



## **Animal Welfare Science, Ethics and Law Sub-Speciality**

# **EXAMINATION BROCHURE**

September 2018

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## **1. JURISDICTION**

All Animal Welfare Science, Ethics and Law (AWSEL) sub-speciality examinations are within the jurisdiction of the AWSEL Examination committee.

## **2. AIMS OF THE EXAMINATION**

The aim of the AWSEL examination is for candidates to demonstrate that they have sufficient training, experience, knowledge in animal welfare science, ethics and law to meet the criteria for Diplomate status of the ECAWBM. Successful candidates will become certified EBVS European Veterinary Specialists® in Animal Welfare Science, Ethics and Law.

## **3. SCOPE OF THE EXAMINATION**

The candidates are required to demonstrate knowledge of the ECAWBM Animal Welfare syllabus in Welfare Science, Ethics and Law as detailed in the residency requirements (Appendix I). The candidates will also be expected to have a practical working knowledge of recent animal welfare literature as detailed in the reading list (Appendix II).

## **4. PROCEDURE FOR ENTERING EXAMINATION**

To be eligible to sit the examination, candidates must have had their credentials approved by the AWSEL Credentials committee. A non-refundable examination fee applies to apply for the examination.

- Summary of suitable work experience including the record of training programmes and conferences attended
- Evidence of completed 120 case exposures, 12 case discussions and 3 case reports
- Summary of research activity
- Summary of research project outcomes
- Evidence of a minimum of 2 submitted publications. Papers must be accepted for publication by the time of examination.
- Evidence of at least two (2) oral or poster presentations at conferences
- Summary of relevant teaching activities

Candidates must notify the Credentials committee of their intention to sit the examination and provide evidence of completing the above activities no later than four (4) months before the date of the written examination.

After being accepted to sit the examination, the candidate has a total of four (4) attempts to pass all parts of the examination within eight (8) years. Candidates who fail to pass all parts of the examination after four (4) attempts will not be able to reapply to re-sit the examination and therefore cannot become a Diplomate of the ECAWBM.

## **5. STRUCTURE OF THE EXAMINATION**

The examination consists of a written examination (3 components) and a practical examination (3 components). All the examinations are conducted in English.

The written examination will include the following components:

- A. Multiple choice questions
- B. Short essay questions
- C. Long essay questions

The oral/practical examination will include the following components:

- A. Practical welfare assessment of animals
- B. Policy briefing and discussion
- C. Discussion of candidate's case exposures, discussions and reports

The practical examination will typically be held separately from the written examination, typically six (6) weeks<sup>1</sup> after. Candidates will be informed of the examination results by the college after the written examinations. Only candidates that successfully complete the written examination will be invited to participate in the practical examination.

## 6. DETAILS OF THE WRITTEN EXAMINATION

### 6.1 Multiple choice questions

This paper aims at assessing core knowledge. The format will be a 1-hour examination consisting of 50 single best answer questions. There will be no choice of questions. There will be no negative marking.

### 6.2 Short essay questions

This paper aims at assessing the broad knowledge base of welfare science, ethics & law. The format will be a 1-hour examination consisting of 10 questions. There will be no choice of questions. Each question should be answered succinctly (usually no more than 200 words per question). Lists, tables and diagrams are acceptable in the answer. The answers given by the candidates will be scored using standard marking criteria (*c.f.* section 8).

### 6.3 Long essay questions

The focus of this paper is to assess the application of knowledge in science, ethics & law using reasoned arguments. The format will be a 3-hour examination consisting of three (3) questions from a possible choice of six (6) questions. The answers given by the candidates will be scored using standard marking criteria (*c.f.* section 8).

Example of questions is available in Appendix III.

## 7. DETAILS OF THE PRACTICAL EXAMINATION

### 7.1 Welfare assessment

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<sup>1</sup> Subject to confirmation.

Candidates will be expected to present the findings of two welfare assessments to the Examination Committee: one group-focussed and one individual-focussed. Both assessments would have been undertaken prior to the examination<sup>2</sup>.

