### Dissertation

##### At Writtle College:

- Exercise Physiology, Sports Medicine and Performance
- Research Methods
- Literature Review

##### At University of Essex:

- Fitness Assessment

Two must also be chosen from the following optional modules:

##### At Writtle College:

- Ethics and Welfare
- Equine Nutrition
- Equine Health

##### At 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

Upon successful completion of this course, graduates will be able to undertake research in biological science and physiology. Graduates will also be able to lecture in equine and sports science, become a health and fitness practitioner/professional, take up positions in recreation and leisure management, or work in equine nutrition or equine product development.

## MSc Animal Biology and Welfare

### Postgraduate Diploma in Animal Biology and Welfare

### Postgraduate Certificate in Animal Biology and Welfare

#### Who is the course for?

This is an advanced course for students from the biological sciences who want to develop an in-depth knowledge and understanding of the biology and welfare of companion, domesticated and wild animals managed for production or leisure. Applicants will normally hold a BSc (Hons) 2.2 or above, or an equivalent qualification in a related topic. Applications are welcome from individuals with extensive industrial experience. Applications from non-UK students are particularly welcome.

#### Course aims

The scheme will provide students with an opportunity to:

- Develop existing knowledge and experience in the biology of designated species (farm, companion and exotic species) maintained in their managed or natural environment.
- Develop an enhanced understanding of animal welfare by specific reference to the biology of the animal and appraise the issues that relate to international criteria for animal welfare.
- Study at an advanced level the techniques used for assessing animal welfare in a range of species and environments, and to determine the limitations of these methods.

#### Duration

This modular course delivered at Writtle College and at HAS Den Bosch University of Professional Education in The Netherlands is awarded by the University of Essex. It is expected that most of the students undertaking this course will do so on a full-time basis over one year. It is possible to study over a two or three year period as a part-time student. Students will study at Writtle College from September to December. The second stage of the course is delivered at HAS Den Bosch from January to April. A minimum of three months will be spent studying away from the UK. The award of Postgraduate Diploma requires a period of seven months of study (September to April) and does not require the completion of a dissertation.

#### Delivery and assessment

Teaching methods are a mixture of lectures, seminars, tutorials, visits and student-managed learning. This self-guided study takes place under the supervision of staff at Writtle College and HAS Den Bosch. Students are assessed using a number of methods, including written papers, case studies, seminars, oral presentations and project reports.

The research project allows the student to undertake specialist research in a specific field relating to animal biology and welfare. The project must demonstrate that the student can gather and process data and problem solve. The project is supervised by an academic member of staff and takes place over a 20 week period from April to September. The project can be based at Writtle College or HAS Den Bosch, or at an external organisation.

#### Modules of study include:

- Behaviour
- Nutrition
- Reproduction and Animal Breeding
- Animal Health and Disease
- Animal Welfare Ethics and Legal Aspects
- Animal Welfare and Production Chains
- Animal Habitat Management
- Wildlife Resources
- Technology Transfer and Extension
- Research Methods
- Personal Development Planning
- Dissertation

#### Key features

A combination of theory, practical experience and industrial visits alongside the development of interpersonal and communication skills.

A second term of study, delivered in English, at HAS Den Bosch in The Netherlands.

Opportunities to undertake research in the UK or The Netherlands.

#### Career prospects

Upon successful completion of this course, graduates are likely to enter management positions in the animal industry, animal welfare organisations or go on to study at advanced postgraduate level.

## MSc Animal Production and Nutrition

### Postgraduate Diploma in Animal Production and Nutrition

### Postgraduate Certificate in Animal Production and Nutrition

#### Who is the course for?

This is an advanced course for students from the biological sciences who want to develop an in-depth knowledge and understanding of the nutrition and production of farmed livestock. Applicants will normally hold a BSc (Hons) 2.2 or above or an equivalent qualification in a related topic. Applications are welcome from individuals with extensive industrial experience. Applications from non-UK students are particularly welcome.

#### Course aims

The scheme will provide students with an opportunity to:

- Gain an in-depth knowledge of the science and technology that underpins farmed livestock production.
- Show how integration of theory and practice can be used to create efficient production systems.
- Provide exposure to the commercial environment.
- Carry out an independent research project, critically analyse data and write a dissertation.

#### Duration

This MSc, awarded by the University of Essex, is offered as a one year course and provides advanced level training in the science and practice of animal production and nutrition. The award of Postgraduate Diploma requires a period of seven months of study and does not require the completion of a dissertation. In some circumstances this course can be taken on a part-time basis.

#### Delivery and assessment

Teaching methods are a mixture of lectures, seminars, tutorials, visits and student-managed learning. This self-guided study takes place under the supervision of experienced staff from the School of Equine and Animal Science (SEAS) at Writtle College. Students are assessed using a number of methods, for example written examination, essays, seminars, oral presentations, case studies and project dissertation.

The research project is an essential part of the MSc programme and provides the opportunity to carry out an independent piece of research, critically analyse data and write a dissertation. The project will normally include 'hands-on' practical experimentation to teach the student how to gather and process data and problem solve. The project is supervised by an academic member of staff and takes place over a 20 week period usually between April and September. The project can be based at Writtle College, other institutions or at an external organisation.

Students will study the following modules:

- Animal Nutrition Science
- Animal Feeds and Rationing
- Animal Biochemistry and Physiology
- Animal Management Case Studies
- Reproduction and Animal Breeding
- Analysis and Communication of Scientific Literature
- Current Issues in Animal Production and Nutrition
- Advanced Principles and Practices of Animal Production Systems
- Research Methods
- Personal Development Planning
- Dissertation

#### Key features

- Advanced level training in the science and practice of animal production and nutrition.
- Emphasis on an international approach to the subject.
- Supported by the activities of CEQAS.

#### Career prospects

Upon successful completion of this course, graduates are likely to enter sales, technical and management positions in livestock production with breeding companies, livestock production units and the livestock nutrition industry in the UK and overseas. Graduates may also be able to use the MSc qualification as a route to advance their careers.