



University of the
West of England

CORPORATE AND ACADEMIC SERVICES

MODULE SPECIFICATION

| Part 1: Basic data | | | | | |
|-----------------------|---|--------------------|---------------------------|-------------------------|-----------|
| Module title | Animal Genetics | | | | |
| Module code | UINXNV-15-1 | | Level | 1 | Version 1 |
| Owning faculty | Hartpury | | Field | Animal and Land Science | |
| Contributes towards | BSc (Hons) Animal Behaviour & Welfare BSc (Hons) Animal Science BSc (Hons) Bioveterinary Science BSc (Hons) Equine Science | | | | |
| UWE credit rating | 15 | ECTS credit rating | 7.5 | Module type | Standard |
| Pre-requisites | None | | Co-requisites | None | |
| Excluded combinations | None | | Module entry requirements | None | |
| Valid from | 01 September 2013 | | Valid to | 01 September 2019 | |

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| CAP approval date | 04 July 2013 |
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| Part 2: Learning and teaching | | |
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| Learning outcomes | On successful completion of this module students will be able to: <ol style="list-style-type: none"> 1 Discuss factors that will affect rates of genetic progress within breeding populations (A). 2 Show knowledge of inherited and congenital conditions of companion animals, production animals and equine species (A). 3 Understand responses to selection (A). 4 Explain the processes by which genetic material is transmitted (A, B). 5 Explain and apply the principles of qualitative trait genetics compared to quantitative traits (A). 6 Demonstrate understanding of theoretical and practical aspects of Mendelian genetics and apply them to the inheritance of traits (A, B). 7 Communicate technical information clearly and professionally within time constraints and in a high pressure environment (A, B). | |
| Syllabus outline | <ol style="list-style-type: none"> 1 Colour inheritance, inherited defects, desirable traits. 2 Mendelian inheritance. 3 Principles of Mendelian inheritance and variation. 4 Chromosomes, genes, random inheritance, dominance and epistasis, linkage. 5 The genetic model for quantitative traits. 6 Application of statistics to quantitative trait. 7 Variation and prediction. 8 Heritability and repeatability. 9 Factors affecting the rate of genetic change. 10 Genetic prediction. 11 Methods. | |

| | 12 BLUP. 13 REML. 14 Correlated response to selection. 15 Multiple trait selection. | | | | | | | | | | | | | | | | | | |
|-----------------------------------|--|-----------------------------------|-----------------------|-----------------------|---|-------------------------|-----------------------|-----------------|-----|----|-----|---|-----|---|--|---|---|---|--|
| Contact hours | Indicative delivery modes: Lectures, guided learning, seminars etc 33 Self directed study 3 Independent learning 114 TOTAL 150 | | | | | | | | | | | | | | | | | | |
| Teaching and learning methods | <p>A variety of learning strategies will be used including lectures and seminars (33 hours), and self-directed learning (3 hours). Students will also be expected to engage in independent learning throughout the module (114 hours).</p> <p>Scheduled learning Includes lectures, seminars, tutorials, project supervision, demonstration, practical classes and workshops; fieldwork; external visits; work based learning; supervised time in studio/workshop.</p> <p>Independent learning Includes hours engaged with essential reading, case study preparation, assignment preparation and completion etc. These sessions constitute an average time per level as indicated in the table below. Scheduled sessions may vary slightly depending on the module choices you make.</p> <p>Virtual learning environment (VLE) or equivalent This specification is supported by a VLE where students will be able to find all necessary module information. Direct links to information sources will also be provided from within the VLE.</p> | | | | | | | | | | | | | | | | | | |
| Key information sets information | <p>Key information sets (KIS) are produced at programme level for all programmes that this module contributes to, which is a requirement set by HESA/HEFCE. KIS are comparable sets of standardised information about undergraduate courses allowing prospective students to compare and contrast between programmes they are interested in applying for.</p> <p>Key information set – module data</p> <table><tr><td>Number of credits for this module</td><td>15</td></tr></table> <table><tr><th>Hours to be allocated</th><th>Scheduled learning and teaching study hours</th><th>Independent study hours</th><th>Placement study hours</th><th>Allocated hours</th></tr><tr><td>150</td><td>36</td><td>114</td><td>0</td><td>150</td></tr></table> <p>The table below indicates as a percentage the total assessment of the module which constitutes a:</p> <table><tr><td>1</td><td><i>Written exam:</i> Unseen written exam, open book written exam, in-class test.</td></tr><tr><td>2</td><td><i>Coursework:</i> Written assignment or essay, report, dissertation, portfolio, project.</td></tr><tr><td>3</td><td><i>Practical exam:</i> Oral assessment and/or presentation, practical skills assessment, practical exam.</td></tr></table> <p>Please note that this is the total of various types of assessment and will not necessarily reflect the component and module weightings in the assessment section of this module description:</p> | Number of credits for this module | 15 | Hours to be allocated | Scheduled learning and teaching study hours | Independent study hours | Placement study hours | Allocated hours | 150 | 36 | 114 | 0 | 150 | 1 | <i>Written exam:</i> Unseen written exam, open book written exam, in-class test. | 2 | <i>Coursework:</i> Written assignment or essay, report, dissertation, portfolio, project. | 3 | <i>Practical exam:</i> Oral assessment and/or presentation, practical skills assessment, practical exam. |
| Number of credits for this module | 15 | | | | | | | | | | | | | | | | | | |
| Hours to be allocated | Scheduled learning and teaching study hours | Independent study hours | Placement study hours | Allocated hours | | | | | | | | | | | | | | | |
| 150 | 36 | 114 | 0 | 150 | | | | | | | | | | | | | | | |
| 1 | <i>Written exam:</i> Unseen written exam, open book written exam, in-class test. | | | | | | | | | | | | | | | | | | |
| 2 | <i>Coursework:</i> Written assignment or essay, report, dissertation, portfolio, project. | | | | | | | | | | | | | | | | | | |
| 3 | <i>Practical exam:</i> Oral assessment and/or presentation, practical skills assessment, practical exam. | | | | | | | | | | | | | | | | | | |