The candidate will have 10 minutes (plus 5 minutes of discussion) to present each welfare assessment. The presentation (*e.g.*, PowerPoint) can include photographs, videos, as well as data based on observations of behaviour, health and other pertinent welfare parameters. A handout, including summaries of the data, can also be provided by the candidate. The candidates will be asked to send the handout to the Examination Committee in advance of the examination to ensure that it can be presented on the day of the examination.

The candidate, may be responsible for finding suitable animals to assess<sup>3</sup>. In order to show a range of assessments, it is expected that the two assessments will cover different animal uses (*i.e.* farm, companion, laboratory, zoo, wildlife and working animals). One assessment should be focussed on a group of animals (*e.g.*, chickens within a specific husbandry system) and one assessment should focus on an individual animal (*e.g.*, dog receiving veterinary treatment).

Each of the following elements of the presentation will be assessed using the standard marking criteria (section 9).

Elements of the welfare assessment presentation	Proportion of assessment
Description of robust systematic welfare assessment	25%
Logical, critical analysis using appropriate frameworks	25%
External evidence to support analysis ( <i>e.g.</i> literature, benchmarking, productivity)	25%
Format (clear, relevant visual material, appropriate reference format)	25%

## 7.2 Policy briefing

Candidates will be required to prepare a two-page evidence-based policy brief of the relevant welfare science, ethical analysis and policy options (including legislation) on a specific topic. The topic of the policy brief will be set no later than two months<sup>4</sup> prior to the examination. The task description will include the intended recipient of the policy briefing (*e.g.* government department, retailer or large producer), the scope and context of the policy briefing (*e.g.* a specific proposal to regulate a castration of pigs in response to a media story). The candidate will be required to submit their two-page policy briefing document at the time of the written examination. The candidate will be asked to discuss the content of the policy briefing during the final oral examination (see 7.3).

Each of the following elements of the policy brief will be assessed using the standard marking criteria (*c.f.* section 9).

Elements of the policy brief	Proportion of assessment
Description of relevant welfare science, ethics and policy, including legislation	25%
Logical, critical analysis using appropriate frameworks & recommendations	25%

<sup>2</sup> Subject to confirmation

<sup>3</sup> Subject to confirmation

<sup>4</sup> Subject to confirmation

External evidence to support analysis (e.g. peer-reviewed & non-peer-reviewed literature)	25%
Format (clear, relevant visual material, appropriate reference format)	25%

### 7.3 Final oral examination

Candidates will be required to attend a final oral examination with members of the Examination Committee. The Committee will discuss the candidate's work experience including case exposures, publications, reports, and elements of the written and practical examinations. The oral examination will last 20 minutes. The questions and expected responses will be agreed in advance by the Examination Committee and marked using standard marking criteria (section 9).

## 8. MARKING CRITERIA AND PROCESS

The pass mark for each component of the examination shall be 60%, as defined by the marking framework (Appendix IV).

### 8.1 Written examination:

Each paper will be marked by a two-step process. First, each paper is marked independently by three (3) examiners members of the AWSEL Examination Committee. Second, quality control of the marking is conducted by Associate members of the AWSEL Examination Committee.

### 8.2 Practical examination:

Each component of the practical examination will be assessed by one (1) examiner and one (1) observer. The role of the observer is to assess the process of the examination.

## 9. OUTCOME OF THE EXAMINATION

9.1 All six elements of the examination will be regarded as entirely separate components for the purposes of the assessment.

9.2 The pass mark for each component shall be 60% (*c.f.* Appendix IV).

9.3 The 60% pass mark for each component is absolute; there is no opportunity to compensate in other components for one failed component.

9.4 Candidates will pass the examination once they have achieved a pass mark in all six components.

9.5 If a candidate fails one or more element, they will be able to re-sit the examination according to EBVS procedures. Candidates are not required to re-sit components in which

they have already scored 60% or above but must re-sit all remaining components in the next examination year.

9.6 Candidates may apply to re-take any part of the examination four (4) times and that all parts of the examination must be passed within eight (8) years of completion of the residency programme.

9.7 The examination team typically consists of at least three examiners from the ECAWBM (AWSEL) Examination Committee. Relevant notes and justifications for the marks attributed will be made of each element of the examination. These will be available for scrutiny on the request of the candidate or in case of an appeal against an adverse decision.

## 10. SPECIAL REQUESTS

10.1 The ECAWBM is committed to allowing all candidates for examinations access to equitable assessment procedures. If a candidate believes that the circumstances, locations or systems of the examination procedures (including written & practical) do not allow them to display their professional knowledge, skills and behaviours fully; they are **strongly encouraged** to submit a request for variation of assessment procedures.

10.2 Requests for variation of assessment procedures should be made in the form of a draft plan which must:

10.2.1. Be directed to the Chair of the Examinations Board (Animal Welfare) and submitted with a candidates notification of intention to sit the examinations.

10.2.2. Be supported by a letter from the candidate's health professional (*e.g.*, Doctor, Ophthalmologist, Psychiatrist, Psychologist, Optometrist, Audiologist, Occupational Therapist) outlining the measures requested to enable to the candidate to fairly undertake the examinations. This letter needs to include specific areas where changes to standard practices are requested. Some examples may include:

- Large print examination papers.
- Adjusted lighting.
- Extra reading time.
- Use of a scribe or keyboard or other data entry device.
- Extra toilet breaks or rest periods.
- Wheelchair access.
- Ergonomic furniture.
- Measures to allow increased audibility.

10.3. A plan will be developed in consultation with the candidate. This plan will take into account:

- The contents of the professionals' letter of support.
- Costs, locations and timeframes.
- Fairness to the other candidates in the examination system.

## **11. ORGANISATION OF THE EXAMINATION**

11.1. The candidate will be sent written notification of:

- The dates and venue of the examination,
- The names of the examiners,
- A personal identification number.

11.2. Once notified of the names of the examiners, candidates must not contact these examiners on matters relating to the examinations, either before or after the examination. Any questions relating to the examination must be addressed to the Chair of the AWSEL Examination Committee.

11.3. Should a candidate contact an examiner about the examination after their announcement as an examiner, the Chair of the Examination committee may suspend the examination process for that candidate until satisfied that such contact was not an attempt to influence the conduct or outcome of the examination.

11.4. The personal identification number is only known to the candidate and the ECAWBM AWSEL Board Chair. The Examination Committee members do not have access to this number until the entire examination has been marked. Under no circumstances should this personal identification number be divulged. Candidates must bring this number with them to the examinations as they will need to identify their answer sheet anonymously.

11.5. Candidates will be expected to make their travel and accommodation arrangements.

## **12. MISCONDUCT**

12.1. The highest standard of conduct is expected of candidates seeking Membership of the College. On their application for examinations, Candidates are required to read and sign an agreement to be bound by the College's rules, regulations and guidelines.

12.2. Participating in any improper conduct such as cheating, attempt to cheat, assisting others to cheat, participating therein is a serious violation and will result in the College disqualifying the candidate's paper and other disciplinary action as deemed appropriate, including, but not limited to, forfeiture of examination fees and/or exclusion from the College. This applies before, during, and after the examinations.

12.3. Candidates must not give or receive assistance of any kind during the examination. During the examinations, candidates are expected to behave with integrity and follow all proper and reasonable instructions whether given in writing or by any College Officer including examination examiners and observers.

12.4. Examples of improper conduct include but are not limited to:

- Attempting to gain an unfair advantage by ascertaining the content of the examination before the examination period.
- Sharing information about the content of the examination during the period in which Candidates have been requested not to disclose it.
- Sharing or attempting to share answers with other Candidates during the examination.
- Attempting to obtain assistance with answering questions by any means including the use of notes, phones, or internet.
- Presenting false information in the application or any other documentation.
- Failing to follow the proper and reasonable instructions of College Officers.

12.5. The Examination Committee will investigate any irregularity or suspected violation of examination discipline, and a determination by the Examination Committee will be made regarding the matter.