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|--------------------------------------|---|------------------------------------|----|----------------------------------|-----|--------------------------------------|-----|--|------|
| | <p>Total assessment of the module:</p> <table> <tr> <td>Written exam assessment percentage</td><td>0%</td></tr> <tr> <td>Coursework assessment percentage</td><td>50%</td></tr> <tr> <td>Practical exam assessment percentage</td><td>50%</td></tr> <tr> <td></td><td>100%</td></tr> </table> | Written exam assessment percentage | 0% | Coursework assessment percentage | 50% | Practical exam assessment percentage | 50% | | 100% |
| Written exam assessment percentage | 0% | | | | | | | | |
| Coursework assessment percentage | 50% | | | | | | | | |
| Practical exam assessment percentage | 50% | | | | | | | | |
| | 100% | | | | | | | | |
| Reading strategy | <p>Core readings Any essential reading will be indicated clearly, along with the method for accessing it, e.g. students may be expected to purchase a set text, or be referred to texts that are available electronically, or in the Library. Module guides will also reflect the range of reading to be carried out.</p> <p>Further readings Further reading is advisable for this module, and students will be encouraged to explore at least one of the titles held in the library on this topic. A current list of such titles will be given in the module guide and revised annually.</p> <p>Access and skills Formal opportunities for students to develop their library and information skills are provided within the induction period and student skills sessions. Additional support is available through online resources. This includes interactive tutorials on finding books and journals, evaluation information and referencing. Sign up workshops are also offered.</p> | | | | | | | | |
| Indicative reading list | <p>The following list is offered to provide validation panels/accrediting bodies with an indication of the type and level of information students may be expected to consult. As such, its currency may wane during the life span of the module specification. However, as indicated above, CURRENT advice on readings will be available via other more frequently updated mechanisms, including the module guide.</p> <ul style="list-style-type: none"> • Bourdon, R.M. (Current Edition) <i>Understanding animal breeding</i>. London: Prentice-Hall International. • Bowling, A.T. & Ruvinsky, A. (Current Edition) <i>The genetics of the horse</i>. Wallingford: CAB International. • Fries, R. & Ruvinsky, A. (Current Edition) <i>The genetics of cattle</i>. Wallingford: CAB International. • Guttman, B., Griffiths, A., Suzuki, D. & Cullis, T. (Current Edition) <i>Genetics: a beginner's guide</i>. Oxford: Oneworld Publications. • Nicholas, F.W. (Current Edition) <i>Introduction to veterinary genetics</i>. Oxford: Oxford University Press. • Simm, G. (Current Edition) <i>Genetic improvement of cattle and sheep</i>. Ipswich: Farming Press. • Sponenberg, P. (Current Edition). <i>Equine color genetics</i>. Iowa, U.S.A: Iowa State Press. • Willis, M.B. (Current Edition) <i>Dalton's introduction to practical animal breeding</i>. Oxford: Blackwell Science. • Winter, P.C., Hickey, G.I. & Fletcher, H.L. (Current Edition) <i>Instant notes in genetics</i>. Oxford: BIOS Scientific Publishers Ltd. | | | | | | | | |

| Part 3: Assessment | | | | |
|---|--|------------------|-------------------|-----|
| Assessment strategy | The oral assessment has been chosen so as to allow the knowledge and intellectual skills gained throughout the module to be assessed in a controlled setting allowing the students to express their oral communication skills. | | | |
| | The essay assignment has been chosen so as to facilitate in depth utilisation of the information covered throughout the module, as well as via additional study. This will also facilitate the development of transferable skills, such as scientific writing and research, early on in the student's academic career. | | | |
| | Formative feedback can be gained from this module in the module delivery, on blackboard, in tutorials and in revision sessions. Summative feedback can be gained upon assignment and following the oral assessment. | | | |
| | In line with the College's commitment to facilitating equal opportunities, a student may apply for alternative means of assessment if appropriate. Each application will be considered on an individual basis taking into account learning and assessment needs. For further information regarding this please refer to the VLE. | | | |
| Identify final assessment component and element | | Oral assessment. | | |
| % weighting between components A and B (Standard modules only) | | | A: | B: |
| | | | 50% | 50% |
| First sit | | | | |
| Component A (controlled conditions) Description of each element | | | Element weighting | |
| 1 Oral assessment (20 minutes) | | | 100% | |
| Component B Description of each element | | | Element weighting | |
| 1 Written assignment (1500 words) | | | 100% | |
| Resit (further attendance at taught classes is not required) | | | | |
| Component A (controlled conditions) Description of each element | | | Element weighting | |
| 1 Oral assessment (20 minutes) | | | 100% | |
| Component B Description of each element | | | Element weighting | |
| 1 Written assignment (1500 words) | | | 100% | |
| If a student is permitted an EXCEPTIONAL RETAKE of the module the assessment will be that indicated by the module description at the time that retake commences. | | | | |