### **13. REPORTING OF RESULTS**

Results of the ECAWBM AWSEL examination will be reported within four (4) weeks to all candidates. Results will indicate whether the candidate passed or failed each of the components of the examination. Candidates who failed will receive a document from the Chair of the Examination Committee indicating their performance on the various topic areas within the examination.

The ECAWBM AWSEL board will store the manuscript of unsuccessful candidates for six (6) years<sup>5</sup> after the candidate's first examination attempt. No copies of either question will be sent to the candidate.

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<sup>5</sup> Six years: subject to confirmation.

## APPENDIX I – SYLLABUS AWSEL

The residency programme should include training in the following areas (the topics listed are intended to give the candidate a better understanding of the key aspects - the lists will be expanded with experience):

The following syllabus addresses the 'core' knowledge base in animal welfare science, ethics and law. Diplomates will be expected to show a deep level of understanding of the scientific and ethical principles that underpin both our current approach to animal welfare and any actions designed to improve it, or actions known to reduce welfare. Equally, it will not be sufficient for Diplomates simply to know the Law as it relates to animal welfare but they should also be equipped to undertake an analysis of the strengths and weaknesses of existing law, to be able to determine legal frameworks for determining infringement e.g. negligence, unnecessary and avoidable suffering and investigate opportunities for improvements of welfare through existing or new legislation. Similarly, in Ethics, candidates should be able to devise ethical frameworks to help assess welfare problems and solutions.

### 1. Animal Welfare Science

#### 1.1. The scientific basis of good husbandry

- practical recognition and assessment of animal wellbeing based on the principles of the 'Five Freedoms' and their incorporation into an assessment of the quality of life
- contemporary approaches to the scientific assessment of animal distress and positive and negative wellbeing based on an appropriate selection of assessment methods (toolbox concept for welfare indicators, e.g. resource, animal based and management factors), relevant scientific disciplines including ethology, physiology, pharmacology, anatomy, and neurobiology
- methods for assessing and enhancing animal environments and husbandry systems such as those used for the purposes of quality assurance and promoting a good quality of life for animals, including formalised systems such as Welfare Quality<sup>®</sup> protocols
- methods used for risk assessment of welfare e.g. EFSA reports
- methods used for labelling e.g. assurance schemes, methods of production
- analysis of the economics of conventional and 'high and low welfare' systems of husbandry
- principles for assessing stockmanship and education, training and competence of stockpersons.

#### 1.2. The scientific basis of animal suffering and wellbeing

- genetic, environmental and evolutionary determinants of behaviour in animals including vertebrates and invertebrates
- the nature of motivation and cognition in animals
- humane approaches to the manipulation of animal behaviour
- the nature of pain, distress, fear and others adverse states e.g. frustration, boredom
- the assessment of positive wellbeing e.g. contentedness, pleasurable states
- the assessment of the quality of a life
- the nature of consciousness and self-awareness, instinct, reproduction, and altruism

#### 1.3 The impact of scientific procedures on animal welfare

- experimental procedures likely to cause ‘pain, suffering, distress and lasting harm’, and their prospective and retrospective assessments
- commercial application of scientific procedures: e.g. embryo transfer, genetic modification, cloning.

1.4 Research methods: validation, experimental design, qualitative and quantitative analysis and critical evaluation of data.

## 2. Ethics

2.1. The nature of scientific truth and moral value

- rational assessment of objectivity and subjectivity in science and ethics
- morality and social biology as a basis for human behaviour.

2.2. The philosophical issues and concepts involved in animal use

- utilitarian and deontological approaches
- virtue ethics
- balancing and assessing harms and benefits (e.g. in animals used for research)
- emerging ethical issues: e.g. patenting of animals, cloning, xenotransplantation, human-animal hybrids, stem cell research, minimum standards of welfare.

2.3 Ethics and human behaviour with respect to animals and animal use

- the construction and use of ethical frameworks to evaluate animal welfare and benefit;
- the historical, social and cultural foundations of human perception and treatment of other (non-human) animals, concepts of dignity, autonomy and integrity as applied to humans and animals
- morality and sentiment (empathy, sympathy) as bases for concern regarding animal welfare
- the ethical basis of professional conduct - the concepts of ‘virtue’ and etiquette, Veterinary Codes
- conflicts between human and animal needs (e.g. animals in sport, research, guide dogs, economics and economic constraints)
- potential conflicts between individual animal welfare and issues such as environmental concerns, pest control, wild life, and public health, the conflict between interests of the ‘group’ vs the individual.

## 3. Law

The object of the law element of the Diploma is to enable candidates to demonstrate an advanced understanding of the way in which legislation is drawn up and applied and monitored in practice, and case law. The object is to equip the candidate to:

- play an informed role in public policy-making
- play an informed role in the policy-making of the veterinary profession

- participate in statutory inspections and other administrative enforcement mechanisms
- advise commercial and other non-statutory bodies.
- understand the role of an expert witness and be able to provide an expert opinion

In pursuing this syllabus, candidates would be expected to demonstrate familiarity with, and an ability to use effectively, relevant primary materials such as the Official Journal of the European Communities; Council of Europe Conventions, EU legislation; OIE, EFSA Journal, and other official publications.

Candidates will be required to demonstrate an understanding of:

- The origin of legislation and the relationship between different types of rules:

WTO; Council of Europe Conventions; European Union Law, the role of the courts in developing case law.

- The factors which influence the development of public policy and legislation:

Public opinion; pressure groups; scientific evidence; recommendations of advisory bodies such as EFSA and the role of Risk Assessment and Risk Management in Risk Analysis; the impact of international legislation and guidance arising from the WTO (GATT), OIE, the European Union, FAO, USDA, EFSA, MAF NZ, and Australia

- The policy-making process:

The way in which EU institutions, national government departments, the devolved executives, local authorities, and other relevant public bodies make policy and administrative decisions.

- The legislative process:

EU legislation; national primary and secondary legislation; legislation passed by the devolved bodies; the impact of the WTO, OIE, FAO and EU law.

- Enforcement through the courts:

WTO dispute resolution; European Court of Justice; judicial review; prosecutions

- Regulation of the veterinary profession:

Relevant European and domestic Law, Code of Professional Conduct; the maintenance of professional standards, the roles and responsibilities of the national veterinary regulatory bodies, and supra- national bodies e.g. FVE, OIE, WVA, EAEVE, EVBS

## APPENDIX II – READING LIST AWSEL

The reading list below is non-exhaustive, and merely aims at guiding residents towards crucial piece of work relevant to the AWSEL sub-speciality. Residents are expected to be up to date with the current literature and to participate in journal clubs or similar ventures.

In the U.K. the RCVS Library will supply a quarterly update on any specified specialist interest through a broad journal search and organisations such as Promed mail. RSPCA, WAP, or the Nuffield Council on Bioethics can also provide current sources.

It is essential that candidates realise the latitude of interests relevant to the AWSEL speciality and make themselves aware of issues in the public domain which may also provide a challenge in the development of policy or other instruments that affect welfare status of animals.

### CORE READING LIST

#### Animal welfare science

Appleby, M., Olsson, A. & Galindo, F. (eds) (2018) *Animal Welfare*, 2<sup>nd</sup> edition. Wallingford: CABI.

Blokhuis, H.J., Miele, M., Veisser, I. & Jones, B. (eds) (2013) *Improving farm animal welfare. Science and society working together: The Welfare Quality® approach*. Wageningen: Wageningen Academic Publishers.

Broom, D.M. (2014) *Sentience and Animal Welfare*. Wallingford: CABI. doi: [10.1079/9781780644035.0000](https://doi.org/10.1079/9781780644035.0000)

Dawkins, M.S. (2012) *Why Animals Matter: Animal consciousness, animal welfare, and human well-being*. Oxford: OUP.

Fraser, D. (2008) *Understanding Animal Welfare: The Science in its Cultural Context* (UFAW Animal Welfare Series). Chichester: Wiley-Blackwell.

Fraser, D., Weary, D. M., Pajor, E. A., & Milligan, B. N. (1997) 'A scientific conception of animal welfare that reflects ethical concerns'. *Animal Welfare* 6: 187-205. <https://animalstudiesrepository.org/cgi/viewcontent.cgi?article=1000&context=ethawel>

Mellor, D.J. (2016) 'Updating animal welfare thinking: moving beyond The Five Freedoms towards A Life Worth Living.' *Animals* 6(3): 21. doi: [10.3390/ani6030021](https://doi.org/10.3390/ani6030021)

Mendl, M., Burman, O., Parker, R. & Paul, E. (2009) 'Cognitive bias as an indicator of animal emotion and welfare: Emerging evidence and underlying mechanisms.' *Applied Animal Behaviour Science* 118 (3-4): 161-181. doi: [10.1016/j.applanim.2009.02.023](https://doi.org/10.1016/j.applanim.2009.02.023)

Veissier, I., Jensen, K., Botreau, R. & Sandøe, P. (2011) 'Highlighting ethical decisions underlying the scoring of animal welfare in the Welfare Quality® scheme.' *Animal Welfare* 20(1).

[https://www.researchgate.net/publication/230851708\\_Highlighting\\_ethical\\_decisions\\_underlying\\_the\\_scoring\\_of\\_animal\\_welfare\\_in\\_the\\_Welfare\\_QualityR\\_scheme](https://www.researchgate.net/publication/230851708_Highlighting_ethical_decisions_underlying_the_scoring_of_animal_welfare_in_the_Welfare_QualityR_scheme)

#### Ethics

Armstrong, S.J. & Botzler, R. (eds) (2008) *The Animal Ethics Reader*, 2<sup>nd</sup> edition. Abingdon: Routledge.

Beauchamp, T.L. (2006) *The Human Use of Animals: case studies in ethical choice*, 2<sup>nd</sup> edition. New York: OUP.

Gruen, L. (2015) *Entangled Empathy: an alternative ethic for our relationship with animals*. New York: Lantern Books.

Mepham, B. (2008) *Bioethics: an introduction for the biosciences*, 2<sup>nd</sup> edition. Oxford: OUP.

Mullan, S. & Fawcett, A. (eds) (2017) *Veterinary Ethics: Navigating Tough Cases*. Sheffield: 5m Publishing.

Rollin, B.E. (2006) *An Introduction to Veterinary Medical Ethics: theory and cases*, 2<sup>nd</sup> edition. Oxford: Blackwell.

Singer, P. (ed) (2006) *In Defense of Animals: the second wave*. Oxford: Blackwell.

## Law

European animal welfare regulations and directives: transport (EC/1/2005), on farm (98/58/EC, 99/74/EC, 2008/119/EC, 2008/120/EC, 2007/43/EC), research (2010/63/EU), and killing (EC/1099/ 2009)

OIE (2017) *Aquatic Code*, 20<sup>th</sup> edition.

<http://www.oie.int/standard-setting/aquatic-code/>

OIE (2017) *Terrestrial Animal Health Code*, 26<sup>th</sup> edition.

<http://www.oie.int/standard-setting/terrestrial-code/>

Robertson, I.A. (2015) *Animals, Welfare and the Law: fundamental principles for critical assessment*. Abingdon: Routledge.

Sweeney, N. (2017) *A Practical Approach to Animal Welfare Law*, 2<sup>nd</sup> edition. Sheffield: 5m Publishing.

Wagman, W.A. & Leibman, M. (2011) *A Worldview of Animal Law*. Durham, NC: Carolina Academic Press.

## FURTHER READING

### Animal welfare science

Bayne, K. & Turner, P.V. (2013) *Laboratory Animal Welfare*. Amsterdam: Elsevier.

Botreau, R., Veisser, I., Butterworth, A. & Keeling, L.J. (2007) 'Definition of criteria for overall assessment of animal welfare'. *Animal Welfare* 16(2): 225-228.

<https://www.researchgate.net/publication/40105884> Definition of criteria for overall assessment of animal welfare

Broom, D.M. & Fraser, A.F. (2015) *Domestic Animal Behaviour and Welfare*, 5<sup>th</sup> edition. Wallingford: CABI.

Broom, D.M. (1988) 'The scientific assessment of animal welfare'. *Applied Animal Behaviour Science* 20(1-2): 5-19. doi: 10.1016/0168-1591(88)90122-0

Broom, D.M. (2010) 'Cognitive ability and awareness in domestic animals and decisions about obligations to animals'. *Applied Animal Behaviour Science* 126(1-2): 1-11. doi: 10.1016/j.applanim.2010.05.001

de Waal, F. (2016) *Are We Smart Enough To Know How Smart Animals Are?* New York: W.W. Norton & Co.

Fraser, D. (2006) Animal welfare assurance programs in food production: a framework for assessing the options. *Animal Welfare* 15(2): 93. <https://animalstudiesrepository.org/cgi/viewcontent.cgi?article=1001&context=farawel>

Grandin, T. (ed) (2015) *Improving Animal Welfare: A Practical Approach*, 2<sup>nd</sup> Edition. Wallingford: CABI.

Koolhaas, J.M. et al (2011) 'Stress revisited: a critical evaluation of the stress concept'. *Neuroscience and Biobehavioural Reviews* 35(5): 1291-1301. doi: [10.1016/j.neubiorev.2011.02.003](https://doi.org/10.1016/j.neubiorev.2011.02.003)

Paul, E.S., Harding, E.J. & Mendl, M. (2005) 'Measuring emotional processes in animals: the utility of a cognitive approach'. *Neuroscience and Biobehavioural Reviews* 29(3): 469-491. doi: [10.1016/j.neubiorev.2005.01.002](https://doi.org/10.1016/j.neubiorev.2005.01.002)

Scott, E.M., Nolan, A.M. & Fitzpatrick, J.L. (2010) 'Conceptual and methodological issues related to welfare assessment: a framework for measurement'. *Acta Agriculturae Scandinavica* (Section A, Animal Science) 51(30): 5-10. doi: 10.1080/090647001316922983

Smulders, F.J.M. & Algers, B. (2009) *Welfare of Production Animals: assessment and management of risks*. Wageningen: Wageningen Academic Publishers.

Stolba, A. & Wood-Gush, D. (1989) 'The behaviour of pigs in a semi-natural environment'. *Animal Science* 48(2): 419-425. doi: 10.1017/S0003356100040411

Waran, N. (ed) (2003) *The Welfare of Horses*. Dordrecht: Springer.

## Ethics

Regan, T. (2004) *The Case for Animal Rights*, 2<sup>nd</sup> edition. Berkeley: University of California Press.

Sandøe, P. & Christiansen, S.B. (2008) *Ethics of Animal Use*. Chichester: Blackwell.

Sandøe, P., Corr, S. & Palmer, C. (2016) *Companion Animal Ethics*. Oxford: Wiley Blackwell.

Singer, P. (1995) *Animal Liberation*. London: Pimlico (Random House).

### **Law**

Cao, C. & White, S. (eds) (2016) *Animal Law and Welfare – International Perspectives*. Heidelberg: Springer.

Lundmark, F., Berg, C. & Röcklinsberg, H. (2018) 'Private animal welfare standards - opportunities and risks'. *Animals* 8(1): pii: E4. doi: 10.3390/ani8010004

Munro, R. & Munro, H. (2008) *Animal Abuse and Unlawful Killing*. London: Saunders Ltd.

Radford, M. (2001) *Animal Welfare Law in Britain: regulation and responsibility*. Oxford: OUP.

**APPENDIX III – SAMPLE EXAMINATION QUESTIONS AWSEL****Multiple Choice Questions** (single correct answer, no negative marking):

1. When one castrates a calf without providing analgesia or anaesthesia, which principle of biomedical ethics is challenged?

- A. Beneficence
- B. Justice
- C. Non-maleficence
- D. Respect for autonomy

2. You are a shelter veterinarian doing the morning rounds in the dog kennel. As you walk in you hear different vocalisations from the dogs. Which vocalisation makes you think that one of the dogs is in pain?

- A. Barking
- B. Growling
- C. Howling
- D. Whining

3. In which European legislation were animals first recognised as ‘sentient beings’:

- A. Treaty on the Functioning of the European Union, 2008, Article 13
- B. Council Regulation EC 1/2005
- C. Directive 2010/63/EU
- D. Council Directive 92/65/EEC

4. Suffering is a term used with convenience and is central to the understanding of animal welfare. The meaning of this term is:

- A. an affective state where pain is experienced
- B. the experience of threats to the intrinsic value of self
- C. an affective state where fear is experienced
- D. conscious recognition (cognitive ability) to recognise negative affects such as pain

**Short Essay Questions** (no more than 150 words):

1. In 1959, Russel and Burch published their ‘Principles of Humane Experimental Technique’. What concepts, still in use today, were <sup>first</sup> described in their publication?
2. Quality of life in animals: please define.

**Long Essay Questions:**

1. Your local veterinary school asks you to host a debate on animal welfare and ethics for senior veterinary students. The question to be debated is: "This house believes that improvements in animal welfare are more likely to be achieved through attention to animal function rather than animal feelings".

After the debate, you wish to ensure that all students are well informed about the main arguments on both sides of the debate. Prepare a handout to give to participants. In the handout, outline the arguments in favour of (a) a focus on animal function and (b) a focus on animal feelings, with respect to animal welfare. In doing this, name some authors students could refer to if they wish to explore these issues further.

2. Are animal welfare laws utilitarian? Please discuss.

**APPENDIX IV – MARKING FRAMEWORK**

≥80 %	<p>Work would be worthy of dissemination under appropriate conditions.</p> <p>Mastery of advanced methods and techniques at a level beyond that explicitly taught.</p> <p>Ability to synthesise and employ in an original way ideas from across the subject.</p> <p>Excellent presentation.</p> <p>Outstanding command of critical analysis and judgement.</p>
70 - 79 %	<p>Excellent range and depth of attainment of intended learning outcomes.</p> <p>Mastery of a wide range of methods and techniques.</p> <p>Evidence of study and originality clearly beyond the bounds of what has been taught.</p> <p>Excellent presentation.</p> <p>Able to display a command of critical analysis and judgement.</p>
60 - 69 %	<p>Attained all the intended learning outcomes for a unit.</p> <p>Able to use well a range of methods and techniques to come to conclusions.</p> <p>Evidence of study, comprehension, and synthesis beyond the bounds of what has been explicitly taught.</p> <p>Good presentation of material.</p> <p>Able to employ critical analysis and judgement.</p>
50 - 59 %	<p>Some limitations in the attainment of learning objectives, but has managed to grasp most of them.</p> <p>Able to use most of the methods and techniques taught.</p> <p>Evidence of study and comprehension of what has been taught</p> <p>Adequate presentation of material.</p> <p>Some grasp of issues and concepts underlying the techniques and material taught.</p>
30 - 49 %	<p>Limited attainment of intended learning outcomes.</p> <p>Able to use a proportion of the basic methods and techniques taught.</p> <p>Evidence of study and comprehension of what has been taught, but grasp insecure.</p> <p>Poorly presented.</p> <p>Some grasp of the issues and concepts underlying the techniques and material taught, but weak and incomplete.</p>
1 - 29 %	<p>Attainment of nearly all the intended learning outcomes deficient.</p> <p>Lack of ability to use at all or the right methods and techniques taught.</p> <p>Inadequately and incoherently presented.</p> <p>Wholly deficient grasp of what has been taught.</p> <p>Lack of understanding of the issues and concepts underlying the techniques and material taught.</p>
0 %	<p>No significant assessable material, absent, or assessment missing a "must pass" component.</p>